Review of Models, Simulations, and Games for Domestic Preparedness Training and Exercising Product Reviews

Volume III

March 2004

Rebecca Agrait
Andrew English
David J. Evans
Thomas J. Hammell
Julia J. Loughran
Marchelle M. Stahl

Prepared for:
Office for Domestic Preparedness
Department of Homeland Security

This work was conducted under contract no. GS-35F-0132K/OJP-2002-BF-016 by ThoughtLink, Inc. for Innovative Technology Application, Inc. (ITA), in support of ITA's prime contract with the Office for Domestic Preparedness, Department of Homeland Security. Publication of this document does not indicate endorsement by the Department of Homeland Security, nor should the contents be construed as reflecting the official position of that Agency.
© 2004 ThoughtLink, Inc., 2009 Cantata Court, Vienna VA 22182, (703) 281-5694

Table of Contents

Abbotville Tabletop Simulation 1
ADMS 1 11
ADMS Team 22
ADMS VR 33
Angel Five 44
ALOHA (Areal Locations of Hazardous Atmospheres) 56
Automated Decision Aid System for Hazardous Incidents – First Response (ADASHI-FR) 72
Automated Decision Aid System for Hazardous Incidents (ADASHI-PR) 85
AEAS (Automated Exercise and Assessment System) 99
Biological Weapons Response Template 110
BioSimMer 121
Bridgeworks 133
Bt CREATE 146
CAMSIM (Chemical Agent Monitor Simulation) 155
Chemical Biological Response Aid (CoBRA®) 168
Citizen's SMART Book 180
CERRTS (Civil Emergency Reaction and Responder Training System) 190
CORE 204
CAMEO (Computer-Aided Management of Emergency Operations) 216
Consequence Assessment Toolset with Joint Assessment of Catastrophic Events (CATS-JACE) 231
CRISIS 243
Crisis Management Simulator Modeling Analysis Package (CMSMAP) 261
Decision Making Skills for Public Officials During a Hazardous Materials Incident 286
Eagle Defender 304
EM/2000 321
Emergency Fighters for Life 331
Emergency Preparedness and Incident Command Simulation (EPICS) 342
Emergency Response Synchronization Matrix (ERSM) 358
Emergency Response to Terrorism: Basic Concepts (ERT:BC) 370
EMS Simulator 380
Emergency Simulation Program (ESP) 393
Employee Awareness Video 405
eRoom 413
E Team 424
FEMIS and EMA*DVANTAGE* 436
Fire Studio 449
First Responders Situational Awareness Tool (FiRST) 460
Force Protection Operational Requirements Testbed (FORT) 470
Full Spectrum Command (FSC) 480
Gaming and Multimedia Applications for Environmental Crisis Management Training (GAMMA-EC) 490
Groove 502

Guard Force 514
Guardian Suite 525
Hazard Prediction and Assessment Capability (HPAC) 538
Homeland Security Response Action Model (HLS-RAM) 549
Human Patient Simulator (HPS)/Emergency Care Simulator (ECS) 562
Hybrid Particle And Concentration Transport Model (HYPACT) 574
JANUS 586
Joint Conflict and Tactical Simulation (JCATS) 603
Joint Integrated Database Preparation System (JIDPS) 616
Joint Theater Level Simulation (JTLS) 629
LifeLine Videos 648
MARPLOT: Mapping Application for Response, Planning, and Operational Tasks . 659
MMT&E (Mass Casualty Medical Training & Evaluation Services) 668
MIDAS-AT (Meteorological Information and Dispersion Assessment System - Anti-Terrorism) 679
MIND 700
Minerva 712
MLADS – Multi Layer Decision Making Simulation: School Violence 728
National Security Network (NSN) 737
Nuclear Biological Chemical Casualty Training System (NBC CTS) 749
Ops Center 788
PEGEM (Post-Engagement Ground Effects Model) 798
PISCES (Potential Incident Simulation, Control and Evaluation System) 810
Post-Incident Review For Emergency Command Training (PIRFECT™) 833
PowerSTRIPES 846
QUIC (Quick Urban & Industrial Complex) Dispersion Modeling System 861
Rainbow Six (Tom Clancy's) 877
RAMSAFE 896
Regional Atmospheric Modeling System (RAMS) 910
Response Information Folder System (RIFS) 924
Rest Ops SRC 934
S3 Exercise 942
San Luis Rey (SLR) 954
ScribeVision 968
SEAS/Homeland Security Simulation (a customized version of SEAS) 981
Security and Emergency Response Information System (SERIS) 996
SIMfX Interactive Training Simulations 1006
SimViz/3400ICS-S 1017
SimViz/3400ICS-T 1027
SimViz/3400ICS-C 1037
SoftRisk SQL 1047
Spectrum 1057
STAT Care 1072
TEMA- Tennessee Emergency Management Weapons of Mass Destruction Computer Based Training CD-ROMS 1082
TUTOR 1092

Vigilent 1104
Virtual Cities 1116
Virtual Clinic 1128
Virtual Emergency Response Training Simulation (VERTS) 1139
Virtual Terrorism Response Academy (VTRA) 1151
Weapons of Mass Destruction Basic Awareness Training. (2 CDs) 1165
Weapons of Mass Destruction Decision Analysis Center (WMD-DAC) – Biological Implementation 1174
Nature of Change 1183
WebEOC Standard 1186
WisdomTools Scenarios 1200
WorldReach Emergency Management Suite 1212
Xybernaut Mobile Solutions 1223
Abbreviations/Acronyms 1234

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:
Abbotville Tabletop Simulation

Type of tool (model, game, simulation): Simulation

Product is hardware, software, both, game?

- Generic city model-supported tabletop exercise that can be adapted to model rural, industrial or high rise building areas.
- Three main ones available: city diorama, mall diorama (12' x 9' mall and surrounding strip mall) & ICS/EOC (with stations for each area of ICS/EOC).
- Examples of models available include: airports, chemical companies, a zoo, a high school, and a carnival.

- Reference materials:
  - Some handed out at the time of the simulation identifying agents and communications/dispatch call times.
- Upgrade options: N/A

Large multi-user system, small multi-user product, or individual-user product?

- Small multi-user system.

Focus/specialty of product: for those who practice incident command (IC) on an everyday basis and those who are learning to be an Incident Commander.

- Also used to test plan implementation, and measure interagency coordination and communication.
- Areas modeled: city, residential, & industrial.

Incident response operational tool/system:
Domestic, military, other users?

- Domestic.

Incident response training/exercise tool/system:
- *Domestic*

Other operational tool/system (Identify): NA

Functional-area identification of product (Broad range, or specific):
- All levels of personnel are encouraged to participate including firefighters, medics, chiefs, public works and utility company's personnel, and elected officials. Unified Command works best when participants include Local Emergency Managers, Local Emergency Planning Conference (LEPC) members, hospital, industry, law enforcement, EMS, and 911 dispatchers.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):
- Developer(s): Don & Bev Abbot
- Owner: Command School Inc.

Contact info ref. technical questions (Person, title, organization, telephone, email):
- Scott Porman
  117 South West End Ave.
  Lancaster, PA 17603
  Tel: 1.866.238.6688
  Website: www.commandschool.com Email: scott@commandschool.com

Contact info ref. buying the product (Person, title, organization, telephone, email): Same as above.

COTS/GOTS (circle one).
- COTS.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.
- Directly applicable to counter-terrorism. Related scenarios: mass casualty incidents, WMD, unified command, law enforcement activity, building collapse, utility emergencies, and terrorist actions.
- Other scenarios: mass transit, structural firefighting, industrial and HazMat, weather emergencies, and aviation & marine.

Product status (Production version in use; prototype in use; under development)? If in use, identify users, types of use:
- Currently in use in major metropolitan areas, suburban and rural departments, military and industrial facilities and public safety agencies within the United States to practice tactics and Incident Command. It is often used by local LEPC's and by state and county Emergency Management Agencies who are required to hold annual drills, and who wish to provide practice for the local emergency responders in Unified Command and EOC operations. Companies such as chemical producers, refineries and large corporations use the table-top allow their Emergency Response Teams, and facility directors to practice their in-house emergency response plans, and to practice Unified Command with surrounding fire and police departments.

- They do not utilize specific city models (e.g., exact street names and layout) but they try to customize the structures to reflect areas/cities.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- Consists of over 400 buildings ranging from suburban, rural, industrial, urban, to high rise buildings or special hazard. Real fire and smoke are used (depending on the location where it's held), emergency equipment is dispatched and simulated via the use of scale model apparatus, police cars, ambulances vehicles positioned on the board. Other types of props are used including radios, dunk tanks, decontamination showers, hose (yarn), and simulated smoke are available. Emergency personnel are identified by wearing vests. The instructor controls background sounds of fire, sirens, wind and screaming people set the scene.
- Actual incidents are used as the basis for most of the scenarios (over 100 scenario types, of which 85% are real incidents). Scenarios include personal injury accidents, structural fires, chemical releases, terrorist acts, tornados, earthquakes, floods, & plane and train accidents.
- Scenarios can run as short as 40 minutes and as long as 8 hours.

Intended for operations, training/exercises, or both?

- Both.
- I*f training/exercises, is it an instructor/controller/evaluator tool, or training media?*
  - Training/Exercise tool.

Intended for individual, group or team use?

- Group.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- Full incident command response team.

Number persons usually trained simultaneously?

- The preferred class size should stay between 25 and 35 participants; during the ICS/EOX exercises, the class can exceed 40 participants.
- Typically, no less than 20 players and no more than 45.

Large multi-station system, or based on individual PC's?

- N/A.

Custom/proprietary hardware required?

- None. Tabletop set up prior to exercise and dismantled and taken back with the contractor.

Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- See above.

Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone system.

Web-based application, LAN, or a single computer/system-based application?
- No.

Can the training be administered over a wide area network or a local area network?
- No.

Is an instructor or facilitator needed?
- Yes. Instructors are located in Phoenix, Chicago, New York, Lancaster, Washington, Cincinnati, and Miami and they will travel through the country for scheduled trainings at client's facility.

If not, how is training conducted (e.g., Individual self-paced)?
- Instructors control the simulation pace by controlling events (timing of explosion, progression of fire, prompting dispatch for actions, etc.). They call the exercise end when the objectives have been achieved.

If not, how is training managed (e.g., Testing, certification of completion, etc.)? See above.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?
- No purchase option. Day(s) training only.

Initial acquisition cost (purchase; licensing fees):
- Daily rate
  - Daily Rate for Instruction is $1650.00 plus hotel cost for instructor(s). There is a 2-day minimum required for each training, due to the set-up and break-down time of the diorama (usually contracted for 2-5 days).
  - Hotel: It is the client's responsibility to make all hotel arrangements and relay the information to the instructor prior to the training; airfare: when required, rental car: when required, $ 85.00 fee per day (when a training occurs outside of the instructor's training area. This fee may be waived if the client provides transportation for the instructor).
  - Additional costs: $500.00 fee per instructor for each training when training occurs outside of the instructor's training area and if class reaches over 40 participants, an additional charge will be made for an additional instructor.
  - Evening Classes must be scheduled ahead of time, and will require an additional charge to be determined at the time of scheduling.
  - Specialized programs are an additional charge.
- Open sessions.
  - Client hosts the tabletop and it is open to any participant who signs up (through Command School website or number).
  - Cost is $120 per person and it's open to anyone.
  - Host department is allowed 5 free attendees from their department for lending their time and facility.
  - They are provided with brochures and posters to market the event. They must have 40 participants at the host locations two weeks prior to the session or it is

subject to cancellation by Command School. The host department has the option to fill the needed slots to have 40 participants at $120 per attendee.

- Package deals.
  - Can be worked out on individual basis by speaking to the president of Command School (e.g., discounts for repeat customers).

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- Yes, to run simulation. It takes between two to three hours to set-up the tabletop.

Number of staff required to setup and operate product:

- One instructor. An additional instructor is needed for more than 40 players.

Staff training required to use product (identify briefly ... type, time):

- Training includes: PowerPoint instructor led basic IC system theory, terminology, rules of the game of operation prior to the start of the simulation.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Vendor asks to be provided with a location (a 30' x 20' minimum size room with electrical outlets), one overhead projector with or without screen, tables and chairs. City Diorama – (22) eight foot tables or (24) six foot tables, Mall/ICS/EOC Diorama – (20) eight foot tables or (22) six foot tables (about 15 eight-foot tables and 40 chairs) to set up our simulator.

Expected operating costs? None other than the one time cost. See above.

Product maintenance requirements/recommendations (identify briefly):

- N/A.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- N/A.

Can product be customized? How? Cost?

- Client contacts an instructor and fills out a form describing scenario needs (structural and procedural) to tailor to training needs.
- No additional cost for customization.

Performance measures:

- "Hot wash" discussion of events following simulation. Includes discussion of things done properly and what could be improved.
- No formal documents provided but instructors can be asked (on an individual basis) to provide a more formal review of activities at no additional cost.

Product modifications required to support counter-terrorism training/exercises:

- No.

Performance measures, and standards already supplied for WMD?

- Objective performance assessment: based on event resolution.
- Subjective measure of performance: Based on instructor evaluation after the exercise.

<u>Personal Computer Requirements</u> *(if appropriate)*

- N/A.

Processor speed (in MHz): N/A.

Memory:(SDR/DDR): N/A.

Free disk space: N/A.

Internet connection speed :(if any): N/A.

Display adapter: N/A.

CD-ROM speed: N/A.

Training/Exercise Characteristics

Potential type of WMD event product can support:

Chemical - Yes
Biological - Yes.
Radiological – Yes.
Nuclear - Yes.
Explosive – Yes.

Constraints on supported exercises or scenarios ?

Potential disciplines product can support:

Emergency medical service, Fire Department, Health care, HazMat, Law enforcement, Public health, Red Cross, Emergency managers and planners.

- Directly supports field activity training.

Potential types of learning product can support (S&K):

Incident action planning, inter-agency cooperation, ability to locate and use available resources, firefighting safety actions, crew resource teamwork training, preparation of specific hazards.

Target audience:

- Incident commanders and all levels of emergency responder personnel.

Potential responder training level(s)/categories product can support:

Awareness – Yes,
Performance [Operations] – Yes.
Technician [Specialist] – Yes.
Planning & Management [Incident Command] – Yes.
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - Yes.

Potential equipment and/or facilities product can address:

- Varies according to simulations (see scenarios mentioned above).

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- ICS, EOC decision-making, team communications, zoning, agent awareness, interagency communication/coordination.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

- Awareness level should be considered as it's a team training/exercising.
- Basic level should be considered for this training/exercise medium; but intermediate or advanced levels may be required for specific training objectives.

Potential training/exercise types product can support:

Classroom – Not designed for classroom training.
Individual self-paced - No.
Seminar/workshop - Yes.
Drill – Yes.
Individual and small-team exercises – Team exercises.
Simulation-supported – Yes.
Gaming – No.
Collaborative – Yes.
Tabletop – Yes.
Functional – No.
FSE – No.

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time team exercises (sub-team, and/or full-team).
- Role-play—Yes. Participants communicate via radio and have the option to communicate via different frequencies.
- Immediate feedback (simulator actions) and delayed (instructor comments).
- Dialogue
- Simulation

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Improvisation by the instructor is the norm. S/he wears different hats (e.g., employees working near scene, victims, media, etc.).

Exercise/scenario length/time(typical):

- 2 hours.
- Can last up to 8 hours but varies greatly between locations.

Process and time to:

Develop new exercise/scenario:

- N/A, done by instructor prior to simulation.

Modify an exercise/scenario:

- N/A. Scenarios controlled by instructor.

Setup an exercise/scenario to run:

- About two hours to set up board, done by instructor.

Does a curriculum already exist?

- Yes.

Instructional Assistance Features

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- City/department performance standards are taken into account before exercise is customized.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Immediate feedback based on student actions.

HELP features (Briefly identify):

- Instructor can answer questions and clarify artificialities/actions.

Instructor/controller/evaluator tools:

- N/A.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Scenarios already developed.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Instructor debrief & hot-wash sessions.

Training/exercise fidelity:

Environment (including situation/scenario):

- Depending on the scene depicted.

Information (including interaction with other persons):

- Can be of high fidelity if it elicits real city actions (i.e., follows EOPs/SOPs, plans and policies).

Spoke with Kendra Nealon, Executive Manager of Command School (1.866.238.6688) about cost, logistics, etc.

Live observation at the 24th Annual International Disaster Management Conference in Orlando, FL, 2/6/03. Comments/observations:

- Instructor: Hans Wagner, Deputy Fire Chief, Keys.
- Presented an introduction to the simulation development: Don and Beverly Abbot traveled around the county for about five years and then sold it to Command School who now continues to offer it around the country by ten instructors. Key note speakers such as Alan Brunacini, Phoenix F.D. has instructed at workshops and seminars dealing with Fireground Operations, Health and Safety, Customer

Service, and Fire Department Management. His book, Fire Command, is a text for students of firefighting, and is supplemented by a movie that demonstrates his Fireground Commander System in action.

- Areas modeled: city, residential, & industrial.
- Conducted a PowerPoint assisted orientation that described the simulation and terms utilized in IC. Stated that the simulation emphasis was not on tactics but on strategizing and scene management. Thus it is important to develop strategic goals to control the scene. He also emphasized scene accountability and responder location tracking. In addition he felt that the simulation worked well in such a group as was present at the conference, from different areas of the country, because on the scene you will not likely work with all the people you know, but with other city personnel.
- The first scenario was a short one, lasting about 30 minutes, with about 5 players, depicting an unintentional structure fire to get the players used to the simulation.
    - No real fire was utilized because of the facility used and potential hazards (convention center versus a fire station). Instead, string-like materials placed on the roof of a structure in different colors as the fire progressed simulated fire and smoke.
    - Before commencing he learned of the participants actual roles and tried to match them up to the simulation. He assigned roles including IC, P.D., F.D., P.I.O., communications dispatcher and E.M.S. These players wore colored vests that identified them, utilized radios to communicate with each other (even though they were in the same room) and controlled the appropriate vehicle in the simulated city. Once the players were selected they waited outside of the room and waited for the dispatcher (player) to make the calls and request the appropriate personnel, following a sheet with alarm call requirements based on the simulated scene.
    - The city was a generic city area that included a middle school, fast food restaurant, government buildings, fire station, and a nuclear plant with a train carrying anhydrous ammonia, a bank, a warehouse, a gas station, a church, a hardware store, and a hospital. Zone markings were depicted by colored yarn and were placed by the players who denoted zoning after being prompted by the instructor. Hose lines were also yarn and were placed on the board by the players.
    - Sound effects were played on a radio nearby by the instructor and included helicopter noises (a toy helicopter was controlled by the instructor and landed near the scene). The command post was located a few feet from the table and the EOC on the other side of the room. He stressed the importance of command post communications.
    - There was some confusion as to the direction of the city and this was corrected by the instructor who wrote “N, S, W, E” on pieces of paper and placed them on the board. Once all players were assembled around the table and began communications the instructor donned different hats during the simulation and played different roles including a bystander who wanted to interfere in the scene and a media member. This was done to

increase the stress level and to observe scene control by the different players.

- It appeared somewhat disorganized as the scene progressed and some players stood around the scene (it was a small space with a lot of radio noise). Once the exercise was underway the instructor controlled the pace by interrupting the players by role-playing, by escalating the progression of the fire and/or controlling it based on player actions, and by prompting dispatch calls. After about ½ hour the exercise was called to an end by the instructor and he conducted a hotwash. This was brief (about 15 minutes) included a discussion of appropriate actions and areas for improvements.
- The second scenario was a *dirty bomb* exercise. The same process was used to select players and to start the exercise. This time all attendees (about 15) were players by the end of the scenario. Initially they did not all have roles, but by the end of the game they had been recruited by a player or the instructor to play a role (e.g., Red cross representative, hospital personnel, etc.).
- Once again the scenario was initiated by the dispatcher. The instructor placed smoke on top of a structure. The scenario and responder actions progressed as in the previous one until it escalated to an explosion (simulated by replacement of the building with one with the roof blown and with small pieces of debris placed on the board). There were also simulated shots fired sounds played on a tape player by the instructor.
- Once again there was some confusion on direction and some people were standing around. The instructor brought a lot of sense of humor in the roles that he played. Towards the end of the scenario and as everyone had a role they became more involved. Because it was such a small area there was a lot of noise from chatter and from radio communications. HazMat and F.D. delineated zones and established decontamination zones. There was some repositioning of vehicles when this happened.
- The “Hot Wash” and evaluation were conducted the same way as in the firs scenario.

Available evaluation support materials:

- Command School INC. brochure. All included information available online at www.commandschool.com

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:
ADMS 1

Developer: Environmental Tectonics Corporation (ETC)

Contact information:

Mr. Shabbir Merchant, President, Simulation Division
12001 Science Drive, Suite 180
Orlando, FL 32826
Phone: (407) 282-3378 Fax: (407) 282- 3583
Email: info@etcflorida.com

And additional Contact information:

Mr. Ralph Huber, Sales Manager
Environmental Tectonics Corporation
(407) 282-3378 / Email: rhuber@etcflorida.com

Website: www.adms.info COTS/GOTS: COTS

Product status (version in use): ADMS 1

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  ADMS-1 is a "real-time virtual reality engine" that addresses operational planning, & incident response & management from the on-scene responder to the incident commander to the local city or county EOC, up to State and National level Command and Control Centers. It's the portable, "train the trainer" version of ADMS.

- Current Target audience:
  Emergency response community: from first responder to command personnel. Suited for Train the trainer because of its portability.

- Potential equipment and/or facilities product can address:
  Emergency response scene (via scene simulation) & Emergency Operations Center (via communication set up).

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
  This tool can be used for training & exercising of first responders to make decision based on scene information and multi-agency communications & for command personnel to exercise their management functions. Its configurations allow users to mirror their current operation set up (e.g., communication capabilities) to evaluate adequateness of plans and response. It can be tailored to the user's geospecific environment to increase fidelity of response. In addition it contains performance data recording and AAR capabilities.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
   The ADMS-1 can be packed up in 5 boxes, put in the back of a passenger van, and transported from location to location. Enabling the training to be brought to the training site. The system consists of an instructor station, a student station, and projects on a flat screen. The same features and capabilities of the ADMS VR™ are resident on the

ADMS-1™, and scenarios practiced on the ADMS-1™ can be brought to an ADMS VR™ Facility, and run in the immersive theater system for advanced training or for promotional assessment.

b) Large multi-station system, or based on individual PCs (if applicable)?
Individual PCs. ETC proprietary multi-user system: 3D interactive models, 2D and 3D topography with visual databases and virtual environments (generic and geo-specific), Includes visual and behavioral aspects of people, vehicles, fires, bombs, chemicals, and weather/environmental factors. It can also simulate the inside of structures (e.g., F.D. can enter and leave aircrafts and buildings and remove victims).

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand-alone.

d) If simulation models are used, what is the basis of the data and/or distributions used?
Simulation models are physics based and represent reality. Simulation models are validated through industry standards and real world physics. Weather modeling capabilities include snow, rain, fog, fire, and smoke. It can incorporate existing simulation models (e.g., Cameo) and/or real time weather and other parameters (e.g., passenger manifesto data).

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
Required facilities depend on the arrangement chosen. ADMS-1 is intended to be set up in a classroom environment and typically does not require additional facilities. It's fully portable and ready "out of the box".

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Runs on UNIX, LINUX, and Windows.

b) Processor speed (in MHz): 2.5

c) Memory (SDR/DDR): 1GB

d) Free disk space: 40GB

e) Internet connection speed (if any): 128kbps

f) Display adapter: GeForce4 128MB

g) CD-ROM speed: 40X

h) Optional accessory requirements: Sound Blaster Audigy, Ethernet Card (100Mbps)

3. Describe the user interface characteristics:

Because it's portable it's not as immersive as the other ADMS products. Users work out of a single computer workstation. ADMS™ has interfaces that include: joystick, steering wheel, mouse & voice recognition/activation. It uses standard device drivers to incorporate other standard user interface protocols.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Single user or team mode with up to 25 stations.

b) Custom/proprietary hardware required? If so, identify:
The product can be sold as software, or as a bundled system of hardware and software. ADMS-1 is primarily a software-oriented system and is not dependent on specific hardware. While ADMS-1 is platform agnostic, it requires computer, projection, and speaker interfaces that are industry standard COTS items. No proprietary hardware is required to run the basic system software.

5. Describe any user HELP features:
Help features are activated by placing the mouse arrow over a particular feature, or right clicking the feature to see a pop up screen explaining or defining a particular feature. ADMS™ has graphical and text-based interfaces and can be set up graphics and/or text help. Help features can be expanded to allow for a larger realm of trainees.

The ADMS™ system allows for a predictive capability tied to the help features. In this mode of use, the level of help automatically varies from user to user based on their selected actions taken in a given exercise. In this mode, clicking on the same item may provide two different users two different level of help aids (assuming their selected path, decisions and actions were different).

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
Comprehensive recording and storage features are available in ADMS™. Also snapshot freeze and record playback.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Should be contracted with ETC (cost included in the high end model).

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
The product itself does not contain its own knowledge base, but can connect or simulate programs such as: NOAA, satellite imagery, or other Internet accessible databases.

b) Exercise/scenario length/time(typical):
From several minutes to several days.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable. If user wishes to train/exercise in specific geography this has to be developed (currently available for a few cities in which the product has been used and in generic form).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
- Ministry of Defense Fire Services, United Kingdom
- Orlando Sanford International Airport
- Osceola County Dept. of Emergency Management
- Orange County Fire Rescue
- Osceola County Fire Rescue
- Seminole County Fire Rescue
- Honolulu International Airport
- National Fire Academy of the Netherlands
- SERCO – International Fire Training Centre
- Kawasaki Heavy Industries (Power Plant Emergency Response)
- Charleston International Airport
- Civil Aviation Authority, UK
- South Carolina Department of Emergency Management

3. Instructional Attributes (if applicable)

Does a curriculum already exist? If so, briefly describe its form and content? Yes.
Scripted scenarios are available on ADMS™, and new interactive exercises can be created by the user. Currently designed scenarios include:
- Plane crash into above ground fuel line
- Plane crash into above ground fuel line causing a train to derail
- Plane crash into above ground fuel line causing gases to endanger area/town (daycare, local business, etc.)
- Plane crash into above ground fuel line causing dangerous gases to endanger area/town, causing evacuation of local residents
- Hazmat incident in urban downtown
- Forest fire with strong winds
- Forest fire with sea breeze winds
- Fire in isolated area with residential homes

- Fire in structural building in a metropolitan city
- Train derailment with toxic spill - endangering area town
- Train derailment with toxic spill endangering local residents in the immediate vicinity. Strong winds increase the threat to local residents.
- Truck carrying toxic chemical leaks substance in a downtown city area
- Truck carrying toxic chemical leaks substance in a downtown city street, harming nearby pedestrians (asphyxiation, death etc.)
- Road accident in a commercial area
- Vehicular accident ignites explosion causing fire fighting and rescue conditions to deteriorate

a) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Comprehensive recording and storage features are available in. Also snapshot freeze and record playback. Full scoring and assessment system (OASIS™) is available.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
Scenario Generator for use with its simulation systems is available as an additional option.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
Scripted scenarios are available and new interactive exercises can be created by the user. In the ADMS™-1 configuration graphics are projected onto a screen in front of the student station (40-degree x 40-degree) view from the trainee's standpoint. The user controls the simulation with a joystick (or other input device). It is equipped with a 3D sound system (e.g., sounds appear to emanate from appropriate direction).

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
Exercise and Scenario Customization via the Scenario Generation Tool Set. This tool provides a means for customers to build and develop their own scenarios and exercises to further customize the scenario (from a daytime to nighttime event, for example), and save the exercise. Development and modification costs would involve purchase of the Scenario Generator, and staff time. Available customizations are: type of emergency (airport, WMD, natural disaster), Standard Operating Procedures (customer specific), availability of emergency response equipment and personnel, and situational details (weather, number and behavior of people).

Geo-specific Data Base (ADMS™ virtual environment)- While ADMS™ comes with a generic database or environment, some customers (Chicago O'Hare International, Minneapolis, Orlando Sanford, Netherlands, Kawasaki) desired geo-specific models, equipment and personnel.

b) What is the process and how much time does it take to setup an exercise/scenario to run? Approximately one hour.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): Extensive analysis features from data recording, scenario playback to view selection (e.g., birds eye vie or particular functional area view).

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
2	Group	1	Automated summary of data
2	Small multi-user team (up to 25 persons)	1	SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
2	Multi- Agency Participation		
		1	**HLA Compliance** (does product support HLA?)[1]
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN

[1] Vendor did not provide an answer.

1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
2	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
	EMS	1	Drills
1	EMA	2	TTX
1	Fire	1	FE
	Govt. Administrator	1	FSE
	Health Care	1	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
	Public Health		
	Public Safety Communication		
	Public Works		
	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
X	High
	Medium
	Low
	N/A

	Current Applicability to ODP
X	Very
	Somewhat
	Limited

	Ease of Use
	Easy
X	Relatively Easy
	Difficult
X	Requires trained support staff

5. TLI Observations & Recommendations:

	Selected General Observations: product allows for/can be used for:
	Specific objectives, criteria, metrics/measure or level of preparedness
X	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
X	Tracking participant performance through multiple tries (automation)
X	Structured Feedback among players *(during collaboration they are aware of others' actions)*

	Selected TTX Observations: product allows for/can be used for:
X	Decision-making
X	Tracking Interactions/info-sharing among players

	Selected Functional Observations: product allows for/can be used for:
X	Simulation Support

	Selected FSE Observations: product allows for/can be used for:
	Remote Observation
X	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E

	Selected New Concepts for Improving T&E: product allows for/can be used for:
2	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)

b. No, Vendor must quote a system based on user requirements (*end here*)

Pricing is primarily determined by the type of ADMS™ system and number of users, typically on a licensing basis. License fees are charged on a per user basis. Systems may be purchased, but there is no data for this option currently available. In the past, ETC has completed ADMS™ projects ranging from $25K to $5.5M (The 2M price range includes all ADMS family of products and multiple modules of ADMS). Purchase price of a high-end ADMS™ includes installation costs. The low-end product requires no special installation, and can be installed from CD, DVD, or over a network. According to the vendor, industry guidelines suggest 8% to 10% of the purchase price per year should be budgeted for system maintenance. One year parts and labor for a full system implementation is included in ADMS™ purchase price.

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				

Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

ADMS Team

Developer: Environmental Tectonics Corporation (ETC)

Contact information:
Mr. Shabbir Merchant, President, Simulation Division
12001 Science Drive, Suite 180
Orlando, FL 32826
Phone: (407) 282-3378 Fax: (407) 282-3583
Email: info@etcflorida.com

And additional Contact information:
Mr. Ralph Huber, Sales Manager
Environmental Tectonics Corporation
(407) 282-3378 / Email: rhuber@etcflorida.com

Website: www.adms.info Product status (version in use): ADMS Team
Date of Evaluation: October 16, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- Played/Used product
- X Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- CD-Rom
- Related Papers

Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.
Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

Operational planning and personnel training & exercising in all areas of incident response from the on-scene responder to the incident commander to the local city or county EOC, up to State and National level Command and Control Centers.

It is marketed as having the following trainer capabilities:
- Incident Management:
- Terrorism Mitigation Trainer
- Disaster Exercise (Mock Drills)
- Command Staff Proficiency & Evaluation

Current Target audience:
Command and Control, Fire & Police, Security Personnel, & Hazardous Materials teams.

- Potential equipment and/or facilities product can address:
ADMS Team provides a reality based virtual environment with simulation of numerous real training facilities. It simulates: Vehicular traffic accidents, small fires, explosions, large-scale disasters such as incidents involving chemical agents, or wind-driven fire.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
ADMS™ Team is a fully featured and modular system that is not platform specific, for the purpose of training and evaluation in a broad range of functional

emergency response areas. It allows teams of teams to interact, communicate, share information, manage resources and incident scenes in real time (time can also be sped up). All actions and communications are captured from different points of view and can be replayed for post-incident review.

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Hardware:
   - Runs on multiple computer platforms – PC, MAC, Graphics Workstation (SGI)
   - Requirements depend on the number of players

   Software:
   - Runs on any MS Windows version, Unix, Linux operating systems

   Simulation: *used, identify it/them*

   ETC proprietary multi-user system
   - 3D interactive models
   - 2D and 3D topography with visual databases and virtual environments (generic and geo-specific)
   - Includes visual and behavioral aspects of people, vehicles, fires, bombs, chemicals, and weather/environmental factors.

   It can also simulate the inside of structures (e.g., F.D. can enter and leave aircrafts and buildings and remove victims).

2) Large multi-station system, or based on individual PCs?

   Networked PCs. The following arrangements are available:
   - E-learning (training)—passive learning sitting in front of a computer where the user can observe a simulation, makes no manipulations, and generates reports.
   - Same as above plus the user can manipulate the scene (e.g., steer a fire truck or aircraft)—often used for training on procedures.
   - Same as above but the student sits in a cab that simulates their vehicle.
   - Same as above plus a motion system in the simulated vehicle.

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   Stand alone.

4) If simulation models are used, what is the basis of the data and/or distributions used?

   Simulation models are physics based and represent reality. They are validated through industry standards and real world physics. Weather modeling capabilities include snow,

rain, fog, fire, and smoke. It can incorporate existing simulation models (e.g., Cameo) and/or real time weather and other parameters (e.g., passenger manifesto data).

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
   There are versions for use in an auditorium, over a LAN or the Internet, such that other required facilities depend on the arrangement chosen.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Runs on UNIX, LINUX, and Windows.

b) Processor speed (in MHz): 2.5

c) Memory (SDR/DDR): 1GB

d) Free disk space: 40GB

e) Internet connection speed (if any): 128kbps

f) Display adapter: GeForce4 128MB

g) CD-ROM speed: 40X

h) Optional accessory requirements[5]: Sound Blaster Audigy, Ethernet Card (100Mbps)

3. Describe the user interface characteristics:
User has access to viewing the entire scene and can hear activities on the scene and via own communication equipment (e.g., radio).
ADMS™ TEAM has interfaces that include: joystick, steering wheel, mouse, touch screen and voice recognition/activation; uses standard device drivers to incorporate other standard user interface protocols.

- Projectors –IC CAN VIEW WHOLE SCENE
- Communications (radio, intercom, microphone etc.)

4. If multiple users:

c) Identify the range of persons it can simultaneously support (min-max)?
   1-25

d) Custom/proprietary hardware required? If so, identify:
   Computer, projection, and speaker interfaces that are industry standard COTS items. No proprietary hardware is required to run the basic system software.

5. Describe any user HELP features:
Extensive on line help features are available. Help features are activated by placing the mouse arrow over a particular feature, or right clicking the feature to see a pop up screen explaining or defining a particular feature. ADMS™ has graphical and text-based interfaces and can be set up graphics and/or text help. Help features can be expanded to allow for a larger realm of trainees.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
Comprehensive recording and storage features, also snapshot freeze and record playback.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
System staff training ranges from 2 days to 1 week.

2. Product Content

e) Training content description (briefly identify any relevant WMD-specific content):
Training options include experiential learning such as having first-hand experience of the impact of policies and procedures (e.g., not following the "2-in, 2-out rule", after which responder can observe the consequences and play the scenario again correcting mistakes).

f) Exercise/scenario length/time(typical):
From several minutes to several days.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

h) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
- Ministry of Defense Fire Services, United Kingdom
- Orlando Sanford International Airport
- Osceola County Dept. of Emergency Management
- Orange County Fire Rescue
- Osceola County Fire Rescue
- Seminole County Fire Rescue
- Honolulu International Airport
- National Fire Academy of the Netherlands
- SERCO – International Fire Training Centre
- Kawasaki Heavy Industries (Power Plant Emergency Response)
- Charleston International Airport
- Civil Aviation Authority, UK
- South Carolina Department of Emergency Management

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?
Yes. Scripted scenarios are available on ADMS™, and new interactive exercises can be created by the user. Currently designed scenarios include:
- Plane crash into above ground fuel line
- Plane crash into above ground fuel line causing a train to derail
- Plane crash into above ground fuel line causing gases to endanger area/town (daycare, local business, etc.)
- Plane crash into above ground fuel line causing dangerous gases to endanger area/town, causing evacuation of local residents
- Hazmat incident in urban downtown
- Forest fire with strong winds
- Forest fire with sea breeze winds
- Fire in isolated area with residential homes
- Fire in structural building in a metropolitan city
- Train derailment with toxic spill - endangering area town
- Train derailment with toxic spill endangering local residents in the immediate vicinity. Strong winds increase the threat to local residents.
- Truck carrying toxic chemical leaks substance in a downtown city area
- Truck carrying toxic chemical leaks substance in a downtown city street, harming nearby pedestrians (asphyxiation, death etc.)
- Road accident in a commercial area
- Vehicular accident ignites explosion causing fire fighting and rescue conditions to deteriorate

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
- Immediate feedback as well as after action report capability.
- Replay of exercise from another's point of view (either other live players or computer-controlled players).
- Capability to restrict views to certain players (e.g., EOC players do not have a view of the scene if so desired).

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
Comprehensive scenario generation (design and development tool is available (see above description of OASIS™).
Instructors have the option to control "pop up" tools such as dials, gages, and Hazmat reports that prompt the trainee towards action.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): ADMSTM-Team is set up with each player in front of a computer and there is an instructor station and an additional incident commander view (if desired). The user controls the simulation with a joystick (or other input device).

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario? There are two levels of customization to be considered:

1. Exercise and Scenario Customization – This is accomplished by including in the configuration a requirement for the Scenario Generation Tool Set. This tool provides a means for customers to build and develop their own scenarios and exercises to further customize the scenario (from a daytime to nighttime event, for example), and save the exercise. Development and modification costs would involve purchase of the Scenario Generator, and staff time. Available customizations are: type of emergency (airport, WMD, natural disaster), Standard Operating Procedures (customer specific), availability of emergency response equipment and personnel, and situational details (weather, number and behavior of people).
2. Geo-specific Data Base (ADMS^{TM} virtual environment)- While ADMS^{TM} comes with a generic database or environment, some customers (Chicago O'Hare International, Minneapolis, Orlando Sanford, Netherlands, Kawasaki) desired geo-specific models, equipment and personnel.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Develop new exercise/scenario:

Given existing databases and entities - 10 to 30 minutes. New scenarios requiring new entities will take several days. Exercises involving new modeling will take much longer, depending upon the level of complexity.

Modify an exercise/scenario:

Depending on geo-specificity. Two elements: source data construction and validation of the simulation.

- About 12 months for ground based applications that require high environment specificity (e.g., they can model dips on the road and this affects vehicle movements).
- About 2-3 months for less specific environments
- There is currently a Federal initiative in place to develop a library of environments (e.g., lakes, ranches) and ETC has a process for automation that would allow for city creations in about 500 days.

Setup an exercise/scenario to run:

Approximately one hour.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): Real time data collection and scenario playback are available.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
1	CO (commercially owned)		Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
	Individual	1	Scenario replay
	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		1	**HLA Compliance** (does product support HLA?)[2]
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

[2] Vendor did not provide an answer.

3. Training Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
2	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
	Govt. Administrator	1	FSE
	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
	Public Health		
	Public Safety Communication		
	Public Works		
	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X	High
	Medium
	Low
	N/A

Current Applicability to ODP

X	Very
	Somewhat
	Limited

Ease of Use

	Easy
X	Relatively Easy
	Difficult
X	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

	Specific objectives, criteria, metrics/measure or level of preparedness
X	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
X	Tracking participant performance through multiple tries (automation)
X	Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

X	Decision-making
X	Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

X	Simulation Support

Selected FSE Observations: product allows for/can be used for:

	Remote Observation
X	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

X	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. No, Vendor must quote a system based on user requirements (*end here*)

    Pricing is primarily determined by the type of ADMS™ system and number of users, typically on a licensing basis. License fees are charged on a per user basis. Systems may be purchased, but there is no data for this option currently available. In the past, ETC has completed ADMS™ projects ranging from $25K to $5.5M (The 2M price range includes all ADMS family of products and multiple modules of ADMS). Purchase price of a high-end ADMS™ includes installation costs. The low-end product requires no special installation, and can be installed from CD, DVD, or over a network. According to the vendor, industry guidelines suggest 8% to 10% of the purchase price per year should be budgeted for system maintenance. One year parts and labor for a full system implementation is included in ADMS™ purchase price.

2. Does the cost apply to: (choose one)
    a. Product
    b. Service
    c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

ADMS VR

Developer: Environmental Tectonics Corporation (ETC)

Contact information:

Mr. Shabbir Merchant, President, Simulation Division
12001 Science Drive, Suite 180
Orlando, FL 32826
Phone: (407) 282-3378 Fax: (407) 282-3583
Email: info@etcflorida.com

And additional Contact information:

Mr. Ralph Huber, Sales Manager
Environmental Tectonics Corporation
(407) 282-3378 / Email: rhuber@etcflorida.com

Website: www.adms.info Product status (version in use): ADMS VR

Date of Evaluation: October 16, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- Played/Used product
- X Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- CD-Rom
- Related Papers
- Material from Internet
- Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

Operational planning and personnel training & exercising in all areas of incident response from the on-scene responder to the incident commander to the local city or county EOC, up to State and National level Command and Control Centers.

It is marketed as having the following trainer capabilities:

- Incident Management:
- Emergency Vehicle Driver Trainer
- Terrorism Mitigation Trainer
- Disaster Exercise (Mock Drills)
- Command Staff Proficiency & Evaluation

- Current Target audience: 1st responders and command personnel.

- Potential equipment and/or facilities product can address:
  Vehicular traffic accidents, small fires, explosions, large-scale disasters such as incidents involving chemical agents, or wind-driven fire.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
  ADMS™ VR is a fully featured and modular system that is not platform specific, for the purpose of training and evaluation in a broad range of functional emergency response areas (individual and team). It is designed to immerse the user in a 180 degree screen of a scene (user can see any part of the scene and hear scene operations as well as communicate with players off scene).

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Hardware:
   - Runs on multiple computer platforms – PC, MAC, Graphics Workstation (SGI)
   - Requirements depend on the number of players

- The largest version (on ETC site, Orlando, FL) is set up with a 3-lense projector with screen blending that is also equipped with rear projection. This is modular and re-configurable. It allows for multiple views of the scene. Black boxes at a remote site allow modules for other players (e.g., med-evac unit can receive real time data transmission in another room at the same time) and would aid for a FSE.

Software:

- Runs on any MS Windows version, Unix, Linux operating systems

Simulation: *used, identify it/them*

ETC proprietary multi-user system

- 3D interactive models
- 2D and 3D topography with visual databases and virtual environments (generic and geo-specific)
- Includes visual and behavioral aspects of people, vehicles, fires, bombs, chemicals, and weather/environmental factors.

It can also simulate the inside of structures (e.g., F.D. can enter and leave aircrafts and buildings and remove victims).

2) Large multi-station system, or based on individual PCs?

ADMS™ operates on large multi-station systems like Silicon Graphics work stations or individual PCs. Although there are four available arrangements (see below) ADMS-VR works best when it's live (Not E-learning).

- E-learning (training)—passive learning sitting in front of a computer where the user can observe a simulation, makes no manipulations, and generates reports.
- Same as above plus the user can manipulate the scene (e.g., steer a fire truck or aircraft)—often used for training on procedures.
- Same as above but the student sits in a cab that simulates their vehicle.
- Same as above plus a motion system in the simulated vehicle.

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand alone.

4) If simulation models are used, what is the basis of the data and/or distributions used?

Simulation models are physics based and represent reality. They are validated through industry standards and real world physics. Weather modeling capabilities include snow, rain, fog, fire, and smoke. It can incorporate existing simulation models (e.g., Cameo) and/or real time weather and other parameters (e.g., passenger manifesto data).

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

There are versions for use in an auditorium, over a LAN or the Internet, such that other required facilities depend on the arrangement chosen.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Require adaptation of operational hardware (not just the computer system) to provide interactive immersion for a high level of simulation and training. This product utilizes multiple PCs of differing computational power and configurations.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any):

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements: Requires adaptation of operational hardware (not just the computer system) to provide interactive immersion for a high level of simulation and training. This product utilizes multiple PCs of differing computational power and configurations.

3. Describe the user interface characteristics:

Fully immersive environment where the user has access to viewing the entire scene and can hear activities on the scene and via own communication equipment (e.g., radio).

4. If multiple users:

e) Identify the range of persons it can simultaneously support (min-max)?
1-25

f) Custom/proprietary hardware required? If so, identify:
Computer, projection, and speaker interfaces that are industry standard COTS items. No proprietary hardware is required to run the basic system software.

5. Describe any user HELP features:

Extensive on line help features are available. Help features are activated by placing the mouse arrow over a particular feature, or right clicking the feature to see a pop up screen explaining or defining a particular feature. ADMS™ has graphical and text-based interfaces and can be set up graphics and/or text help. Help features can be expanded to allow for a larger realm of trainees.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
Comprehensive recording and storage features, also snapshot freeze and record playback.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
System staff training ranges from 2 days to 1 week.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
Training options range from familiarization with vehicles (e.g., where the pumper is located on the vehicle) to experiential learning such as having first-hand experience of the impact of policies and procedures (e.g., not following the "2-in, 2-out rule", after which responder can observe the consequences and play the scenario again correcting mistakes).

b) Exercise/scenario length/time(typical):
From several minutes to several days.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
- Ministry of Defense Fire Services, United Kingdom
- Orlando Sanford International Airport
- Osceola County Dept. of Emergency Management
- Orange County Fire Rescue
- Osceola County Fire Rescue
- Seminole County Fire Rescue
- Honolulu International Airport
- National Fire Academy of the Netherlands
- SERCO – International Fire Training Centre
- Kawasaki Heavy Industries (Power Plant Emergency Response)
- Charleston International Airport
- Civil Aviation Authority, UK
- South Carolina Department of Emergency Management

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?
Yes. Scripted scenarios are available on ADMS^{TM}, and new interactive exercises can be created by the user. Currently designed scenarios include:
- Plane crash into above ground fuel line

- Plane crash into above ground fuel line causing a train to derail
- Plane crash into above ground fuel line causing gases to endanger area/town (daycare, local business, etc.)
- Plane crash into above ground fuel line causing dangerous gases to endanger area/town, causing evacuation of local residents
- Hazmat incident in urban downtown
- Forest fire with strong winds
- Forest fire with sea breeze winds
- Fire in isolated area with residential homes
- Fire in structural building in a metropolitan city
- Train derailment with toxic spill - endangering area town
- Train derailment with toxic spill endangering local residents in the immediate vicinity. Strong winds increase the threat to local residents.
- Truck carrying toxic chemical leaks substance in a downtown city area
- Truck carrying toxic chemical leaks substance in a downtown city street, harming nearby pedestrians (asphyxiation, death etc.)
- Road accident in a commercial area
- Vehicular accident ignites explosion causing fire fighting and rescue conditions to deteriorate

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Immediate feedback as well as after action report capability.
- Replay of exercise from another's point of view (either other live players or computer-controlled players).
  Capability to restrict views to certain players (e.g., EOC players do not have a view of the scene if so desired).

5. Instructor/controller/evaluator tools

c) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
Comprehensive scenario generation (design and development tool is available (see above description of OASIS™).
Instructors have the option to control "pop up" tools such as dials, gages, and Hazmat reports that prompt the trainee towards action.

d) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
Tool places the user in front of a surround view screen for immersive training. Scenario unfolds real time (but can be paused and/or sped up). Comprehensive data collection is available (that can be replayed for analysis of response).

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
There are two levels of customization to be considered:

3. Exercise and Scenario Customization – This is accomplished by including in the configuration a requirement for the Scenario Generation Tool Set. This tool provides a means for customers to build and develop their own scenarios and exercises to further customize the scenario (from a daytime to nighttime event, for example), and save the exercise. Development and modification costs would involve purchase of the Scenario Generator, and staff time. Available customizations are: type of emergency (airport, WMD, natural disaster), Standard Operating Procedures (customer specific), availability of emergency response equipment and personnel, and situational details (weather, number and behavior of people).
4. Geo-specific Data Base (ADMS™ virtual environment)- While ADMS™ comes with a generic database or environment, some customers (Chicago O'Hare International, Minneapolis, Orlando Sanford, Netherlands, Kawasaki) desired geo-specific models, equipment and personnel.

b) What is the process and how much time does it take to setup an exercise/scenario to run?
Develop new exercise/scenario:

Given existing databases and entities - 10 to 30 minutes. New scenarios requiring new entities will take several days. Exercises involving new modeling will take much longer, depending upon the level of complexity.

Modify an exercise/scenario:

Depending on geo-specificity. Two elements: source data construction and validation of the simulation.

- About 12 months for ground based applications that require high environment specificity (e.g., they can model dips on the road and this affects vehicle movements).
- About 2-3 months for less specific environments
- There is currently a Federal initiative in place to develop a library of environments (e.g., lakes, ranches) and ETC has a process for automation that would allow for city creations in about 500 days.

Setup an exercise/scenario to run:

Approximately one hour.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): Real time data collection and scenario playback are available.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation

	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
1	CO (commercially owned)		Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
	Individual	1	Scenario replay
	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		1	**HLA Compliance** (does product support HLA?)[3]
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
			LAN
	Environment		WAN
1	Generic		Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
2	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
2	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials

[3] Vendor did not provide HLA information.

	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
	EMS	1	Drills
1	EMA	2	TTX
1	Fire	1	FE
	Govt. Administrator	1	FSE
	Health Care	1	FSE Reinforcement
1	HazMat		Distributed Collaborative Exercise
1	Law Enforcement		National Training Exercise
	Public Health		
	Public Safety Communication		
	Public Works		
	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

- **X** High
- Medium
- Low
- N/A

Current Applicability to ODP

- **X** Very
- Somewhat
- Limited

Ease of Use

- Easy
- **X** Relatively Easy
- Difficult
- **X** Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

	Specific objectives, criteria, metrics/measure or level of preparedness
X	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
X	Tracking participant performance through multiple tries (automation)
	Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

X	Decision-making
X	Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

X	Simulation Support

Selected FSE Observations: product allows for/can be used for:

	Remote Observation
X	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

X	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. <u>No, Vendor must quote a system based on user requirements (*end here*)</u>

    Pricing is primarily determined by the type of ADMS™ system and number of users, typically on a licensing basis. License fees are charged on a per user basis. Systems may be purchased, but there is no data for this option currently available. In the past, ETC has completed ADMS™ projects ranging from $25K to $5.5M (The 2M price range includes all ADMS family of products and multiple modules of ADMS). Purchase price of a high-end ADMS™ includes installation costs. The low-end product requires no special installation, and can be installed from CD, DVD, or over a network. According to the vendor, industry guidelines suggest 8% to 10% of the purchase price per year should be budgeted for system maintenance. One year parts and labor for a full system implementation is included in ADMS™ purchase price.

2. Does the cost apply to: (choose one)
    a. Product

b. Service
c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Angel Five

Product is hardware, software, or both?
Software

Large multi-user system, small multi-user product, or individual-user product?
Individual User or small team

Focus/specialty of product:

Incident response operational tool/system:
Domestic, military, other users?

Incident response training/exercise tool/system:
Domestic, military, other users?
Domestic Incident Response Training/Exercise System

Other operational tool/system (Identify):
Typical users (e.g., Military, consumer)?

Other training/exercise tool/system (Identify):
Typical users (e.g., Military, consumer)?
FBI Special Agents (including special agents in charge (SAC) and assistant special agents in charge (ASAC)), other high-level personnel who interface with FBI during Crisis Management phase of a terrorist incident

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):
Visual Purple, LLC

Contact info ref. technical questions (Person, title, organization, telephone, email):
Mr. John W. Jarrett
Vice President, Product Development
Visual Purple, LLC
805.595.7579 x116
jjarrett@visualpurple.com

Contact info ref. buying the product (Person, title, organization, telephone, email):
Not available for public sale. Can only be obtained through FBI.

Contact:
Walt Mesler
Contracts Office
703/814-4900
FAX 703/814-4787

COTS/GOTS (circle one).
GOTS. Which is slightly misleading, since the FBI won't release to anyone, so it's not exactly available in the sense that "off-the-shelf" implies.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.
Directly applicable. Product was designed as a crisis management tool for dealing with WMD (radiological) terrorist incidents.

Product status (Production version in use; prototype in use; under development)?
Final product delivered to client and in use.

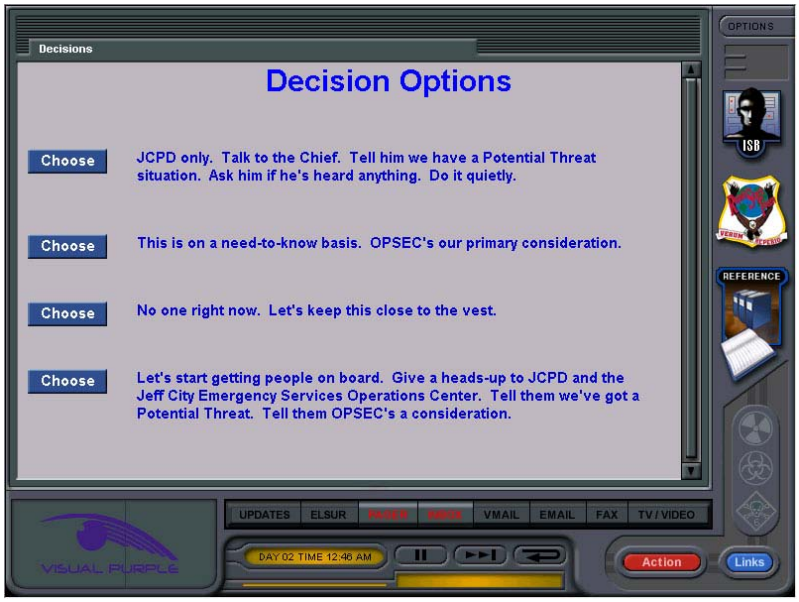
If in use, identify users, types of use:
Senior FBI field agents: Special Agents in Charge (SACs), Assistant SACs (ASACs), and Special Agents.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):
PC-based crisis management training and response tool. Used as an individual trainer and as a table-top exercise forum.

This is a 3rd person interactive role-playing game – you are one of the characters you see in the game and the story develops based on a) your decisions and b) 158 parameters chosen randomly in each new simulation execution. Your character is a special agent in Jefferson City.

The simulation appears as a series of video clips, showing the current situation, followed by a decision point for the user, with 3-9 possible choices given. The user picks one, which then determines the next set of video clips to show and in turn, the next set of possible actions/decisions.



As the story develops, items appear in the character's IN BOX, FAX, and PAGER areas on-screen. The user can stop and review these, however, there's no penalty for not reading them. The user can also click on LINKS and see the most relevant hyperlinks for the current point in the simulation (these links have been pulled down from the Internet, so that all the documents are local during simulation execution).

There's also a REFERENCE section, with 2000 pages of materials, chosen by the FBI SMEs who consulted on the game.

One unique characteristic is the online ISB: INFORMATION SUMMARY BOARD. This replicates the display of materials that the FBI would have in a conference room during a real

investigation. For example, there will be an evolving list of suspects and materials about each suspect: map to their house, copy of their driver's license, picture, physical description, etc.

Another somewhat unusual characteristic: time matters. The clock is ticking while you're playing (unless you've clicked on LINKS, which pauses time). Events and decisions can be overtaken and your choices take a certain amount of time to implement – they might not actually happen in time.

There is however a time-jump feature to bypass extended "passage of time" periods required for user-directed events to take place. The time-jump feature allows the user to "fast-forward" at certain points in the scenario. If the situation is such that a passage of time is required for an event to occur (for example, the user has ordered that a building be searched and must wait 30 minutes for the results of the search), the user can "jump ahead" 30 minutes rather than having the user stare at a blank screen (boring) or watch the SWAT Team search a building (expensive to film and uses lots of CD space to store video). The user can access other parts of the sim (the Reference Library, for example) while the sim is counting down the 30 minutes. When the user wants to proceed, he can wait out the rest of the 30 minutes or select the FAST-FORWARD button which will immediately advance the sim clock to the end of the 30 minute period and display a "... minutes later" screen to indicate the passage of whatever time remained of the 30 minutes.

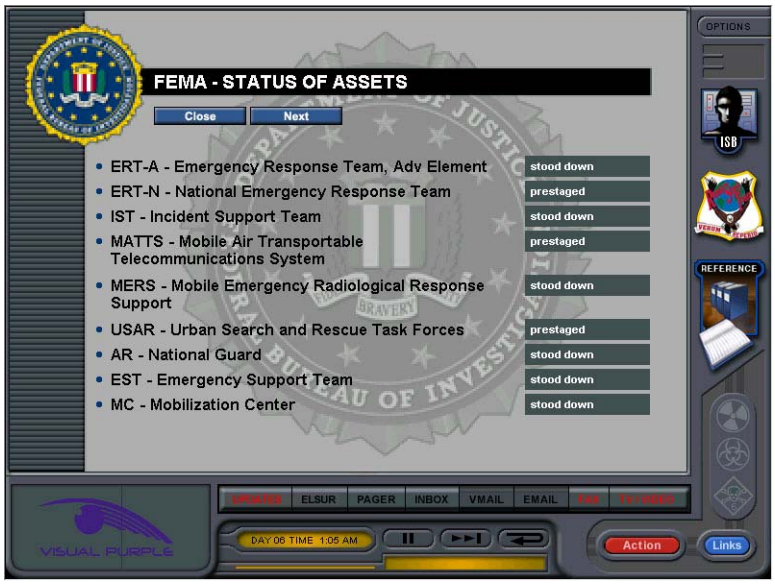
The game originally included proprietary VP technology called I2 (I-squared) that was removed at the FBI's request. It profiled the user to identify whether they took a lot of time or little time to make decisions and whether they liked many or few choices. Then it can alter the number of choices or even time, by making events proceed faster, at 45-sec: 1 min speed. If the user is not reading through all the choices, it will start to add more choices to each decision point. OTOH, if the user is reading a lot of material and taking a lot of time, fewer choices will appear. I2 forces the user to work against their preference.
There are 39 learning points captured in the simulation, though not all of them show up in each run. This improves re-playability.

Feedback: Feedback is very general and deliberately is not comparative to other users' performance. The simulation tracks the order in which decisions were presented to the user, choices they made (as well as all possible choices), and shows these to the user. There is no indication given to the user of whether they made a right choice or wrong choice. The FBI provided information describing points to consider in a particular block of decisions. These same points are displayed each time. Feedback doesn't change based on user decisions – this was the FBI's decision. They didn't want to grade anyone or give them an overall score.

Users can access feedback during the game and also at the end of the game.

History: The game was delivered in 2000. Currently used by FBI only.

Interagency capability: About ¾ way through, the on-scene commander gets a checklist with the names of the 15-18 organizations who are part of the Joint Operations Center. User can click on a name to get info about the list of assets that organization can provide. User can then: alert the asset; put it on standby; forward base it (bring it halfway to Jefferson City); or bring it all the way to Jefferson City.



In addition, the simulation is designed to illustrate how an event would, in time, be transferred from the FBI to FEMA.

There are 20 different ways to start the event, ranging from top down: Washington DC calls you ref. the loss of plutonium to bottom up: a guy shows up in the local ER with radiation burns. Also varied: number of bad guys, their background (military experience or not) and their story arc. There are 64 possible endings: best case, you catch the bad guys (and I believe find the plutonium); worst case, you get fired because you've handled the case so poorly.

Intended for operations, training/exercises, or both? Training/exercises

If training/exercises, is it an instructor/controller/evaluator tool, or training media?
Training media

Intended for individual, group or team use[1]?
Intended for individual use. Also currently in use as a group product, in which multiple people in a conference room are led by a facilitator through the decision-making in the game.

If multiple users, identify the range of persons it can simultaneously support (min-max)?
Single user, but in a table-top setting, large numbers can use the product as a forum for discussion and training. In a group setting, the min is 2 and the max is probably however many people can fit into a conference room.

Number persons usually trained simultaneously?

Large multi-station system, or based on individual PC's?
Individual PCs

Custom/proprietary hardware required?
None

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
- Software: Simulation training software
- Simulation: Simulation training software

If simulation models are used, identify their qualitative validity level (if possible):
Simulation scenarios are based current procedures and protocols. The FBI had 43 SMEs who contributed to the scenario and materials, so this product has a very high qualitative validity level in terms of the FBI response to WMD. The simulation starts with a video clip of former FBI director Louis Freeh discussing the importance of WMD preparedness and the potential role of this product so it has high-level endorsement.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):
Stand-alone product.

If other hardware and/or software required, or typically used, identify it/them.
None

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None for individual use. For small groups, a conference room.

Web-based application, LAN, or a single computer/system-based application?
Single computer. Per VP: "It has been used on a LAN, but is not designed for such usage." Theoretically, one can deliver the content over a network or do a mix of local & LAN/WAN usage: video clips stay on CD in local computer but user has to log on via network – this is a security precaution.

Can the training be administered over a wide area network or a local area network?

Is an instructor or facilitator needed?
No instructor/facilitator is required for single–user mode, but in a table-top setting, facilitators have successfully used the product.

If not, how is training conducted (e.g., Individual self-paced)?
Individual self-paced

If not, how is training managed (e.g., Testing, certification of completion, etc.)?
Generic feedback is provided based on user decisions as compared to SOP.

Describe unique user interface characteristics:
Multi-path story line driven by user input. Contains video surveillance, Intelligence Summary Board and other typical crisis management aids. Large Reference Library incorporated into the product. Very engaging UI and display of situation via video. Simulates typical communication modes like FAXes and email and integrates their use into decision-making.

Other important product characteristics:
Per VP: Multiple onsets and endings. Wide variety of paths through the simulation all of which provides tremendous replayability. Immediate consequences of decisions are experienced by users, leading to increased motivation to train in order to discover proper solutions to various problems and issues presented by the simulation.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?
Product is now the property of the FBI and is not available for resale. Due to the sensitivity of the material, the FBI is not allowing other agencies to use the product.

Initial acquisition cost (purchase; licensing fees):

Product itself:
Development cost was $1.2M (Firm/Fixed Fee including all necessary licenses)

Other necessary support, software, equipment:
None

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?
No

Number of staff required to setup, and operate product:
None

Staff training required to use product (identify briefly ... type, time):
None

Cost for staff training on product (Cost to purchase training):
None

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):
Individual PC

Expected costs?
None (other than individual PC)

Product maintenance requirements/recommendations (identify briefly):
None

Maintenance costs (Expected or required software, hardware maintenance):
None

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):
Windows 98

Can product be customized? How? Cost?

Reference Library Updates with cost dependent on number and size of documents included.

Product modifications required to support counter-terrorism training/exercises:
None

Modifications:
None

Range of potential costs:
None

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).
Minimum System Requirements are listed below.

Processor speed (in MHz):
Intel Pentium Processor, 166 MHz MMX

Memory:(SDR/DDR)
24 MB of RAM

Free disk space:
Six CD-Rom set. Installation requires approximately 150MB of hard disc space and the use of the five video CDs. (If all video files are installed to the hard drive: 3GIG)

Internet connection speed:(if any)
None

Display adapter[4,5]:
SVGA monitor compatible with industry standard graphics card

CD-ROM speed:
4X CD-ROM drive

Optional accessory requirements[5]:
Windows 95/98
Industry standard sound card and speakers
DirectX Media, DirectDraw, DirectShow, and DirectSound (all included in install)

Training/Exercise Characteristics

Product may support training, exercises, or both?
Both

Potential type of WMD event product can support:
Chemical –
Biological –
Radiological – X
Nuclear –
Explosive –
Per John Jarrett, about 70% of the process also applies to other types of events.

Constraints on supported exercises or scenarios?

The scenario centers on a WMD (radiological) event, but many of the other WMD crisis response techniques are similar.

Potential disciplines product can support:

Emergency medical services
Emergency management agency
Fire
Governmental administration
Health care
HazMat
Law enforcement **– X for FBI only**
Public health
Public safety communication
Public works
Global ... or other (Pelfrey)

Primary training audience: FBI special agents in charge and assistant SACs. In terms of familiarization however, all of the above audiences could use it to learn about the FBI.

Originally, the concept was for the CDs to be distributed to local law enforcement, so they could learn more about FBI capabilities & procedures, however, the product ended up being too sensitive for distribution outside the FBI.

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition
Improvement
Maintenance/refresher

The product can be used for initial, pre-course familiarization, as an adjunct to classroom instruction or as a follow-up refresher.

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel

FBI agents. All of the above could be a secondary audience for familiarization with FBI procedures and capabilities.

Potential responder training level(s)/categories product can support:

Awareness –
Performance [Operations]
Technician [Specialist]
Planning & Management [Incident Command]
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -

Primary training audience learns planning & management, plus integrated systems. Secondary training audience would, I think, learn about integrated systems.

Potential equipment and/or facilities product can address:

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
ICS/JOC processes, high-level decision making; inter-agency coordination and coordination of Federal assets with state and local assets.

Training content description (what trained), in addition to preceding item (Brief):
For primary training audience: critical thinking skills, procedures and maintenance of proper paperwork.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required :
Basic computer use/skills. Primary training audience will be field agents. It has been used for special agents in charge, but can be used by more junior agents to help them figure out what they're leading up to.

Potential training/exercise types product can support:

- *Classroom* – Yes
- *Individual self-paced* - Yes
- *Seminar/workshop* - Yes
- *Drill* - Yes
- *Individual and small-team exercises* - Yes
  - *Simulation-supported* - Yes
  - *Gaming* - Yes
  - *Collaborative* - Yes
- *Tabletop* - Yes
- *Functional* - No
- *FSE* - No
- *Other*

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
real-time exercise, self-paced individual CBT or classroom if facilitator is used

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Self-paced, 15-40 hours total training time.

Exercise/scenario length/time(typical):
Typical single pass through the simulation is approximately 15 hours.

Process and time to:

Develop new exercise/scenario: 6-24 months, depending on the scope and complexity of the exercise/scenario

Modify an exercise/scenario: Other than updating Reference Library materials, modification is not practical due to the nature of video content

Setup an exercise/scenario to run: Under 30 minutes (including initial software installation)

Does a curriculum already exist?
Not really. This product is apparently given to agents and what they choose to do with it is up to them. So there doesn't appear to be a curriculum or strategy involved. Note that we have not been able to contact the FBI, so this information may be wrong.

If so, briefly describe its form and content:

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):
Scripted multi-path scenario, minimal feedback.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
None. Evaluation features and performance measures were included as part of original design, but removed at client request.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Minimal immediate participant feedback and AAR at completion of exercise are available – that feedback is simply showing the user the choices they made and presenting actions/items to be considered. Users can access feedback during the game as well as at the end of the game.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):
Complete library of relevant WMD resources (over 2000 pages). Original library was larger, but some sensitive materials were removed at the request of the client.

HELP features (Briefly identify):
Standard Windows-type help features.

Instructor/controller/evaluator tools: None.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

AAR support tools (May overlap with "Student/participant/team feedback features", above):

Data recording & storage features (e.g., Scenario events; student performance):
Save/Restore feature, so user can come back to a partly-completed game later.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Part of original design, but removed at client request.

Training/exercise fidelity:
This is a multi-path, interactive video simulation using live actors and on-location, Hollywood-style filming techniques. Environments are either actual locations (FBI offices) or faithful representations of same. Interactions are realistic and based on current procedures and protocols. No special hardware (beyond a PC meeting minimum system requirements listed above) is required.

Environment (including situation/scenario):

Hardware:

Information (including interaction with other persons):

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, &GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

ALOHA (Areal Locations of Hazardous Atmospheres)

Developer: NOAA OR&R (National Oceanographic and Atmospheric Administration, Office of Response and Restoration); and
EPA CEPPO (Environmental Protection Agency, Chemical Emergency Preparedness and Prevention Office)

Contact information:

ALOHA can be downloaded from the EPA web site:
http://www.epa.gov/ceppo/cameo/aloha.htm
http://www.epa.gov/ceppo/cameo/request.htm

Additional Contact information:

Internet: General support: http://www.epa.gov/ceppo/cameo/shoot.htm

EPA ALOHA regional: http://www.epa.gov/ceppo/cameo/regcont.htm

Email: EPA support: userrmp.usersupport@epcra.org

NOAA support: orr.cameo@noaa.gov

Telephone: NOAA: 206/526-6317

Website: http://www.epa.gov/ceppo/cameo/aloha.htm
http://www.epa.gov/ceppo/cameo/

Product status (version in use): 5.2.3

Date of Evaluation: December 2003

Source(s) of Evaluation: ***check all that apply***

Observed Product in use during a training or exercise
Observed Demo
Played/Used product
Attended Briefing
Reviewed CD-Rom or other software
X Reviewed Website
X Spoke/emailed with POC
X Interview(s) with Product Users (please paste into the end of this document)

Product developer filled-in evaluation form
TLI team modified evaluation form

Materials in our Possession:

Brochure/Prospectus
CD-Rom
X Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  ALOHA is a computer program that uses information the user provides, along with physical property data from its chemical library, to predict how a hazardous gas cloud might disperse in the atmosphere after an accidental chemical release. ALOHA can also predict rates of chemical release from broken gas pipes, leaking tanks, and evaporating puddles, and can model the dispersion of both neutrally-buoyant and heavier-than-air gases. Of note, ALOHA is primarily designed as a tool for evaluating the hazards posed by industrial chemicals.

  ALOHA is intended for use during hazardous chemical emergencies, as well as for planning, training and exercising, and for academic purposes. Scenarios can be entered into ALOHA, representing actual situation parameters, or parameters of a hypothetical situation to support planning, training, exercising or analysis investigation (e.g., chemical properties, site data, environment properties). For example, alternative scenario situations can be entered (e.g., weather, chemicals, release rates, release amounts, locations, etc.), data generated, and results compared (worst case, typical, day, night).

  ALOHA can display a "footprint" plot (i.e., plume) of the area downwind of a release where concentrations may exceed a user-set threshold level (see Figure 1). It also can displays plots of source strength (release rate), concentration (e.g., Figure 1), and dose over time; and a detailed text summary (also shown in Figure 1). For example, it can predict the release rate forming the cloud, identify areas downwind that will be affected by the release, and provide estimates of the degrees of danger in different areas.

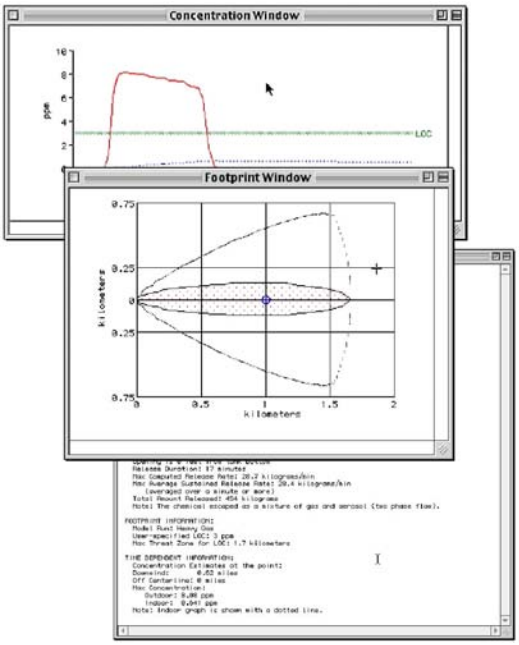
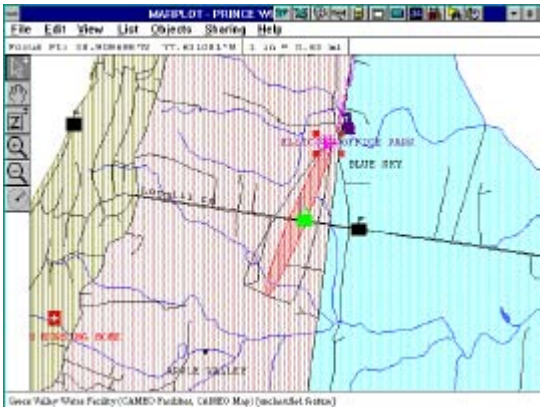


Figure 1. Example plots of concentration, footprint, and listing of detailed information.

ALOHA accepts weather data observed, estimated or transmitted from portable monitoring stations, and can plot footprints on electronic maps displayed in a companion mapping application, MARPLOT, as shown in the two examples of Figure 2 (the MARPLOT product is separately addressed). The upper image shows the MARPLOT window, while the lower image provides a detailed example of graphic display information (i.e., streets, important facilities). ALOHA data can also be used in other charting/mapping applications (e.g., ArcView).



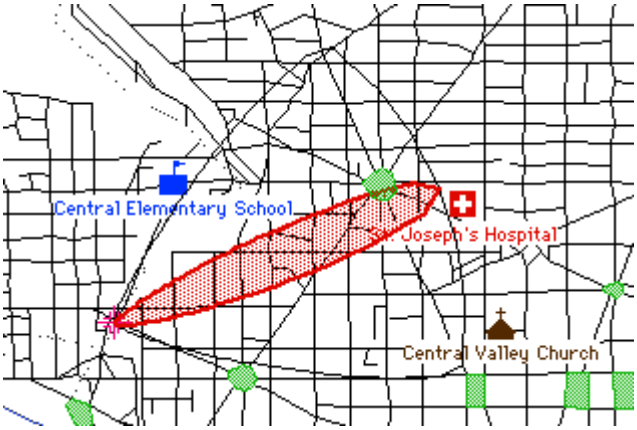


Figure 2. Example "footprint" plots of area downwind of a release, where concentrations may exceed user-set threshold level.

ALOHA is distributed worldwide to thousands of users in government and industry. It has been used as a tool to assist in incident response, planning, and to support training and exercising.

ALOHA was designed to meet the following criteria:

- Operates on common computers. ALOHA runs quickly on small computers (IBM-compatible or Macintosh) that are easily transportable and affordable for most users. Its algorithms represent a compromise between accuracy and speed; it has been designed to produce good results quickly enough to be of use to responders.

- User friendly. ALOHA is designed to be easy to use so that people can use it during high-pressure situations like a chemical incident response.

- Reliable. ALOHA's user interface is designed to minimize operator error. The program checks and cross-checks information entered by the user before proceeding to solutions. If a particular input value is unlikely or not physically possible, ALOHA requests a new value.

- Current Target audience:

Aloha is targeted at several audiences today:

Incident/emergency response (e.g., NOAA, EPA, state staffs involved with assessing and predicting the airborne chemical dispersion).
Fire departments.
Emergency planners.
State Emergency Response Commissions (SERC).
Local Emergency Planning Committees (LEPC).
Chemical facilities
Health care facilities
Training and exercising; academia.

- Potential equipment and/or facilities product can address:

ALOHA does not address specific equipment or facilities, but rather the airborne environment in the vicinity of an incident, within which equipment and facilities function.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  ALOHA is a tool that has been used extensively for emergency response, planning, and training. It is likely the most widely used tool of its kind, around the world. It represents a set of capabilities that have been integrated with other widely accepted incident response tools (e.g., CAMEO, ArcView). Hence, ALOHA should be considered one of the leading tools of this type. In support of training, ALOHA has been used as an independent instructional tool for several purposes, such as the training of response plan development and implementation (e.g., affected areas, identification of important facilities to be affected, establishment of evacuation zones and procedures, contrasting alternative response approaches, etc.). In addition, ALOHA has been used in support of other training and exercising products (e.g., PISCES uses ALOHA to support its scenario simulation, specifically the dispersion of gas in accordance with situation factors).

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   The ALOHA model has a 6 mile (10 KM) area of coverage.

   ALOHA has the following attributes:

   a. **Rapid deployment.** Emergency responders can use ALOHA to predict the behavior of a chemical gas in the event of an accidental release. An extensive chemical library, automatic conversion of chemical and physical units, online help, and other features make ALOHA convenient and quick to use.
   b. **Quality control.** ALOHA checks user inputs for reasonableness and guides the user in selecting appropriate inputs. Numerous warnings and help messages can be invoked during an ALOHA run.
   c. **Usable accuracy.** Although ALOHA makes many approximations in order to produce results quickly, its predictions have been checked against estimates made by similar models and measurements made during field experiments to ensure that results are as accurate as possible.
   d. **Variety of source types.** ALOHA models emissions from boiling and non-boiling pools, pressurized gas pipelines, pressurized tanks containing gas or liquid, unpressurized liquid tanks, and refrigerated tanks containing liquefied gases. It has a library of tailored models for all the pure chemicals in CAMEO that have been judged to be air dispersion hazards. Certain solutions are also modeled.
   e. **Neutral and heavy gas models.** ALOHA models dispersion of both neutrally-buoyant and heavier-than-air gases.

f. **Concentration and dose.** ALOHA predicts indoor and outdoor ground-level concentrations of chemical in the air and the dose of chemical to which people may be exposed, at any location selected by the user.
g. **Footprint mapping.** ALOHA's footprint is a plan view of the area within which the ground-level concentration of pollutant gas is predicted to exceed the user-specified Level of Concern (LOC) at some time during the hour after a release begins. ALOHA footprints may be displayed on a grid and can be scaled to a user-selected scale in an ALOHA window. ALOHA footprints can also be overlaid on electronic maps displayed in ALOHA's companion application, MARPLOT (Mapping Application for Response, Planning, and Local Operational Tasks).
h. **Contingency planning.** ALOHA can be used for industrial site characterization. Users can save accident scenarios as ALOHA-readable files, then easily evaluate a variety of scenarios and archive results. Contents of output windows can be readily transferred to documents and reports in word-processing or graphics applications.

Major limitations of ALOHA are:

a. **Topography**. ALOHA does not account for topographic effects. The earth is assumed to be flat and the mean wind speed and direction are assumed to be uniform at any given reference height.
b. **Particulates**. ALOHA does not model particulate transport (including dispersion of radioactive material).
c. **Buoyant gases.** ALOHA does not account for the initial positive buoyancy of a gas that has been heated or is lighter than air.
d. **Low-level background**. The emergency responder is the primary target audience of ALOHA, and hence the model does not address air quality issues. ALOHA is not designed to model chronic, low-level (fugitive) emissions. The maximum duration of a release in ALOHA is 1 hour.
e. **Near-field.** ALOHA does not account for near-field influences on dispersion, such as effects of momentum jets or concentration patchiness very near the point of release. If the distance to a threshold concentration is shorter than 100 m, ALOHA will not display a footprint.
f. **Liquids in pipes**. ALOHA does not model releases from liquid pipelines.
g. **Reactivity**. ALOHA does not account for chemical reactions. It assumes that the substance escaping from a storage vessel or evaporating from a pool surface is the substance that disperses downwind. However, when the user selects an air- or water-reactive chemical, ALOHA alerts him or her that the chemical is reactive, and describes the type of reaction and reaction products to expect.
h. **Solutions and mixtures.** ALOHA's algorithms are appropriate for pure chemicals only.
i. **Fires**. ALOHA cannot model the dispersion of chemicals that are involved in a fire. It does not account for fire effects such as heating of escaping vapors or heat-induced chemical reactivity that causes the chemicals dispersing downwind to be different from the chemical that was originally stored.
j. **Prediction time**. ALOHA can predict dispersion up to 60 minutes, after which it must be run for the next period with updated parameters.

2) Large multi-station system, or based on individual PCs?

ALOHA is software that can be run on individual PC’s or Macintosh computers.

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

A stand-alone product, with the exception that it requires computer hardware.

ALOHA is often used, however, with other products, such as CAMEO (which it is often considered to be a part of) and charting/mapping applications (to display results).

4) If simulation models are used, what is the basis of the data and/or distributions used?

ALOHA models are based on the following:

Gaussian distribution
DEGADIS heavy gas dispersion
Source strength models

The ALOHA model has been strongly validated, in terms of its development rationale, comparisons with other reference models, and comparisons with field data. A continuing quality assurance program is in place.

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

No facilities are required.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

- Apple Macintosh MAC OS.
- Microsoft Windows (Version 3.1 or later).

b) Processor speed (in MHz):

- MAC: Prefer math co-processor chip or Power PC.
- PC: At least 80286 microprocessor (80386 or better is recommended).

c) Memory (SDR/DDR):

- 1 megabyte or more of RAM.

d) Free disk space:

- MAC: 2 MB.
- PC: 2.5 MB.

e) Internet connection speed (if any):

N/A

f) Display adapter:

No limitations

g) CD-ROM speed:

N/A

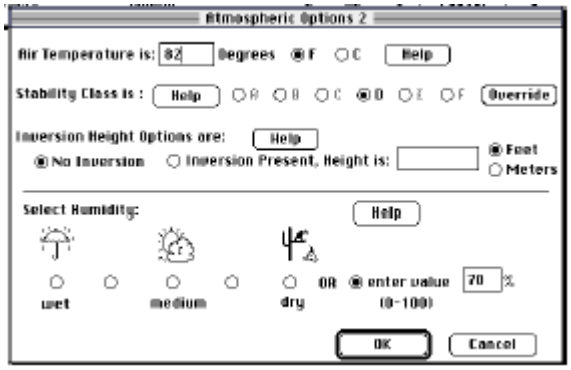
h) Optional accessory requirements:

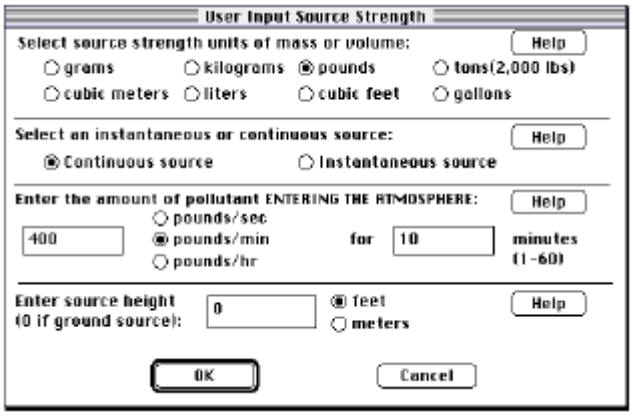
ALOHA can work with portable meteorological stations (called Station for Atmospheric Measurements, or SAM), which provide weather data input. These are independent of ALOHA, although their characteristics must meet certain ALOHA requirements. Hardware and software guidelines for designing a SAM are provided by NOAA.

3. Describe the user interface characteristics:

ALOHA's user interface is based on windows display and mouse/keyboard control interaction.

The user interface was designed to enable use by inexperienced users, to minimize operator error. The program checks and cross-checks information entered by the user before proceeding to solutions. ALOHA evaluates each parameter entered. If a particular input value is unlikely or not physically possible, ALOHA requests a new value. It also provides context-sensitive HELP for every data input parameter. For example, the HELP function may provide guidance for user assessment of parameters (e.g., how to estimate wind velocity based on water conditions of a lake). Example user data entry displays (Macintosh computer) are presented in Figure 3; examples of output displays are presented above in Figures 1 and 2.





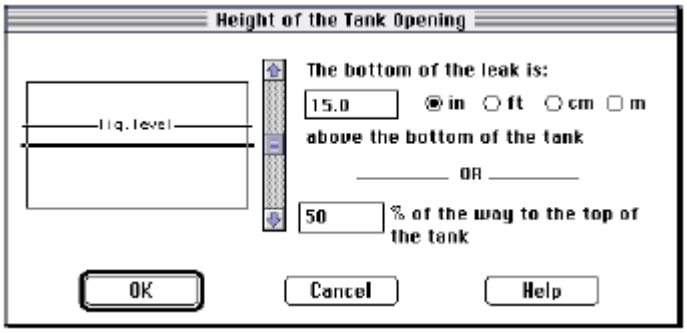


Figure 3. Example user data entry displays.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

ALOHA would typically be used by a single person, interacting via a personal computer. Small groups of users (e.g., 2-4 individuals) may work collaboratively with the system during an incident. And, often, ALOHA is used independently by multiple users during an incident, with each user separately operating the system from their respective computers.

In training and exercising, ALOHA has been used on a PC as an instructor aid, to provide the context for incident situational factors under study. In this manner, being used as an instructor's tool, it typically would support a classroom of students (the number of students and classroom size supported are dependent on the display size).

b) Custom/proprietary hardware required? If so, identify:

None required.

5. Describe any user HELP features:

- ALOHA FAQ Pages.
- *Ask Dr. ALOHA* HELP function. It is a column that appeared in each issue of the CAMEO Today newsletter. The columns are available for user access, providing guidance relating to ALOHA functions, and answers to usage questions.

- ALOHA Decision Keys. Step-by-step keys to decide (1) whether ALOHA should be used for a particular accident scenario; and (2) if so, which of its several source modules should be chosen.
- ALOHA Decisions Game. Tests a person's skill at discerning situations when ALOHA is and is not appropriate for use.
- Level of Concern Page Information. Provides help in choosing and using a Level of Concern (LOC) in ALOHA.
- ArcView Extension. Version of an extension that can be used to import an ALOHA footprint into ArcView.
- Evaporation Calculator. Tool to estimate the initial evaporation rate from a solution, and find out how to use that rate estimate in ALOHA.
- ALOHA Technical Description. A description of technical details about ALOHA and how it makes its calculations.
- Other technical documents addressing aspects of ALOHA.
- Training materials to support a 2-day course about ALOHA operation and use. The materials include:

  Instructors Manual
  Student Workbook
  Presentation slides

- ALOHA user groups.
- Context sensitive HELP. Each data parameter entry in ALOHA is associated with context sensitive Help. It explains the field; automatically checks for allowable entry values; provides warnings where appropriate; provides example inputs and data sets; and provides guidance on alternative ways of generating parameter estimates.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

ALOHA can generate a save file with the setup and results data each time the application is run. These data can be later accessed, such as for training, analysis or AAR purposes.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Training materials are available to support a 2-day course about ALOHA operation and use. The materials include:

Instructors Manual
Student Workbook
Presentation slides

Training materials are not provided to support specific WMD training objectives.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The training content provided with ALOHA addresses the setup, operation and use of ALOHA for response and other purposes (e.g., planning, training).

Training provided with ALOHA does not address incident response itself (i.e., issues other than those involving the operation and use of ALOHA).

b) Exercise/scenario length/time(typical):

Applied training with ALOHA (i.e., in support of homeland security training or exercising) depends on the applied training that would be provided by user organizations. The ALOHA application itself can address periods of time up to 60 minutes; for longer periods of time, ALOHA would be run repeatedly, with new input parameters for each new period. It is estimated that less than a minute would be required to modify the input parameters for subsequent periods of time (simulation runs); each ALOHA run would take less than 1 second.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

ALOHA is directly applicable to counter-terrorism training/exercises.

In addition, ALOHA has been used to support other simulation products that provide homeland security training (e.g., PISCES). Modifications to the other products are often necessary to incorporate ALOHA.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

ALOHA has been used by both government agencies (federal and state) and private organizations in support of WMD-related counter-terrorism training, in several ways:

- It has been used to support large exercises, as well as small table-top training exercises, acting to support the incident scenario (e.g., provide chemical dispersion information).
- It has been used as an operation tool by students during training.
- It has been used in classroom and other training contexts as an instructional aid, to address a variety of learning issues associated with incident response planning and operation. For example, it is used regularly as a teaching aid by faculty of the Harvard School of Public Health.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

A curriculum does exist for training the setup, operation and usage of ALOHA. A 2-day ALOHA training course can be conducted. The instructional materials available include:

Student Workbook
Course outline, script notes, and detailed script
Presentation slides

A CAMEO instructor certification program, of which ALOHA is a part, is offered by both NOAA and EPA. The certification is based on passing an exam. Of note, a person does not have to be certified to teach CAMEO or ALOHA.

Vendor homeland security training for other products using ALOHA also exists. These are particular to each vendor.

Specific curricula for homeland security training using ALOHA is not provided with ALOHA.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The information provided by ALOHA can be used in an operational context, as well as feedback in support of training and exercising. ALOHA can generate a save file with the setup and results data each time the application is run. These data can be later accessed to provide feedback during the AAR, including re-generation of charts/graphs and textual information (including information sets from alternative conditions/runs for comparison purposes). See Section *B. Summary Product Description* for the description and examples of information features.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The ALOHA interface (windows format and content; mouse/keyboard control and data entry) is specifically designed to facilitate scenario data entry by the user, in conformance with an actual situation or a hypothetical scenario. ALOHA has extensive context-sensitive HELP features to assist the user in setting up a scenario (see Section C. Technical Attributes, Subsections #3 and #5 for descriptions of the various user assistance features).

ALOHA does not have the capability to run scripted real-time scenarios (i.e., a paced sequence of release and dispersion, such as a training script tracking a chemical release over time). The ALOHA planning mode, however, allows the setting up of all inputs prior to running. In addition, products (e.g., PISCES) have implemented ALOHA in an iterative fashion, as part of their products, as a simulation generation tool in support real-time continuous scenarios.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Scenario setup decision aids (e.g., ALOHA Decision Keys) provide guidance in setting up a scenario in ALOHA (see Section C. Technical Attributes, Subsections #3 and #5 for descriptions of the various user assistance features).

ALOHA does not have the capability to run scripted real-time scenarios (i.e., a paced sequence of release and dispersion, such as a training script tracking a chemical release

over time). The ALOHA planning mode, however, allows the setting up all inputs prior to running. In addition, products (e.g., PISCES) have implemented ALOHA in an iterative fashion, as part of their products, as a simulation generation tool in support real-time continuous scenarios.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Customization is limited to setup and run conditions (e.g., weather).

b) What is the process and how much time does it take to setup an exercise/scenario to run?

5 - 15 minutes for initial setup.
Less than 1 minute, usually, for modification of input parameters to make a subsequent simulation run.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The analysis features are indigenous to the ALOHA model itself. No other analysis features are present.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
	CO (commercially owned)	3	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	1	Automated summary of data
2	Small multi-user team (up to 25 persons)	1	SME controls AAR
2	Large multi-user team (more	3	Does not provide feedback or AAR

	than 25 persons)		
3	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
3	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
1	Generic	3	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	3	Equipment Training
3	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		

2	Transportation		
2	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

1 High
Medium
Low
N/A

Ease of Use

Easy
1 Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

1 Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
3 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

3 Remote Observation
3 Enhanced Communication T&E/does it practice/train/exercise communications?
3 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

3 Distributed, collaborative, decision-making environment
3 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. Yes (*proceed to Q2*)

2. Does the cost apply to: (choose one)
   b. Product

3. Product (content) configuration, as priced, is: (choose one)
   c. Standardized

4. What are the prices (in $USD) according to type: (fill in all applicable)

   Free ($0.00). Can be downloaded from the NOAA (or EPA) web sites.

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$ 0.00			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:

Review form filled-in by Optimetrics, Inc.
Reviewed, edited, modified by TLI team.
ADASHI First Response was not observed.

A. Basic Product Information

Name of Product: **ADASHI First Response**

Automated Decision Aid System for Hazardous Incidents – First Response (ADASHI-FR)

Developer: U.S. Army Edgewood Chemical and Biological Center, & Optimetrics, Inc.

Contact information:

James A. Genovese
CHEM/BIO Counterterrorism Team
SBCCOM
AMSSB-REN-HD-T
5183 Blackhawk Road
Aberdeen Proving Grounds, MD 21010-5424

Tel: 410-436-1915
Fax: 410-436-6529
james.genovese@SBCCOM.APGEA.ARMY.MIL

Technical Support Contact Information:

Alex M. Menkes
Program Manager
Optimetrics, Inc.
2107 Laurel Bush Rd, Suite 209
Bel Air, Maryland 21015

Tel: 410-569-6081 x111
amenkes@ADASHI.org

ADASHI Information: 410-569-6021

Website: www.ADASHI.org

COTS/GOTS: COTS (GSA schedule: GS-35F-0500K).
ADASHI First Response is a commercial operational tool.

Product status (version in use): Complete (v1.0)

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise

	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

x	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Incident response operational tool, for planning and response.

  ADASHI First Response is a stand alone, off-the-shelf HAZMAT and terrorism incident public safety decision aid designed for first responders. The program is founded on well known tools such as CAMEO and ERG 2000 and includes a sophisticated interface design to allow manual-free and training-free operations during life threatening hazardous incidents. The software provides emergency responders, decision-makers, and support personnel with a user-friendly, intelligent PC based tool to plan, mitigate, and track both large scale and daily hazardous incidents.

- Current Target audience:

  Hazardous incident first responders, planners, decision makers (Incident Command), EOC staff, and other support personnel. This tool is intended to provide support in a small incident; it is not intended to support a large-scale incident.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game

	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	0	Multiple dynamic paths through the product and more than one out come possible
0	Group	1	Static configuration: fixed path, only one right way to use the product
0	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		0	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	0	SME controls AAR
3	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

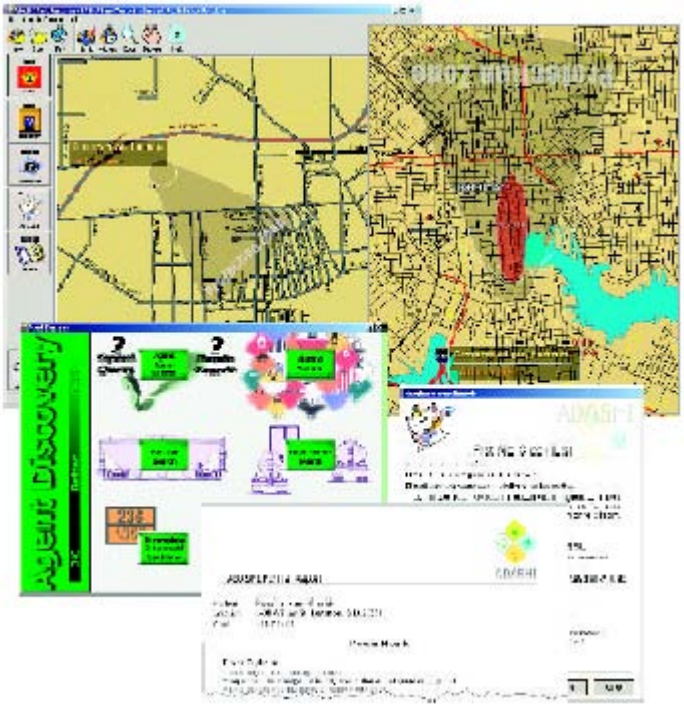
(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- GUI: Sophisticated interface design permitting training-free operation.
- Decision tracking, incident report summaries and time stamped detailed action reports.
- First Aid and Emergency Response standard operating procedures and convenient checklists.
- Customizable standard operating procedures and checklists.
- Street level operation command center display and incident reporting.
- Identified agent information reports.
- Operation decision and course of action recommendations.
- Agent identification aids including questions and answers.
- Automated weather acquisition.
- Automatic plume generation from ALOHA model.
- Automated hazard region identification and mapping.
- Fully integrated help system.
- Automated report transmission to National Fire Incident Reporting System (NFIRS 5.0 certified).

Example display, showing geographic area with a plume overlay.



Examples of several displays.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone product.

c) Large multi-station system, or based on individual PCs?

- Individual PC.

d) If simulation models are used, what is the basis of the data and/or distributions used?

- Incorporates two dispersion algorithms:
  1) Modified, time-dependent Gaussian equation, based on:
     - Hanna, S.R., G.A. Briggs, and R.P. Hosker, Jr. 1982. Handbook on atmospheric diffusion. Report DOE/TIC-11223. Oak Ridge, Tennessee: Technical Information Center, U.S. Department of Energy.
     - Palazzi, E., M. DeFaveri, G. Fumarola, and G. Ferraiolo. 1982. Diffusion from a steady source of short duration. Atmospheric Environment 16(12):2785-2790.
     - Beals, G. A. 1971. Guide to local diffusion of air pollutants. Technical Report 214. Scott Air Force Base, Illinois: U.S. Air Force, Air Weather Service.
  2) Heavy gas dispersion model, based on:
     - DEGADIS model (Havens, J. A. and T. O. Spicer. 1985. Development of an atmospheric dispersion model for heavier-than-air gas mixtures, Vol. I. Report CG-D-22-85 to U.S. Coast Guard. Washington, D. C: Office of Research and Development, U.S. Coast Guard, U.S. Department of Transportation.)

e) Web-based application, LAN, or a single computer/system-based application?

- Single computer/system-based application.

f) Describe any debriefing after-action reporting support tools:

- Formal incident reporting tool.
- Time stamped detailed action report generation.
- Automated report transmission to National Fire Incident Reporting System (NFIRS 5.0 certified).
- See C.3.a above.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Automated weather acquisition requires either a compatible micro-meteorological unit or an internet connection.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

a. Windows 2000, 98, ME, NT w/SP6, XP, and Windows Server 2003.

b) Processor speed (in MHz):

b. 300 MHz.

c) Memory (SDR/DDR):

c. 128 MB, (192 MB recommended).

d) Free disk space:

d. 650MB for entire US, however subsets can be alternatively selected.

e) Internet connection speed (if any):

e. Not required, used if available.

f) Display adapter:

f. 1024x768 color monitor w/ 16-bit color or greater video card.

g) CD-ROM speed:

g. Not required.

h) Optional accessory requirements:

h. None.

5. Describe the user interface characteristics:

- The user interface has been designed to permit manual-free and training-free operations during life threatening hazardous incidents. Graphical displays contain easy to understand pictorial guides that intuitively assist the user in making timely and critical decisions.

- See C.3.a above.

6. If multiple users: (Not applicable)

- Supports a single command-level person; does not support multiple users.

7. Describe any user HELP features:

- The program has contextual electronic help for all displays.

- The program provides automatic online updates from a menu driven request, and a menu link to the ADASHI support website.

- Customer support is additionally provided either through a menu initiated email, or am – 5pm M-F phone support.

- ADASHI First Response comes with a handy reference guide both on paper and in Adobe PDF format.

8. Data recording & storage features (e.g., Scenario events; student performance):

- All incident and scenario information is automatically stored (no save button required) and can be recalled by date and time.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- None is needed, according to developer.

2. Attributes

	Application Environment:		**Content**
2	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
0	Instructor/Facilitator	1	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
2	Intermediate	1	Awareness
2	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	0	Planning & Mgmt. (incl. ICS)
1	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	0	Pre-Training
1	EMS	0	Drills
1	EMA	2	TTX
1	Fire	2	FE
1	Govt. Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
2	Public Safety Communication		
0	Public Works		
2	Transportation		**Incident Stage Supported**

2	Private Sector	0	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
3	Initial Acquisition	0	Recovery
3	Improvement		
3	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

   a. N/A

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

   - Material safety data sheets (MSDS).
   - National Guard CST team handbook.
   - Emergency Response Guide (ERG) 2000.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

   N/A

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

   N/A.

e) Exercise/scenario length/time(typical):

   N/A.

f) Potential equipment and/or facilities product can address:

   N/A.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

   It is directly applicable. However, it is an operational tool.

h) Are there any constraints on supported exercises or scenarios?

Not known.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

N/A

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

b. Most likely.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

c. Not known.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

d. N/A

e) Does a curriculum already exist? If so, briefly describe its form and content

e. No.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

f. N/A

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

g. N/A

5. Instructor/controller/evaluator tools

a. Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

h. N/A

b. Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

i. N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?

There are no restriction on the customization of the standard operating procedures and checklists.

b) What is the process and how much time does it take to develop a new exercise/scenario?

Not known.

c) What is the process and how much time does it take to modify an exercise/scenario?

Not known.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Not known.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Tracks decisions and provides incident report summaries, time stamped detailed action reports, and FEMA reimbursement templates.
- First aid checklists.
- Emergency response checklists.
- Street level operation command center display and incident reporting.
- Identified agent information reports.
- Operations decision and course of action recommendations**.**
- Agent identification aids.
- Automated weather acquisition.
- Automated hazard region identification and mapping.
- See C.3.a above.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High … operational tool	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
1	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
2	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
0	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
3	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

      - Yes

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

      - Product

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

- Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

- Software License
  - Licensed Copy 1 thru 9 $995 each
  - Licensed Copy 10 thru 50 $795 each
  - Licensed Copy 51 and up Contact Optimetrics, Inc.

  Note: Volume discount is based upon cumulative number of licensed copies purchased. To illustrate, an initial purchase of 8 licenses would cost 8 x $995, or $7,960; a subsequent purchase of 5 licenses would cost 1 x $995 plus 4 x $795, or $4,175. The total of both purchases is $12,135 which is the same as if all 13 licenses had been purchased initially.

- Software Maintenance and Support
  - First twelve months after purchase: No additional charge.
  - Subsequent twelve-month periods: $200 annually per license.

  Software maintenance and support includes all maintenance releases and unlimited telephone support during regular business hours 8:30AM to 5:00PM Eastern Time, Monday through Friday, excluding holidays.

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$995 each	For copies 1-9		
	$795 each	For copies 10-50		
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	First 12 months, no additional			

	charge. Subsequent 12 month periods, $200 annually.			
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:

Review form filled-in by Optimetrics, Inc.
Reviewed, edited, modified by TLI team.
ADASHI was not observed.

A. Basic Product Information

Name of Product: **ADASHI Professional** *

Automated Decision Aid System for Hazardous Incidents (ADASHI-PR)

Developer: U.S. Army Edgewood Chemical and Biological Center, & Optimetrics, Inc.

Contact information:

James A. Genovese
CHEM/BIO Counterterrorism Team
SBCCOM
AMSSB-REN-HD-T
5183 Blackhawk Road
Aberdeen Proving Grounds, MD 21010-5424

Tel: 410-436-1915
Fax: 410-436-6529
james.genovese@SBCCOM.APGEA.ARMY.MIL

Technical Support Contact Information:

Alex M. Menkes
Program Manager
Optimetrics, Inc.
2107 Laurel Bush Rd, Suite 209
Bel Air, Maryland 21015

Tel: 410-569-6081 x111
amenkes@ADASHI.org

ADASHI Information: 410-569-6021

Website: www.ADASHI.org

COTS/GOTS: COTS & GOTS
ADASHI was developed jointly by the federal government and a commercial organization.

Product status (version in use): Under development

* This review addresses ADASHI Professional, the version of ADASHI intended for support of large-scale incidents in the civilian community. At this time, ADASHI Professional is under development. According to the ADASHI web site (May 2003), as a

performing system, ADASH is immature. A demonstrable proof of concept version exists. The architecture for Chemical and Biological incidents has been completed. The basic information to be compiled in databases exists. It is anticipated a version of ADASHI will be available for release in approximately 18 months.

A limited version of ADASHI is currently available: ADASHI First Response. This product has been separately reviewed.

It is intended that ADASHI will be used for training and exercising, as well as operations. However, it has not been used for training to date, and hence does not have training support elements at this time.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

x	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  - Incident response operational too/system, and
  - Incident response training/exercise tool/system.

  The Automated Decision Aid System for Hazardous Incidents (ADASHI) product line provides civil authorities responding to chemical, biological, radiological, nuclear or explosive (CBRNE) events with an "over the shoulder" decision-support system to assist incident commanders in making better, timelier decisions by rapidly processing the multi-variate input data and providing critical information in high-stress environments.

ADASHI effectively integrates the specific technical functions required to mitigate both an everyday HAZMAT incident and infrequent weapons of mass destruction (WMD) event. The product features include hazardous agent identification, source analysis, physical protection of responders, decontamination, medical treatment, casualty care, resource and equipment monitoring/tracking, multi-tier communication, scenario based planning and training, and emergency operations center (EOC) command and control displays.

The ADASHI program is founded on well known tools such as CAMEO and ERG 2000 and includes a sophisticated interface design to allow manual-free and training-free operations during life threatening hazardous incidents. The software provides emergency responders, decision-makers, and support personnel with a user-friendly, intelligent PC based tool to plan, mitigate, and track both large scale and daily hazardous incidents.

ADASH integrates the specific technical functions required to manage a hazardous incident or WMD event. Those functions include, but are not limited to the following:

- Initial hazard assessment.
- Hazard area prediction.
- Hazard source analysis.
- Detection planning and sampling.
- Physical protection requirements.
- Medical treatment, and triage criteria.
- Decontamination / hazard mitigation methods.

Specific functional characteristics are integrated with decision criteria to enhance response management in a crisis situation. The initial emphasis has been on Chemical incidents. Approximately 50% of the required functionality has been established and integrated for a Chemical incident. The architecture for a Biological incident has been structured and partially integrated.

- Current Target audience:

  First responders, including fire departments, police departments, HAZMAT teams, decontamination teams, EMT/Paramedics, incident command post staff, and emergency operation centers (EOC).

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
2	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	1	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		2	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
3	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

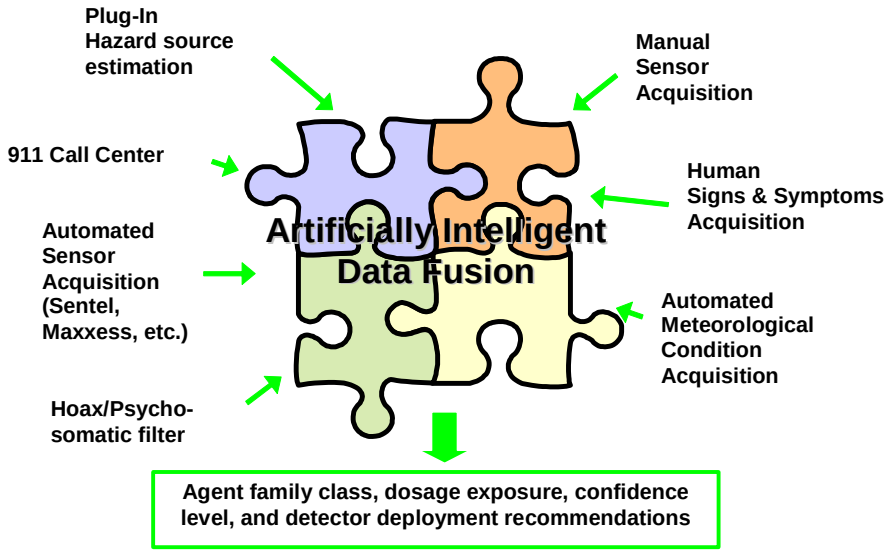
(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- GUI: Sophisticated interface design.
- Decision tracking, incident report summaries and time stamped detailed action reports.
- First Aid and Emergency Response standard operating procedures and convenient checklists.
- Customizable standard operating procedures and checklists.
- Street level operation command center display and incident reporting.
- Identified agent information reports.
- Operation decision and course of action recommendations.
- Agent identification aids including questions and answers.
- Automated weather acquisition.
- Automatic plume generation from ALOHA model.
- Automated hazard region identification and mapping.
- Fully integrated HELP system.
- Automated report transmission to National Fire Incident Reporting System (NFIRS 5.0 certified).
- Hazardous agent identification.
- Source analysis.
- Physical protection of responders.
- Decontamination.

- Medical treatment.
- Casualty care.
- Resource and equipment monitoring/tracking.
- Multi-tier communication.
- Scenario based planning and training.
- Emergency operations center (EOC) command and control displays.
- The following diagram illustrates the artificial intelligent data fusion architecture:



The artificially intelligent (AI) data fusion architecture integrates manual sensor data, human symptoms, observed physical signs, and automated detector data.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone but can interface with most data base systems and some operational equipment.

c) Large multi-station system, or based on individual PCs?

- Multi-station, but can be run on a single PC.

d) If simulation models are used, what is the basis of the data and/or distributions used?

- Nuclear Facility (NFAC).
- Nuclear Weapon Explosion (NWPN).
- Nuclear Weapon Incident/Accident (NWI).
- Chemical/Biological Facility (CBFAC).
- Chemical/Biological Weapon (CBWPN).
- Missile Intercept (MINT).
- Meteorological Data Server (MDS).
- Stationary Wind Fit and Turbulence (SWIFT).
- Second-order Closure Integrated Puff (SCIPUFF) model.

- ALOHA's Modified, time-dependent Gaussian equation.
- Heavy gas dispersion model (DEGADIS). For example, DEGADIS model: (Havens, J. A. and T. O. Spicer. 1985. Development of an atmospheric dispersion model for heavier-than-air gas mixtures, Vol. I. Report CG-D-22-85 to U.S. Coast Guard. Washington, D. C: Office of Research and Development, U.S. Coast Guard, U.S. Department of Transportation.)

e) Web-based application, LAN, or a single computer/system-based application?

- Single computer/system-based application, but works over LAN.

f) Describe any debriefing after-action reporting support tools:

- Formal incident reporting tool.
- Time stamped detailed action report generation.
- Automated report transmission to National Fire Incident Reporting System (NFIRS 5.0 certified).
- See C.3.a above.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Automated weather acquisition requires either a compatible micro-meteorological unit or an internet connection.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

- Windows 2000, 98, ME, NT w/SP6, XP, and Windows Server 2003

b) Processor speed (in MHz):

- 300 MHz.

c) Memory (SDR/DDR):

- 128 MB, (192 MB recommended).

d) Free disk space:

- Unknown.

e) Internet connection speed (if any):

- Not required, used if available.

f) Display adapter:

- 1024x768 color monitor w/ 16-bit color or greater video card.

g) CD-ROM speed:

- Not required.

h) Optional accessory requirements[5]:

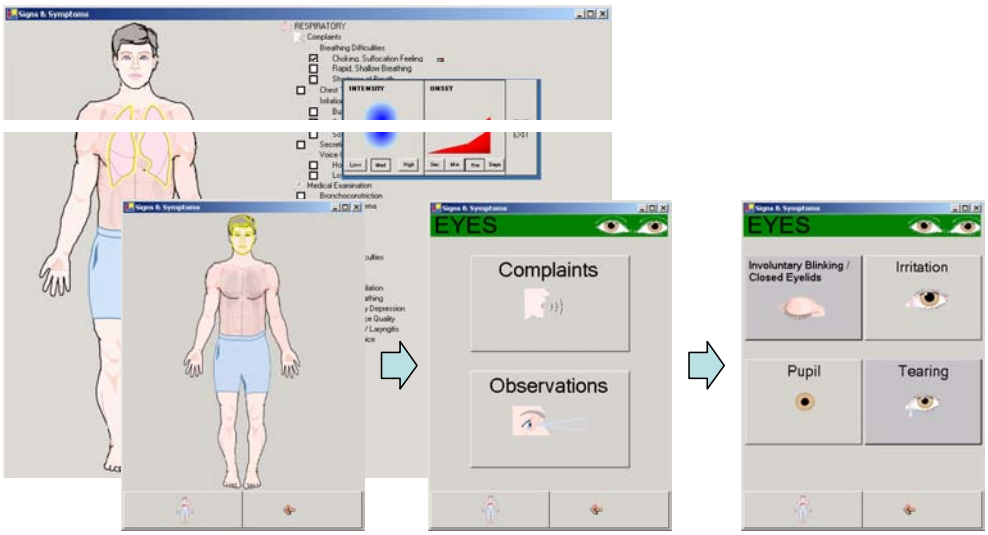
- None.

5. Describe the user interface characteristics:

- The user interface has been designed to permit manual-free and training-free operations during life threatening hazardous incidents. Graphical displays contain easy to understand pictorial guides that intuitively assist the user in making timely and critical decisions.

- See C.3.a above.

- An example of the operation of the signs and symptoms component is provided in the following figure.



The signs and symptoms component provides a carefully planned graphical interface that promotes the timely entry and processing of signs and symptoms related to hazard identification. The component utilizes an artificial intelligence architecture designed to guide a stressed user through an optimally short question and answer protocol for acquiring relevant hazard markers. The signs and symptoms component has two versions: the call center version intended for quick data entry that may be communicated over radio, and a PDA handheld version that has been designed for practical use within a Level A protective suit.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

- Min of 1, max is unlimited.

- ADASHI Professional is intended for use by a large team.

b) Number persons usually trained simultaneously?

- 30 (Usually. This product has not been deployed yet).

c) Custom/proprietary hardware required? If so, identify:

- None.

7. Describe any user HELP features:

- The program has contextual electronic help for all displays.
- The program provides automatic online updates from a menu driven request, and a menu link to the ADASHI support website.
- Customer support is additionally provided either through a menu initiated email, or am – 5pm M-F phone support.

8. Data recording & storage features (e.g., Scenario events; student performance):

- All incident and scenario information is automatically stored (no save button required) and can be recalled by date and time.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- Unknown at this time.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	1	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
2	Advanced	1	Performance (operations)
		1	Technician (specialist)

	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
2	Health Care	2	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
1	Public Safety Communication		
0	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	1	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	1	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

- Several predefined time/flow scenarios including TIC/TIMs, chemical and biological attacks.
- In addition, all ADASHI Professional components are scriptable, so customized scenarios and training sessions can be developed.
- Trainee would be presented an incident problem, and must select a specific operational option to mitigate or manage the effects of the incident. ADASHI's expert system would then help determine the scope of operational alternatives available and query the trainee using direct questions, memory prompts, etc., to help in making an informed decision.
- Team leaders and members can perform "trial and error".
- Can be used to augment the traditional 'table-top training' by providing automated tracking of decisions and making projections of the consequences of those decisions as they impact on the situation and the response resources available.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

- ADASHI provides an expert database which includes models and listings of recommended hazard detection and contamination mitigation techniques, decontamination requirements, medical support needs, and numerous other response functions. The product includes material safety data sheets (MSDS), the National Guard CST team handbook, and the Emergency Response Guide (ERG) 2000, and CDC's Basic Disaster Life Support (BDLS).

- The guidance is provided intelligently as one-liners or checklists so that it can be used effectively during a stressful incident.

- Users can import new operation response reference material as customized checklists and SOPs.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Command and control (EOC decision-making).

- Hazard identification equipment deployment.

- Personal protective equipment scenario specific safety

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Self-paced, scripted/instructor-controlled, and real time.

e) Exercise/scenario length/time(typical):

- Undefined.

f) Potential equipment and/or facilities product can address:

- Any equipment not in ADASHI's extensive databases can be added by users. Facility information can be entered using a sophisticated user interface.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- Yes.

h) Are there any constraints on supported exercises or scenarios?

- Unknown.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Classroom scenarios.
- Real-time exercise.
- Self-paced CBT.
- WAN based collaborative (not web-page based).
- See, also, D.3.a above.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- No.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- Scripted scenario.

- Automatic reactive scenario.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- Certification of completion.

e) Does a curriculum already exist? If so, briefly describe its form and content

- No, the curriculum must be developed; scenarios can be integrated into a curriculum.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Scenario/exercise data recording.

- Casualty estimations.

- First responder personal hazard assessment.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Text/graphic information displays.

- Situation cues.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Instructor handbook under development.
- Scenario conditions & events scripting.
- Real-time models.
- Scenario library.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- Data recording & real-time analysis & display.
- Student-action/situation warning/cues.
- Real-time/fast-time/time-jump.

6. Customization

a) Can the product be customized? If so, how, and by whom?

- Yes, by any user. New scripted scenarios can be created; in addition, there is no restriction on the customization of the standard operating procedures and checklists.

b) What is the process and how much time does it take to develop a new exercise/scenario?

- A GUI specific to script creation accelerates this process. The user selects from a menu of commands, which are automatically inserted into a textual script file. Parameters such as timing and source terms are then requested by the program, and inserted into the file as well.

c) What is the process and how much time does it take to modify an exercise/scenario?

- The scripts can be modified directly within text files, or automatically through the graphical interface.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- There is no additional setup time required.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Scenario report.
- See C.3.a above for additional information regarding analysis features.

E. TLI Evaluation

	Face Validity		Current Applicability to ODP
1	High … operational tool	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
1	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
2	Tracking participant performance through multiple tries (automation)
2	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
2	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
2	Enhanced Communication T&E/does it practice/train/exercise communications?
2	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Part-task training
2	Pre-training
2	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)

a) Yes (*proceed to Q2*)
b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   - The COTS prices are not known at this time.
   - The pricing is not clear at this time for several reasons:
     - The original ADASHI was developed for the government.
     - Government-developed ADASHI components exist.
     - The ADASHI system consists of multiple components, including those developed by the government and those developed commercially.
     - ADASHI Professional is currently under development. This product has not been sold to date.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

AEAS (Automated Exercise and Assessment System)

Developer: Science Applications International Corporation (SAIC)

Contact information:
Richard Solomon
407.243.3406

Technical Support Contact Information:
Mike Kerrigan
407.243.3618

1209 Science Dr.
Orlando, FL 32826-3248

solomonri@saic.com

kerriganmi@saic.com

Website:
N/A

GOTS

Product status (version in use):
Current version: V1.0 March 31, 2003

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
X	Other: vendor presentation & related articles

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

AEAS is a constructive simulation (wargame) that exercises emergency response decision makers in scenarios that involve the use of Weapons of Mass Destruction (WMD). It provides an interactive decision making environment for responders both at the Incident scene as well as the Emergency Operations Center (EOC).

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  Training simulation that allows emergency responders to exercise the Incident Command System. It is a multi-functional simulation that trains and assesses a community's ability to respond to and mitigate the effects of a terrorist WMD attack.

- Current Target audience:
  Incident Scene: Incident Commander, Firefighters, Law Enforcement, HAZMAT, Operations, Scene Security, Scene Safety, EOD, EMS, and Public Information.

  Emergency Operations Center:**:** Incident Commander, Firefighters, Law Enforcement, HAZMAT, Operations, Scene Security, Scene Safety, EOD, EMS, Public Information, Chaplaincy, Debris Management, Elected Official, Emergency Management, Fatality Management, Info & Planning, Military Support, Medical Facilities, Mass Care, Public Health, Public Works, Search & Rescue, Transportation, Veterinary Medicine.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
	COTS	1	Generic
1	GOTS		Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25		

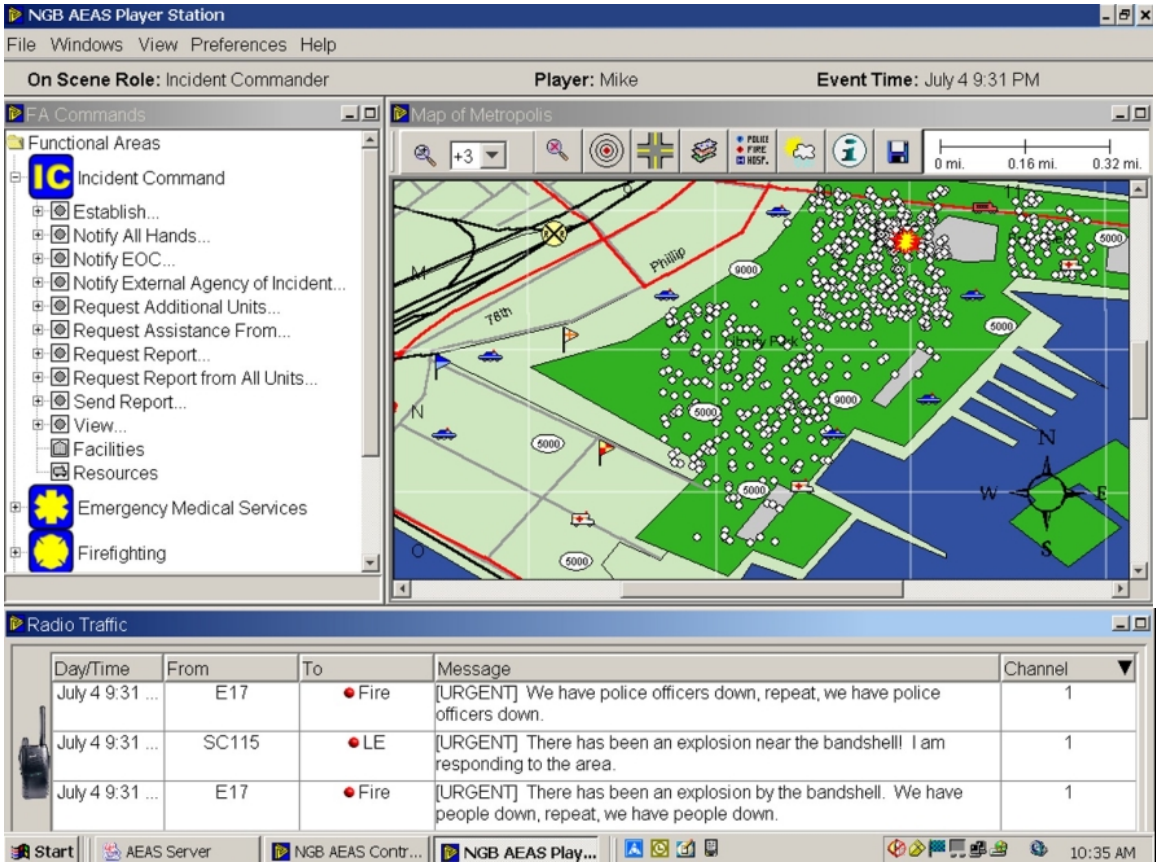
	persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
			Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific		SME controls AAR
	Equipment		Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

AEAS system is composed of six applications: Map Viewer (used for player training), Player Station (used by players during the simulation), Controller Station (used to set up and monitor the exercise), and After Action Review application that automatically collects and organizes data to support the AAR. Prior to using the simulation, the Survey application is used by participating agencies to compose their organization and the Community Profile Builder is used to collate the data and initialize the simulation.



b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

PC based that requires no unique hardware or software requirements.

c) Large multi-station system, or based on individual PCs?

PC based.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Weapons effects are generated using the Consequence and Assessment Tool Set (CATS). Behavioral models were developed specifically for the AEAS.

e) Web-based application, LAN, or a single computer/system-based application?

Players should be on a common LAN.

f) Describe any debriefing after-action reporting support tools:

AEAS contains an entire application that collects data in real time and also conducts an assessment of player performance bases on a set of baseline task, conditions and standards.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

None

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Window 2000/NT

b) Processor speed (in MHz):

Min 166 MHz

c) Memory (SDR/DDR):

256 M for Controller; all other applications require 128M.

d) Free disk space:

80 M.

e) Internet connection speed (if any):

N/A

f) Display adapter:

N/A

g) CD-ROM speed:

N/A

h) Optional accessory requirements[5]:

N/A

5. Describe the user interface characteristics:

User interface provides a scenario description in a two-dimensional display and replicates the communication architecture of the using community. The works station is modified for each specific user to give the player the ability to interact with the simulated world the same way in which they interact and coordinate in the real world.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

1 - 43

b) Number persons usually trained simultaneously?

25

c) Custom/proprietary hardware required? If so, identify:

None

7. Describe any user HELP features:

Each application has complete documentation that can be printed as well as context sensitive help available throughout the course of the exercise.

8. Data recording & storage features (e.g., Scenario events; student performance):

Simulation records ground truth as well as all data states throughout the scenarios. An assessment of player performance is also made and recorded in real time as the scenario is played out.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

A two – hour player train up is recommended; the train up is provided with the user documentation.

2. Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
1	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		0	Federal Officials (With the current scenarios only simulated)
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
1	Govt. Administrator	1	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat		Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Training content is focused on functional areas that respond both at the Incident Scene as well as the supporting EOC. The players responsible for these functional areas are assessed against a baseline of tasks, conditions and standards that should be executed in support of response and recovery activities specific to the scenario.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

The following scenarios are integrated into the AEAS: Anthrax Hoax, Anthrax contamination, Anthrax Line Source, Dirty Bomb (Radiological), Sarin Release, Phosgene/Propane Derailment, Foot & Mouth Infection (Attack), Conventional High Explosive, High Explosive and Radiological Device, Smallpox Infection (Attack), & Nuclear Detonation.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
Incident Command System, Emergency Operations Center Decision Making, Community Response, Functional Area Expertise.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercises vary in length from two to eight hours. Simulation runs in three modes: assessment, training and tutored training. In the assessment mode the scenario is played in real time and player performance is assessed against baseline standards. In training mode, the controller can stop or rewind events to facilitate AARs as necessary. In the tutored training mode, players are provided with prompts that suggest appropriate actions at that specific time.

e) Exercise/scenario length/time(typical):

Scenarios vary in length from two to eight hours.

f) Potential equipment and/or facilities product can address:

Equipment types and numbers can be adjusted to conduct initial analytical studies.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable to the response and recovery phase of a terrorist attack. Can be modified to support the prevention phase.

h) Are there any constraints on supported exercises or scenarios?

All constraints are typical to PC based simulation.

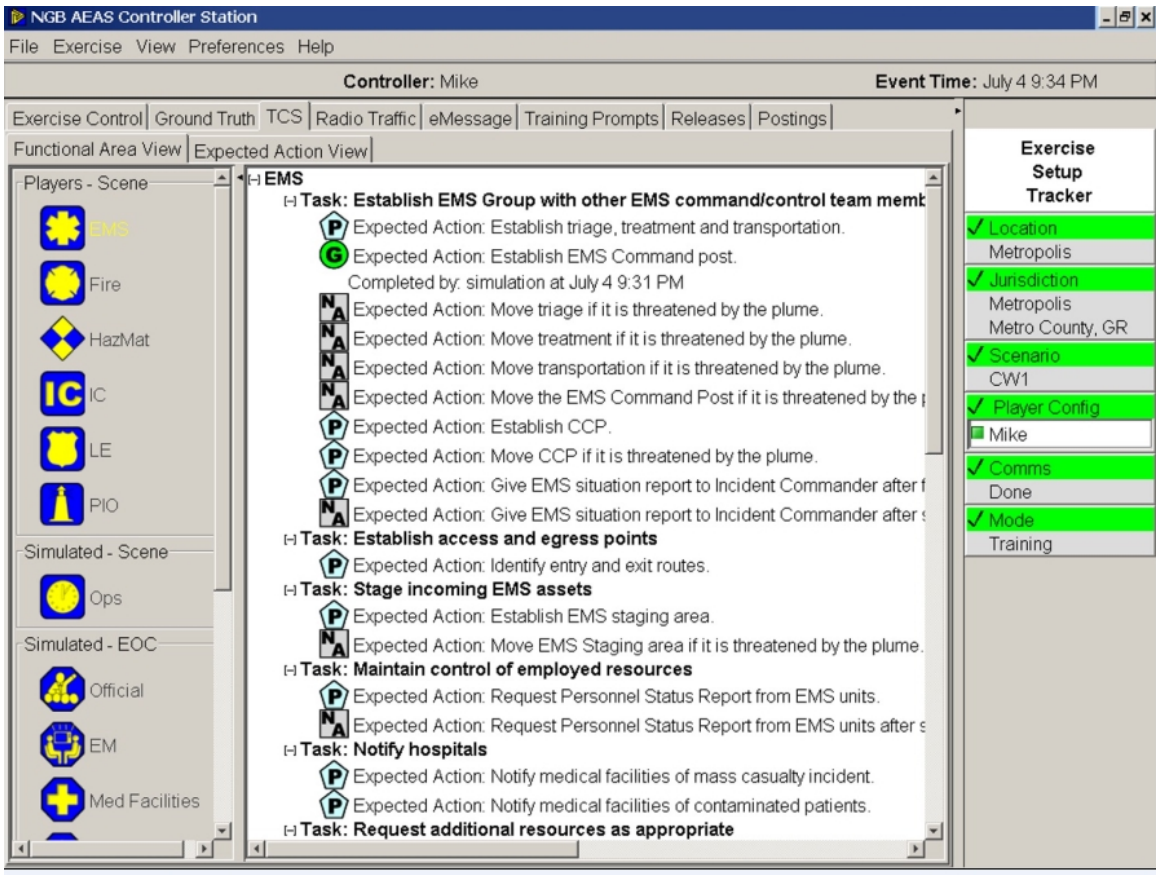
4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Exercise and training events can be conducted either as a team activity or an individual self-paced event.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

A facilitator is not required, however, the use of a controller is recommended to monitor the operational tempo of the exercise.



c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Players can receive prompts if the simulation is run in the tutored training mode.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

Training management is left to the discretion of the using community.

e) Does a curriculum already exist? If so, briefly describe its form and content

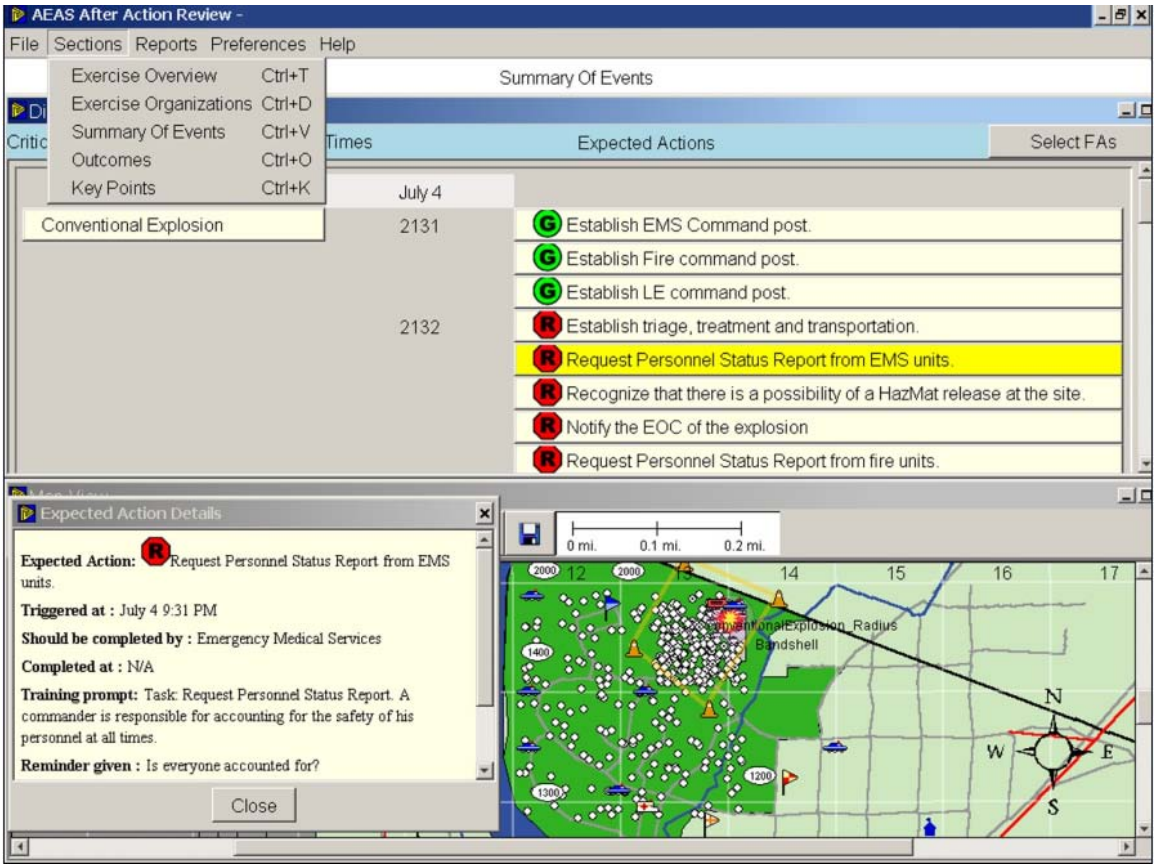
The documentation has a recommended concept of operation to employ with the AEAS simulation.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Player actions are recorded (expected actions) and these actions are compared to standards and an assessment of player performance is automatically generated.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

An After Action Report is immediately generated and contains player performance with extensive data that validates the basis of the assessment.



5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenarios and expected actions are fully described in the Controller's handbook which is provided in the application.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The controller can control the operational tempo of each exercise by controlling both situational injects and time compression.

6. Customization

a) Can the product be customized? If so, how, and by whom?

Each community can adjust the simulated resources to the amount and type that they actually have. The communication architecture can also be adjusted to simulate that of the using organization.

b) What is the process and how much time does it take to develop a new exercise/scenario?

Requires contractor support.

c) What is the process and how much time does it take to modify an exercise/scenario?

Requires contractor support.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Twenty Minutes.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

AAR tool captures real time data such as casualty figures to support analytical studies.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
	Distributed, collaborative, decision-making environment
1	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) **No**, Vendor must quote a system based on user requirements (*end here*). The software itself is provided as GFI to appropriate agencies. Modification and training support can be provided by SAIC and cost is determined by the specific customer requirements.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Biological Weapons Response Template

Developer: U.S. Army Soldier and Biological Chemical Command (SBCCOM)

Contact information:
Gregg Mrozinski, 410-436-2963. http://www.sbccom.army.mil.

For the automated version called bioterrorism response template:
3225 Shallowford Rd., Ste. 700
Marietta, GA 30062

800-477-8778
770-977-7233
770-579-5955 fax

info@ramsafe.com Website: www.ramsafe.com

Technical Support Contact Information:
Same as contact information

Product status (version in use):

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
1	Reviewed Website
0	Spoke/emailed with POC. POC never returned phone calls.
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
1	Material from Internet

	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

The biological weapons response template (BWRT) is a decision tree in paper format developed by SBCCOM for communities to use to evaluate their preparedness for a bioterrorism incident. The BW Response Template (see Figure 1, below) shows the response elements needed to respond to a biological attack. There are detailed response activities associated with each element of the template, and are formatted as worksheets that can be used by a community to develop their response plan[4].

The paper version of the template can be accessed in The Interim Planning Guide: Improving Local and State Agency Response to Terrorist Incidents Involving Biological Weapons at the following web site http://hld.sbccom.army.mil/downloads/bwirp/bwirp_interim_planning_guide.pdf. This version is free. An automated version of the template is owned exclusively by RAMSAFE Technologies and is used as a component of their information management software designed for emergency managers.

[4] Kussman, Richard L. (2001) REPORT of the Biological Weapon Improved Response Program (BW-IRP) Updated BW Response Decision Tree and BW Response Template http://www2.sbccom.army.mil/hld/downloads/bwirp/bwirp_updated_decision_tree_report.pdf.

An automated version of BWRT is owned exclusively by RAMSAFE Technologies and is used as a component of their information management software designed for emergency managers. RAMSAFE calls it the bioterrorism response template and uses it to predict casualties and response/resource requirements for an incident. Below is a portion of the
template:

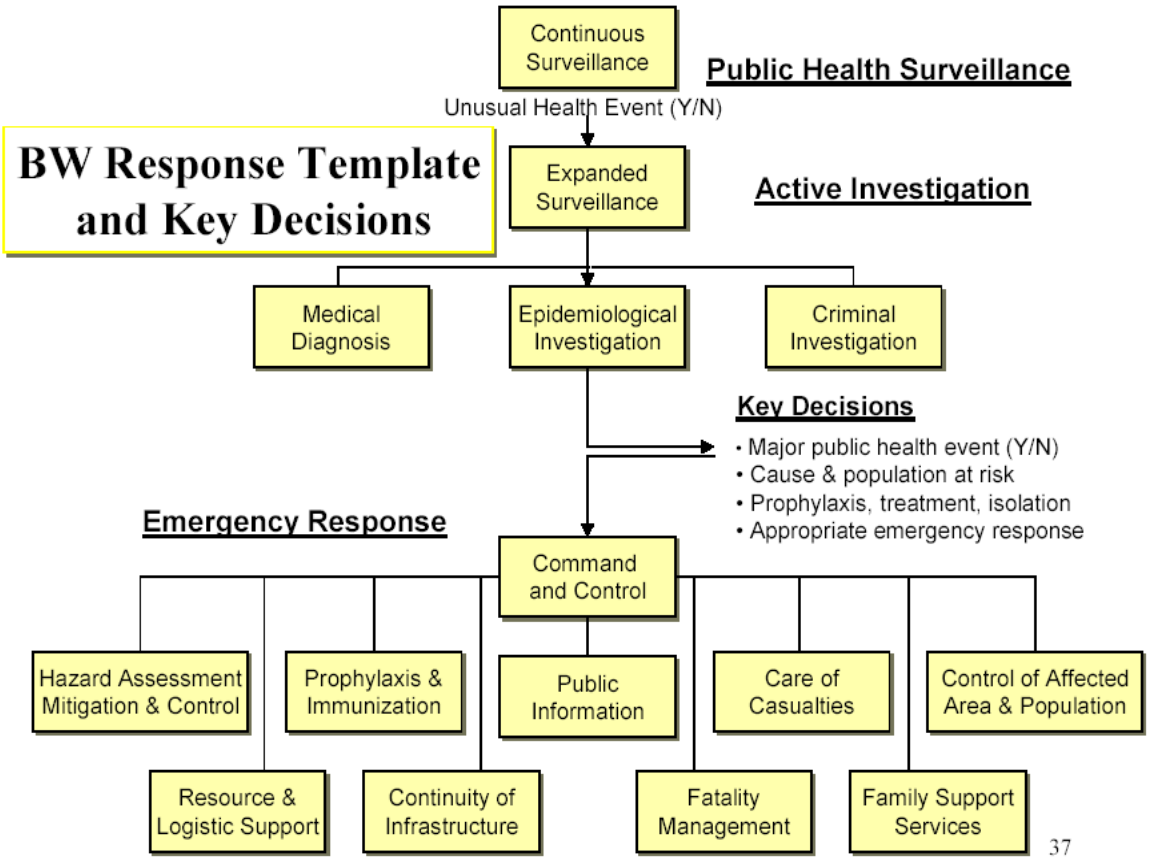


Figure 1 BW Response Template and Key Decisions

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	1	Generic
1	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
0	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	3	Automated summary of data
1	Non-specific	3	SME controls AAR
0	Equipment	3	Does not provide feedback or AAR
		3	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Paper decision making tree.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

N/A

c) Large multi-station system, or based on individual PCs?

N/A

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?

N/A

f) Describe any debriefing after-action reporting support tools:

N/A

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

N/A

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

N/A. BWRT is a paper and pencil product. Please see RAMSAFE for the electronic version

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* N/A

b) Processor speed (in MHz): N/A

c) Memory (SDR/DDR): N/A

d) Free disk space: N/A

e) Internet connection speed (if any): N/A

f) Display adapter: N/A

g) CD-ROM speed: N/A

h) Optional accessory requirements: N/A

5. Describe the user interface characteristics:

Paper and pencil decision tree

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Probably not more than classroom size.

b) Number persons usually trained simultaneously?

N/A Was not designed for training.

c) Custom/proprietary hardware required? If so, identify:

N/A

7. Describe any user HELP features:

N/A

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

N/A

2. Attributes

	Application Environment:		**Content**
0	Training	0	Knowledge
0	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	0	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
0	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
0	Explosion	0	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
0	EMS	0	Drills
1	EMA	2	TTX

0	Fire	0	FE
1	Govt. Administrator	0	FSE
1	Health Care	0	FSE Reinforcement
0	HazMat	0	Distributed Collaborative Exercise
0	Law Enforcement	0	National Training Exercise
1	Public Health		
0	Public Safety Communication		
0	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
This product does not contain training content.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Important considerations for response to a biological incident

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
N/A

d) Exercise/scenario length/time(typical):

N/A

e) Potential equipment and/or facilities product can address: N/A

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes for planning purposes

g) Are there any constraints on supported exercises or scenarios?

Yes, this product is not easy to use for exercises or scenarios in the paper format. It is aimed at emergency management planning and does not include any training content or scenarios. It requires some expertise with management planning and preparedness as well as knowledge about community resources and capabilities.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

   Possibly as a table top exercise. More of a planning tool, though.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

   N/A

c) How is training managed (e.g., Testing, certification of completion, etc.)?

   N/A

d) Does a curriculum already exist? If so, briefly describe its form and content
   N/A

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

   N/A, although it is used to evaluate plans.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

   N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

   N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

   N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?

   Yes, communities use it to create their disaster response plans.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

N/A

c) Does the customer or the vendor modify or develop a new exercise/scenario?

N/A

d) What is the process and how much time does it take to setup an exercise/scenario to run?

N/A

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
0	High	**0**	Very
0	Medium	**1**	Somewhat
0	Low	**0**	Limited
1	N/A		
	Ease of Use		
0	Easy		
0	Relatively Easy		
1	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
0	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
0	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?

2	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	Free			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				

Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Product still in development

A. Basic Product Information

Name of Product:

BioSimMer

Developer: Sandia National Laboratories

Contact information:

Sharon Stansfield
Mathematics and Computer Science Dept
212 Williams Hall
Ithaca College
Ithaca, NY 14850
Phone: (607) 274-3630
Fax: (607) 274-1588
sstansfield@ithaca.edu

Technical Support Contact Information:

Website: None

COTS/GOTS: COTS

Product status (version in use): Prototype not yet in use. Initial field evaluation conducted at the Texas Engineering Extension Service Fire Protection in 1999. Development of additional injury models and scenarios is planned as well as making the system more robust and user friendly. This work was sponsored by the Defense Advanced Research Projects Agency (DARPA). Previous work upon which it is built was sponsored by DARPA and the Naval Health Research Center. The work was performed at Sandia National Laboratories, a multi-program laboratory operated by Sandia Corporation, a Lockheed-Martin Company, for the U.S. Department of Energy under Contract DE-AC04-94AL85000.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Other: Sandia video that shows 3 patient scenarios (chest trauma, head wound, and psychological trauma) and ensuing treatment. The video presents a trainee view (virtual reality goggles with capability to see other trainee in the virtual environment) and a view of

	the outside environment (e.g., you see the user strapped to the sensors and head gear moving about as they "treat" the patients). Voice commands are issued for vital signs and hands on treatment is performed (if incorrectly victims' condition progressively—e.g., seizures, color change—worsens and they may die).

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers: Design and Implementation of a Virtual Reality System and Its Application to Training Medical First Responders (http://www.ithaca.edu/faculty/sstansfield/topLevel/biosimmerPresence.pdf).
X	Other: Sandia National Laboratories video

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  Distributed virtual reality platform developed to support the training of multiple users who must perform complex tasks in which situation assessment and critical thinking are the primary components of success. The system is fully immersive and multimodal, and users are represented as tracked, full-body figures. The system supports the manipulation of virtual objects, allowing users to act upon the environment in a natural manner. BioSimMER is an application of the system to training first responders to an act of bio-terrorism.

- Current Target audience: Medical emergency-response personnel.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS		Locale Specific

	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
	Large multi-user team (more than 25 persons)		**AAR Capability**
			Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific		SME controls AAR
	Equipment		Does not provide feedback or AAR
			HLA Compliance (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
Sound input and output utilize the hardware available on the SGI workstations The system is not VR device dependent. BioSimMER has the additional capability to directly place both the avatar and its associated camera/view within the virtual world via a menu interface that acts through the avatar driver.

BioSimMER contains a voice-recognition component (Entropic GrapHvite speech-recognition, although this capability is currently limited).
The user can also interact with the simulation, requesting information (such as vital signs) and commanding certain actions (such as exposing a patient by removing his shirt). The sound server serves the various sounds used within the simulation, which include background sounds, such as sirens, as well as responses from the virtual patient to questions asked by the medic and responses from the simulation to requests for information such as vitals.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Requires VR equipment: HMD, position trackers, external medical simulation component

c) Large multi-station system, or based on individual PCs?
Multiple stations.

d) If simulation models are used, what is the basis of the data and/or distributions used?
The underlying intelligent simulation component creates an interactive, responsive world in which the consequences of such actions are presented within a realistic, time-critical scenario. The dissemination of Staphylococcus

Enterotoxin B (SEB) through the airport VE was modeled, and the results were used to determine casualty, exposure rates and facility contamination levels (for future training of tasks such as the placement of sensors). The SEB dispersion was modeled using the CONTAIN software, which accurately models the dispersal and disposition of aerosols within the interiors of facilities.

The virtual patient is a dynamic, interactive simulation that presents the clinical symptoms of the modeled injury and whose state changes realistically over time, both spontaneously (due to the injury) and in response to the actions of the user.

e) Web-based application, LAN, or a single computer/system-based application?
LAN required.

f) Describe any debriefing after-action reporting support tools:
None developed at this time.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
UNIX (SGI IRIX) – currently being ported to PC platform under Windows. At least one processor per user. Additional processors to offload drivers and external simulation modules are desirable, but not required. The system is distributed and runs across a LAN, so the equipment must be networked. (Ethernet and multicast hardware and system software are used.) Our current configuration uses SGI workstations.

b) Processor speed (in MHz):
Minimum not determined.

c) Memory (SDR/DDR):
Minimum not determined.

d) Free disk space:
Minimum not determined.

e) Internet connection speed (if any):
N/A

f) Display adapter: one graphics pipe or card for each user (view) desired. The VR gear worn by each user currently consists of a head-mounted display; four position trackers worn on the head, the back of each hand, and the small of the back; a microphone; and (optionally) earphones.

g) CD-ROM speed:
N/A

h) Optional accessory requirements[5]:
N/A

5. Describe the user interface characteristics:
The user interacts with the simulation via a series of menus and he/she wears goggles to view scene displayed in a monitor behind him/her. When the user specifies actions via menu-selected input an animation is presented that shows the virtual medic performing the action on the virtual patient.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
1 - 4

b) Number persons usually trained simultaneously?
1 - 2

c) Custom/proprietary hardware required? If so, identify:
No.

7. Describe any user HELP features:
None currently implemented.

8. Data recording & storage features (e.g., Scenario events; student performance):
Scenario events, user actions recorded. User motions may be recorded for full playback.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
N/A (for now)

2. Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational	1	Hands-on
	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:		Commanders
	Self-paced		Local Officials
	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**

1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:		Planning & Mgmt. (incl. ICS)
	Chemical		Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
	EMS		Drills
	EMA		TTX
	Fire		FE
	Govt. Administrator		FSE
1	Health Care		FSE Reinforcement
	HazMat		Distributed Collaborative Exercise
	Law Enforcement		National Training Exercise
2	Public Health		
	Public Safety Communication		**Incident Stage Supported**
	Public Works		Prevention
			Detection & Identification
	Learning Supported:	1	Response
	Initial Acquisition		Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable): Victim assessment procedures and interventions (such as inserting an IV, administering medication, and applying a dressing).
.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
None.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
Field assessment and stabilization of casualties.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Users can treat a patient and immediately see the results reflected in the state of the patient, within a full scenario that includes environmental and situational aspects that could effect decision-making and its outcomes (good or bad). No tutorial component or “expert guide” is included.

e) Exercise/scenario length/time(typical):
10 minutes.

f) Potential equipment and/or facilities product can address:
Any that can be modeled (per developer).

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Yes, for bioterrorism.

h) Are there any constraints on supported exercises or scenarios?
Currently, only the above-mentioned four exercises are implemented.

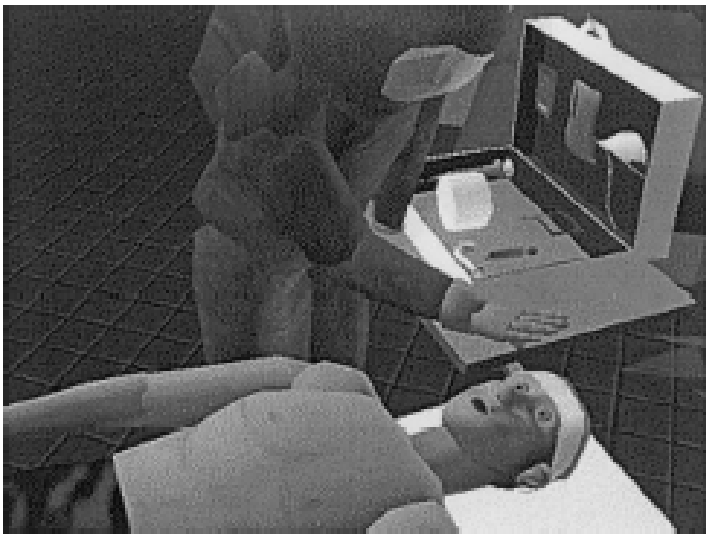
4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
Self-paced individual and team CBT, real-time simulator.

b) Is an instructor or facilitator needed? If not, how is training conducted (e.g., Individual self-paced)?
Addresses experiential training, prior introduction to subject assumed.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.
The system immerses multiple users in a shared virtual world that consists of themselves (represented graphically as avatars), the environment, virtual casualties, and other application-relevant virtual objects. Users are able to interact with the virtual world by handling and using objects and speaking to the simulated patient. The virtual world responds to the user's actions appropriately and changes state accordingly. The set of actions the user may perform are listed below:

Action	Purpose
	Initial Exam
Ask patient what happened	Gather information; test coherence
Expose patient	Look for wounds
Request vitals	Blood pressure; respiratory rate; pulse rate; temperature
Squeeze fingertips	Check capillary refill rate
	Neurological Exam
Ask patient to move arms, legs	Check voluntary motor control
Test ocular motility	Voluntary motion of eyes
Test pupillary reflex	Involuntary pupil response to light
	Airway Intervention
Insert J-tube	Open airway
	Respiration Intervention
Perform needle aspiration	Relieve pressure on lung
	Circulatory Intervention
Start intravenous therapy (IV)	Increase, balance fluids
	Neuro-trauma Intervention
Apply cervical collar	Prevent further damage to spine
	Biological Exposure Intervention
Apply wipe to body	Decontamination
Place mask over nose, mouth	Breathing barrier against external toxins
	Wound Care
Apply sterile bandage	Protect wound
Apply occlusive bandage	Protect wound, prevent air intake
	Medications
Auto injection	Inject sedative (head wound)
	Inject atropine (agent exposure)

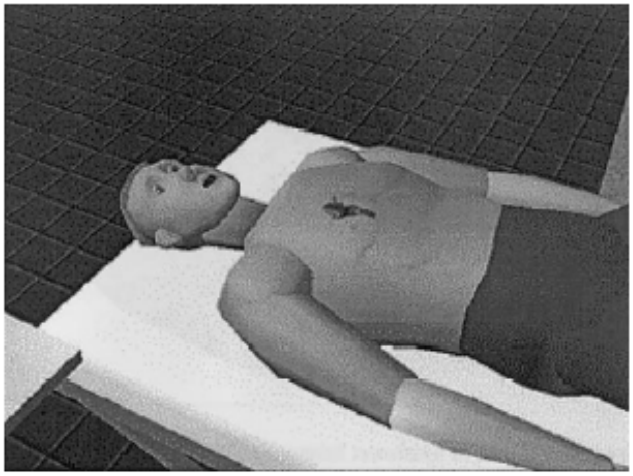


Action example: Bandage placing.

The orientation of the user's body, rather than of the head, determines the direction of movement. This permits simulated walking and upperbody movement reflecting the user's body posture.

d) How is training managed (e.g., Testing, certification of completion, etc.)?
NA.

e) Does a curriculum already exist? If so, briefly describe its form and content
Scenario: Terrorists have taken over a small airport and are holding hostages. They claim to have released a biological agent, but they haven't indicated what it is (SEB). After a standoff of several hours, law enforcement raids the airport. The terrorists set off a bomb (aerosol dissemination) via the explosion of the terrorist bomb., which causes conventional injuries and additional dispersion of the unknown agent. The trainees enter the scenario at the point just after the raid and explosion. Four injury types are featured: SEB exposure, tension pneumothorax, cerebral contusion, and catatonia due to psychological shock (consistent with their scenario of the terrorist act with an explosion and the release of a bio-warfare agent).



Virtual patient with chest wound resulting in tension pneumothorax.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
Trainees carry out their tasks within the scenario, the only feedback being the changing condition of the virtual patient.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
BioSimMER has a recording capability that stores the high-level actions taken by the trainee, along with a time stamp. Evaluation of performance and feedback from an instructor can therefore be done in a post training session. It is assumed that trainees come into the system having received traditional training and having some familiarity with their tasks.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
No capability to design additional scenarios at this time.

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes – currently by developers. All injury models are reusable and can be (and have been) utilized to build additional training scenarios. Further training tasks and injury cases are added.

b) What is the process and how much time does it take to develop a new exercise/scenario?
No capability to design additional scenarios at this time.

c) What is the process and how much time does it take to modify an exercise/scenario?
No capability to design additional scenarios at this time.

d) What is the process and how much time does it take to setup an exercise/scenario to run? User puts on goggles and simulation can be set to run within a few minutes.

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): Only current feature is time stamped actions. SME required for performance interpretation (outside of those that occur based on the simulation) and AAR.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
1	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
	Decision-making
	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
	Distributed, collaborative, decision-making environment
1	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.
Not determined.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Bridgeworks

Developer: Bridgeborn LLC

Contact information:
Tim Ambrosino (CEO)
Bridgeborn LLC
3113 Pacific Avenue
Virginia Beach, VA 23451
Phone: (757) 437-5000
Fax: (757) 422-3439
info@bridgeborn.com
tambrosino@bridgeborn.com

Additional Contact information:
msarro@bridgeborn.com

Website: www.bridgeborn.com Product status (version in use): N/A

Date of Evaluation: December 17, 2003

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo
- [x] Played/Used product
- [ ] Attended Briefing
- [x] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [x] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

- [ ] Brochure/Prospectus
- [x] CD-Rom
- [ ] Related Papers
- [x] Material from Internet
- [ ] Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

Bridgeborn has developed a proprietary, patented-pending software technology – Bridgeworks – for the design, development and implementation of interactive, 3D, web-based environments. Bridgeborn uses this technology to create visualizations of products, complex processes and systems as well as visualizations of abstract data. Bridgeworks applications can run on standard Pentium class PCs, laptops, and CDs, and can be used collaboratively. User controls allow the end-user (trainee) to interact with the scene in 3-Dimensional space; tools such as rotate, view and inspect allow the trainee to break any scene into its individual components for intuitive and engaging training.

Bridgeborn uses this technology to provide solutions to a wide range of clients. Their current focus is on developing training and education, creating After Action/Lessons Learned Reports, and developing and expanding logistics management applications.

- Focus/specialty of product:
  Emergency management incident response/ coordination tools, IETMS, lessons learned tools.
  Currently developing Architecture analysis tools.

- Current Target audience:
  Primarily Department of Defense strategy, logistics and training organizations.

- Potential equipment and/or facilities product can address:

  - Equipment – Bridgeworks, Bridgeborn's software platform, can be used for training on any complex product, process or environment. (e.g., Bridgeborn has done work for the NAVY creating content for a web-based training tool for the E2C NATOPs manual). Additionally, Bridgeborn recently won a contract to create a 3D, web-based training tool for a 500 piece circuit breaker on a nuclear submarine.

  - Facilities – Bridgeworks technology can be used to create fly-throughs for virtual environments. Their work on the Lessons Learned tool for Operation Anaconda involved the creation of a 3D 10x10 mile area in Afghanistan mapped from DTED draped over digital satellite photos. The result is a photo-realistic, interactive environment in which the end user can zoom in and out of, rotate, pivot, and navigate with fly-through capability. To that end, Bridgeborn also has the ability to create the same kind of multifaceted fly-throughs for facilities, buildings, street blocks, and other complex environments. See following example.

The following image comes from a simulation that was developed to give a guided visual tour through Ellis Island. The individual can virtually *fly* around the exterior or interior of Ellis Island.

Exterior view:

Interior view:

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Bridgeborn's technology has been previously used for the development of training tools, exercises, and After Action Reports within the Department of Defense. They are able to create interactive, 3D visualizations for training and exercise which prepares individuals, without the need for classroom time or in-person instruction. The ability to train independently or collaboratively with others via the web significantly reduces costs (travel, coordination, opportunity) associated with traditional training and exercise programs. Bridgeborn does this by providing a single digital dashboard environment where 3D visualizations, collaborative game play, multimedia presentations, and all information relevant to an exercise or training session can be intuitively accessed.

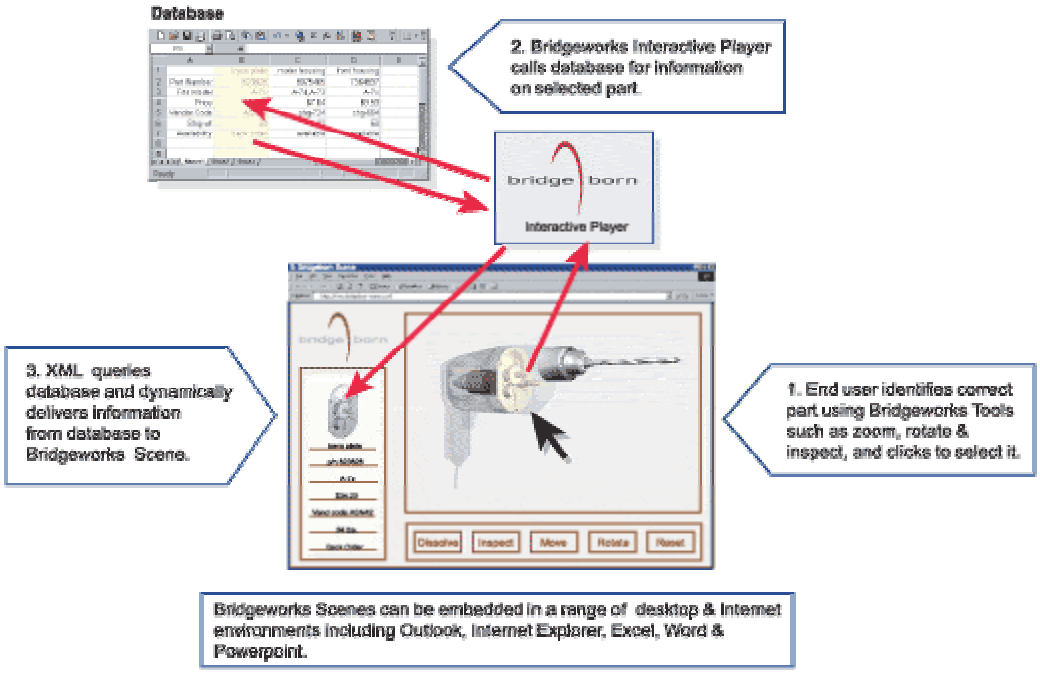
C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Bridgeborn's Bridgeworks is a software run-time engine that enables collaboration, simulation, 3D data visualization, and dynamic creation of content, all in a single interface. Since Bridgeborn provides customized solutions, the form and function of its deliverables vary.

<u>The Bridgeworks Interactive Player enables the following:</u>
Renders 2D and 3D graphical representations of information in real-time
Displays photo-realistic representations of XML defined environments
Uses standard XML transport protocols to communicate with any data source
Dynamically updates the Bridgeworks scene without refreshing the page or reloading the scene

Allows information to be easily transmitted and shared globally by installing the Bridgeworks Interactive Player©



b) Large multi-station system, or based on individual units/PCs?

Bridgeworks was developed to run on existing hardware; the only requirement is that the end-user install the Bridgeworks' Run-Time Engine. This engine allows for two key functionalities:

- ability to interact with 3D scenes
- real-time data exchange between the Bridgeworks visualization and any local or remote data source

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Requires the installation of the Bridgeworks Run-Time Engine. Simulation models, physics packages for explosion, plume clouds etc. as well as databases can be used to either build or dynamically change the 3D visualization.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Because Bridgeworks is based in XML, the applications can access any data source. As long as the data is available to the user, Bridgeworks can process it and display the resulting simulation. Bridgeworks is not HLA compliant but instead relies on its open architecture to be distributable in any Windows PC environment.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Multi-user domains can be used for group training, but are not necessary. Applications can be delivered via the web or on CD and can be used remotely and collaboratively.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Windows 98/ME/2000/XP/NT 4.0SP6

b) Processor speed (in MHz): 500MHz

c) Memory (SDR/DDR): 256 MB

d) Free disk space: N/A

e) Internet connection speed (if any): Applications can be delivered via the web or CD. When an internet connection is not available, a CD can be used. Regardless, a dial-up connection is sufficient, but will obviously be slower. The Bridgeworks Run-Time Engine is approximately 1MB and training applications are commonly less than 1MB.

f) Display adapter: 16MB (32MB recommended)

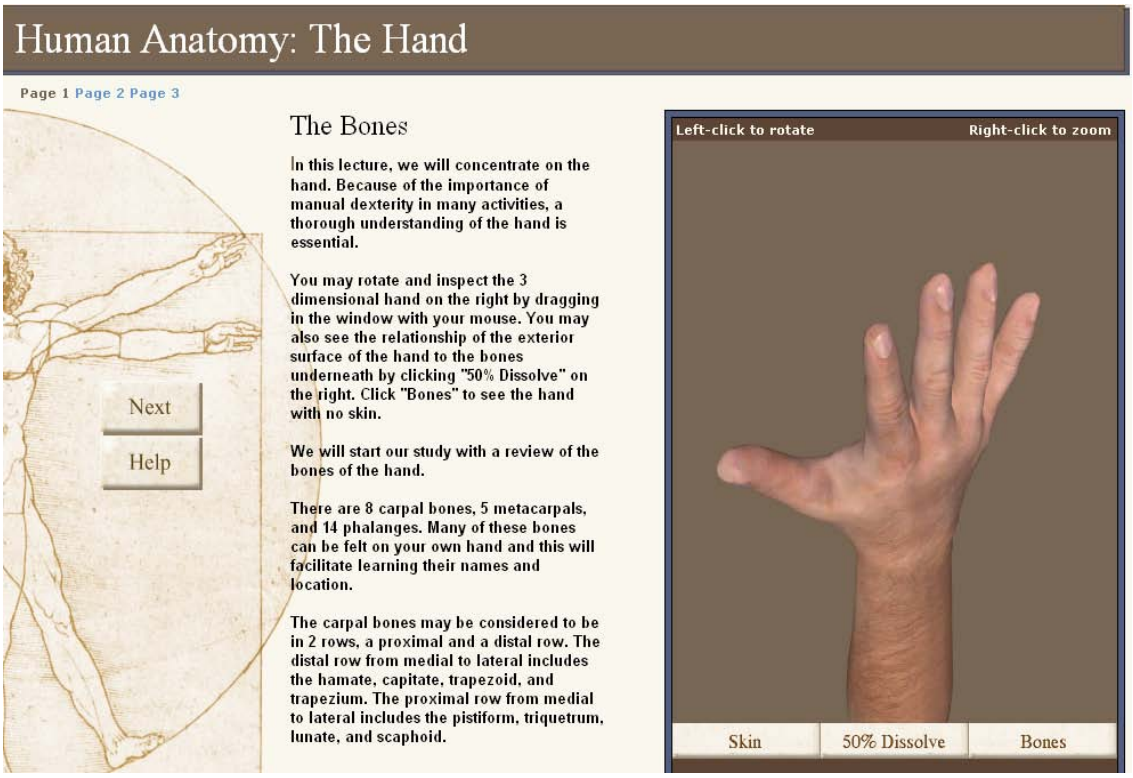
g) CD-ROM speed: N/A

h) Optional accessory requirements:

3. Describe the user interface characteristics:

The Graphical User Interface (GUI) is dependent on the application developed. Bridgeborn employs professionals in the design and development of web pages and GUIs. Applications are designed to be intuitive for ease of use without training and intuitive for the user. Additionally, running as a win32 application or embedded using an ActiveX control, Bridgeworks applications can run in any windows-based environment ranging from a window on the desktop, web-page, within Microsoft Office documents including Word and PowerPoint as well as within Learning Management Systems.

User interface requires pointing and clicking the mouse to interact with the 3-D environment. The following screen shot is from an anatomy demo built for Georgetown University Medical School. It is 3D model of a human hand. The student/trainee can manipulate the hand by dragging it with the mouse and dissolve the skin to examine the bone structure.



4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Minimum user base is an individual. Maximum in a collaborative environment is 40.

b) Custom/proprietary hardware required? If so, identify:

None.

5. Describe any user HELP features:
Help features can be built into the tool, but would be specific to that application.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Bridgeworks can create an audit trail of user activity through a dynamic tracking capability using XML transport protocols to communicate user interaction with the scene to a local or remote database.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
In-person training is offered during IPTs, at delivery of beta version of any application and with delivery of any final Bridgeworks application.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
Bridgeborn is on the Titan win-team for the central region to prepare first responders for use of WMD and CBRNE.

b) Time required for a typical exercise or scenario (if applicable):
This ranges based on level of complexity, but a standard range for creation of an exercise is 3 months.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Modifications in the form of development of the training would be necessary. Once a standard application is developed, it can be used and reused indefinitely. Additionally, changes and updates are easy to make as Bridgeworks scenes are created using a series of independent objects. When an object or a process needs to be changed or becomes obsolete, a new asset can be easily inserted.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?
N/A

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Bridgeworks includes a *tracking* capability that registers all user interaction. The resulting data can be formatted into any feedback system that the LMS supports or can be incorporated in a custom designed feedback loop. All forms of feedback from visual, audio, text, to immersive interaction in a 3Dimensional situation are available.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Once the specific scenario is developed along with the appropriate models, the instructor can literally drag-and-drop new situations, players, and models into the scene, which will be instantly modified. Each dragged and dropped object can contain new behaviors or attributes, giving instructors the power to dynamically change situations or respond to student interactions expeditiously.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Since students are working in an immersive, interactive 3 Dimensional environment, they constantly affect that environment and receive direct feedback from their actions. A recording and tracking capability allows for playback of those actions, highlighting strengths and weakness of their performance. This also gives instructors the ability to monitor, compare and evaluate individual and group performance over time and under difference situations.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Bridgeworks scenes can be customized by either the client using a software developer kit or by Bridgeborn. Once a baseline application is created, customization would likely take 1-3 months depending on the level of complexity. If changes are nominal, the turn-around time could be as little as several hours or days.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The process and resulting timeframe vary depending on the complexity of the scenario and models associated with that scenario. However, since all components are sharable and reusable, there will be a resulting economy of scale from one project to the next, meaning less set up time for projects of similar scope.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Just as a particular scenario can be used as an analytical tool, any resulting data from the exercise can be visualized. Having the additional z-axis dimension in 3D visualization makes for a powerful tool in discovering and analyzing trends and intent.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
X	Student Learning
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned	0	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	2	Automated summary of data
1	Small multi-user team (up to 25 persons)	2	SME controls AAR
2	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
2	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
2	Non-specific		**Interconnectivity**
1	Equipment	1	Standalone
		2	LAN
	Environment	2	WAN
2	Generic	2	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
2	Operational	1	Hands-on
2	Analysis		
2	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
2	Chemical	2	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	1	Equipment Training
2	Explosion	2	Awareness
		1	Part Task Training

	Functional Area Supported:	1	Pre-Training
1	EMS	2	Drills
1	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
1	Health Care	2	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
1	Public Works		
2	Transportation		
2	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
1	High
0	Medium
0	Low
0	N/A

	Current Applicability to ODP
1	Very
0	Somewhat
0	Limited

	Ease of Use
0	Easy
1	Relatively Easy
0	Difficult
2	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
2 Tracking participant performance through multiple tries (automation)
2 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
2 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

2 Remote Observation
2 Enhanced Communication T&E/does it practice/train/exercise communications?
1 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

2 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				

Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Bt CREATE

Developer: National Association of County and City Health Officials
DeKalb County Board of Health's Center for Public Health Preparedness
(DeKalb County, Georgia)

Contact information: NACCHO
1100 17th St. NW, 2nd Floor
Washington, D.C. 20036
Tel.: 202-783-5550
FAX: 202-783-1583

Additional Contact information:

Website: http://www.naccho.org/prod140.cfm Product status (version in use): 1.0 (2003)

Date of Evaluation: 17 October 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- X Played/Used product
- Attended Briefing
- X Reviewed CD-Rom or other software
- X Reviewed Website
- Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- X CD-Rom
- Related Papers
- Material from Internet

Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Bt CREATE is a tool for developing table top exercise (TTX) scenarios. It is an interactive CD-ROM based application intended to educate, inform and assist emergency response communities as they prepare for and respond to bioterrorism, other outbreaks of infectious disease, and other public health threats and emergencies.

- Current Target audience:

  The medical, public health, and emergency response management communities.

- Potential equipment and/or facilities product can address:

  The product does not address specific equipment or facilities.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

The emergency professional and medical community can use Bt CREATE to develop exercise scenarios for biological agents used as terrorist weapons. "Tabletop exercises provide a platform to begin discussing the complexities associated with mounting an effective and timely response to a bioterrorist event. They have the added benefit of simulating events in compressed time that provides additional challenges to the participants. When done properly, they provide an invaluable learning experience for all of those involved."[5]

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Software – interactive CD

b) Large multi-station system, or based on individual units/PCs?

   Individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   Standalone product.

[5] N.A.CC.H.O., Bt CREATE, 2003.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not applicable.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

A computer work space.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

i) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Microsoft Windows 95, 98, ME, 2000, XP.

Required applications:

i. Microsoft Explorer 5.0 or later (or compatible browser application)
j. Microsoft PowerPoint 97 or later
k. Adobe Acrobat Reader and/or Microsoft Word

j) Processor speed (in MHz): Not specified

k) Memory (SDR/DDR): Not specified

l) Free disk space: Sufficient space to store document output

m) Internet connection speed (if any): Not required

n) Display adapter: 800x600 resolution or better

o) CD-ROM speed: Industry standard

p) Optional accessory requirements: An Internet connection is useful for accessing hyperlinked information.

3. Describe the user interface characteristics:

The interface consists of the user's native Web browser application for displaying HTML-encoded files. The user points and clicks on menu selections within Web pages to navigate through the application.

4. If multiple users:

c) Identify the range of persons it can simultaneously support (min-max)?

One to several people working collaboratively on one computer.

d) Custom/proprietary hardware required? If so, identify:

None.

5. Describe any user HELP features:

Bt CREATE includes a twelve-page User's Manual in Word (.DOC) format or Rich Text Format (.RTF). The manual covers the main menu and the Table-Top Presentation Wizard program functionality.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Output from the Table-Top Presentation Wizard, the customized Microsoft PowerPoint presentation, can be saved to the file "output.ppt". There are no other data recording or storage features.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The User's Manual describes the basic functionality of the program.

2. Product Content

e) Training content description (briefly identify any relevant WMD-specific content):

The content of Bt CREATE is primarily directed toward assisting the user in developing a table top exercise scenario using a biological agent. The application contains presenter materials for three biological agents that could be used as weapons: botulism (Botulinum toxin), plague (Yersinia pestis), and smallpox (Orthopox virus, Variola). These materials consist of fact sheets, guidance documents, Journal of the American Medical Association (JAMA) consensus statements describing the agents, transmission, symptoms, prevention measures, treatments etc.

Reference material covers Brucellosis, Hemorrhagic viruses, Q-fever, Anthrax, Tularemia and other bio-agents. Materials include tables of characteristics, lab diagnosis and identification, vaccine, therapeutics, and prophylaxis.

f) Time required for a typical exercise or scenario (if applicable):

The application is used to generate a scenario, and does not execute the exercise itself. Time required, then, is dependent on the exercise director/facilitator.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes, Bt CREATE can be used to develop bio-weapon exercises.

h) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

3. Instructional Attributes (if applicable)

c) Does a curriculum already exist? If so, briefly describe its form and content?

d) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

There are no feedback features, per se, as part of the software application.

5. Instructor/controller/evaluator tools (if applicable)

c) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Bt CREATE, itself, is an instructor/controller tool for developing TTX scenarios. It comes with:

a. A sample scenario
b. A "wizard" program that facilitates development of custom scenarios
c. Presenter resources (see D2a)
d. Reference material (see D2a).

d) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Bt CREATE serves to guide the user in the preparation of Microsoft PowerPoint presentations that can be used to facilitate table top exercises. The nature of the conduct is dependent on the instructor/controller.

6. Customization

c) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Bt CREATE is not customizable. Output, in the form of PowerPoint presentations are customizable by the user. The product can be used to develop a new exercise/scenario in one to two hours.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Exercise conduct is independent of the use of Bt CREATE. A scenario would be presented to the participants using Microsoft PowerPoint slides displayed via a digital projector.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

There are no analysis features in Bt CREATE.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

See Appendix A for classification descriptions.

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
1	Instructor/Facilitator Aid
	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	0	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	1	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	3	Scenario replay
2	Group	3	Automated summary of data
0	Small multi-user team (up to 25 persons)	3	SME controls AAR
0	Large multi-user team (more than 25 persons)	1	Does not provide feedback or AAR
0	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone
		0	LAN
	Environment	0	WAN
1	Generic	0	Internet
0	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge

1	Exercise	0	Applied
0	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
0	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
0	Chemical	1	Multi-jurisdictional Integrated Systems
1	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
0	Explosion	1	Awareness
		0	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	2	Drills
1	EMA	1	TTX
2	Fire	0	FE
2	Govt. Administrator	0	FSE
1	Health Care	1	FSE Reinforcement
0	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
1	Public Health		
0	Public Safety Communication		
0	Public Works		
0	Transportation		
2	Private Sector		
	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High	X	Very
	Medium		Somewhat
	Low		Limited
X	N/A (Content supplied by user)		

Ease of Use
X Easy
Relatively Easy
Difficult
Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:
0 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:
1 Decision-making
0 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:
0 Simulation Support

Selected FSE Observations: product allows for/can be used for:
0 Remote Observation
0 Enhanced Communication T&E/does it practice/train/exercise communications?
1 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
0 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1) Can the vendor provide a price for a given (or typical) product or system? *(choose one)*
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: *(choose one)*
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: *(choose one)*

a) Standardized
b) Vendor Customized
c) Allows User Customization

4) What are the prices (in $USD) according to type: *(fill in all applicable)*

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase[6]			$10	$12.50
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

[6] NACCHO member price is $10; non-member price is $12.50 (not including shipping and handling charges)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, &GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

CAMSIM (Chemical Agent Monitor Simulation)

Developer: Argon Electronics

Contact information: Steven Pike
Unit 16 Ribocon Way
Progress Business Park
Luton Bedfordshire LU4 9UR U.K.

Tel: 011 44 1582 491616
Fax: 011 44 1582 492780
Email: sales@argonelectronics.com

And additional Contact information: U.S. Representatives: JGW International (Fairfax, VA)
Tel: 703 352 3400

Website: http://www.argonelectronics.com

Product status (version in use):

Various versions in use .

CAMSIM 2, which simulates the CAM 2 equipment (also known as ICAM, Improved CAM) is the most common version in use today, particularly in the U.S.

CAMSIM PLUS, which simulates the CAM PLUS equipment, is another common variant in use today.

Date of Evaluation: December 2003

Source(s) of Evaluation: ***check all that apply***

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
x	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
x	CD-Rom
x	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.
Include the following:

The CAMSIM is a training and exercise device that simulates the operation and use of gas detection equipment in applied environments (i.e., field scenarios). It should be viewed as an example of the simulation technology available for a range of detection equipment, to train and exercise tasks relevant to CBRNE WMD incidents.

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  - The Chemical Agent Monitor Simulator (CAMSIM) is a training device that simulates the Chemical Agent Monitor (CAM) operational equipment. The Chemical Agent Monitor (CAM) is a hand-held instrument capable of detecting nerve or blister agents or liquid agent contamination. The CAM detects the presence of the agents; it does not identify the actual substance (other equipment, such as Hapsite, would be used after detection to identify the specific chemical). The hand-held CAM equipment is shown in Figure 1. The CAM is widely used by military organizations and civilian agencies around the world

Figure 1. Hand-held Chemical Agent Monitor (CAM)

  - The CAMSIM is a replica of the CAM. Behavior is in all respects the same as that of the real instrument. Of note, CAMSIM avoids the need to incorporate real contamination sources during field training and exercising.

  - The CAMSIM supports CAM equipment training, and can also support a range of training related to airborne hazardous chemical release. The CAMSIM provides for "look alike" training simulator(s), enabling training in detection and response to chemical and HAZMAT substances to take place both indoors and outside without the need to use hazardous material. The system simulates vapor and contamination hazards for nerve and blister agents. This technology can also simulate other CW agents, toxic industrial substances, radiological and biological hazards. The system simulates partial and full decontamination and persistency, and the effects of wind. The system has the

ability to monitor students' use of the CAM instrument, identify and report procedural errors. The CAMSIM kit is shown in Figure 2.

Figure 2. CAMSIM, housed within a standard CAM case marked as a simulator.

- CAMSIM enables the simulation of:

  - Nerve, blister, blood and choking agents.
  - Contamination and decontamination of vehicles, cargo, luggage, ground areas, aircraft, ships and people.
  - Persistent and non persistent agents.
  - Effects of wind direction.
  - Chemical munitions for ordinance disposal training.
  - Suspect packages and improvised chemical devices.

  It also facilitates the simulation of chemical releases within buildings such as shopping centers, airports and conference centers, as well as confined spaces such as railway cars, aircraft, offices or open public areas.

- Ultrasound (transmitters and receivers) is used as the primary vapor simulation technology. Electromagnetic sources (tagged magnets and magnetic detectors) are also used to simulate contamination, such as on clothing. The sources can be placed in numerous different locations, and hidden in packages and cases as desired. The emission level can be varied to suit the scenario, and the signal is encoded to permit different sources to represent different substances.

- As an example of CAMSIM sensitivity during use, some contamination sources may have been placed in different rooms, or in storage cupboards in a building. In such instances searching around any gaps where the door closes will result in a reading being obtained. Opening the door or cupboard will result in a greater vapor release and therefore a higher reading. In this example, the small ultrasonic packs were placed in the contaminated spaces when setting up the scenario.

  Another example of CAMSIM use is shown in Figure 3, searching to detect residues on clothing. Once the HAZMAT team have withdrawn from the scene the individual members can be checked for contamination. Personal contamination is readily

simulated using the electromagnetic packs. Their decontamination can then be supervised, and the simulated residue of any decontamination can be remotely controlled by the instructor if it is decided decontamination was not carried out effectively.

Figure 3. Example CAMSIM use during training.

- Current Target audience:

  - Target audience is users of CBRNE detection/identification equipment, specifically CAM equipment with regard to the CAMSIM device (e.g., HAZMAT teams).
  - It can also be used as a support tool for other training/exercising audiences, such as training related to airborne hazardous chemical release.
  - Current users in the US include: US Army, US Army National Guard, Reserves, US Air Force, Air National Guard, Air reserves, US Marine Corp, US Navy, National Security Agency, and Department of Justice.

- Potential equipment and/or facilities product can address:

  - Chemical Agent Monitor (CAM) operational equipment.
  - The technology can be, and has been, adapted to simulate virtually any hazardous material detector (CBRNE), such as Hapsite M22 ACADA, Multi Rae PID, JCAD Chemsentry, SAIC Small CAD, ADP2000 etc. The technology can also simulate radiological hazards.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  CAMSIM provides hands-on training in the operation and use of CAM equipment during field training and exercising. In addition, it facilitates the simulation of practical CBRNE incidents, permitting multiple look alike detection equipments to be used within the exercise such that they will respond exactly as in a real incident (identification of class, actual agent / substance and response to false positives as appropriate) without the need to use any form of hazardous material. The systems also collect data to indicate student errors, enhancing the effectiveness of training and exercising.

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   The components primarily consist of the simulated CAM equipment. In addition, ultrasonic transmitters and magnetic sources are used to simulate the dispersing contaminants. The CAMSIM simulator is sensitive to these, functioning in a manner similar to the actual CAM equipment in response to actual contaminant sources.

   A remote instructor/facilitator unit is provided, enabling the instructor to control the contaminant source in real time (e.g., decrease level, remove contamination, wind effects).

2) Large multi-station system, or based on individual PCs?

   Neither. CAMSIM is hand-held equipment, similar to the actual equipment.

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   Each system is stand alone; simulator and simulation sources are supplied as complete systems, along with the instructor/facilitator remote device.

4) If simulation models are used, what is the basis of the data and/or distributions used?

   N/A

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

   N/A

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

N/A

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

   N/A

b) Processor speed (in MHz):

   N/A

c) Memory (SDR/DDR):

   N/A

d) Free disk space:

   N/A

e) Internet connection speed (if any):

N/A

f) Display adapter:

N/A

g) CD-ROM speed:

N/A

h) Optional accessory requirements:

N/A

3. Describe the user interface characteristics:

The user (student) interface is identical to that of the operational equipment (i.e., a hand-held detection device, with device-specific physical characteristics). The operation procedures of CAMSIM are identical to those of the actual CAM equipment (e.g., turn on, warm-up time, procedural steps to configure equipment, sensor clearing time, etc.).

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Each CAMSIM unit (i.e., each simulating a single CAM unit) is used by one person. Any number of CAMSIM units could be used simultaneously, one per student. For example, a all members of a HAZMAT team may use units simultaneously, as part of a team search.

b) Custom/proprietary hardware required? If so, identify:

The CAMSIM is, itself, custom/proprietary hardware.

5. Describe any user HELP features:

User manual addressing the features and operation of the CAMSIM. This document compliments the operation manual and other operating procedures documentation of the operational CAM equipment.

The operational CAM equipment provides readout information to the user/operator. The CAMSIM provides the same information.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

CAMSIM records data throughout the exercise, about the type, sequence and timing of student actions. It automatically determines student errors by comparing student actions with

built-in operating doctrine (i.e., comparative differences between the users actions and the in-built doctrine). The student error data can be displayed on the CAMSIM by the instructor/facilitator when desired.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

A comprehensive user manual is provided.
User training can be provided if required.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

System teaches the correct use of WMD detection and identification equipment, in accordance with operational doctrine. It can also be used in support of wider ranging training, such as Hazmat team search/detection/identification and decontamination procedures.

The training curricula (and training and exercise scenarios) would be provided by the user organization; they are not a part of the CAMSIM package.

b) Exercise/scenario length/time(typical):

System is very flexible, with typical exercise/scenario lengths of 30 minutes to 1 day or more, depending on what the instructor decides. That is, CAMSIM has the capability to support long scenarios. But, the scenario length is determined by the user organization and/or instructor as part of the training/exercising curricula.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes, it is directly applicable to counter-terrorism training/exercises. Its applicability spans the range of tasks addressing CBRNE, from specific equipment operation (e.g., CAM), to team search/detection/identification/source-control activities, to decontamination and other related activities.

Whereas the CAMSIM is specifically intended to support CAM related training/exercise activities, this technology would be equivalently effective in supporting training/exercises activities related to other sensing equipment (e.g., Hapsite).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

CAMSIM has been used in many exercises by the US Army, US Army National Guard, US Air Force, Air Nat Guard, Air reserves, US Marine Corp, US Navy, National Security Agency, Department of Justice and many other organizations.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Yes, curricula do exist, although they are not explicitly a part of the CAMSIM product. Appropriate curricula are resident with the many users of CAMSIM (e.g., US Army SBCCOM). The curricula are not provided as part of the CAMSIM simulator.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Procedural actions the student performs using the simulated CAM equipment are monitored by the CAMSIM, and compared with established doctrine for equipment use (i.e., via the CAMSIM internal software). Deviations from this doctrine are recorded as errors in the internal simulator log. The instructor can access the recorded error log at any time during the exercise, or after conclusion of the exercise (i.e., immediate or delayed feedback). Using a job aid, the instructor can read the coded error log on the CAMSIM display; as many as 24 errors may be recorded.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

US Army SBCCOM have developed a CD ROM based guide which is available free of charge to any US Government entity.

Argon provides a CAMSIM operations guide for instructors. They also provide example product use information on CD media.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The contaminant source can be remotely controlled in real-time by a wireless hand-held instructor device, with an operating range of about 15 feet. With this remote device, the observing instructor has 5 major control functions:

- Manipulate the contaminant reading strength the student gets on the simulated CAM equipment, reflecting the strength of the contaminant source. For example, by reducing the reading strength the student will receive at any time, the instructor can control for dispersion and persistency of the source.

- Control for partial or full decontamination of the chemical agent (based on observing actions of the students). For example, upon observing an inadequate decontamination process, the instructor could remotely reduce the reading of the simulated chemical agent, but not eliminate it altogether, thus simulating a residue remaining. Conversely, if the instructor is satisfied with the decontamination process, the source of contamination can be eliminated entirely (no reading on the CAM equipment when the students return to check the results of decontamination).

- Simulate the effects of wind direction, such as when an individual is using the simulator to simulate contamination of a second individual and has not ensured appropriate orientation of the two parties relative to the wind direction.

- Scenario reset function.

- Low battery reading (control of simulated reading on equipment).

Errors (differences between student actions and doctrine) are automatically recorded by CAMSIM, and available for instructor review at any time during or following the exercise. See item "b" under "3. Instructional Attributes" above for additional information.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

CAMSIM can be customized by the manufacturer. Time and cost would be dependent upon customization required.

Exercises can be developed or modified by the instructor with ease and in minutes, without the need to refer to the manufacturer.

Advances in technology since the original CAMSIM development have resulted in the use of digitally coded simulated contaminant signals to more realistically simulate the presence of different substances and potentially interfering readings. This enables more sophisticated training, such as the use of a CAM for initial detection and gross classification, followed up by the use of a more sophisticated detector (e.g., Hapsite). Other types of detection and identification equipment simulations have been developed, and are available as COTS, addressing a range of CBRNE agents.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The instructor deploys simulation sources in various physical locations as desired, in accordance with the exercise/scenario. A typical exercise can be set up in ten minutes.

The CAMSIM unit itself does not require any special setup for an exercise.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Depending upon simulator version, immediate or AAR feedback is available, addressing student errors. Student use of equipment is monitored and compared with correct doctrinal use of equipment (See item "b" under "3. Instructional Attributes" above for additional information).

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
1	CO (commercially owned)	3	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual*	3	Scenario replay
1	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
3	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
3	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
3	Non-specific		**Interconnectivity**
1	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
1	Generic	3	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* One CAMSIM unit would be used by one student. However, since multiple CAM units may be used by multiple responders in an incident, multiple CAMSIM units may be used by multiple students during a training/exercise scenario.

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
3	Operational	1	Hands-on
3	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders

1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
3	Biological*		
3	Radiological*		**Training Type Supported**
3	Nuclear*	1	Equipment Training
3	Explosion*	1	Awareness
		1	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	1	Drills
0	EMA	0	TTX
1	Fire	2	FE
0	Govt. Administrator	1	FSE
1	Health Care	2	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
0	Public Safety Communication		
0	Public Works		
1	Transportation		
1	Private Sector		
	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* The technology used in CAMSIM, as well as similar products available from Argon Electronics, will support this type of WMD event.

4. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		

1	Relatively Easy		
	Difficult		
	Requires trained support staff		

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
3	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
2	Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
2	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
2	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
3	Distributed, collaborative, decision-making environment
1	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)

2. Does the cost apply to: (choose one)
   d. Product

3. Product (content) configuration, as priced, is: (choose one)
   e. Standardized

4. What are the prices (in $USD) according to type: (fill in all applicable)

   CAMSIM price is typically $11,000.00.
   Other simulators somewhat similar to CAMSIM, for similar types of training and exercising, are typically priced from $5,000.00 to $16,000.00. Examples include Hapsite

(available now) M22 ACADA (available now) Multi Rae PID, JCAD Chemsentry, SAIC Small CAD, ADP2000.

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase		$ 11,000.00		
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, &GAMES

Note: This survey was completed with input from Defense Group Inc., and substantially reflects their judgment of system capabilities. The Master Scenario Events List (MSEL) functionality described herein is supplemental to the version reviewed, and is available as a free upgrade from Defense Group Inc.

A. Basic Product Information

Name of Product:

Chemical Biological Response Aid (CoBRA®)

Developer: Defense Group Inc.

Contact information: Brad Gardner
Vice President, CoBRA Division
Defense Group Inc.
2034 Eisenhower Ave., Suite 115
Alexandria, VA 22314
Telephone: 703-535-8720
Email: brad.gardner@defensegp.com

Additional Contact information: CoBRA Technical Support
Telephone: 703-535-8720
Toll Free: 877-233-5789
FAX: 703-519-8511
Email: cobra@cobraguides.com

Website: http://www.cobraguides.com Product status (version in use): v 2.0

Date of Evaluation: 10/15/2003

Source(s) of Evaluation: *check all that apply*

X Observed Product in use during a training or exercise
Observed Demo
X Played/Used product
Attended Briefing
X Reviewed CD-Rom or other software
X Reviewed Website
X Spoke/emailed with POC
X Interview(s) with Product Users (please paste into the end of this document)
X Product developer filled-in evaluation form
X TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
X	CD-Rom
X	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  CoBRA® is an operational tool for emergency incident planning and response. It combines reference materials, checklists and reporting mechanisms into a single software package.

- Current Target audience:

  The target audience includes the range from first responders (including Fire/HAZMAT, Law Enforcement, Emergency Medical, National Guard WMD Civil Support Teams, Bomb Squads, and Forensic Investigators) to emergency managers at local, state, and federal levels. It is currently in use for planning, response, training, and exercise management.

- Potential equipment and/or facilities product can address:

  The reference material addresses personal protective equipment (PPE) for a range of chemical and biological threats.

- In one paragraph, describe how this product is potentially relevant to ODP's T&E program?

  The content is directly applicable to WMD-related training and exercising because it includes training content and emergency procedures relevant to chemical and biological accidents or attacks. Content includes reference material on chemical, biological and explosive agents, and links to the CAMEO® (Computer-Aided Management of Emergency Operations) database of 6,000 hazardous chemicals and 80,000 synonyms and product names for determining appropriate PPE, First Aid, and response procedures. Emergency procedures include standard operating procedures (SOPs) published authoritative federal sources on such subjects as: Explosion and Bombing Scene Investigation, Emergency Response Guide, On-Scene Commanders Guide, and Medical Management of Biological Casualties Guide. Checklist and resource functions in the software can assist response planning by identification and mitigation of risks. The system includes an Administrator toolset that enables the user to create custom versions of CoBRA® focused on specific training or exercise objectives. Additionally, the automated data logging capability can be used to automate the capture of exercise evaluator data for immediate inclusion in exercise hotwash or after action reports. A

MSEL injection tool is available in the CoBRA® systems currently fielded by ODP, which allows exercise managers to compare exercise injection times with response times or time-tagged evaluator observations as part of the incident report.

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   CoBRA® is software that consists of guides, interactive tools, SOPs, response action checklists, and automatic logging and alerting.

2) Large multi-station system, or based on individual PCs?

   The software is intended for installation on individual PCs (laptops, desktops, or handhelds). Individual PCs can, however, be networked to allow CoBRA® data to be transmitted from on-scene users to higher levels in the Incident Command System structure.

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   CoBRA® is software that requires a PC compatible computer. Although it does not require external features, the system can incorporate chemical data contained in the EPA's CAMEO® database. It also allows communication with operations command and control systems through email via local area network (LAN), wide area network (WAN), or wireless LAN.

   CoBRA® is also offered for sale pre-loaded on a variety of rugged or ultra-rugged laptops, including touchscreen, wirelessly enabled laptops that are rated intrinsically safe (for operation in explosive atmospheres) and can be decontaminated through normal First Responder decontamination procedures. Such systems are not reviewed in this survey.

4) If simulation models are used, what is the basis of the data and/or distributions used?

   Simulation models are not used in this version. CAMEO®, as a separate product, uses ALOHA for modeling airborne dispersion. HOTSPOT, a product of Lawrence Livermore National Lab, also interfaces with CoBRA® to provide calculations of radiological material dispersion.

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

   No other facilities are required to use the product. For training purposes, facilities may be needed as determined by the training coordinator.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 95, 98, ME, NT, 2000, XP, XP Tablet Edition, Handheld PC 2000 (Pocket CoBRA®, or Windows CE (Pocket CoBRA®).

b) Processor speed (in MHz): 133 MHz minimum (333MHz or higher recommended)

c) Memory (SDR/DDR): 32 MB RAM minimum, 64 MB or higher recommended

d) Free disk space: 70 MB minimum, plus 50 MB for CAMEO® RIDS data

e) Internet connection speed (if any): Optional (for interactive incident reporting).

f) Display adapter: Industry standard SVGA

g) CD-ROM speed: Industry standard

h) Optional accessory requirements: Internet connection needed to download CAMEO® from the EPA Web site (www.epa.gov/ceppo/cameo/pubs/cameo.exe). Email notification over local or wide area network (including the Internet) requires necessary communications hardware and software (runs using Internet Explorer v 5.5 or later).

3. Describe the user interface characteristics:

The user interface is a Windows type screen with drop-down menus and three sections. The left side of the screen contains a tree view of all the folder functions. The right side of the screen is the data window that displays the pertinent function or reference information, while the lower section of the screen is the incident status window. Navigation is accomplished by means of mouse clicks or screen touch on icons, menus and scroll bars. Most buttons and icons are made large enough to be usable on a touch screen computer with a finger press. All chemical and biological database search screens have a common format for ease of use.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

CoBRA® is designed for use by one person at a time, logged in according to a designated user profile (e.g., EMA director, HAZMAT responder, Police or Fire Chief). The system, however, is meant to be deployed throughout an organization or multiple organizations to facilitate communication and recording of actions taken, such that multiple copies of the program would be installed on individual computers.

b) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is required.

5. Describe any user HELP features:

The software contains a User's Guide in the form of an 83-page Adobe Acrobat® file. The publication covers the range of functions, navigation, and administrative issues. The software also comes on a multimedia, interactive training CD or DVD that covers all tools and features of the software.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

There are several features of the software that capture information, either automatically or manually input by the user. Automatic data capture and time stamping occurs for user ID and role, incident log-on, and all actions taken within CoBRA® (guides, SOPs or tools consulted, email notifications). Manual user input for response action checklist entries, and for incident reports are also recorded and time stamped. Logs of all user activities for each incident can later be combined to reconstruct incident response over time for an entire organization.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

All software is shipped on a CD that includes a multimedia training package. This package covers all CoBRA® software tools and features. For customers purchasing the CoBRA® Response Kit (the ultra-rugged laptop with a variety of peripherals for field use), a multimedia training DVD is included which also provides training on all hardware included in the Response Kit (laptop, printer, scanner, GPS, digital camera, power inverter, battery charger, CD burning software, GPS software, and CoBRA® Software). Defense Group Inc. also offers a variety of instructor-led training packages on the application software and Administrator Tools, as well as their bundled software / ruggedized laptop products. These courses have been presented to a variety of Response Agencies using the software around the country under an existing FBI contract. The standard user familiarization course comprises four hours of instruction, with an option for an additional tabletop practical exercise to test the user's new skills.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

CoBRA® Guides are published documents from authoritative sources that provide background information, data, and general guidelines for first responders and investigators, in simple text, Adobe Acrobat® PDF, or hyperlinked HTML formats. The user can access these files within CoBRA®, but cannot edit them. The user can, however, add or remove data through the CoBRA® Administrator Tools. Guides include:

- Forensic Guides include:
    - DOJ Fire and Arson Scene
    - Evidence Guide
    - DOJ Explosion and Bombing Scene Investigation Guide
    - DOJ Death Investigation Guide
    - DOJ Crime Scene Investigation Guide
    - DOJ Eyewitness Evidence Guide
    - FBI Forensics Handbook is also included.

- DOT Emergency Response Guide (ERG) 2000
- Jane's ® Chem-Bio Handbook
- FBI NDPO On-Scene Commander's Guide for Responding to Biological/Chemical Threats
- USAMRIID Medical Management of Biological Casualties Handbook
- USAMRICD Medical Management of Chemical Casualties Handbook
- AFRRI Medical Management of Radiological Casualties Handbook.

Tools allow the user research new information or procedural guideline by entering data or observations into the system, which then performs a specified function. This utility allows quick search and retrieval of published or archived information, including:

- Material Safety Data Sheets (MSDS) for hazardous materials of all types (including military chemical agents, and biological agent simulants).
- Response Information Data Sheets (RIDS) data comes packaged with the EPA's CAMEO® hazardous material planning software.
- Agent Identification Tool – allows input of observed symptoms to identify the most likely causal chemical agent category.
- ERG2000 – searchable database format version of the DOT ERG2000.
- Chemical Compatibility Tool - search for PPE breakthrough times based on Kappler and DuPont manufacturer data
- NIOSH Pocket Guide – Searchable database version of the NIOSH "Green Book"
- National Fire Protection Association (NFPA) 704 Placard Tool - allows interpretation of the NFPA 704 marking system (colored placard) which is the fire service standard for indicating general hazards associated with various chemicals.
- PPE Tool - search the CAMEO® database for appropriate PPE, and penetration times for various hazardous chemicals.
- Technical Support Working Group (TSWG) Vehicle Bomb Card – find evacuation and falling glass distances for various vehicle sizes in open air.
- Blast Effects Tool – find building effects or personnel injuries based on building type and large vehicle bomb threat type
- Glossary – Chem/bio, WMD, forensic and other terms related to emergency response.

b) Exercise/scenario length/time (typical):

Not applicable (dependent on exercise design).

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes, the product is directly applicable for counter-terrorism training or exercises.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

CoBRA® has been used both in real-world deployments (for example, the Salt Lake City Winter Olympics and the 2003 Major League Baseball All-Star Game in Chicago), and for WMD-related counter-terrorism training exercises. The latter include the Pentagon's Misty Court exercise in May 2002 (a simulated sarin attack on the Pentagon), Operation Furies (a simulated chemical attack on the Federal District Courthouse in Alexandria,

VA, held in February 2003), and TOPOFF 2 (a national response exercise held in Chicago and Seattle in May 2003). CoBRA® is also being fielded by ODP to support the conduct of Gateway Response, a large-scale exercise in Newark, New Jersey in November 2003.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

CoBRA® is used as part of instruction syllabi in HAZMAT training schools and as part of the "Win Against Terrorism" course given by the International Association of Chiefs of Police.[7] The Defense Group offers a WMD training course, details of which can be viewed at: http://www.defensegroupinc.com/cobratraining.cfm. CoBRA® software also supports the courses of instruction at the DoD Fire Academy (at Goodfellow AFB, TX) and at the Federal Law Enforcement Training Center (FLETC) in Athens, GA.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The CoBRA® Incident Reporting feature provides a real-time chronological log of activities taken to date during a specific incident. These can be viewed by the user on-scene, and readily transmitted to a separate location (up the chain of command or to a reach-back support facility) using standard e-mail network connections, or runners. The Incident Report can include digital imagery collected on-scene, and electronic reports in standardized formats. This has been used during exercise hotwashes and as the basis for AARs. All AAR feedback and logged data can be deposited into a central database repository and queried by the players for analysis. The system uses the XML standard data format for incident report storage.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The CoBRA® software deployed by ODP includes an 'ODP MSEL Tool'. Through the Administrator Tools, exercise evaluators can update the MSEL data, instructor handbook, scenario data and library, controller/evaluator handbook, and the EXPLAN. It is also possible to modify the Exercise Evaluation Guides based on local plans or procedures being exercised.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The MSEL Tool allows an exercise controller/evaluator to view the planned event list, time tag the completion of injects, and the insertion of comments regarding the MSEL in

[7] http://www.defensegroupinc.com/cobraterror_training.cfm; accessed on 10/15/2003.

the Incident Report they generate during an exercise. The controller is warned as the MSEL inject time approaches, and flagged with a visual cue when the inject is missed.

The MSEL inject log is integrated with the evaluation data filled out in the HSEEP Exercise Evaluation Guides in one central database, allowing controllers, evaluators, and participants to compare inject times to evaluator observation times (which are also time tag logged into the incident report / AAR database). Customization of the application software using the Administrator Tools allows user-specific checklists and standardized report forms to be embedded in the software. This enables the recording of coordination measures and response SOPs, and documentation of the use of these measures during a response.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

CoBRA® provides administrative tools that allows a user with admin privileges to customize role-based information display, data content, and available resources. In addition, any user can set optional email/network settings, folder locations etc. If appropriate user resources are available, the customization process takes only a few minutes to insert a new resource and deploy it to existing users. The system also has a free, open interface standard (XML) in which 3rd party programmers can implement or integrate tools into the software application, allowing for expansion of the system where necessary.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

As of 10-20-03, there exists a ready ODP version of CoBRA® that includes the ODP MSEL tool and all ODP exercise evaluation guides (draft versions as of 10-2003).

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

CoBRA® includes a tool that can merge all CoBRA® incident reports into a consolidated exercise database, showing what actions were taken by all the players who submitted such reports. This includes data logged by exercise players, controllers (such as MSEL injects), and evaluators.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
2	Computer Based Training other than Simulation
	Game
1	Student Learning Aid
1	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	0	Multiple dynamic paths through the product and more than one out come possible
1	Commercially Owned	1	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	0	Scenario replay
2	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)*	1	SME controls AAR
1	Large multi-user team (more than 25 persons)*	0	Does not provide feedback or AAR
1	Multi- Agency Participation*		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
1	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
0	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	0	Applied
1	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)

* With multiple software installations on separate, networked computers

	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Multi-jurisdictional integrated systems
1	Biological		
1	Radiological		**Training Type Supported**
0	Nuclear	1	Equipment Training
1	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
0	Public Works		
0	Transportation		
0	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X High
Medium
Low
N/A

Ease of Use

Easy
X Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

X Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation

1 Tracking participant performance through multiple tries (automation)
1 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:
1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:
0 Simulation Support

Selected FSE Observations: product allows for/can be used for:
1 Remote Observation
0 Enhanced Communication T&E/does it practice/train/exercise communications?
1 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
0 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE ($)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				

Product License (Site)				
Product License (Base System)				
Product License (Terminal)	$2500			
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	$250/year			
Daily Rate and/or Travel				
Instructor Fee		$1000/day plus travel		
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Citizen's SMART Book
ISBN 1-58982-031-2

Developer: Stephen P. Gamache and Pete Presley

Contact information: Steve Gamache
Low.tec@verizon.net
Home (760) 256-1759
Cell (760) 900-4435
Office (760) 380-5313

Additional Contact information:

Website: www.citizenseries.com Product status (version in use): In print

Date of Evaluation: December 18, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- X Played/Used product- Read text
- Attended Briefing
- Reviewed CD-Rom or other software
- Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- CD-Rom
- Related Papers
- X Material from Internet
- X Other: please state- published copy

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

The focus of this book is to distribute information the authors feel every American citizen should know. This includes addressing the threat of terrorism faced by the average American, how to avoid an attack, and what to do if caught in an attack. The information and the avoidance/protective procedures are presented at a basic, but, realistic level.

- Current Target audience:

American citizens (private), over the age of twelve, are the primary target audience.

- Potential equipment and/or facilities product can address:

Individual homes and automobiles, personal protective equipment, communications equipment, food and water reserves, and creating a “safe room”.

- In one paragraph, how is this product potentially relevant to ODP’s T&E program?

This product is very inexpensive and could be used to train private citizens how to react to a terrorist event and how to realistically prepare for one. This text directly addresses various terrorist threats and presents the content in a manner that is very easy to understand as targeted to the general public. This text could be used to train first responders, high school and college students.

The authors, 2 retired U.S. Army master sergeants, have suggested changes they could make to increase its relevancy to ODP’s T&E program. These changes are:

- Describing the function of the Department of Homeland Security. The current edition was written while the Department was still a proposal.
- Reducing the verbiage on the color code system and the various related governmental responsibilities associated with each color. Adding specific recommendations for individuals and families at each color level.
- Adding more detail to that "it doesn't feel right" condition people sometimes experience. We advise people to leave an area "If it doesn't feel right". While we all understand this condition, few people can describe what causes this feeling, and why this feeling is usually accurate.
- Offering several different NBC protective clothing ensembles, such as a rain suit used by golfers.
- Adding a roadside bomb (Improvised Explosive Device) to the "Explosions" section.

C. Technical Attributes:

1) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   N/A

2) Large multi-station system, or based on individual PCs (if applicable)?

   N/A

3) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   Product is stand-alone text. Requires the reader's participation in acquiring the recommended equipment and supplies. All equipment and supplies can be acquired over time with only a small investment required.

4) If simulation models are used, what is the basis of the data and/or distributions used?

   N/A

5) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

   N/A

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*
<u>All below is not applicable as product is a paperback text.</u>

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any):

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements:

3. Describe the user interface characteristics:
Product is stand-alone paperback text and is 108 pages in length. Numerous illustrations and diagrams are used to highlight specific points and present relevant information.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Text could potentially be used to train an individual or large group in a classroom setting.

b) Custom/proprietary hardware required? If so, identify:
N/A

5. Describe any user HELP features:

Product contains a detailed Table of Contents to locate content-specific chapters in the text.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

N/A

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
N/A

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
See outline of text below:

THE TERRORISTS: THEIR TARGETS, TECHNIQUES, AND PRACTICES
- Threat: The Terrorists
- Target: You!
- How They Fight: Dirty
- Narco-Terrorism, Just Business?

HOW THEY CAN STRIKE: NOW AND IN THE FUTURE
- Direct Fire
- Indirect Fire
- Explosions
- Kidnappings & Hijackings
- Nuclear, Biological, Chemical

SURVIVE, MOVE, AND COMMUNICATE: YOUR BEST OPPORTUNITY FOR SUCCESS
- Place & Time is Everything
- Survive
- Protect Your Car
- Be Aware of Your Situation
- Have an Escape Plan

BE PREPARED TO REACT TO A THREAT
- React to a Direct Fire (Gunfire) Attack
- React to an Indirect Fire Attack

React to Explosions: Small, Medium, Massive & Nuclear
React to a Kidnapping or Hijacking
React to a Chemical/Biological Attack
Symptoms of Contamination and/or Poisoning
The HELP Suit
Protect Yourself from Injury During a Chemical/Biological Attack
The SMART Room
Decontaminate Yourself and Your Things

MOVE & COMMUNICATE
Move
Communicate

YOUR SUPPORT CHANNEL
Your Home
Your Family & Friends
Your Community
Contacts at the State and Territorial Level
Your Nation
Contacts at the National Level
The United States Homeland Security Advisory System
The Proposed Department of Homeland Security

HELP SUIT CHECKLIST

SMART ROOM CHECKLIST

SAMPLE COMMUNICATIONS CARD

GLOSSARY

b) Exercise/scenario length/time(typical):

According to authors, 2 hours to read this book.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

No modifications are required. Section B contains changes the authors have discussed including in the next edition.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Text could potentially be used as curriculum itself, or incorporated into existing curriculum.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Revisions or changes to text would have to be completed by authors.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
X	Student Learning
X	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government owned	0	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned	1	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	0	Scenario replay
1	Group	0	Automated summary of data
2	Small multi-user team (up to 25 persons)	2	SME controls AAR
2	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
3	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
1	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
1	Generic	3	Internet
0	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training	1	Knowledge
3	Exercise	2	Applied
1	Operational	3	Hands-on
3	Analysis		
2	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
1	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
2	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	2	Equipment Training

1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	2	Drills
2	EMA	2	TTX
2	Fire	3	FE
2	Govt. Administrator	3	FSE
2	Health Care	3	FSE Reinforcement
2	HazMat	3	Distributed Collaborative Exercise
2	Law Enforcement	3	National Training Exercise
2	Public Health		
1	Public Safety Communication		
2	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

0 High
1 Medium
0 Low
0 N/A

Ease of Use

1 Easy
0 Relatively Easy
0 Difficult
0 Requires trained support staff

Current Applicability to ODP

1 Very
0 Somewhat
0 Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

3 Decision-making

3 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:
3 Simulation Support

Selected FSE Observations: product allows for/can be used for:
3 Remote Observation
3 Enhanced Communication T&E/does it practice/train/exercise communications?
3 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
3 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase		15.00	10.00	15.00
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				

Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

CERRTS (Civil Emergency Reaction and Responder Training System)

Developer: Raytheon Company

Contact information: Kenneth R. Woodall
Business Development
Network Centric Systems
621 Six Flags Drive, Suite 100
Arlington, Texas 76011-6305
817-619-9465 (office)
817-619-9410 (fax)
817-313-1939 (cell)
Kenneth_R_Woodall@Raytheon.com

Technical Support Contact Information: Gary Kueck 817-619-9472

Website: http://www.raytheon.com COTS/GOTS: COTS

Product status (version in use): Version 1.0

A. Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
X	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

	Brochure/Prospectus
X	CD-Rom (Contains marketing presentation that highlights product capabilities)
	Related Papers
X	Other: additional screenshots in electronic form.

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other): Computer driven, emergency response and crisis rehearsal training tool for training Incident Command and Emergency Operations Centers at various echelons of command.

- Current Target audience: Incident Commander/Staff and Emergency Operations Center Director/Staff

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	2	Locale Specific (must be developed)
	Media Scale		**Product Re-Playability**

2	Individual*	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team		
1	Large multi-user team		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
	Equipment		Does not provide feedback or AAR

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

*****CERRTS can be used by an individual participant in a classroom environment or the individual. can access the Mission Planning utility (2D and 3D graphics, digital library, chat room and duplex voice over IP) over the Internet or an Intranet today from his/her home, work place, on the road, etc. In a classroom setting, each student/trainee can operate in total isolation with the Instructor at the Exercise Control Station providing stimulus to each student/trainee. However, the main purpose of the tool is multi-user.

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
Windows-based, menu-driven user interface with view capabilities ranging from god's eye view to 'sniper' field of view, & embedded plume modeling capabilities (model). Multi-player work stations that support 2D and 3D interactive environments (Version 1.0) that allows the Incident Command Team to be immersed into their simulated 'real-world' environment for Mission Planning. Once Mission Planning is completed, the Incident Command and/or EOC Team then executes with 'man-in the-loop' decision making utility on the Mission Execution work station. This includes both a 2D map (Version 2.0 is anticipated to support 3D visualization also) with Alert Terminal that supports all communication functionality inside the scenario (e.g. 9-11 Call Center receiving calls from the public reporting a tanker truck wreck on the interstate.) Visualization of NBC plumes is available on the Mission Execution terminal in 2D.

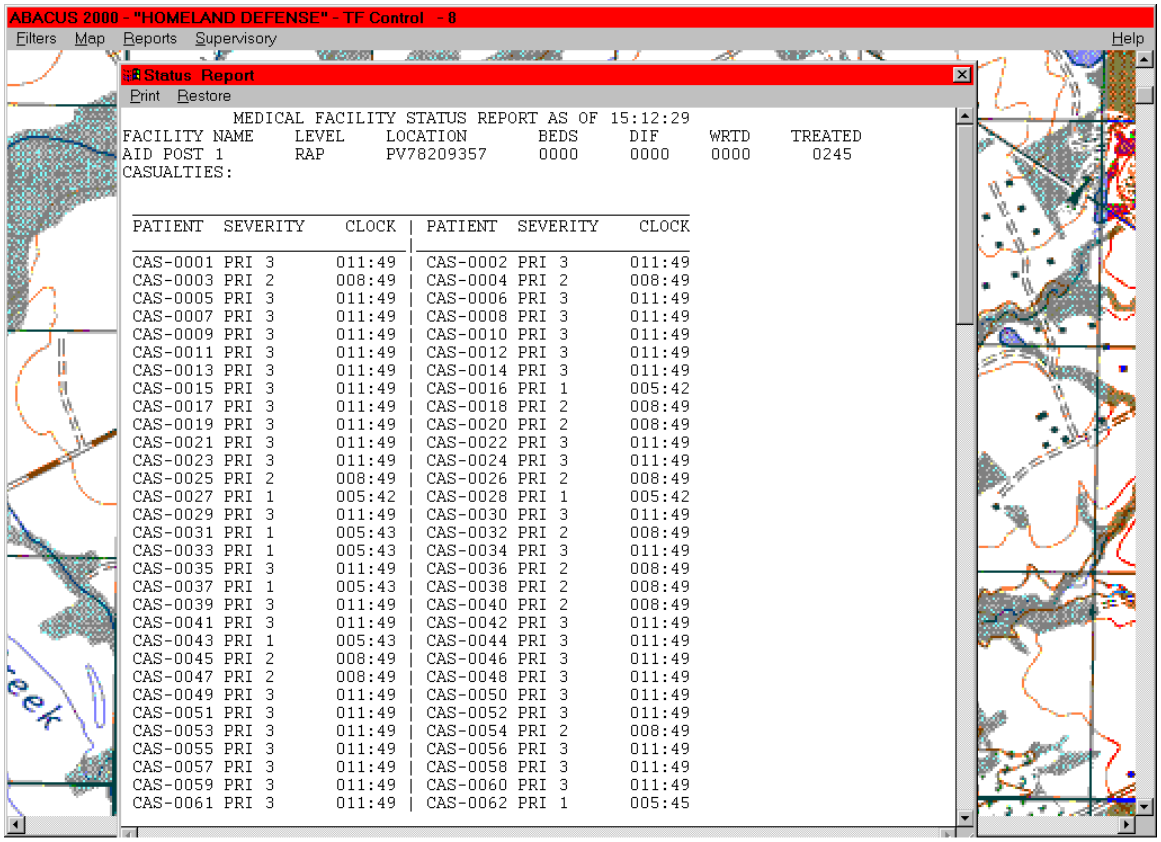
b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment): Stand alone product.

c) Large multi-station system, or based on individual PCs?
Client/Server configuration supporting up to 170 work stations.

d) If simulation models are used, what is the basis of the data and/or distributions used? (NBC model was provided by the US Army, Fort McClellan, Anniston, Alabama in 1994 when the military variant of CERRTS was delivered to the British and Canadian Armies)

e) Web-based application, LAN, or a single computer/system-based application? Web-based: Collaborative Mission Planning -2D, 3D, Digital Library, Chat Room, Duplex Voice over IP.

f) Describe any debriefing after-action reporting support tools: Alert & casualty notifications generated, casualty report (patient identifier, severity, time). Interaction is resolved between individual entities based on validated models and 'not aggregated force/power scores. Screen captures can be downloaded to PowerPoint as required. Interfaces to COTS AAR tool sets also is available (Under a separate contract with a UK customer, Raytheon has been tasked to develop interfaces with COTS based AAR. They are looking to use the tool Virtual EOC as the vehicle to access the AAR. This would allow the user to select an AAR application to run in addition to the capabilities of the Mission Planning suite).



g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? Can be operational in any fixed facility, mobile configuration or in the field. Self-contained (the only requirement for operational use is 110v/20 amp power).

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Windows 2000 and XP and UNIX (SGI)

b) Processor speed (in MHz): 190 MHz or higher for SGI O2 Server and 800 MHz or higher for Work Station Maps and Graphics

c) Memory (SDR/DDR): DDR 256 MB work stations and DDR 512 MB for SGI Server.

d) Free disk space: 5 GB - Server and 6 GB-Work Stations.

e) Internet connection speed (if any): 56K dial-up or High Speed for Mission Planning applications.

f) Display adapter: Video Switch to Plasma big screen displays, SMART Technologies electronic boards

g) CD-ROM speed: 40x or Faster.

h) Optional accessory requirements[5]: Projectors, Plasma displays, Electronic display boards (NFL John Madden type)

5. Describe the user interface characteristics: Windows based menu driven interfaces with prompts for the next operator action.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)? 1-170.

b) Number persons usually trained simultaneously? 1-170.

c) Custom/proprietary hardware required? If so, identify:
One Roll-A-Board Case with retractable handle contains: three Toshiba laptops, One SGI O2 server, one Ethernet switch, one video switch, three mice, assorted wiring and power supplies (total weight: 94 lbs). The cost of this Demo Suite is in the $400-500K range which includes H/W, S/W, Licenses, Cases, Wiring, etc. The customer can supply his/her own equipment with Raytheon providing the specs. This is the minimum configuration that CERRTS can be operational and this configuration is the same as the Exercise Control Station that could control up to 170 player work stations. A configuration that would include also two player work stations would be typically used in a Nunn/Domenci/Lugar Chemical Table Top Series currently conducted by Texas A&M and Titan. This configuration would replace the scripted portion.

7. Describe any user HELP features:
Operator helps can be loaded on the Mission Planning/Virtual Emergency Operations Center work station for easy call up. Also access can be granted via Internet or intranet via digital library utility. I.e., loading of an Operator's Handbook and virtually any other manual, data, specs that are accessed directly from the hard drive or across the internet. This would be especially true on accessing regulations, operations orders, etc.

8. Data recording & storage features (e.g., Scenario events; student performance):
All scenario events, orders via each work station are captured for analysis and playback. All designated key events can be flagged prior to each exercise/scenario.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Typically one half of a day is allocated to hands-on operator training including a small scenario/vignette. Spin-up time for operator training is approximately 30 minutes to one hour. Raytheon prefers providing User Training at the User Site. The cost is variable depending on level of training (user versus an IT person), etc.

2. Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
1	Analysis (e.g. planning)		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	0	Drills
1	EMA	1	TTX
1	Fire	1	FE
1	Govt. Administrator	1	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat		Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
	Public Safety Communication		
1	Public Works		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable): Raytheon offers training from both an IT perspective and an operator perspective.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries): Validated US Army NBC model that factors type of agent, volume of agent released, weather impact on the agent and terrain impact on the agent. Depicted in 2D plume on Mission Execution Work Station

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications): EOC decision-making, ICS process ('human in the loop' decision making in an Immersive 'real world' HLS command and control environment).

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): Scaleable from a one-hour vignette to a multi-day/multi-week HLS exercise.

e) Exercise/scenario length/time(typical): 1-2 eight hour days could be typical. Includes spin-up and AAR.

f) Potential equipment and/or facilities product can address: Incident Command field operations and the operational EOC environments.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? Yes.

h) Are there any constraints on supported exercises or scenarios? Can support scenario's up to map size of 600 kilometers by 800 kilometers.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): Mission Planning may be delivered via web-based applications with both chat room and duplex voice over IP. System supports both classroom utility and a real-time exercise driving both Incident Command and EOC operations. The system has embedded CBT capability that supports self-paced operations including multi-lingual utility. Raytheon's subcontractor, GIST can provide a multi-lingual capability (e.g. Spanish and English) by a 'toggle' switch, which allows the user to select the preferred language. This capability can be resident in the Virtual EOC (Mission Planning Work Station) and accessed via the Internet and/or Intranet. They are considering developing a bi-lingual capability for the Mission Execution side (the actual simulation) if they can find a Launch Customer that required this capability. All the Help tables can be bi-lingual to aid the user.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?* Typically not, however the customer may select a contractor supplied 'puckster' or customer supplied 'puckster' to operate the various workstations.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario. Automatic reactive scenario system. The system does not react to any events unless human intervention via 'order' is involved. I.e., must have input(s) from the Incident Command and/or Emergency Operations Center to allow the simulation to do something (e.g. move five fire trucks from Fire Station # 1 to the Incident Scene).

d) How is training managed (e.g., Testing, certification of completion, etc.)?
Training can be accomplished with 'certification compliance' if desired by the customer. For example the customer may require 'x' number of hours of simulation time that involves various types of training incidents to allow the trainee to receive certification.

e) Does a curriculum already exist? If so, briefly describe its form and content
A formal curriculum does not exist at this time. Typical curriculum would be tailored to the customer needs. Raytheon recommends a formal Training Needs Analysis with the customer to establish training baselines for Incident Command and Emergency Operations Center personnel.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): Human in the loop decision-making for all work stations can be captured and evaluated during AAR. Tool can be halted at any time during the training event to support both educational and training comments and objectives.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Can display: Initial & Current situation; Rendering of a Street, Town or Room. Cut and Paste Entities from Tactical Editor. Real-time displays and immediate play-back is available to the training audience. The Instructor Operator Station can control what is/is not available for each works station.

5. Instructor/controller/evaluator tools

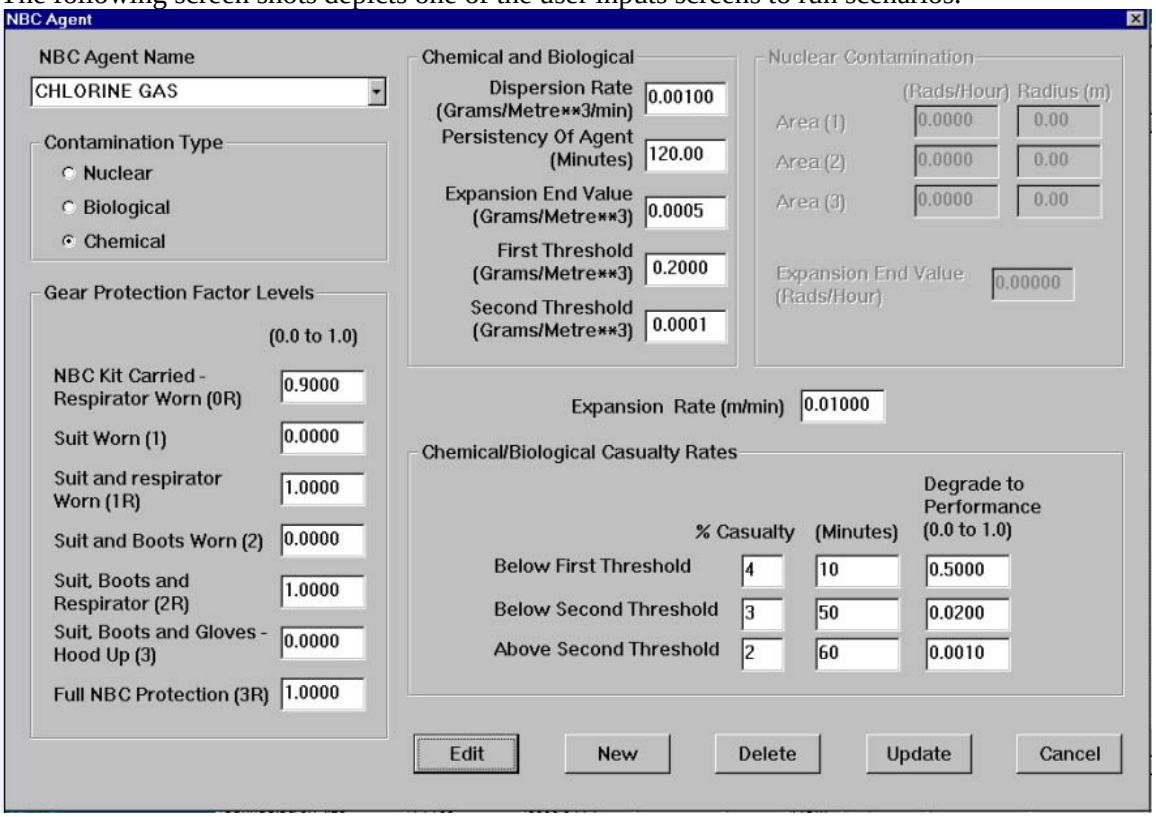
a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)): All the above is available for customer request. CERRTS can be operated faster than real time (e.g. 10 second minutes) to meet fast-time modeling.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): CERRTS can started, stopped, play-back and time jump per training requirements to integrate training with education. This also includes data recording, real-time analysis and immediate playback of 'what just transpired' on any work station. Also, Walk, Drive and Fly Thru Interactive capabilities.

6. Customization

a) Can the product be customized? Either by the customer or Raytheon. Raytheon offers training support in use of the tool.

b) What is the process and how much time does it take to develop a new exercise/scenario? Totally dependent on the size of the exercise audience, level of fidelity, etc… A typical Huntsville, Alabama size of exercise which included data gathering from the city took approx. three months. Actual insertion of the data into CERRTS was five working days after the data was available. Insertion of incidents is dependent upon 'what the training audience' requires training in.
The following screen shots depicts one of the user inputs screens to run scenarios.

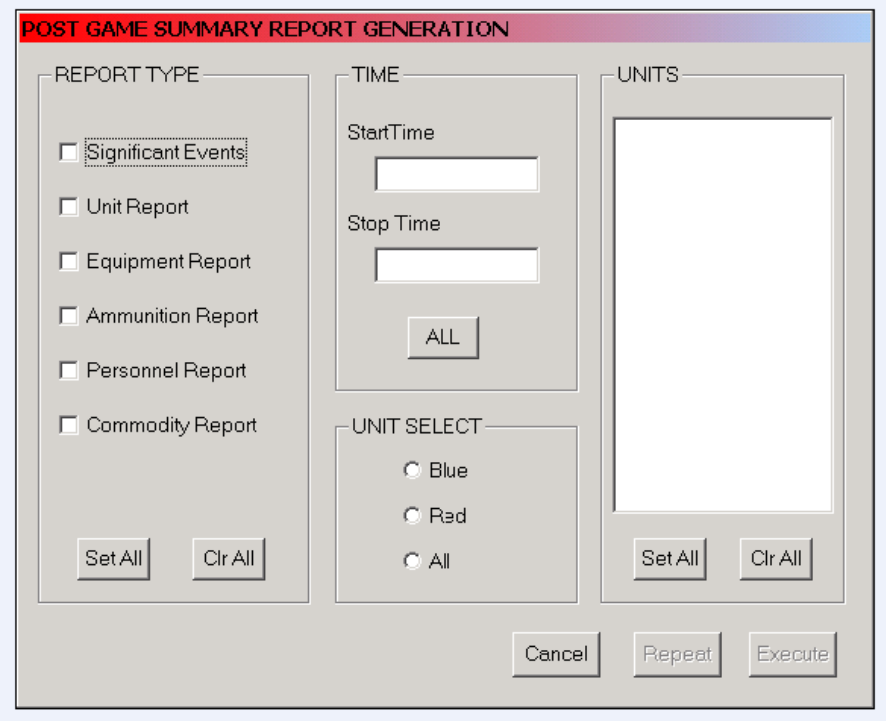


c) What is the process and how much time does it take to modify an exercise/scenario? The exercise/scenario can be modified on the 'fly'. However, 2D and 3D maps and visuals will remain the same as well as the tactical data base. The CERRTS system is flexible to allow changes in the scenario/exercise for the Exercise Director's request and training requirements. Incidents can be introduced as the training situation dictates.

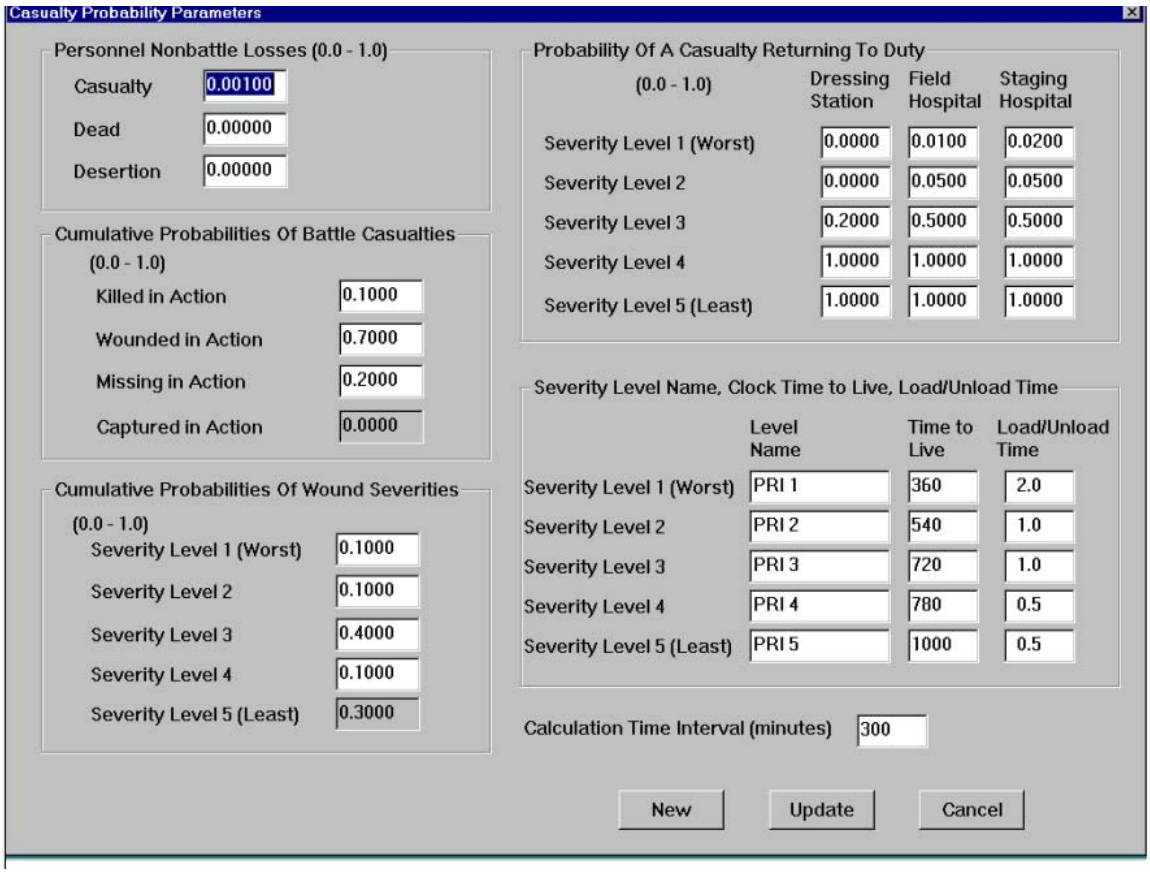
d) What is the process and how much time does it take to setup an exercise/scenario to run? The process is totally dependent upon data gathering assuming the need for fidelity for a given town/city/metroplex/region. CERRTS can operate in a generic mode (Any town USA) or a very specific town (e.g., Huntsville, Alabama). The more specific the data base is for a particular community, then more time is required to generate the database via data gathering (e.g., fire stations, number of ladder trucks, hospitals, number of beds, etc)

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): CERRTS offers collaborative interactive mission planning and mission rehearsal in real time. That is planning and execution can be accomplished by Incident Commander and Staff, EOC Director and staff dynamically. CERRTS permits 'flagging' by individual

workstation of events to be captured during AAR. Can be sorted by time, workstation, etc. Screen captures can be saved and downloaded into PowerPoint for immediate AAR during post exercise evaluation and debriefing.



Sample AAR



E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		Difficult
	Relatively Easy		Requires trained support staff

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making

1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
	Distributed, collaborative, decision-making environment
1	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the costs (in $USD) according to type: (fill in all applicable)
   - Live Exercise Turn Key Support - One time lease for a Homeland Security Exercise - support a one day exercise which includes preparation, Set-up, AAR and Post Exercise Report - $350-$500K
   - Purchase System for Training - Includes Installation, Database, Equipment - $400K-$1.5M Note: Additional Cost for each one day exercise support is $32K.
   - Purchase System for Operational Use during Live Crisis's. Includes Equipment, Installation, Database, Validated Models - $5M. Additional Software Annual Maintenance Fee: $50K
   - Regional Training Center (includes two classrooms and four break out rooms. Includes Facility, CERRTS System, Instructor Cadre, Emergency Operations Training Center (EOTC), Curriculum and Certification - $10M/year

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

CORE

- CORE is a hand-held device used for remote exercise control, status monitoring, and data entry. It is intended for use by instructors and exercise staff (controllers, evaluators, facilitators, observers) who are located remotely from the training/exercise control station (e.g., located among students/participants in the field of a large-scale exercise). It can communicate wirelessly with exercise control, or provide data via a docking station after conclusion of the exercise. CORE software is being developed by the Navy (GOTS); the hardware is COTS (primarily a PDA, interfacing with a PC).

Product is hardware, software, or both?

- Both

Large multi-user system, small multi-user product, or individual-user product?

- Small multi-user product, based on a Personal Data Assistant (PDA).

Focus/specialty of product:

Incident response operational tool/system:
Domestic, military, other users?

Incident response training/exercise tool/system:
Domestic, military, other users?

- Developed to support large-scale exercises, requiring remote instructors, facilitators and/or observers.
- Hand-held device provides information, enables exercise control, and enables data entry from remotely-located instructors or exercise staff. It also can provide information from an exercise control station to a remote instructor/facilitator/observer.

Other operational tool/system (Identify):
Typical users (e.g., Military, consumer)?

Other training/exercise tool/system (Identify):
Typical users (e.g., Military, consumer)?

- Military.
- But, it is a generic device that could be used to support any field exercises … supports multi-station/person exercises.

Functional-area identification of product (Broad range, or specific):

- Broad range … any multi-station/person exercise.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

Rosemary Garris
Code 4691
Naval Air Warfare Center, Training System Division
12350 Research Parkway
Orlando, FL 32826-3275

Developed and owns product.

Contact info ref. technical questions (Person, title, organization, telephone, email):

Rosemary Garris
Code 4691
Naval Air Warfare Center, Training System Division
12350 Research Parkway
Orlando, FL 32826-3275

407-380-4833
rosemary.garris@navy.mil

Contact info ref. buying the product (Person, title, organization, telephone, email):

- Same as above.

COTS/GOTS (circle one).

- GOTS (software). But, uses COTS hardware.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- Modifications would likely be required to tailor the human interface content and application content (and, perhaps, operating structure) for domestic use. For example:
  - User interface content (domestic incident text and symbology);
  - Data collection content for domestic application (e.g., performance measures, comment choices);
  - Simulation items and characteristics;
  - Data transformation and analysis algorithms;
  - Feedback displays;

  cues
  status info … seek out
  PM data … observations & evaluations
    Comments
    Evaluations
    Scripted (selects from set), user-generated … predetermined levels
  Control
    Give commands to controllers
    Direct control of resources (maneuver own ship, etc.)
  Data manipulation, transformation
    PCD, etc.
    Issue commands, …
  Video
    Monitoring … remote
  AAR
    Configure
    Presentation

Product status (Production version in use; prototype in use; under development)?

- Currently under development by the U.S. Navy to support a variety of applied exercises, including full-scale exercises. Initial version will be used to support on-board data collection in March 2003.
- Initial capabilities:
  - Remote control of scenario.
    Interfaces with maneuvering contacts.
    Remote command of simulated resources (e.g., ships).
  - Fixed sequence input/output.
    Prompts/cues provided to instructor and exercise staff (e.g., certain events).
    Remote entry of timing data and instructor/exercise observations.
    Note data entry is currently stored in device for later uploading to data processing PC using a docking station.

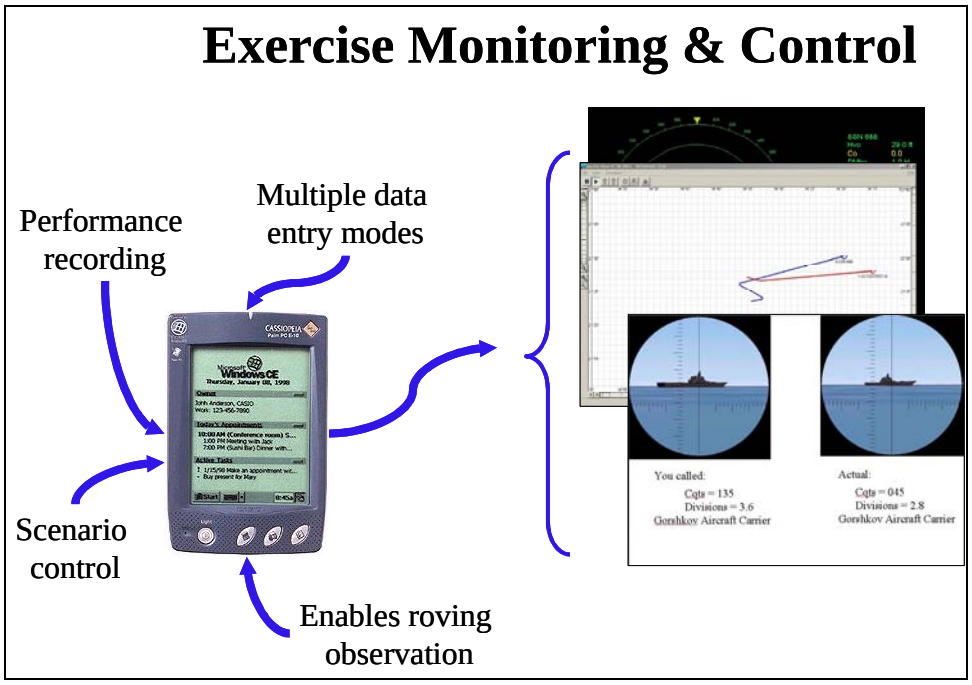
If in use, identify users, types of use:

- U.S. Naval Air Warfare Center, Training Systems Division (development lab).
- Basic Enlisted Submarine School (use in March 2003).

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- Intended as an instructor and exercise-staff tool, to support real-time full-scale exercises.
- Wireless hand-held device to cue evaluators, provide status information, enable remote control of scenario, collect/record performance data, and transfer data to the exercise/analysis computer (i.e., for the AAR, and for subsequent analysis).
- Hardware is a PDA, wirelessly linked, or post-exercise docked, with a PC.
- CORE functionality is based on custom software (using COTS hardware).
- Functions:
  - Provide information to remotely-located instructors and exercise staff.
    - Status, monitoring.
    - Cues.
  - Control simulation in real-time, from remote location. Issue commands.
  - Support observations of roving instructors and exercise staff.
  - Record student performance data, including cued, scripted and unscripted observations; objective and subjective data (including comments). These functions include:
    - Automatic time-tagging of inputs.
    - Data integration.
    - Verbal checklists.
    - Selectable comments and real-time comment development.
    - Solution entry.
    - Exportable data to Excel spreadsheet for further analysis and presentation.
    - Interfaces with other instructional support simulation tools.
  - Support evaluation by integrating data from CORE and simulation sources, for debrief (AAR), post-exercise analysis and reports.



Intended for operations, training/exercises, or both?

- Both … Training/exercises.

  If training/exercises, is it an instructor/controller/evaluator tool, or training media?
    - Instructor, controller, evaluator, observer and/or facilitator tool.

Intended for individual, group or team use[1]?

- Group/team use, primarily.

  If multiple users, identify the range of persons it can simultaneously support (min-max)?
    - One PDA per observer. For example,
      - A single observer can use CORE.
      - Or, as many observers as necessary can use CORE devices.
      - Upper limit probably exists, limited by network hub capacity.
    - All data from multiple users would be aggregated in the central PC (PC that interfaces with CORE users, and processes the data).

  Number persons usually trained simultaneously?
    - Varies, depending on exercise … multiple persons (small > large teams).
    - Can support small & large-scale exercises.

Large multi-station system, or based on individual PC's?

- Small hand-held device (PDA) wirelessly linked to one or more PC's (or stores data in field for later uploading via PC-docking station. Current implementation uses docking station.

  Custom/proprietary hardware required?
    - No … COTS.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
  - Personal Data Assistant (PDA).
  - Desktop or laptop computer.
  - Wireless networking (PDA - computer); docking station if not wireless.
  - Network hub, if multiple units in use.

- Software:
  - Windows CE operating system … on PDA.
  - Windows 98 or more recent version operating system … on PC.
  - CORE software … NAWC-TSD developed (GOTS).
    PDA subset of software.
    PC subset of software.
  - MS EXCEL for data manipulation … on PC.

- Simulation:
  - Interfaces with PC-based simulation and other features.
  - Submarine environment at this time
    E.g., Interfaces to ship handling, visual/periscope/bridge controls and information.

If simulation models are used, identify their qualitative validity level (if possible):

- Ship handling … medium fidelity.
- Visual … high fidelity.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

- Stand-alone (GOTS software and COTS hardware).

  If other hardware and/or software required, or typically used, identify it/them.
  - See hardware and software information, above.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- None.

Web-based application, LAN, or a single computer/system-based application?

- Wireless LAN (single or multiple computer application).

  Can the training be administered over a wide area network or a local area network?
  - LAN

Is an instructor or facilitator needed?

  - YES … intended to assist instructor, facilitator, observer, controller, evaluator.

  If not, how is training conducted (e.g., Individual self-paced)?

  If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Describe unique user interface characteristics:

- PDA … stylus entry, small display, etc.
- Graphical displays (not developed at this point).
- Textual display information.
  - Sentences, phrases.
  - Text entry boxes … courses, evaluation, observations.
  - List boxes … drop down, item selection.
    - Buttons, check boxes (option selection).
  - Browse windows (similar to Windows).
  - Tabular display data (not developed at this point).

Other important product characteristics:

- Portable device.
- Wireless or dockable.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- Purchase PDA, PC hardware.
- License MS EXCEL software.
- CORE software … Free to U.S. Government Agencies. MOU/cooperative agreement would likely be required.

Initial acquisition cost (purchase; licensing fees):

- $600 PDA with wireless capability.
- $1,500 for PC.
- $150 for MS Excel.

Product itself:

- CORE … Free to U.S. Government Agencies. MOU/cooperative agreement likely be required.

Other necessary support, software, equipment:

- None

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- NO.

Number of staff required to setup, and operate product:

- One.

Staff training required to use product (identify briefly ... type, time):

- Minimal time … estimated as 1 hour of time.

Cost for staff training on product (Cost to purchase training):

- $100/hour + travel.
  - If at NAWC … 4 hours staff time (estimate).
  - On-location … 8 hours staff time (estimate).

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- None specific.

Expected costs?

- Nominal … meaning batteries and other supplies to support a PDA and PC.

Product maintenance requirements/recommendations (identify briefly):

- None recommended.

Maintenance costs (Expected or required software, hardware maintenance):

- None.
- Broken units, etc. would probably be replaced.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Windows 98 and later.

Can product be customized? How? Cost?

- Yes.
  - Content modifications.
    Control, processing, scenarios, etc. …. all content.
  - User interface modifications.
- Accomplished via NAWCTSD.
- Cost depends of modifications. Hourly rates for NASWC labor are provided above, and below.

Product modifications required to support counter-terrorism training/exercises:

Modifications:
- Exercise domain content … scenarios, WMD threats, etc.
- Structure modifications to support specific exercise requirements.

Range of potential costs:
- $100 per hour + travel
- Estimated as less than 6 months labor; may be as little as several hours, or a day.

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).
- Windows CE
- 200 MHz
- 32 MB RAM
- 50 MB left on memory card or flash RAM (PDA).

Processor speed (in MHz):
- PC: 400Mhz

Memory :(SDR/DDR)

Free disk space:

Internet connection speed:(if any)

Display adapter[4,5]:

CD-ROM speed:

Optional accessory requirements[5]:
- Compact flash, secure digital or multi-media card.
- Wireless card.

Training/Exercise Characteristics

Product may support training, exercises, or both?
Both.

Potential type of WMD event product can support:
Chemical – YES.
Biological – YES.
Radiological – YES.
Nuclear – YES.
Explosive – YES.

Constraints on supported exercises or scenarios?

Potential disciplines product can support:
Emergency medical services– YES.

Emergency management agency– YES.
Fire– YES.
Governmental administration– YES.
Health care– YES.
HazMat– YES.
Law enforcement– YES.
Public health– YES.
Public safety communication– YES.
Public works– YES.
Global ... or other (Pelfrey) – YES.

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):
Initial/acquisition– YES.
- However, FSE wouldn't be the best way to learn initial/acquisition. But, can support … should be collecting performance measurement data, etc. if such training.

Improvement– YES.
Maintenance/refresher– YES.

Target audience:
First responders/Crisis managers/Incident Commander– YES.
Law enforcement/Fire& Rescue/Hospital personnel– YES.

Potential responder training level(s)/categories product can support:
Awareness – NO. Could be used, but not an efficient strategy.
Performance [Operations] – YES.
Technician [Specialist] – YES.
Planning & Management [Incident Command] – YES.
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - YES.

Potential equipment and/or facilities product can address:
- CORE can support training regarding any equipment and facilities.

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
- Equipment-related training and exercising … can support large-scale exercises.
- ICS-related objectives … Yes.
- EOC decision-making … Yes.
- Team communications and coordination … Yes.

Training content description (what trained), in addition to preceding item (Brief):
- Not applicable to the CORE device.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :
- None specific … But, should be at level that requires FSE

Potential training/exercise types product can support:
Classroom - No.

Individual self-paced - No.
Seminar/workshop - YES. … perhaps.
Drill - YES.
Individual and small-team exercises - YES… small team
Simulation-supported - YES.
Gaming - YES.
Collaborative - YES.
Tabletop - NO…. questionable.
Functional - YES.
FSE - YES.
Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Not applicable.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Supports, primarily, FSE exercises … Scripted and instructor-controlled.

Exercise/scenario length/time(typical):

- Limited by PDA battery run time … requires changing … approximately 2-6 hours
  .

Process and time to:

Develop new exercise/scenario:

- Subject matter expertise … month or less … time to develop FSE.
  - This time may, of course, vary widely. The typical FSE is developed over a 9-month period. The CORE tool will not decrease the typical scenario development time.
- Scenario developed in Word/Excel/etc. … put into CORE.
  - CORE setup … estimate: 4 hours including test/mod.
  - Assuming scenario materials are developed … cues, events, actions, etc. In Windows Office environment.
  - Time will be in scenario development … SME time.

Modify an exercise/scenario:

- Same as above … writing over old stuff.

Setup an exercise/scenario to run:

- 15 minutes … upload a new scenario.
  - Most time is testing.

Does a curriculum already exist?

- No.

If so, briefly describe its form and content:

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

- Various instructor assistance features … see above.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- See above.
- Performance measurement scripts … set beforehand.
- Real-time capture of student/participant evaluation … immediate.
    - Comparison of performance measures vs. standards could be real-time comparison.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- See above.
- Immediate feedback support … performance measures and standards.
    - Could generate graph & show to students/participants
    - Instructor would have information immediately available, to do whatever intervention he/she wants.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- Whatever is developed and associated with scenario. None have been developed to date.
- Could have access to whatever is available in exercise PC.

HELP features (Briefly identify):

- None at this time.

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- User guide will be provided.
- Scenario conditions & events … provided … see above.
- MSEL support.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- CORE can support whatever information is available in the exercise control computer.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

- Generate data that will be used during AAR.

Data recording & storage features (e.g., Scenario events; student performance):

- Remote o observations of instructors and/or exercise staff, recorded in CORE or transmitted to exercise controlling PC for recording.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Not in CORE itself … these tools would be in the exercise computer (e.g., EXCEL and other data analysis tools).
- May have some analysis features in CORE (e.g., performance standards, graph, etc.). These are not currently in CORE.

Training/exercise fidelity:

- Depends on the exercise computer … not a purview of CORE.

  Environment (including situation/scenario):

  Hardware:

  Information (including interaction with other persons):

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

CAMEO (Computer-Aided Management of Emergency Operations)

Developer: NOAA OR&R (National Oceanographic and Atmospheric Administration, Office of Response and Restoration)
EPA CEPPO (Environmental Protection Agency, Chemical Emergency Preparedness and Prevention Office)

Contact information:

CAMEO can be downloaded from the EPA web site:
http://www.epa.gov/ceppo/cameo/request.htm

Additional Contact information:

Internet: General support: http://www.epa.gov/ceppo/cameo/shoot.htm

EPA CAMEO regional: http://www.epa.gov/ceppo/cameo/regcont.htm

Email: EPA support: userrmp.usersupport@epcra.org

NOAA support: orr.cameo@noaa.gov

Telephone: NOAA: 206/526-6317

Website: http://www.epa.gov/ceppo/cameo/request.htm
http://www.epa.gov/ceppo/cameo/

Product status (version in use): V 1.0

Date of Evaluation: December 2003

Source(s) of Evaluation: ***check all that apply***

Observed Product in use during a training or exercise
Observed Demo
Played/Used product
Attended Briefing
Reviewed CD-Rom or other software
X Reviewed Website
X Spoke/emailed with POC
Interview(s) with Product Users (please paste into the end of this document)
Product developer filled-in evaluation form

TLI team modified evaluation form

Materials in our Possession:

Brochure/Prospectus
CD-Rom
X Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  CAMEO was originally a data base and data base management methodology for cataloging and addressing hazardous chemicals. Today, CAMEO is a system of software applications used to plan for and respond to chemical emergencies. It includes national data (e.g., data base of hazardous chemicals), and local data entered by local authorities, such as detailed data about local facilities (e.g., chemical plant blue prints; hazardous chemical transportation routes) and local demographics.

  The CAMEO application contains a chemical database of over 6,000 hazardous chemicals, 80,000 synonyms, and product trade names. CAMEO provides a search engine that allows users to find chemicals instantly. Each chemical is linked to chemical-specific information on fire and explosive hazards, health hazards, firefighting techniques, cleanup procedures, and protective clothing. CAMEO also contains basic information on facilities that store chemicals, on the inventory of chemicals at the facility (Tier II) and on emergency planning resources. Additionally, there are templates where users can store required EPCRA (Emergency Planning and Community Right to Know Act) information. CAMEO also connects the planner or emergency responder with critical information to identify unknown substances during an incident. The CAMEO system provides tools to answer the following questions:

  - What hazards are at this site?
  - Where is the hazard located?
  - What is the chemical?
  - What specific hazard(s) does it present?
  - How can the hazard be mitigated?

  CAMEO has been enhanced to provide emergency planners with a tool to enter local information and develop incident scenarios to better prepare for chemical emergencies.

  CAMEO also supports regulatory compliance by helping users meet the chemical inventory reporting requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA, also known as SARA Title III).

  The typical sequence of tasks using CAMEO are presented in Figure 2.

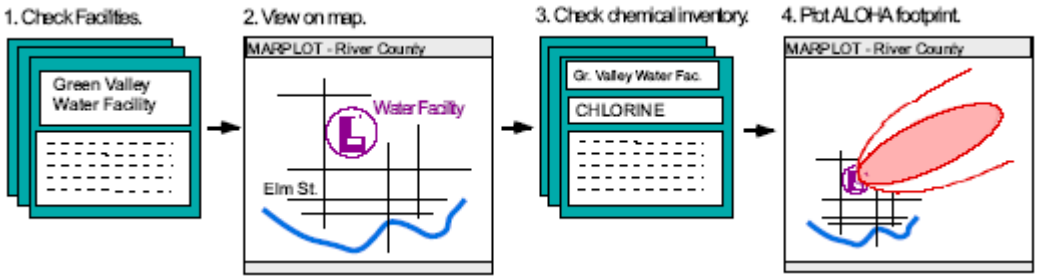


Figure 1. A sequence of tasks in CAMEO: viewing a facility's record; viewing its map location; viewing its chemical inventory; assessing a release scenario in ALOHA and MARPLOT.

CAMEO was developed by EPA's Chemical Emergency Preparedness and Prevention Office (CEPPO) and the National Oceanic and Atmospheric Administration Office of Response and Restoration (NOAA), to assist front-line chemical emergency planners and responders. They use the CAMEO software tool to access, store, and evaluate information critical for developing emergency plans.

This system came about by integrating the original CAMEO chemical database and a methodology to manage the data, with an air dispersion model (ALOHA), and a mapping capability (MARPLOT). All modules work interactively to share and display critical information in a timely fashion. The CAMEO data base and information management methodology is addressed in this product review. The ALOHA and MARPLOT products are addressed separately.

CAMEO also can be used with a separate software application called LandView to display EPA environmental databases and demographic/economic information to support analysis of environmental justice issues.

- Current Target audience:

Chemical emergency planners and responders are the primary audience. The users include the following groups:

Firefighters
State Emergency Response Commissions (SERCs) and Tribal Emergency Response Commissions (TERCs)
Local Emergency Planning Committees (LEPCs)
Industry
Schools
Environmental Organizations
Police Departments
U.S. Government agencies (e.g., Coast Guard, Bureau of Census)

The following figure (Figure 1) shows the target audience breakdown.

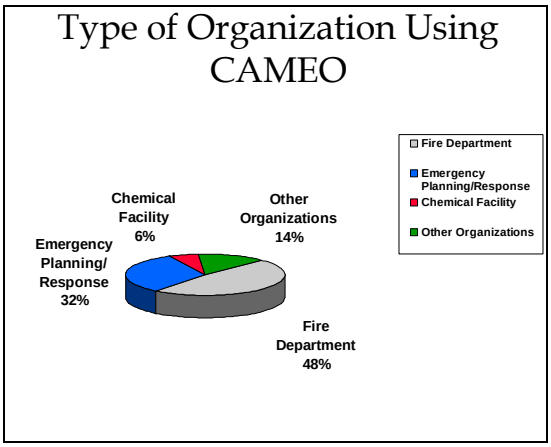


Figure 2. CAMEO target audience breakdown.

- Potential equipment and/or facilities product can address:

  CAMEO is an information source, which can address a wide range of hazardous chemical substances, and also plants/facilities dealing with those substances. Together with ALOHA and MARPLOT, it can provide detailed information to planners and responders regarding the geographic implications of potential hazards, including future projections (e.g., potential impact of dispersion on schools, hospitals, etc.). Otherwise, it does not affect any specific equipment.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  CAMEO is relevant in that it comprises a well known operational tool set developed by the federal government, that is available without cost to responding agencies. Consequently, CAMEO and its associated parts (i.e., ALOHA, and MARPLOT) have received widespread use in the incident response community, in the U.S. and other parts of the world.

  The CAMEO is an operational tool, rather than a training tool. As such, it may be used together with other operational tools (i.e., equipment, software) in support of training and exercising scenarios. In addition, potential exists for the use of CAMEO as instructional media, although this is not its primary purpose. Its use in this manner would depend on the instructional methods employed.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Twelve modules comprise CAMEO, as follows (examples of some module displays are presented to provide an overview of the types of information available and the user interface):

Chemical Library Module - Contains records for more than 6,000 hazardous substances. Each record describes a chemical or substance, including its chemical name, trade names and other synonyms, identification numbers, regulatory information, and labeling conventions. For emergency responders and planners, the most important part of each chemical record is the Response Information Data Sheets (RIDS) section, which contains a general description of the chemical, its physical properties, fire and health hazards, and recommendations for firefighting and non-fire response, first aid, and protective clothing for response.

Facilities Module - Stores information about facilities where chemicals are maintained, including address, emergency contact information, and site plans showing the layout of the facility. The information in the local data base is entered by local authorities, including that in the subsequently identified modules. Any record in this module can be linked to an electronic map, to quickly see where a facility is located in a community. A Site Plan Viewer capability can present a floor plan blueprint about any particular site, as shown in Figure 3.

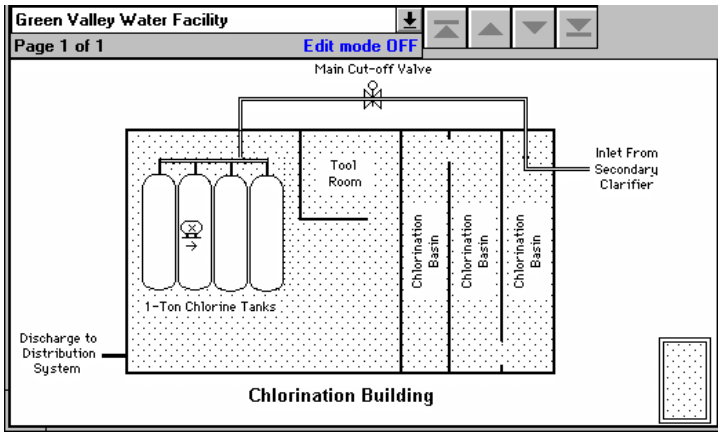


Figure 3. An example blueprint in the Site Plan Viewer: blueprint for the Green Valley Water Facility.

Chemicals Inventory/Transit Module - Maintains inventory records for stored chemicals and those in transit, including descriptions of each chemical's physical state, storage conditions and locations, and quantities routinely on site.

Storage Locations Module - Provides detailed information about the storage of each chemical at each site (a more detailed subset of the Chemicals Inventory/Transit Module). Figure 4 provides and example of a display addressing chemical storage.

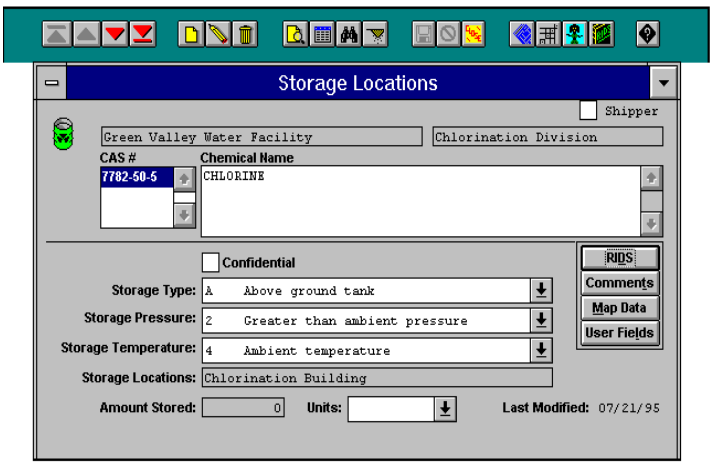


Figure 4. An example display in the Storage Locations Module.

Toxic Release Module - Provides information about routine and accidental toxic releases that have occurred (e.g., at a particular facility). Figure 5 presents an example of a Toxic Release display.

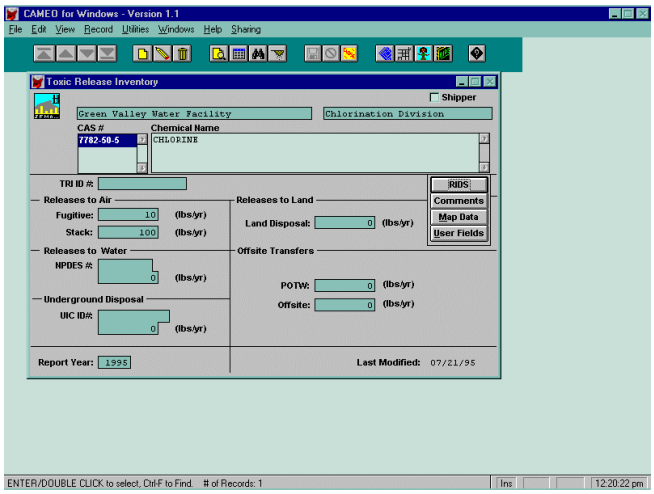


Figure 5. Example of the Toxic Release display window.

Census Data - Provides information characterizing the population around facilities, for emergency planning and response and hazards analysis (see Figure 6). It contains selected 1990 demographic and economic census information from the U.S. Bureau of Census, including the following:

Population characteristics;
Economic and housing characteristics.

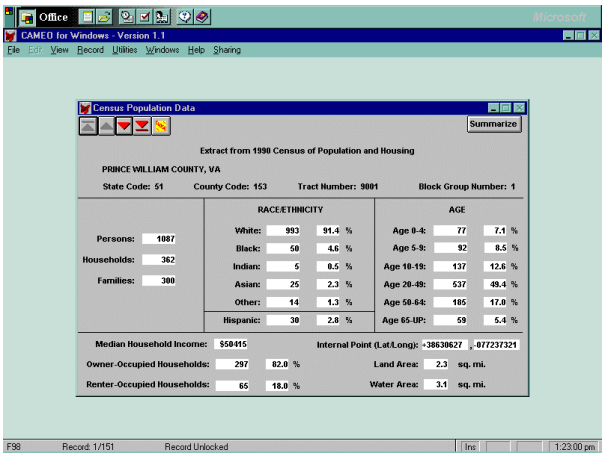


Figure 6. Example Census Data display window.

Contacts Module - Provides a telephone and address directory of important contacts, such as chemical experts, government agencies and organizations, contacts for facilities, response resources, and other people who can help with emergency planning or response.

Screening & Scenarios Module - Assists in performing hazards analyses for a community, using procedures described in the guidebook, Technical Guidance for Hazards Analysis (i.e., estimate the extent of the area around a facility, or other potential spill site, that might be affected by the accidental release of a chemical of concern; plot this area on an electronic map in MARPLOT).

Routes Module - Compiles information about routes commonly used to transport chemicals. It can also be used to maintain information about the particular chemicals transported along a given route, and can link records in this module to routes shown on electronic maps.

Incidents Module - Tracks information about accidental spills of hazardous chemicals, either at fixed facilities or along transport routes. Records in this module can be linked to symbols shown on electronic maps.

Resources Module - Maintains information about resources, such as supplies, experts, and contractors, that may be needed to quickly access during a response, or that are useful to in planning activities. Resources records can be linked to symbols on an electronic map.

Special Locations Module - Keeps descriptions of schools, nursing homes, hospitals, and other facilities that require special protection and consideration during emergencies. Records in this module can be linked to symbols shown on electronic maps

b) Large multi-station system, or based on individual PCs?

CAMEO is software that can be run on individual PC's or Macintosh computers.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

A stand-alone product, with the exception that it requires computer hardware.

d) If simulation models are used, what is the basis of the data and/or distributions used?

CAMEO's Chemical Database sources are:

49 Code Federal Regulations
U.S. Department of Transportation (ERG)
Association of American Railroads
U.S. Coast Guard (CHRIS)
Chemical Abstract Service Registry
National Institute for Occupational Safety and Health (Pocket Guide)
Title III (List of Lists)
National Toxicology Program

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

No other facilities are required.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

The CAMEO system is available in Macintosh and Windows formats.

IBM compatible: Microsoft Windows 95/98/NT
MAC 4.5: System 7.x

b) Processor speed (in MHz):

IBM compatible 486 (Pentium is recommended)

c) Memory (SDR/DDR):

IBM compatible: 8 MB (16 MB or more is recommended).
MAC 4.5: 5 MB

d) Free disk space:

50 MB recommended

e) Internet connection speed (if any):

N/A

f) Display adapter:

VGA color

g) CD-ROM speed:

N/A

h) Optional accessory requirements:

Math co-processor is desirable on MAC's for ALOHA

3. Describe the user interface characteristics:

CAMEO's user interface is based on windows display and mouse/keyboard control interaction. The previous figures provide some examples of information windows; Figures 7 and 8 provide additional examples of the windows type of information displays.

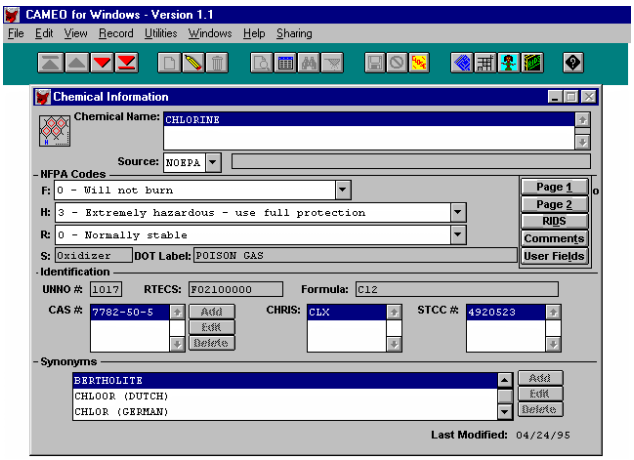


Figure 7. Example user interface window (1 of 2) for the Chemical Data Base.

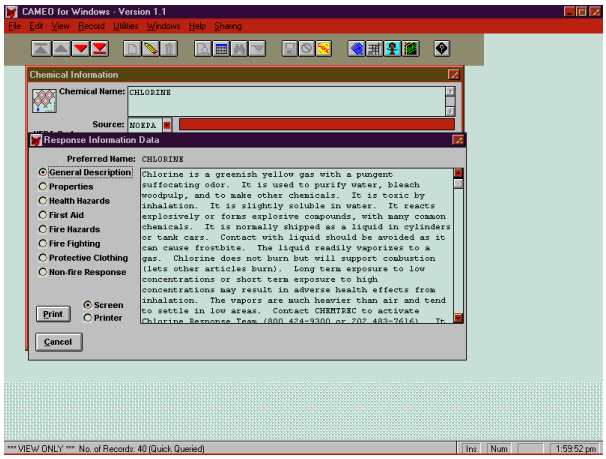


Figure 8. Example user interface of the Response Information Data Sheet.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

CAMEO would typically be used by a single person, interacting via a personal computer. Small groups of users (e.g., 2-4 individuals) may work collaboratively with the system during an incident. And, often, CAMEO is used independently by multiple users during an incident, with each user separately operating the system from their respective computers.

In training, CAMEO is used as an instructor's aid, usually addressing small groups of students.

b) Custom/proprietary hardware required? If so, identify:

None required.

5. Describe any user HELP features:

An html-based Help function is included with the program. Note, the user does not have to connect to the internet to use the HELP feature; it is just accessed via the browser.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

CAMEO records some data during its operation, such as that associated with the Screening and Scenarios Module.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Training materials are available to support CAMEO training. They include:

Course outline, script notes, and detailed script
Presentation slides.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The CAMEO training content addresses CAMEO, ALOHA, and MARPLOT tools. It focuses on their content, use and operation to support emergency planning and emergency response.

Homeland security training content is not provided with CAMEO. It would be provided by the CAMEO user, when CAMEO is used as an instructional aid.

b) Exercise/scenario length/time(typical):

CAMEO has a Screenings & Scenarios module (see summary in section "C.a" above) that functions to make simplified threat zone calculations, as a screening tool to assist planners. This capability is functionally similar to that of the ALOHA product, but to a much lesser degree of sophistication (ALOHA takes many more factors into account).

Nevertheless, scenarios can be developed and run in CAMEO. These are batch process scenarios, yielding information associated with a single fast-time run of the simulation.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The product is directly applicable to counter-terrorism training/exercising, but primarily as an operational tool. However, it could be used as a training/exercise aid, depending on the training/exercising methodology.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

CAMEO has been used in several ways to support WMD training:

- It has been used as an operational support tool by responders (similar to how simulated equipment might be used).
- It has been used by evaluators during exercises, to provide baseline information to assist in assessing responder performance.
- The Screening and Scenarios Module has been used to assist with the conduct of training sessions.
- Various CAMEO capabilities have been used as instructional aids in support of classroom/group types of training.

CAMEO has been used by both governmental agencies and commercial organizations.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

A curriculum does exist for training the setup, operation and usage of CAMEO. It includes the following:

Course outline, script notes, and detailed script
Presentation slides

A CAMEO instructor certification program is offered by both NOAA and EPA. The certification is based on passing an exam. Of note, a person does not have to be certified to teach CAMEO.

Specific curricula for other homeland security training using CAMEO is not provided with CAMEO. The use of CAMEO would typically be integrated with other emergency training, and provided by the training vendor.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The information provided by CAMEO can be used in an operational context, as well as in support of the training and exercising AAR. See section *C. Technical Attributes* for the description and examples of information features.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The CAMEO (Screening & Scenarios Module) interface (windows format and content; mouse/keyboard control and data entry) is specifically designed to facilitate scenario data entry by the user, in conformance with an actual situation or a hypothetical scenario. This is a limited CAMEO capability, however. CAMEO models run in fast time (batch process).

Other CAMEO capabilities used in support of training and exercising are generally not scenario dependent.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

CAMEO addresses local/state data (e.g., chemical facility). These data (i.e., customization) would be entered by local/state authorities.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Less than 15 minutes, typically.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The analysis features are particular to its operational functions, not training or exercising.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
	CO (commercially owned)	3	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	2	Automated summary of data
3	Small multi-user team (up to 25 persons)	1	SME controls AAR
3	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
3	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
3	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
1	Generic	2	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**

2	Nuclear	3	Equipment Training
3	Explosion	2	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

1 High
Medium
Low
N/A

Ease of Use

Easy
1 Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

Very
1 Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making

3 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:
2 Simulation Support

Selected FSE Observations: product allows for/can be used for:
3 Remote Observation
3 Enhanced Communication T&E/does it practice/train/exercise communications?
2 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
2 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)

2) Does the cost apply to: (choose one)
   a) Product

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Free ($0.00). Can be downloaded from the EPA or NOAA web sites.

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Consequence Assessment Toolset with Joint Assessment of Catastrophic Events (CATS-JACE)

Developer: Science Applications International Inc. (SAIC), Defense Threat Reduction Agency (DTRA), and U.S. Federal Emergency Management Agency (FEMA)

Contact information:
Defense Threat Reduction Agency
Consequences Assessment Branch (TDOC)
6801 Telegraph Road
Alexandria, VA 22310-3398
ACEhelp@dtic.mil
Tel.: (703) 325-6106
FAX (703) 325-0398

Technical Support Contact Information:
http://cats.saic.com/
(858) 826-6363

Website: http://cats.saic.com/

COTS/GOTS: COTS+GOTS

Product status (version in use): Version 4.60, September 2001 release.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in TLI Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  CATS-JACE is a decision support system for analyzing the consequences of man-made threats (CBRNE) and natural disasters (earthquakes and hurricanes).

- Current Target audience:

  The target audience includes U.S. government agencies and military commands, state and city emergency agencies, and commercial users.

  Federal government users include:
  - DTRA
  - FBI
  - FEMA
  - National Guard RAID teams
  - Presidential Infrastructure Protection Task Force
  - NASA
  - CDC/ATSDR

  State and local government users:
  - Alabama EMA
  - Colorado EMA
  - Utah EMA
  - NYC EOC
  - Arlington, VA
  - Charleston, SC
  - Orange County, CA
  - San Diego, CA
  - Thurston City, WA
  - West Valley, UT

  Military users include:
  - Army Corps of Engineers
  - Directorate of Military Support
  - Forces Command
  - Pacific Command
  - Pacific Disaster Center
  - Southern Command
  - U.S. Marine Corps

  Commercial user:
  - USAA Insurance

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
1	Instructor/Facilitator Aid: Student Interfacing
2	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	0	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	0	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay *(redisplay)*
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
0	Equipment	3	Does not provide feedback or AAR
			HLA Compliance (High Level Architecture)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

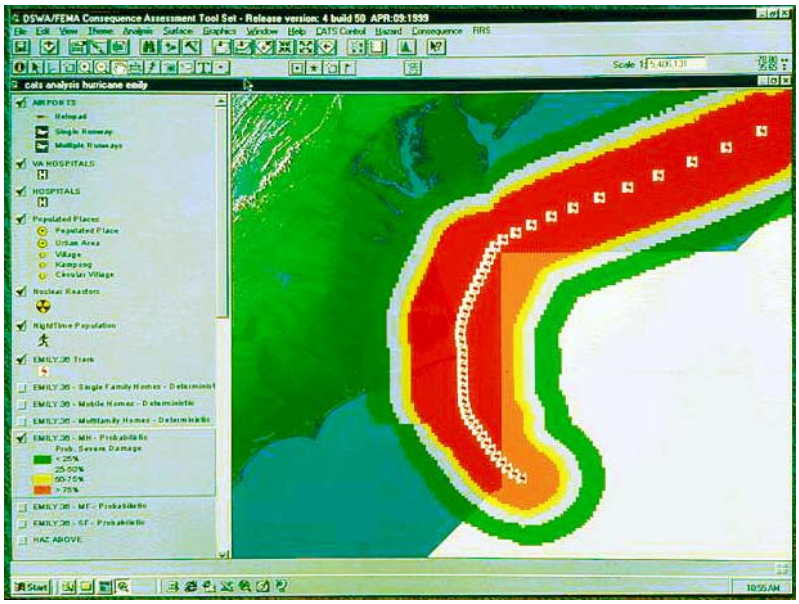
3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The system consists of a graphical user interface (GUI), GIS mapping, simulation, and reporting features. ArcView provides the GIS mapping capability for analysis, and display of predictions, consequence assessments, and resources. Simulation is performed by a large number of modeling packages:

- USGS earthquake ground motion
- Facility motion damage models
- Hurricane and storm surge
- Hazard Prediction and Assessment (HPAC)

- NBC weapons - Comprehensive Hazards Assessment System (CHAS), including Radiation-Induced Performance Decrement (RIPD) ionizing radiation effects
- Chemical hazards propagation (D2PC)
- Toxic material hazard zones - North American Emergency Response Guide (NAERG)
- High Explosive blast damage
- Biological weapons (VLSTRACK)
- Air Transport of Radiation (ATR)
- Residual radiation (NewFall)
- Radiation transmission into 3D structures - Vehicle Protection Factor (VPF)
- Source term determination (ALOHA)



Screenshot of a hurricane track prediction, courtesy of SAIC.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

CATS-JACE is an integration layer that combines access to multiple models through a common GUI. Most access to external software and modeling code is transparent to the user, except for procurement of ArcView. The customer/user must obtain a copy of ArcView from ESRI separately, in order to run CATS-JACE. The user must also provide an industry standard Pentium III computer to install and run the ArcView and CATS code.

c) Large multi-station system, or based on individual PCs?

The software runs on individual PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The technological hazard simulations typically originated from military programs for CBRNE analysis, and are based on the physics algorithms available when developed.

The natural disaster simulations are also physics based. The USGS ground motion model is based upon a digitized geologic rock database, and algorithms for predicting intensity based on location, earthquake source and other factors. The hurricane and storm surge model sources real-time inputs from the National Hurricane Center, the Central Pacific Hurricane Center, the Joint Typhoon Warning Center, NOAA Weather Wire, university Internet servers, and commercial meteorological data vendors.

e) Web-based application, LAN, or a single computer/system-based application?

CATS-JACE is a single computer-based application with external database access via the Web.

f) Describe any debriefing after-action reporting support tools:

There are no debriefing or AAR tools, per se. However, CATS-JACE does allow for generation of a range of reports.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

CATS-JACE is designed to be deployed in the field on a laptop computer. Installation in an office environment will depend on user needs.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Microsoft Windows 95, 98, NT.

b) Processor speed (in MHz): 160 MHz (minimum)

c) Memory (SDR/DDR): 256 MB (minimum)

d) Free disk space: 5.4 GB (minimum)

e) Internet connection speed (if any):

f) Display adapter: Industry standard

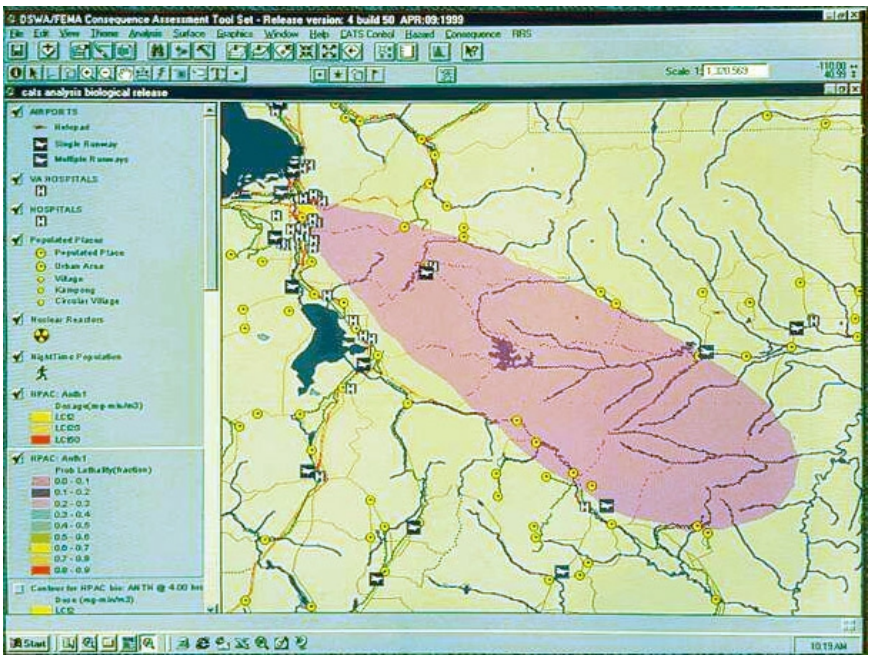
g) CD-ROM speed: Industry standard

h) Optional accessory requirements[5]:

ESRI ArcView 3.1 or later is required. ESRI StreetMap 1.x is recommended. Note that CATS-JACE release 4.60 is not compatible with ESRI Arc8 software products. HPAC 4.0.1 (from DTRA) and ALOHA (from EPA) are optional simulation components. A web browser with 128-bit SSL encryption capability is needed to download HPAC via the Web (after user registration).

5. Describe the user interface characteristics:

The user interface is a graphical, menu-driven program accessed by keyboard and mouse inputs. Outputs are displayed as maps with multiple information layers (e.g., topography, streets, plume, facility locations etc.).



Screenshot of a plume prediction, courtesy of SAIC.

6. If multiple users:

c) Identify the range of persons it can simultaneously support (min-max)?

CATS-JACE can support any number of independent computer installations. Potentially, small groups or teams might be supported by a single installation but will be constrained by the nature of the interface.

d) Number persons usually trained simultaneously?

CATS-JACE is not a training system. Use as part of training would depend on curriculum and training program design.

e) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is required. As a functional part of the system, however, ESRI ArcView software is needed for map displays (for which there is a licensing fee per installation).

7. Describe any user HELP features:

The system provides context-sensitive online Help, and Web-accessible help is supported by SAIC.

8. Data recording & storage features (e.g., Scenario events; student performance):

Not applicable.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

DTRA provides regular, 3-day courses in CATS-JACE for basic and advanced users, and a natural hazards course twice a year that specifically covers modeling earthquakes, floods, and hurricanes. See: http://www.dtra.mil/td/acecenter/td_training.html for the 2003 calendar.

2. Attributes

	Application Environment:		**Content**
2	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	2	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	2	Pre-Training
0	EMS	2	Drills
1	EMA	2	TTX
2	Fire	2	FE
1	Govt. Administrator	1	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
2	Public Health		

0	Public Safety Communication		**Incident Stage Supported**
2	Public Works	1	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
0	Initial Acquisition	1	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Not applicable. Training is user dependent.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

CATS-JACE accesses multiple databases for modeling the consequences of WMD agents, primarily through the HPAC module (see the HPAC product review for details).

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

CATS-JACE was designed for decision support at multiple levels, from first responders to national response planning teams.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

The application may be appropriate for assisting in simulation-supported exercises, or other exercise types depending on planned use.

e) Exercise/scenario length/time (typical):

User dependent.

f) Potential equipment and/or facilities product can address:

CATS-JACE can predict damage to structures caused by natural disasters (floods, hurricanes, and earthquakes).

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

CATS-JACE is directly applicable to counter-terrorism T&E without modification.

h) Are there any constraints on supported exercises or scenarios?

Incorporation of CATS-JACE into a training or exercising program would require the user to adjust to product design limitations.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The range of potential training or instruction delivery methods depends upon user intent. Potential methods may involve classroom instruction, CBT, case study, real-time exercise, among others.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

Training conduct will depend on the objectives and training methodology chosen by the user. CATS-JACE could potentially support self-paced or instructor led sessions.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Not applicable.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

User dependent.

e) Does a curriculum already exist? If so, briefly describe its form and content

A curriculum for training system users is supported by DTRA. Basic and advanced courses cover the entire set of hazard prediction models, casualty and damage assessment tools, and the geographical information system (GIS) ArcView. Population and infrastructure data, as well as other geo-referenced data are also covered.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Not applicable.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Not applicable.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Not applicable.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Not applicable.

6. Customization

a) Can the product be customized? If so, how, and by whom?

CATS is currently maintained and updated by SAIC for DTRA. It is not a user customizable product.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Changes to exercise design are user dependent. Scenario changes, in terms of modifying input variables for recalculating a model may take an experienced user in the range of minutes to tens of minutes depending on complexity.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

There is no vendor support for exercise scenario development as part of CATS-JACE software. The user can produce new or modified consequence assessment models.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

User dependent.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The analysis tools described above are used for consequence assessment and planning based upon real (or simulated) events and natural phenomena. No training or exercise performance analysis tools are incorporated into CATS-JACE.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited

	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
1	Difficult *(to produce accurate models)*		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
0	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)
2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle
3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized

b) Vendor Customized
c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)			$0[8]	$650[9]
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License		$2500[10]		
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

[8] No charge for U.S. Federal agencies or military
[9] Annual subscription fee for State or Local users (includes one training seminar for one user)
[10] Price for required ESRI product bundle (ArcView, StreetMap, and Spatial Analyst)

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS
February 24, 2003

Basic Product Information

Name of Product:

CRISIS

Product is hardware, software, or both?

- Both.

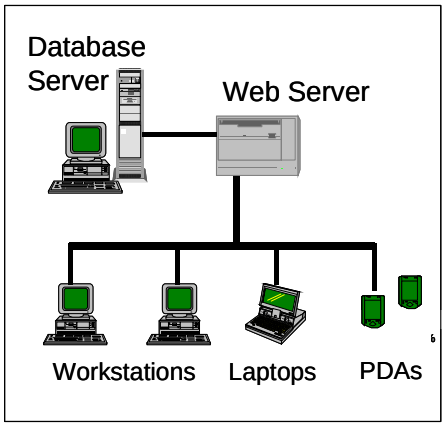
  Off-the-shelf PC's (workstations).
  MS Windows 2000.
  Oracle database.
  Proprietary emergency management software.

- Software. The product is available in two variants, which can be used in combination:
  (a) Thin-client product accesses data from any computer having a browser and network or internet connection (no Ship Analytics software is loaded on the client computer;
  (b) Thick-client product in intended to be used on a local area network (LAN) – additional GIS (Geographic Information System) features are available with this product.

Large multi-user system, small multi-user product, or individual-user product?

- Large & small multi-user system.

  "…supports massive databases and hundreds of workstations".
- Scalable system … small to large.
- The basic CRISIS system configuration is shown below.



Focus/specialty of product:

- Multi-purpose:

  Operational support system to manage disaster response.
  Training and exercise system.
  Planning system for risk management & environmental damage mitigation.

Incident response operational tool/system:

Domestic, military, other users?

- Domestic (primarily)… initial response & management:
  Federal & state governments.
  Foreign governments (may include military).
  Commercial organizations.
- It is used in incident response for applications ranging from oil spill, storm and natural disaster, to police counter-terrorism. Installations include:
  - National level at the National Response Center;
  - State level (State of South Carolina for example)
  - County and large city police applications in New York City and Nassau County.
  - International applications include countrywide systems in the Middle East, large city applications in Europe, and specific site applications such as the Panama Canal.

Incident response training/exercise tool/system:

Domestic, military, other users?

- Same as for above (Incident response).
- With respect to training and exercises, each of the above systems utilizes the training and exercise capacity of CRISIS™ in the development of response plans, alternative strategies, and performance measurement scoring of trainee performance to assure a state of readiness.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Planning system for risk management & environmental damage mitigation. Same as above for operations & training.

- Specific tool systems for operational applications include:
  - Predictive models which include:
    Nuclear release
    Three models of chemical release
    Two models of oil spill release
    Earthquake damage assessment model
    Wildfire model
    Flood models utilizing the Core of Engineers models
  - These models are coupled with countermeasure simulations which allow the evaluation of alternative countermeasures dynamically against the spread of a particular crisis and its impact on layers of GIS and Oracle databases illustrating the impact of the crisis in terms of economic and biologic damage.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Tool systems exercised in the training area include
  - Performance measurement scoring related to:
    Resources expended
    Damage mitigated

Communication frequency
- Embedded performance measurement scoring across measures in terms of the effectiveness of alternative plans.
- The system incorporates statistical analysis tools in its applications.

Functional-area identification of product (Broad range or specific):
- All hazard.
- Decision support.
- Incident response management system.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):
- Ship Analytics, Inc.

Contact info ref. technical questions (Person, title, organization, telephone, email):
- Michael Collins, Chief of Development
  Ship Analytics Inc.
  183 Providence - New London Turnpike
  North Stonington, CT 06359

  Tel: 860-535-3092 Fax: 860-535-0560
  Website: www.shipanalytics.com Email: mcollins@shipanalytics.com

Contact info ref. buying the product (Person, title, organization, telephone, email):
- John Hughes, Vice President of the Crisis Management Division
  Ship Analytics Inc.
  183 Providence - New London Turnpike
  North Stonington, CT 06359

  Tel: 860-535-3092 Fax: 860-535-0560
  Website: www.shipanalytics.com Email: jhughes@shipanalytics.com

COTS/GOTS (circle one).
- COTS.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.
- System has capabilities to support training/exercises today. But, it may have to be tailored, such as implementing specific simulation models.
- Modifications would typically be required.
  - Exercises and scenarios would have to be developed (this would be true of most, if not all, products of this type).
  - Specific simulation models, which are currently available, may have to be integrated into the system. System is designed to facilitate easy integration of desired models.
  - Performance measures, and supporting displays, may have to be developed or tailored to provide enhanced training, and AAR support. AAR capabilities are probably equivalent to, if not better than, most training systems in operation today.

Product status (Production version in use; prototype in use; under development)?
- Currently in use in several countries (according to supplied information; see above).
  - Production version: 5.3

- Under development: 6.0

If in use, identify users, types of use:

- Foreign national governments. Focused on oil and hazardous chemical incidents. E.g., Panama, Egypt, Korea, Russia.
- National Response Center (NRC) of U.S. government. System was loaned to NRC late in 2001. Conflicting reports about the present extent of use of this system by the NRC.
- North Carolina (EOC). Supposed to support an exercise in late 2002 (about now).
- See additional information, above.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- Multi-hazard emergency response / training system. In training mode, it serves as a large-team trainer, with access to the exercise available both within cooperating emergency operations centers, and, if desired, remotely using the Internet as a data communication medium.
- Command Center training focus. Large-scale system designed to support full EOC team in responding to, and managing, an incident. Can support teams of various sizes.
- Consists of multiple consoles (PC's) and large-screen displays. Software is for managing data/information associated with incident response and management. Provides tools for data entry, integration, and display.
- Coincides with FEMA ESF's, NIIMS-ICS functions.

Intended for operations, training/exercises, or both?

- Both

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

- Both.
- Contains capabilities to support instructors/controllers/evaluators (e.g., Exercise Controller Console; monitoring displays).
- Presents operationally-related information to participants (team of trainees), in real-time scenario. Note, user must develop scenarios.

Intended for individual, group or team use[1]?

- Team … intended for.
- Can also be used for group instruction.
- May be used for individual instruction. But, not really configured for this.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- One to the number of workstations that are connected to the system. That is, from a single station to a full EOC team ("hundreds of workstations").

Number persons usually trained simultaneously?

- 10 - 25

Large multi-station system, or based on individual PC's?

- Large multi-station system.
- Uses networked PC's.

Custom/proprietary hardware required?

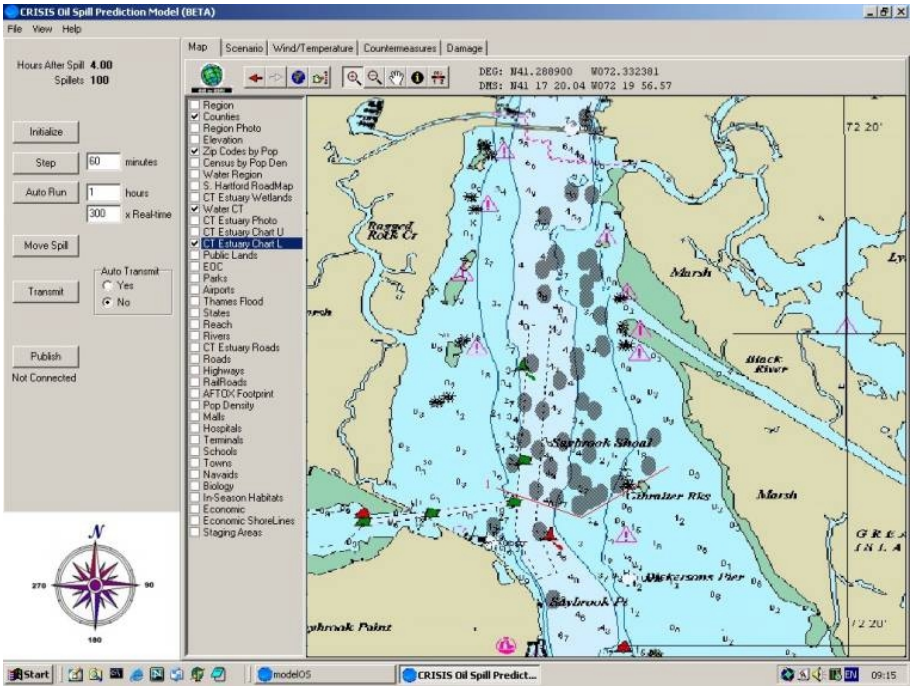
- No. All hardware is commercially available.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

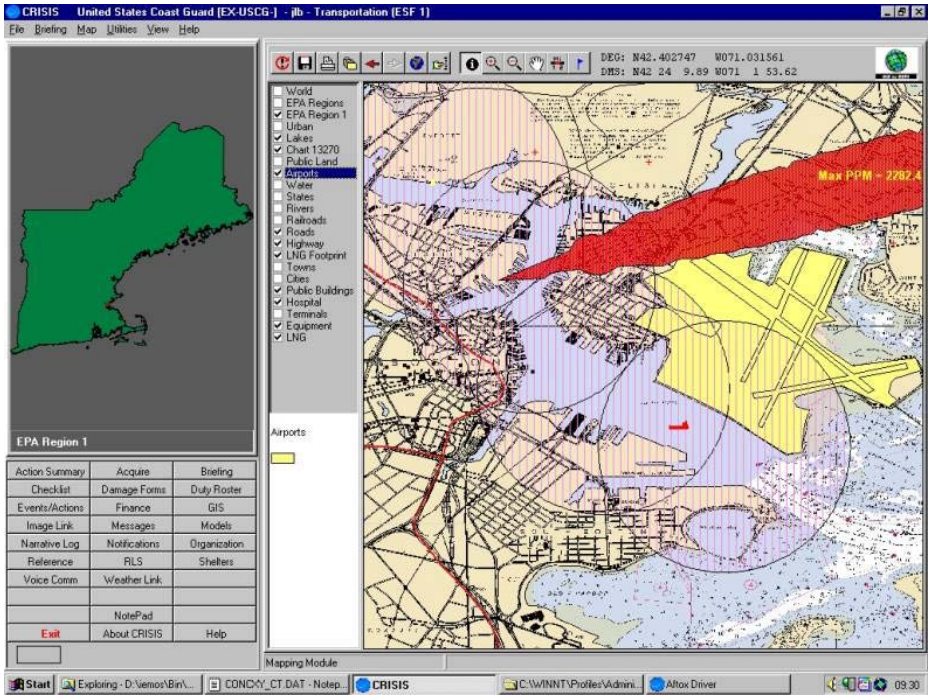
- System is intended for command center operations and training/exercising. It can support small- through large-team training, including the whole EOC and multiple EOC's.
- Hardware:
  - Server computers specifications depend on number of client workstation.
  - Windows, UNIX, Linux based.
  - Workstations: Intel PCs running Windows NT, 2000, XP
  - Large screen displays (COTS).
  - Consoles, desks.
- Software:
  - Proprietary crises management software.
    CRISISTM applications, server and client-side.
  - Oracle DBMS
  - ESRI GIS components
  - Proprietary simulation models from other organizations (COTS and/or GOTS).
- Simulation:
  - System integrates with third-party models. Integration characteristics are model specific, but generally involve publishing model results (as GIS layers and impact documents), and input of commanded countermeasure parameters.
  - Basic embedded simulation capabilities (e.g., routing of emergency vehicles, using time legs and waypoints; vessel ship handling models).
  - Sophisticated data entry and integration capabilities.
  - Range of text, tabular and graphical display capabilities … including supporting operations, training, and AAR.
  - Capabilities to integrate and use other-vendor (COTS, GOTS) simulation models (2-D, 3-D; plumes; vehicle dynamics; etc.). This was touted as system strength … rather than be dependent on models from one company; the system can utilize the latest available models, from whomever the client wants.
- Flexibility to configure scenarios to support multi-player collaboration, including sub-team elements, the whole EOC team, and multiple EOC's.
- Specific system capabilities (general) … primarily, information management tools.
  - Supports FEMA, NIIMS-ICS information management protocols.
    E.g., ESF's, ICS groups; EOC functional positions.
  - Web-enabled.
  - Data/information collection, integration, processing.
    Tools organized into 20 modules (approximately)
    E.g., Action summary
    Checklist
    Finance
    GIS
    Organizational
    Resource/logistics/staging.
    Etc.

- Information displays.
  - E.g., GIS maps, 3-dozen overlays/layers supported (ESRI ArcView)
    These assume data are present.
    - Checklist
    - Communications status
    - Damage assessment
    - Incident public briefing
    - Message log
    - Organization chart
    - Staging area status
    - Etc.
- Prediction models, data bases & displays.
  - System is designed to be able to use models from other vendors (i.e., best available models). Extent of flexibility to integrate vendor models is not known at this time.
  - Models are (generally from other vendors, selectable by customer):
    - E.g., Incident: Chemical … air release.
      - Radiological
      - Building collapse
      - Air crash
      - Etc.
    - Weather
    - Disaster characteristics
    - Disaster affects … various damage models:
      - E.g., Population (casualties), environment, economic (repair & replacement costs; tourism, etc.), infrastructure (buildings, water, electrical power, transportation, fire, hospitals, etc.)
  - Manual inputs.
    - E.g., Tracks of response vehicles, response time delays, etc.
- Reports (associated with collected data and models):
  - E.g., Procedures Checklist Report.
    - Financial Report, PO's.
    - Disaster impacts (various, depending on disaster & models).

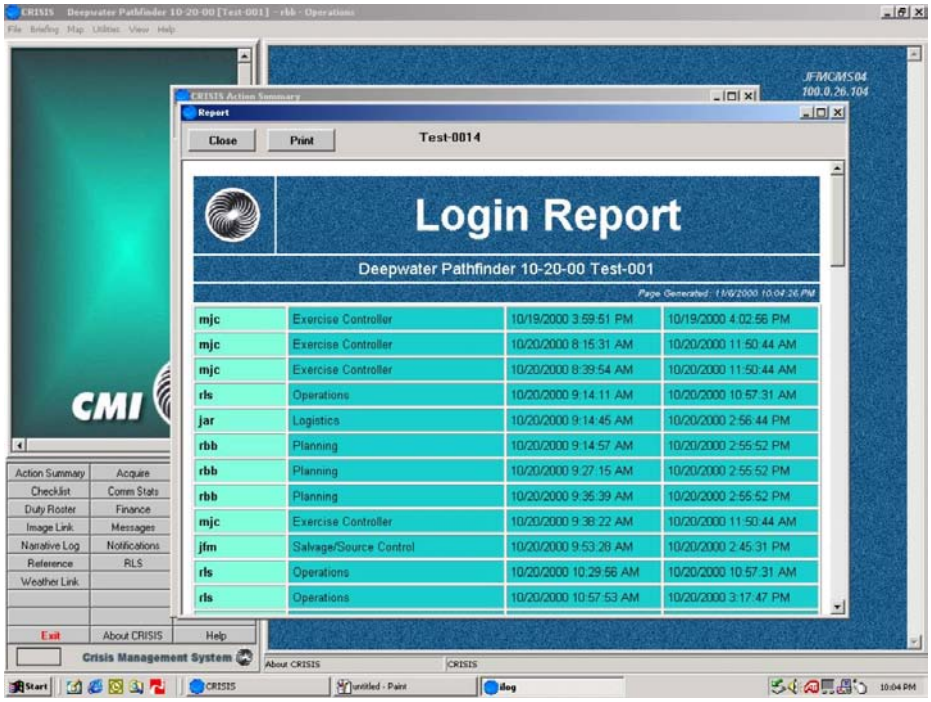
▪ Several example CRISIS displays are shown below:



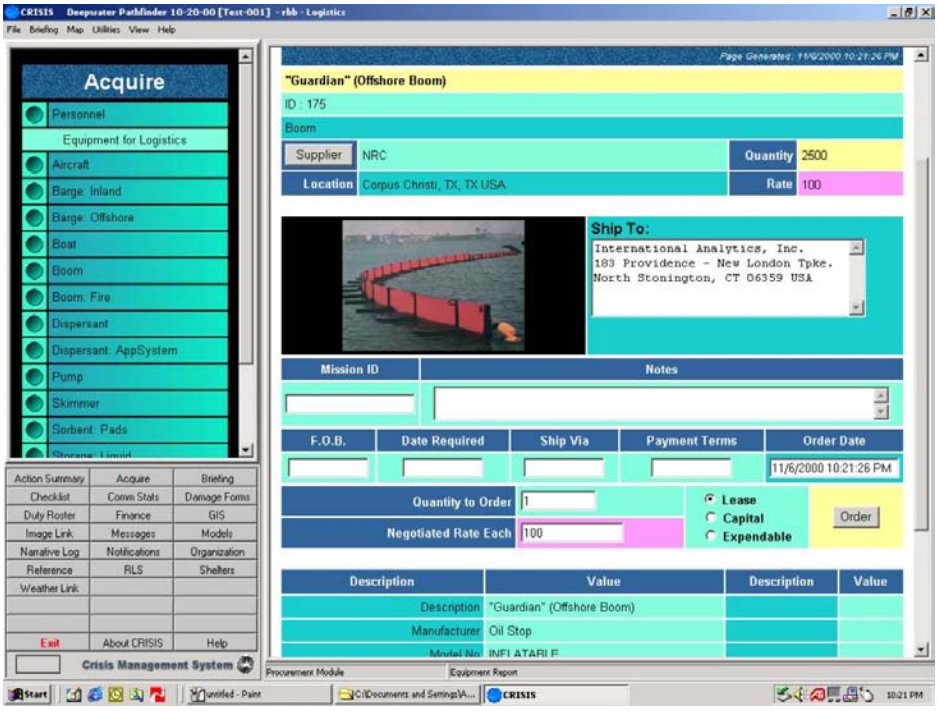
GIS Display



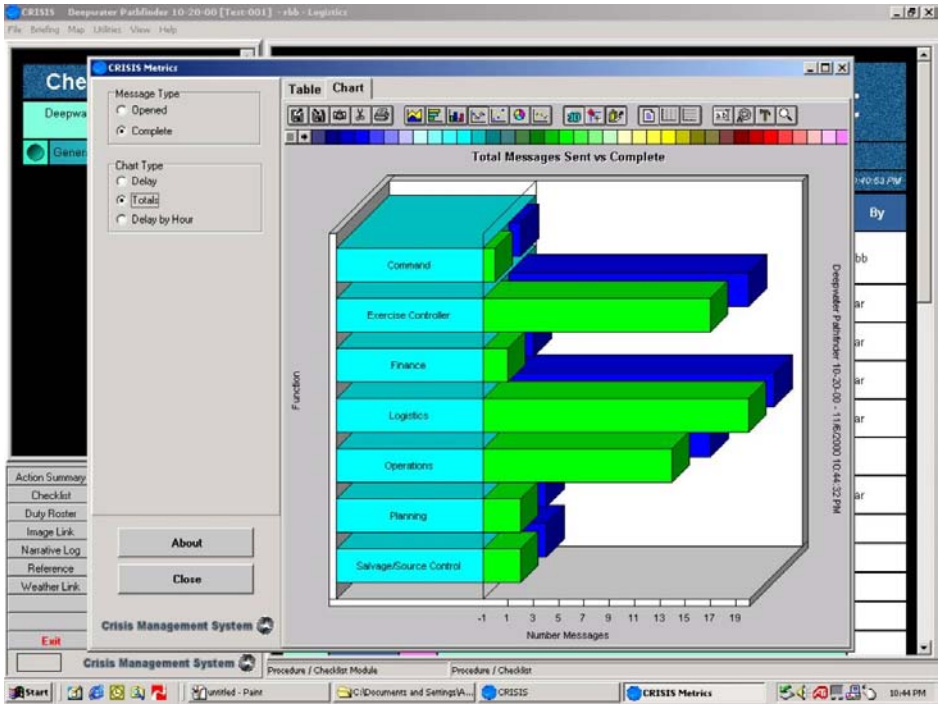
GIS Showing Airborne Chemical Gas Plume



Tabular Data (input, or displayed output)



Data Entry/Status Display



Status/Summary or Performance Indicator Display

If simulation models are used, identify their qualitative validity level (if possible):

- Basic models are embedded in the system.
- High quality simulation models can be used (as could lower quality models, depending on user requirements). Note, the models would be obtained from other vendors (COTS, GOTS) and integrated into the system.
- Ship Analytics has a number of fully integrated predictive models under the models module. These include:
  - Earthquake
  - Flood
  - Fire
  - Disease
  - Nuclear release
  - Chemical airborne release
  - Oil spills
- The system would be delivered in a basic configuration with one of the above model modules. Additional modules are provided on an optional basis in the future managed implementation of the system. Critically, these modules are not just a flow of the model toxicity or spread over a geographic area, but rather, are totally integrated with the database underlying the spread. For example, levels of age and the population of the spread and the lethality of the chemical release are indicative and reported. Similarly, economic models for the specific area and region of the disaster are calculated for economic impact.
- The integration of the models with the databases that underlie the GIS and Oracle data tables are considered a critical advantage by Ship Analytics.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

- Basic stand-alone system.
- Requires a relational database management system, web and application server software, GIS components. Can use external simulation models.
- May require external simulation models, depending on use. Presumably, these would be obtained by International Analytics, and integrated into system, as part of the system package.
- May require external data (data base) to support specific areas of application. This would likely be required of any high-fidelity simulation system.

  If other hardware and/or software required, or typically used, identify it/them.
  - Large screen projection systems and voice communication devices are commonly used. Access to the Internet is desired but not required.
  - Simulation models (as described above). Note these are most likely part of the system when purchased.
  - Field response equipment, if field personnel are to be trained.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- For training purposes rooms/offices are needed to house the command center response team (e.g., EOC team and multi-workstation area) that is being trained. This requirement can vary greatly depending on the purpose (trainees, size of team, etc.).
- Space is required for consoles and large screen displays; an area for server computers, LAN, network connections to/from remote users. But, these can be limited, depending on client's needs.

Web-based application, LAN, or a single computer/system-based application?

- Both web-based and LAN capabilities are provided.

  Can the training be administered over a wide area network or a local area network?
  - Yes, both LAN and WAN.

Is an instructor or facilitator needed?

- Yes. Perhaps multiple instructors/facilitators, depending on instructional strategy.

Describe unique user interface characteristics:

- Standard PC interface, under Windows (keyboard, mouse, display).
- The user interface with the system is though a web browser. In the thin-client variant, any commercial browser is used. In the thick-client, browsers are embedded in the CRISIS application. Using a browser to access and display data ensures that users are presented with a consistent and familiar interface.
- Large screen displays, projecting computer-display images.

Other important product characteristics:

- Custom system configuration … customized for each client.
- Instructional staff may pre-define events and activities that are conditionally executed under program control during a simulation. Event triggers include exercise date/time, controller decision, event declaration, action declaration, resource arrival. Programmatic actions include event declaration, action declaration, simulated response asset update (movement, status, countermeasure start/end), alerts.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- The product is purchased as a licensed product with a similar business model to Oracle and ESRI third party licenses.
- The system is sold with installation, training, and services support contracts available for a total lifecycle turnkey application.
- The emphasis on the product application is a total solution to crisis management as opposed to a simple, off-the-shelf purchase of software of marginal utility. Ship Analytics addresses the application of crisis management as a total system response assuring the client completely operable software, custom formatted and assumes the responsibility for integration of all Oracle and GIS data assures a trained staff is available to not only operate but to system administer the system across a lifecycle of application.

Initial acquisition cost (purchase; licensing fees):

- The initial acquisition cost of the product itself varies as a function of leveled implementation of modules of the system.
- Licensed applications for thin client, single server, web enabled systems begin at $20,000, and range up to several hundred thousand dollars, depending on the numbers of servers, thick client workstations, sizes of networks, including for example national, regional and local systems integrated in one total system, and the number of models delivered as integrated with the client's database.

  Product itself:

  - The application of CRISIS™ is a total system implementation and ranges respectively in cost to the clients requirements.

  Other necessary support, software, equipment:

  - Necessary support software includes Oracle and ESRI licenses, and the system is hosted on pc servers and workstations, on LAN networks, over the internet, or both.
  - Bandwidth of the network appropriate to a responsive application begins at a minimum of 56K, and typically performs optionally on ISDN or T1 lines for rapid response with GIS graphics. Thin client workstations over the internet are supported well at 56K.
  - Building/rooms to setup consoles.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- No, can be operate by end users.

Number of staff required to setup, and operate product:

- One person.

  Staff training required to use product (identify briefly ... type, time):

  - Required training includes:
    - 1 one week course in product operation and a
    - 1 week course in system administration.
  - Additional training may be required for the correct operation of specific disaster models.

- Additional GIS training will be required if local staff intend to develop their own GIS maps/data.

Cost for staff training on product (Cost to purchase training):

- The cost of training for a class size of 6 – 8 personnel on site is $10,000 per week, when purchased after system acquisition. The training is typically included in the overall costs of the acquisition at no extra charge.
- Training is provided free of charge at Ship Analytics facility, during scheduled classes, on a space available basis, for the life of the system. This training addresses hardware and software functions, and the conduct of preventative and routine maintenance.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Server computer, network, user workstations, no other special PC components.
- Installation is included in the price.

Expected costs?

- Expected costs of hardware are:
  - $5,000 - $7,000 per server.
  - $1,500 per workstation for thick client applications.
  - Less than $1,000 for thin client applications.

Product maintenance requirements/recommendations (identify briefly):

- Manufacture's warranties for computer hardware.
- Regular backup of critical data by staff.

Maintenance costs (Expected or required software, hardware maintenance):

- Maintenance costs are those associated with normal PC installations, and are available through Ship Analytics or directly through the hardware vendors themselves.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Windows NT, 2000, XP, UNIX, Linux.

Can product be customized? How? Cost?

- Yes, vendor customization and some end-user customization.
- Customization would typically be achieved via the applications:
  - Exercises/scenarios (Events, data bases used, environment, etc.).
  - Operational support modules used.
  - Performance measures.
  - AAR focus (performance measures, displays, etc.).
- Customization would also be achieved via the simulation models used.

Product modifications required to support counter-terrorism training/exercises:

- Same as preceding item.
- May require additional models, data bases, etc. for certain WMD exercises and areas.
- Depending on the instructional strategy, may need to develop/obtain victim simulation models, responder models, perpetrator models and weapon models.
- Development of performance measures, and standards

Modifications:

- The system currently supports counter-terrorism training and exercises as it currently exists. According to Ship Analytics, there are no additional costs for this application. Customized support is available on a quote basis for all applications of the system.

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).

- Typically, hardware (PC's) would be part of the system purchase. Additional PC's would not be necessary.

Processor speed (in MHz): 500MHz

Memory:(SDR/DDR): 128Mb

Free disk space: 2GB

Internet connection speed:(if any): DSL, Cable, T1

Display adapter[4,5]*:* to support 1024x768 16-bit color

CD-ROM speed: 1x

Optional accessory requirements[5]*:* None.

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Both

Potential type of WMD event product can support:

Chemical - Yes
Biological - Yes
Radiological - Yes
Nuclear - Yes
Explosive - Yes

Constraints on supported exercises or scenarios?

- Not evident at this time.

Potential disciplines product can support:

Emergency medical services
Emergency management agency
Fire
Governmental administration
Health care
HazMat
Law enforcement
Public health

Public safety communication
Public works
Global ... or other (Pelfrey)

- Can support all of the above in the context of the Command Center functions.

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):
Initial/acquisition
Improvement
Maintenance/refresher

- Can support all 3 types of learning.

Target audience:
First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel
- Can support all of the above.

Potential responder training level(s)/categories product can support:
Awareness - Yes.
Performance [Operations] - Yes
Technician [Specialist] - Yes
Planning & Management [Incident Command] - Yes.
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - Yes.

Potential equipment and/or facilities product can address:
- The system responds to a complete team training environment for any and all of the disasters outlined, and any general crisis emergency management application on a generic basis.
- The system is geared to team and interactive training across the various workstations representing elements of a response, either located on one site, or can be connected over the entire network on an internet basis to all the responders associated with the utilization of a CRISIS™ installation. The emphasis is team training.

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
- The system supports all levels of training including individual operator, part task, whole-task, decision making, and team communications training. This range of training is supported because each individual workstation contains the entire set of software for all crisis management applications. An operator can be trained in a special area on an individual PC, supported and run in the system offline to become familiar with his applications; and then, all the stations can be connected in a team environment.

Training content description (what trained), in addition to preceding item (Brief):
- Command center skills & knowledge (e.g., communications, coordination, data/information processing, decision making, problem solving).
- Exercises are provided and operated through an exercise controller. The system contains an instructor station and formal debriefing and scoring routines. Each individual site develops training exercises and scenarios for its application. An excellent example of the

system is installed at Texas A&M for oil spill training where Coast Guard, civilian, and crisis managers are trained on a fixed curriculum.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

- Student input characteristics range from experienced emergency management personnel to specific crisis responders whose training is applicable to their discipline. For example, biologic and health personnel are included in the training sessions as well as the formal departments such as police, fire, military, and contract support personnel not specifically trained as emergency mangers, but integrated in a full team response.
- Awareness level should be considered as minimum, since primarily team training/exercising … this is my (TJH) opinion.
- Basic level should be considered as a minimum for this training/exercise medium; but, intermediate or advanced levels may be required for specific training objectives

Potential training/exercise types product can support:

Classroom - Yes.
Individual self-paced - No.
Seminar/workshop - Yes.
Drill - Yes
Individual and small-team exercises - Yes (small team)
Simulation-supported - Yes
Gaming - Yes, but would need the game context as a scenario.
Collaborative - Yes
Tabletop - Yes … but probably not needed (as tabletop are currently conducted).
Functional - Yes.
FSE - Yes
Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Classroom.
- Real-time team exercises (sub-team, full-team, and/or multi-team).
- Delayed feedback (AAR), typically. Alternative training strategies, depending on training objectives (e.g., Could employ immediate feedback, positive guidance, demonstration, etc.).
- Web-based collaborative.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Both long and short. Normal operation, failures, simulation-supported, scripted/instructor-controlled.
- Normal operations, and failure modes are feasible.
- Simulation-supported exercises would be the norm.
- Scripted/instructor-controlled exercises would be the norm, although all exercises would likely have some degree of free-play (in accordance with the responder's actions).

Exercise/scenario length/time(typical):

- Typically, 1-day. Longer or shorter exercises are possible.

Process and time to:

Develop new exercise/scenario:

- 1-2 hours to enter scenario parameters into computer system

Modify an exercise/scenario:

- Depends on modification – small modifications (to disaster model parameters, equipment resource availability, programmatic conditions) require minimal time to enter into the computer system (minutes)

Setup an exercise/scenario to run:

- Less than 10 minutes.

Does a curriculum already exist?

- Curriculum exists at Texas A&M, the State of South Carolina, and the Arab Academy for Science and Technology, Far East Maritime Academy … all of which have developed specific curriculum for instruction. Applications include from oil spill, chemical spill, and counter-terrorism.

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

- Support for the following control and monitoring of simulation exercises:
  - Communications equipment (role-playing).
  - Exercise Controller Stations (Control and monitoring).
    - E.g., Vehicle control, add/remove response assets, introduce new events, record/store images, monitor certain trainee actions, incident log (dynamic record of events & trainee actions), instructor alerts.
  - GIS
  - Damage assessment
  - Cost accounting
  - Incident logging
- Student cues, scripted scenario, automatic reactive scenario

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Scenario/exercise data recording; performance measures.
- See next item below.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Text/graphic information displays – immediate and AAR
- Animation – immediate and AAR
- Situation cues– immediate
- Performance analysis graphics -- AAR
- For example, the exercise debrief (AAR)
  - History data display, trainee responses.
    - Textual, tabular, graphical.
    - Events, actions, analysis of trainee performance

Exercise replay (variable replay speed).
Graphic timeline … delays between events and trainee response actions.
Graphic performance evaluation histogram … relates instructor-entered subjective scoring to event/action pairs.
Graphic display showing controller scores across trainee sections.
Graphic cost/benefit ration display.
Other data/information summary displays.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- Comprehensive reference capability provides web browser access to local and web-based knowledge bases.

HELP features (Briefly identify):

- Comprehensive on-line help in the use of the computer system.

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Support for the following training/exercise-related development functions:
  - Database creation and maintenance.
  - Exercise/scenario construction (conditions & events scripting); scenario library.
  - Fast-time models.
  - MSEL support.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- Alerting instructor/facilitator about upcoming events (warnings, cues).
- Scenario/exercise conduct controls.
- Real-time/fast-time/time-jump.
- Data recording & real-time analysis and display.
- See above "Scenario/exercise run/conduct features", for additional features.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

- Tables and graphs highlighting the occurrence of critical events and actions taken by individuals/teams in response to the events. Graphs highlight response time within critical limits, scoring, team comparison, and cost-benefit.
- See above "Student/participant/team feedback", for related features.

Data recording & storage features (e.g., Scenario events; student performance):

- Events and performance are stored in Oracle database - exercise specific.
- See above "Student/participant/team feedback features ", for additional features.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Operationally-related analysis tools as part of the several dozen modules (e.g., damage assessment, financial, economic impact). Analysis entry/display are available both during and post-exercise.

- See above "Student/participant/team feedback features", for additional features.

Training/exercise fidelity:

Environment (including situation/scenario):

- Can be very high fidelity, depending on models used.
- Scenario fidelity depends on authors … can be very high.
- The fidelity of training exercises with respect to the environment is a complete recreation of a simulated model utilizing predictive and real time modeling of a crisis overlaying the implementation of crisis software. For example, flood or chemical spill can be operated in real or fast time modes with its impact addressed by CRISIS™ in a simulated exercise. The system provides a fully interactive simulation and training system controlled by an instructor to a specific exercise scenario driven and created by specific training objectives and performance measurement.
- The system was designed as a team trainer from the ground up and has the complete access to graphic displays of complex performance measurement, algorithms for scoring and trainee debriefing, and for the quantitative evaluation of alternate response strategies and planning.
- Its application is not only in training, but also in the refinement of response plans and risk assessment due to the dynamic nature and real time applications of physical models of the crisis interactive against databases and GIS layers which depict the real world.
- The final and most telling application of the fidelity of the system is that the same software and hardware operates in a real crisis response as is used in a training exercise.

Hardware:

- PC-based system. Does not directly deal with response hardware, other than as represented by PC's and simulation models.
- The hardware is exactly the same for both training and operations. The information and databases are maintained over time during the series of training exercises to assure that the data are current and applicable to the system's response to a real crisis. In brief, the application of the same hardware equipment and training system assures that the operability and readiness of the actual system is completely current in not only the hardware, but the databases and importantly the staff responders.

Information (including interaction with other persons):

- Can be very high fidelity, depending on models, scenario and facilitators/controllers.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Crisis Management Simulator Modeling Analysis Package (CMSMAP)

- CMS is primarily oriented toward oil spill and chemical/hazardous-material release types of incidents, in a port area. It has application to other WMD incident types, but substantially less capability in this regard at this time (TJH judgment). Nevertheless, the simulation product has fundamental features that could be readily adapted to the broader area of WMD training and exercising; modifications/expansion would be required.

Product is hardware, software, or both?

- Software.
  It operates on one or more PC's.
- This product has evolved over time with a number of independent, although integrated, components. The information below addresses the overall CMS or only certain parts of CMS (i.e., certain components)

Large multi-user system, small multi-user product, or individual-user product?

- Large and small multi user system, and individual-user system.
- Designed to operate in a networked environment.
  Stations can support the ICS functions (e.g., Operations, Logistics, Planning, Finance)
- Scalable system: Single station
  Multiple stations

Focus/specialty of product?

- Multi-functional application used to simulate a team's response to an emergency situation. It can be used to simulate any combination of the following emergencies:

- Oil spills
- Chemical spills
- Search & rescue operations
- Nuclear fall-out
- Marine emergencies

Its historical application was to support response to oil spill and hazardous materials spills. It has been adapted, to a limited extent, for WMD incidents. The WMD incidents it can readily support at this point would be chemical, oil and nuclear release, primarily in a port/water-borne environment. As currently configured, CMS has somewhat limited capabilities to support inland incidents.

- Enables a team to accurately simulate a response to any of the above incidents, and provide coordinate location, purchasing, and deployment of task forces and resources at any level of incident/emergency situation.

- The underlying database in CMS adheres to the Incident Command System (ICS) protocols developed by the National Interagency Incident Management System (NIIMS). This database was developed as a component of a system that ASA developed for the United States Coast Guard, OSC^2, On-Scene Command and Control.

Incident response operational tool/system:

- CMSMAP can be and is used as an incident response operational system (i.e., oil, chemical, nuclear, in a port environment). The rapid prediction models are initially used to assist the response team in understanding likely direction and impact of a pollutant during the incident. While responding to the spill the user may track deployed equipment, personnel and other resources. This allows cooperative action and communication from any number of emergency service providers.

  Domestic, military, other users?

  - CMSMAP can be used for domestic, military or governmental use. It is primarily used by industry and government, but recently the U.S. Navy has implemented a number of ASA's products for data acquisition and management, hydrodynamic, water quality, and oil spill modeling.

Incident response training/exercise tool/system:

- CMSMAP can, and is, used as a training/exercise tool.
- As an example, the CMS system has been setup for the Singapore Maritime Port authority on a network environment so that multiple stations (users) may train on how to respond to various incidents. An "Instructor" version of the CMS runs on one of the stations and each "student" station responds to the instructor-generated incident. Each station accesses an underlying relational database that stores initial resource information (locations and amounts of response equipment and personnel) as well as time-changing data as the incident evolves.
- The database tracks and stores every event from every station so that the response may be reviewed and audited by the instructor. This would assist the instructor in determining the students understanding of the situation based on the effectiveness of resource deployments.
- The CMS system can also be used for post-spill examinations to determine whether alternative methods could have been used (i.e. placement of booms) to minimize the impact to surrounding habitats and to assess the cost-effectiveness of the response.
- For smaller incidents, a single station may cover all of the response functions.

  Domestic, military, other users?

  - It can be used by various agencies including domestic, military, governmental.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Port Authorities, Oil spill responders, Maritime Authorities, Oil Companies, various Governmental Agencies (i.e. ecology departments, environmental managers).

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Port authorities, maritime authorities, oil companies

Functional-area identification of product (Broad range, or specific):

- Command & control; incident command; decision support.
- Collaboration.
- Emergency response.
- Primarily port environment … oil, chemical, nuclear … water, air.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

- Applied Science Associates Inc.

Contact info ref. technical questions (Person, title, organization, telephone, email):

1) Chris Galagan,
   Project Manager
   Applied Science Associates.
   Telephone: 401-789-6224 Extension 30
   E-mail: chris@appsci.com

   Or

2) Eoin Howlett
   General Director
   Applied Science Associates.
   Telephone: 401-789-6224 Extension 18
   E-mail: ehowlett@appsci.com

Contact info ref. buying the product (Person, title, organization, telephone, email):

Eoin Howlett
Applied Science Associates.
General Director
Telephone: 401-789-6224 Extension 18
E-mail: ehowlett@appsci.com

COTS/GOTS (circle one).

- COTS

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- The original implementation of OSC^2 for the U.S. Coast Guard (upon which CMS is based) was focused on oil spill response but later versions were expanded to include hazardous substance and search and rescue response, as well as planning and management of major maritime events. The Coast Guard Atlantic Strike Team used OSC^2 in a terrorist incident response exercise in Portsmouth, New Hampshire in May 2000 (the TOPOFF exercise). The OSC^2

system was used at the EPA regional office in Edison, NJ during the response to the World Trade Center disaster of September, 2001.

Product status (Production version in use; prototype in use; under development)?

- CMS Version 4.4, currently in use.

If in use, identify users, types of use:

- Full implementation (oil, chemical, marine accident, nuclear) CMS is used by
  - Singapore Maritime Port Authority
  - Hong Kong Marine Department

- Modular components (individual oil, chemical, search & rescue) of CMS are used by hundreds of clients including:

ADNOC	Jody Connor Consulting
AGIP, Europe	Kerr McGee, UK
Amoco, Affiliates Worldwide	LOOP
ANCAP, Uruguay	Magnavox
Aramco, US & Saudi Arabia	Maritime Bureau Inc.
Australian Institute of Marine Sciences	Minerals Management Service
Bedford Institute of Oceanography	Netherlands Government
BHP, Australia	NRC
Bridas, Argentina	OILMOP
British Petroleum	OSRL
Cape Canaveral Marine Services	Pacific Oil Spill Response Team
Clean Caribbean Cooperative	PDO, Oman
Chevron, Affiliates Worldwide	Pemex, Mexico
ConocoPhillips	PCCI/GPC
CSIR, South Africa	Petrotrin
Delaware Bay and River Coop	Phillips, South China Sea
Dorset County Council, UK	Pollution Control Department, Thailand
EG&G, New Zealand	Sandia National Laboratories
Environment Canada	Shell
Esso, Affiliates Worldwide	Star Enterprise
ExxonMobil, Affiliates Worldwide	Statoil
Intevep/PDVSA, Venezuela	Texaco
Imperial Oil	TotalFinaElf
IKU, Norway	United States Coast Guard
Irish Coast Guard	United States Navy
Isle of Man Coast Guard	USGEN

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- PC-based system.
  - Incident decision support tool.
  - It is a follow-on to the OSC2 product completed for the U.S. Coast Guard. OSC2 was designed to provide a computer-based application in support of ICS.

- CMS uses the ICS methodology, database tools and GIS to provide a decision support tool in oil spill, chemical spill, and SAR response.
- The system:
  - Manages response equipment and environmental data sets
  - Would be used during a response to maintain the status of response resources and aid in developing a focused response effort.
  - A relational database describing response equipment, response strategies, and contingency planning data is fully integrated so that the status of all resources (equipment and personnel) is tracked as well as costs.
  - Invoices and purchase orders may be also be generated.
- Large or small team training, primarily (in addition to its operational value).

Intended for operations, training/exercises, or both?

- Both
- Originally developed as a response support tool.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

- It can be used as both an instructor tool and training media.

Intended for individual, group or team use[1]?

- Individual, group and team use. But, primarily team use.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- No theoretical limit, but typically used in the 10-20 user level.

Number persons usually trained simultaneously?

- This will vary from client to client and the number of PC's available.
  - Typically, 1 - 8 stations in trainer configuration.
  - Typically, 2 - 24 students would be in the class (up to 3 students per station).
  - The Singapore system has 8 stations, training 3 students per station, for a total of 24 students trained simultaneously.

Large multi-station system, or based on individual PC's?

- Based on individual PC's.
- Can be used in large multi-station system configuration, small system, or individual station.

Custom/proprietary hardware required?

- No

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
  - Standard Intel-based PC workstations.
  - Additional hardware, typically:
    Large screen display
    Printer

Remote data sources (usually, already in place, such as current sensors, wind sensors, etc.).

- Software:
  - COTS operating system: Microsoft Windows 95,98, ME, NT, 2000, XP. Microsoft Office

- Simulation:
  - CMS … proprietary.
  - CMS components may be added or removed to configure any system:
    - Geographic Information System (GIS) - a proprietary system, but it can import data from independent data bases;
    - Oil Spill model and management system (OILMAP) - proprietary;
    - Chemical (marine and atmospheric) spill model and management system (CHEMMAP) - proprietary;
    - Search & Rescue model and management system (SARMAP) - proprietary;
    - Marine Emergency Management system (MEMS) - proprietary;
    - Nuclear explosion model and management System (NUCLEARMAP) - external COTS source.
  - Examples include the following:
    - Resource management database:
      - Initial conditions (locations and amounts of response equipment).
      - Add new resources, edit their properties, order and assign resources to response divisions.
      - Each resource has a number of properties including supplier details, hourly, daily, or one-time costs, and location of home base, activation time, transit speed, and response capabilities.
      - Resources may be combined into task forces so that multiple capabilities may be brought into a single unit. Task force may be given a set of waypoints for its transit to the oil spill response division.
      - Time-changing data as incident evolves.
    - System can request resources, send messages to other stations, track costs, estimate response effectiveness based on resource deployments, and use numerical models and screening tools to evaluate response plan.
    - Embedded simulation models:
      - Sea surface coverage of oil and chemicals.
      - Based on the deployment of resources, the CMS will estimate how much oil may be cleaned up.
      - Evacuation of personnel from both marine and land facilities. In training, operators can deploy vessels (e.g., oil skimmers, dispersants) or land-based vehicles to pick up personnel from evacuation divisions. Each response resource may make multiple sorties. The CMS will estimate how effective the evacuation is based on these deployments.
      - A real-time tracking system maintains the status of every resource and tracks the status changes as resources are ordered, assigned, and made available. This is integrated with the cost component so that costs may be monitored on a real-time basis.
      - Gas plume model … air and water-column.
      - Nuclear radiation release model … air plume.

If simulation models are used, identify their qualitative validity level (if possible):

- The oil spill model (also known as OILMAP) coupled with the CMS system has been used to respond to many spills across the world and has been validated against many spills including:

1.	Amoco Cadiz Spill	1978
2.	IXTOC 1 Blowout	1979
3.	Exxon Valdez	1989
4.	Arabian Gulf Spill	1991
5.	North Sea Experimental Spill	1992
6.	Braer Spill	1993
7.	Tampa Bay Spill	1993
8.	Makenzie River	1995
9.	Iron Baron	1996
10.	North Cape, RI	1996
11.	Texaco North Sea Spill	1997

- ASA's oil spill models are generally recognized worldwide to be of relatively high validity.
- Information is not available about the validity of other ASA models.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

- Stand alone product.
  - CMS only requires a Windows PC.
  - Microsoft Word is also recommended.
- May require external simulation models and data bases, depending on use.
- May require external data (data base) to support specific areas of application (e.g., city geographic area). This would likely be required of any high-fidelity simulation system.

If other hardware and/or software required, or typically used, identify it/them.

- Large screen display.
- Printer.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- LAN
- Facilities in which CMS is operated; other associated training/exercise spaces and facilities. These are likely required by any media.
- Field response equipment, if field personnel are to be trained.
- Incident-specific performance measures, displays, and other tools … are expected to be needed (TJH).

Web-based application, LAN, or a single computer/system-based application?

- LAN and single computer.
- Remote-Access Option:
  - CMS uses a standard Internet connection and a remote resource check-in component to transfer databases from CMS users in field locations. The remote system is used to capture response equipment and personnel movement in the field so that updated information can be passed to a central database for distribution to all CMS users.
  - Two versions of the remote application, for:
    Standard PC.

Hand-held device that runs on the Palm operating system.

- CMS maps, tables and other output products can be written to PDF file format for posting on a web site.

Can the training be administered over a wide area network or a local area network?

- Local area network.

Is an instructor or facilitator needed?

- Yes.

If not, how is training conducted (e.g., Individual self-paced)?

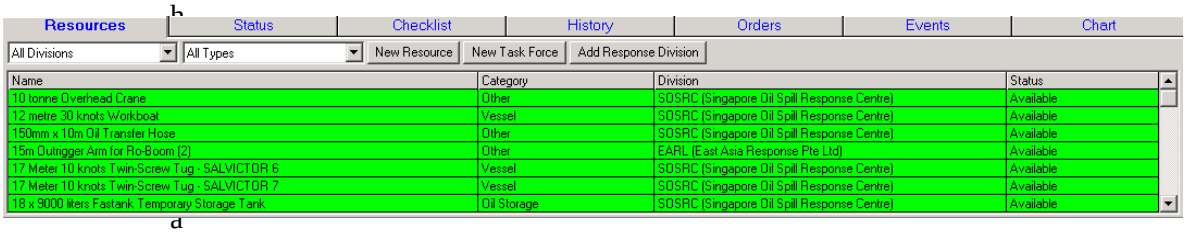
If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Describe unique user interface characteristics:

- The key component of CMSMAP is that it always uses a Map-Based Display System so that all resources, divisions, resource tracks, pollutant plumes, and other data such as population data, sensitive or strategic resources are all displayed in an integrated display.
- CMS features a graphical user interface that runs under Microsoft Windows and is controlled by standard drop down menus and point and click operations.
- CMS uses drag-and-drop functionality extensively to simplify user actions as they build and manage resources during an incident.
- CMS Common Interface Elements

Exercise Response Tabs: At the bottom of the CMS screen there are six tabs which are associated with the response component: *Resources, Status, Checklist, History, Orders and Events.* Each tab is described below.

✓ Resources Tab: displays a list of all the resources available in the current Exercise, including the division each resource is located in, and the status of each resource. Double-clicking any item in the list lets a user edit the properties of the resource or delete it from the list. Users can sort the resources by clicking on any of the column headers, or filter it by making selections from the two drop-down lists: the first specifying divisions, and the second specifying types of resources. By clicking the button labelled *New Resource*, an instructor can add resources to the list, and by clicking *New Task Force* or *Add Response Division*, a user or an instructor can create new response items. Clicking on any of the resources will bring up the *Resource Details Form* card. The form card contains a variety of information including the cost associated with deploying the resouce, resource supplier, t



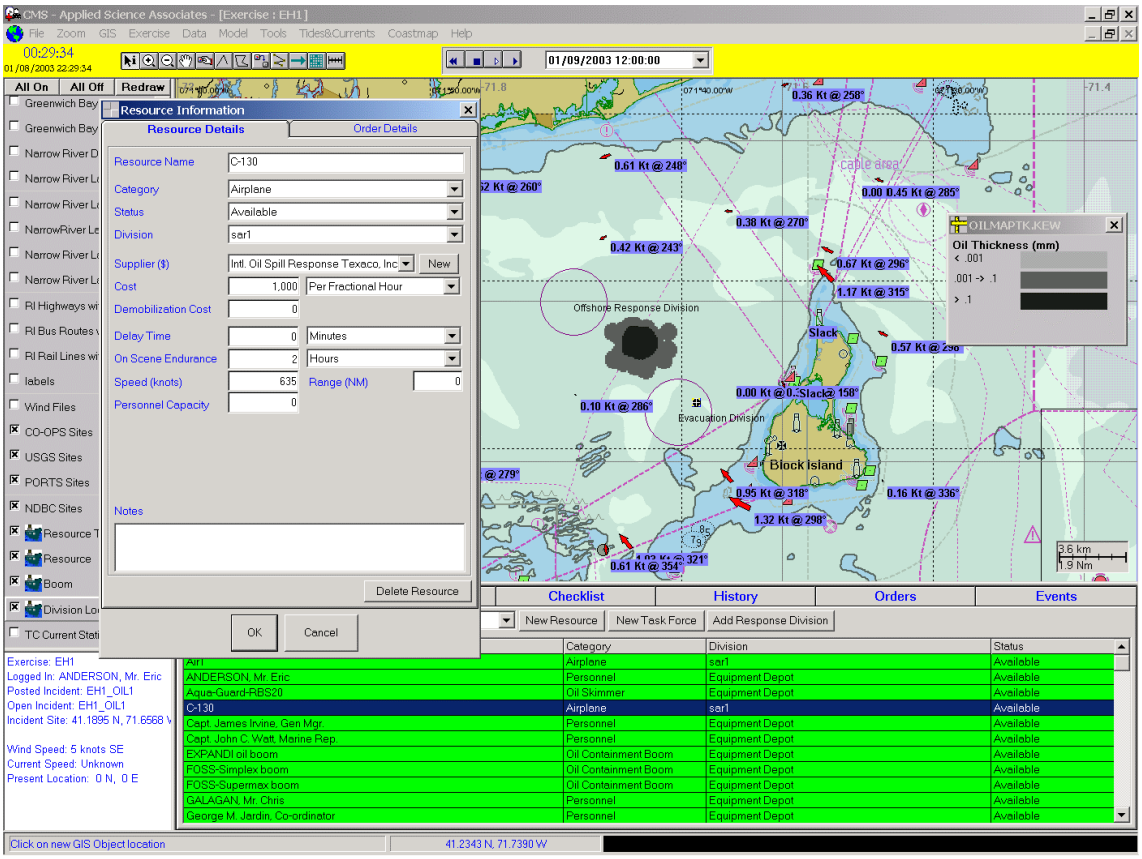
Name	Category	Division	Status
10 tonne Overhead Crane	Other	SOSRC (Singapore Oil Spill Response Centre)	Available
12 metre 30 knots Workboat	Vessel	SOSRC (Singapore Oil Spill Response Centre)	Available
150mm x 10m Oil Transfer Hose	Other	SOSRC (Singapore Oil Spill Response Centre)	Available
15m Outrigger Arm for Ro-Boom (2)	Other	EARL (East Asia Response Pte Ltd)	Available
17 Meter 10 knots Twin-Screw Tug - SALVICTOR 6	Vessel	SOSRC (Singapore Oil Spill Response Centre)	Available
17 Meter 10 knots Twin-Screw Tug - SALVICTOR 7	Vessel	SOSRC (Singapore Oil Spill Response Centre)	Available
18 x 9000 liters Fastank Temporary Storage Tank	Oil Storage	SOSRC (Singapore Oil Spill Response Centre)	Available

h

d

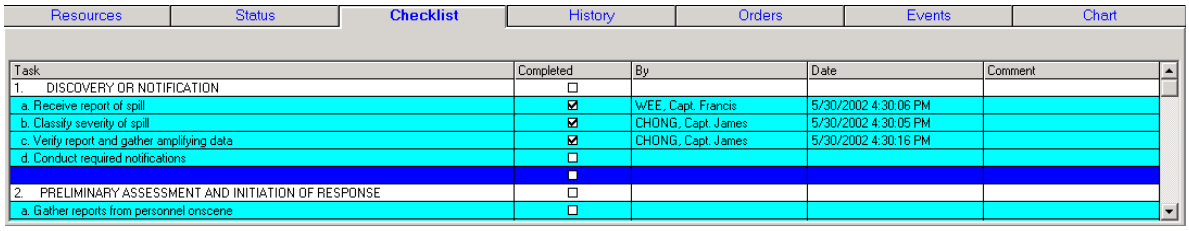
y

time and the on-scene endurance.



✓ Status Tab: The Status Tab displays a tree view of all the response divisions created to respond to the current incident. Each division name expands to a list of resources at that location, the division's current response status, and the division's predicted response status.

✓ Checklist Tab: The Checklist Tab displays a list of important tasks which should be completed in order to efficiently respond to the incident. Users can click on tasks in this list to make notes or mark them completed.



- ✓ History Tab: The History Tab displays a table of all the actions completed by instructors or students in the current Exercise. The *Report* button can generate a printable, formatted report listing all the actions taken, and the *Add History Event* button lets a user manually make an entry in the History table, to help record events not automatically added by the program.

Resources | Status | Checklist | **History** | Orders | Events | Chart

User ALL | Report | Add History Event

Time	ActionBy	Description
5/30/2002 4:30:08 PM	CHONG, Capt. James	b. Classify severity of spill
5/30/2002 4:30:18 PM	CHONG, Capt. James	c. Verify report and gather amplifying data
5/30/2002 4:30:09 PM	WEE, Capt. Francis	a. Receive report of spill
5/30/2002 3:44:56 PM	ALLCORN, Mr. Michael E.	Evacuation Zone has been created.
5/30/2002 3:46:01 PM	ALLCORN, Mr. Michael E.	Evacuation Drop-Off has been created.
5/30/2002 3:44:56 PM	ALLCORN, Mr. Michael E.	ALLCORN, Mr. Michael E. has been made division leader of Evacuation Zone
5/30/2002 3:46:01 PM	ALLCORN, Mr. Michael E.	ALLCORN, Mr. Michael E. has been made division leader of Evacuation Drop-Off
5/30/2002 4:32:50 PM	CHONG, Capt. James	Bell 206 B3 was ordered to Evacuation Zone

- ✓ Orders Tab: The Orders Tab displays a table of all the resources ordered during the current Exercise. It includes the resource supplier, who ordered the resource, when the resource was ordered, when the resource arrived at its destination, which Division was its destination, the current resource status, and the cost. The table can be filtered by supplier, user, or date, and can be sorted by clicking on any of the column headings. Clicking on the *Report* button generates a printable, formatted report listing all the orders.

Resources | Status | Checklist | History | **Orders** | Events | Chart

All Divisions | ALL | All Dates | All Suppliers | New Order | Report | Approve Orders

Resource Name	Ordered Time	Arrival Time	Destination	Order Cost	Deployment Ends	Order Status
Sea Sentinel Inshore Boom (60)	5/30/2002 9:00:07 AM	5/30/2002 9:02:07 AM	Shore Protection	$6,300.00	6/1/2002 9:02:07 AM	Active
20M Oil Spill Response Vessel number 1	5/30/2002 11:13:09 AM	5/30/2002 12:06:09 PM	Shore Protection	$15,654.00	6/2/2002 12:06:09 PM	Active
Bulk Storage Tanks	5/30/2002 11:12:37 AM	5/30/2002 11:14:37 AM	Shore Protection	$2,220.00	5/30/2002 4:14:37 PM	Active
RSS Support Vessel "Endurance" Class	5/30/2002 11:14:00 AM	5/30/2002 12:46:00 PM	Shore Protection	$1,000.00	5/30/2002 5:46:00 PM	Active
Bell 206 B3	5/30/2002 11:12:05 AM	5/30/2002 11:25:05 AM	Shore Protection	$1,000.00	5/30/2002 2:25:05 PM	Active
Patrol Craft 2	5/30/2002 11:13:16 AM	5/30/2002 11:54:16 AM	Shore Protection	$1,000.00	5/31/2002 11:54:16 AM	Active
Dispersant MPA 2	5/30/2002 11:12:54 AM	5/30/2002 12:05:54 PM	Shore Protection	$3,000.00	5/31/2002 2:05:54 AM	Active
Dispersant MPA 5	5/30/2002 11:14:43 AM	5/30/2002 12:07:43 PM	Shore Protection	$3,000.00	5/31/2002 2:07:43 AM	Active

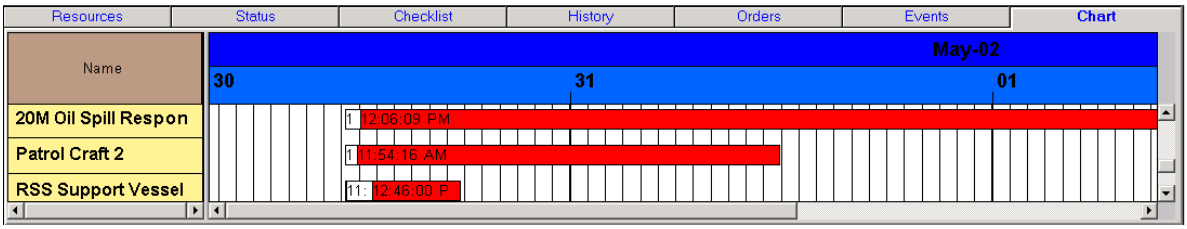
- ✓ Events Tab: The Events Tab displays a table of all events that have occurred since the start of this Exercise. Events are added automatically as they occur. Double-clicking an event in the table allows a user to edit the event details. Clicking on the *New Event* button allows a user to manually add an event to the table.

Resources | Status | Checklist | History | Orders | **Events** | Chart

New Event

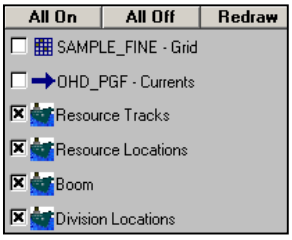
User	Event	Start Time	End Time
CHONG, Capt. James	Instructor has posted a new Incident	5/30/2002 11:11:41 AM	5/30/2002 11:13:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:16:16 AM	5/30/2002 8:18:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:16:51 AM	5/30/2002 8:18:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:18:23 AM	5/30/2002 8:20:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:10:01 AM	5/30/2002 8:12:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:07:24 AM	5/30/2002 8:09:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:06:27 AM	5/30/2002 8:08:00 AM
GALAGAN, Mr. Chris	Instructor has posted a new Incident	5/30/2002 8:03:13 AM	5/30/2002 8:05:00 AM

- ✓ Chart Tab: The Chart Tab displays the order and deployment time for each resource used in the response in Gantt chart format. The chart is used to quickly see what resources are ordered, which are on-scene, and how long a resource has been deployed.



Location Map: The central element of the system is the interactive map showing land, water, and map layers that the user may want to display (i.e. hospitals, fish farms) location of resources, location of the incident, and much more exercise-related information. The location map can be imported from a variety of GIS software including ArcView (shape files) and MapInfo (mif/mid). A variety of data can be displayed on the GIS maps, such as roads and schools.

The Layers List: To the left of the location map is a list of map layers which can be turned on or off to display or hide information on the map. The bottom three layers, entitled *Resource Tracks*, *Resource Locations*, and *Division Locations* display the information most relevant to the exercise in progress.

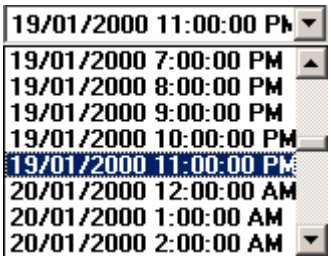


The Map Control Toolbar: Above the map are buttons that comprise the map control toolbar. Each of these buttons allows you to modify the map in some way – either by adding elements, changing an element's properties, or changing your view of the map. The buttons on the toolbar are:

- The **Interrogate GIS Object** button, to get information on any map object.
- The **Zoom In** and **Zoom Out** buttons, to change the view.
- The **Pan Map** button, to move the map sideways or up and down.
- The **Add GIS Point** button, to add new points.
- The **Add GIS Polyline Object** button, to add lines.
- The **Add GIS Polygon Object** button, to define polygons.
- The **Move GIS Object** button, to reposition any GIS object.
- The **Edit Polygon Vertices** button, to change any polyline or polygon.
- The **Add Current Vector** button, to add water currents.
- The **Edit Grid Cell** button, to change the properties of any cell on the map grid.
- The **Distance Measure** button, to find the straight-line distance between points.

The Model Animation Controls: Also located above the location map is a set of buttons that allow you to control the animation of the model simulation. The buttons on the toolbar are:

- The Rewind button, to move the animation to its beginning.
- The Stop button, to stop the animation.
- The Step button, to move the animation forward one frame.

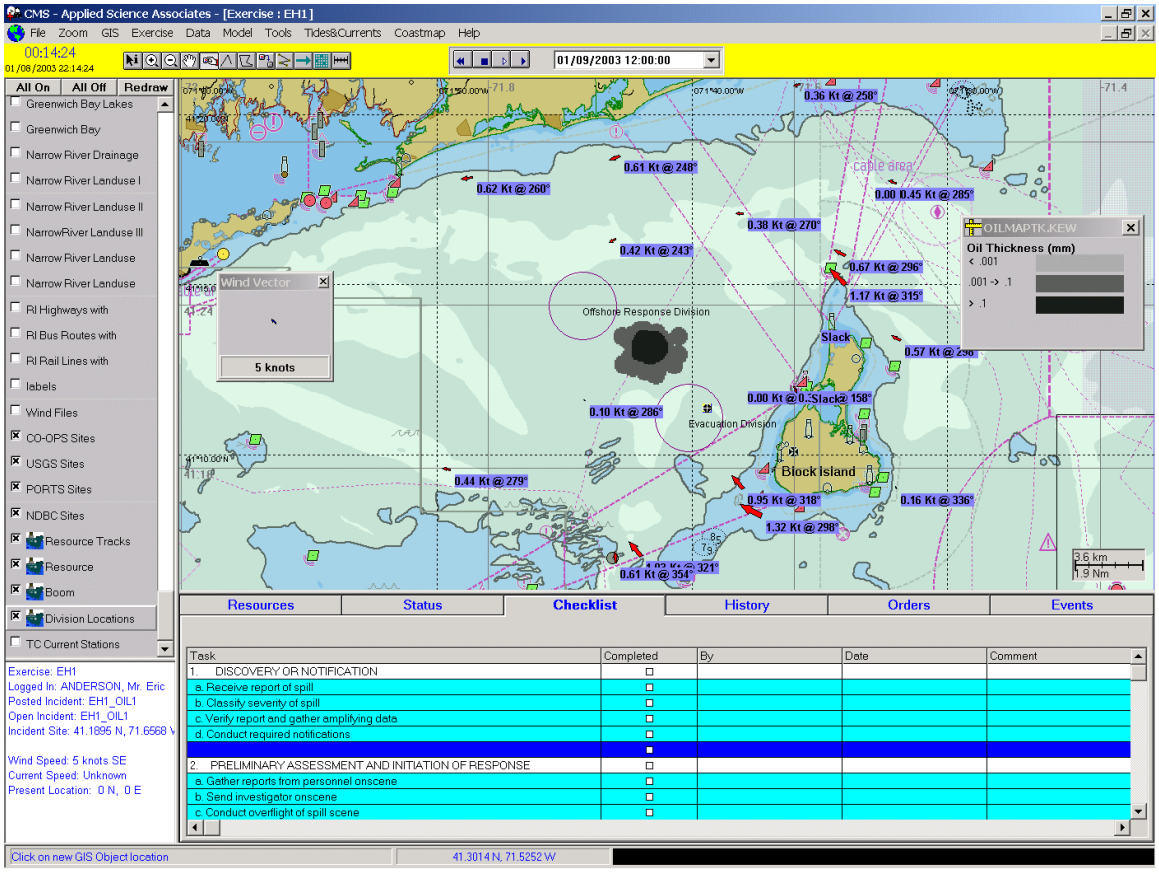


- The Play button, to show the entire animation to its end.

By clicking on the drop down bar, allows the user select a time of interest (i.e 11:00 pm on January 19).

The Event Notification Bar: At the bottom right-hand side of the main CMS window is a thin black bar that is used to display messages during the response. Whenever an important event such as a newly-posted incident or an incoming message arrives, a notification of the event will scroll through this Event Notification Bar in red text. By clicking on the bar when the message appears, a user is able to view more information about the event.

- CMS Messaging. At any point during the exercise, instructors and students can communicate with each other via the CMS internal Messaging system. To access the Messaging system, click on the *Messaging* option under the *Exercise* menu. The Messaging window will appear, allowing you to send a new message to any or all of the checked in users, read messages in your Inbox, or view the messages in the Outbox already sent.



- Other product characteristics:
  - CMS supports the display of Electronic Navigational Charts (ENC). The ENC charts provide detailed information including the location of markers, a detailed outline of the coastline, and depth soundings. CMS also supports the display of aerial photography and satellite imagery in geoTIF format.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- License product, usually.

Initial acquisition cost (purchase; licensing fees):

Product itself:

- The CMS is made up of the following components that may be added/removed to configure any system.
  - Instructor station control
  - Student station
  - GIS
  - Oil Spill model and management system (OilMap)
  - Chemical (marine and atmospheric) spill model and management system (ChemMap)
  - Search & Rescue model and management system (SarMap)
  - Marine Emergency Management system (MEMS)
  - Nuclear explosion model and management System (NuclearMap)

- The following table is a listing of the various components and the associated costs.

Module	Function
Instructor	– Exercise control, design and development – Introduce and control land-based and sea-based targets – Introduce and change target routes – Environment control – Cost/Resource tracking and reporting – Resource control – Resource capacity control. – Student tracking and evaluation – Exercise record and playback.
Cost	US$ 10,000/license
Student	– Exercise response – Resource requests and ordering – Student messaging (to other students and instructor) – Screening and response evaluation tools
Cost	US$ 10,000/license
GIS	– Customise specific GIS requirements – Location of environmental, economic and geographic attributes. – Import and link to existing GIS databases (ESRI and MapInfo formats)

	– Display Nautical Charts (ENC S-57, ARCS, NOAA Maptech) – Store resources for damage assessment functions
Cost	– Basic GIS is bundled, no additional cost. – Some additional costs may be required based on data – Preparation, and specific ENC chart support
OilMap	– Define type of oil spill – Define spill source(s) – Select oil from extensive database – Define environmental conditions – Analyse trajectory and weathering results – Add response strategies
Cost	US$ 10,000/license
ChemMap	– Define type of chemical spill – Define spill source(s) – Select chemical from extensive database – Define environmental conditions – Analyse trajectory and weathering results – Analyse in-water and atmospheric concentrations and their effect on human health and natural resources – Determine areas for evacuation in atmospheric cases and develop evacuation plans – Add response strategies.
Cost	US$ 15,000/license
SarMap	– Define target type – Define last known position(s) – Define environmental conditions – Allocate search units – Define Search Areas and Paths – Calculate Probability of Detection (POD)
Cost	US$ 10,000/license
MEMS	– Define type of accident – Define type of ship in distress – Define cargo and passenger manifest – Define pick-up divisions – Define drop-off divisions – Allocate resources and pathways/waypoints for evacuation
Cost	US$ 5,000/license
NuclearMap	– Define type of nuclear release – Define source(s) – Define environmental conditions – Analyse plume concentrations and their effect on human health and natural resources – Determine areas for evacuation and develop

	evacuation plans
Cost	US$ 5,000/license

Other necessary support, software, equipment:

- Standard Windows PC.
- Microsoft operating system (95,98, ME, NT, 2000, XP).
- Microsoft Word (suggested accessory).

- Support manuals/materials provided with the system:
  - User Manual;
  - On-line assistance;
  - Training documents. These are for training the instructor, but can also be used by the instructor for development of training materials he/she will use.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- No.

Number of staff required to setup, and operate product

- One person minimum.

Staff training required to use product (identify briefly ... type, time):

- 5-day course is recommended for general operation.
- A second 5-day course is recommended for the ICS version of CMSMAP. This second course addresses ICS-related functions and operations.

Cost for staff training on product (Cost to purchase training):

- US$5,000 - $20,000. A 5-day course would typically cost $10,000.
- The cost of training is a negotiated item, depending on the system purchased/licensed.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Windows PC with operating system.

Expected costs?

- US$2,000 for PC.
- A large screen display, printer and other accessories would add to this hardware cost, if wanted.

Product maintenance requirements/recommendations (identify briefly):

- Annual refresher training.
- Maintenance hotline.
- Semi-annual product upgrades.

Maintenance costs (Expected or required software, hardware maintenance):

- US$1000/license

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Microsoft Windows 95,98, ME, NT, 2000, XP.

Can product be customized? How? Cost?

- Yes - Task Specific.
- Via software modifications
  E.g., Area-specific features (geographic maps, facilities, etc.).
  Models (vehicles, incident, weather, etc.)
  Management and training/exercise conduct features
- Cost not known … will depend on customized features. Some cost information is provided above regarding technical support (gives idea of labor rates).
- Technical support labor would be, approximately, $1,000 per day plus travel expenses.

Product modifications required to support counter-terrorism training/exercises:

- CMS would have to be expanded to include capabilities in support of counter-terrorism activities in inland environments. As currently configured, CMS focuses primarily on port environments; and then, with regard to waterborne and airborne hazardous materials, and resources and actions to respond to those incidents.

  Modifications:
  - Capabilities would have to be modified, for example, to include first-responder vehicles and actions.
  - Training-related features (e.g., performance measures, feedback displays) would have to be expanded to provide maximally effective training.

  Range of potential costs:
  - Depends on modifications required. However, it is estimated that the development cost would be substantial. Note, however, other simulations may require similar modifications (TJH).

<u>Personal Computer Requirements</u> *(if appropriate)*
(Most software will offer minimum and recommended configurations).

Processor speed (in MHz):
- 400 MHz minimum.

Memory:(SDR/DDR:
- 64 MB DDR.

Free disk space:
- 35 MB.
- Plus space for geographic location.

Internet connection speed: (if any):
- Not necessary.

Display adapter[4,5]:
- 16 MB Video card.

CD-ROM speed:
- Not necessary.

Optional accessory requirements[5]*:*
- None.

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Both

Potential type of WMD event product can support:

Chemical - Yes.
Biological - Not currently
Radiological - Yes.
Nuclear - Not currently
Explosive - Not currently

Constraints on supported exercises or scenarios?
None that are obvious at this time, other than limitations already addressed.

Potential disciplines product can support:

Emergency medical services
Emergency management agency
Fire
Governmental administration
Health care
HazMat
Law enforcement
Public health
Public safety communication
Public works
Global … or other (Pelfrey)

- Would primarily support higher-level decision making functions, such as those of the Emergency Management Agency.
- But, can potentially support several of the above during FSE, depending on training and exercising objectives and context (e.g., scenario) … particularly with regards to ICS functioning.
- CMS has particularly strong capabilities in regard to chemical gas dispersion, although these would likely require modification for the range of WMD needs.

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition

- Yes, but instructor dependent. Could support individual learning
- Would require an instructor.

Improvement

- Yes, primarily team-related skills & knowledge (e.g., ICS, unified command, communications, coordination, decision making).

Maintenance/refresher

- Yes, primarily team-related skills & knowledge (e.g., ICS, unified command, communications, coordination, decision making).
- Other content-area training can be supported, including:
  Assessment of contingency plans

Equipment management

Note, most large-scale simulation systems could also support these content-area types of training.

Target audience:

First responders/Crisis managers/Incident Commander

Law enforcement/Fire& Rescue/Hospital personnel

- Primary target audience (TJH assessment): Crisis managers
  Incident command team

  ASA states first responders, law enforcement, and fire & rescue/hospital personnel as well.
- Can support field training of first responders, including actual resources and simulated resources.

Potential responder training level(s)/categories product can support:

Awareness –

Performance [Operations]

Technician [Specialist]

Planning & Management [Incident Command]

Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -

- All (according to ASA).
- Primarily oriented to (TJH assessment): Planning & Management
  Integrated Systems
- Performance and technician levels can be supported (i.e., particularly with regard to environmental effects). But, not efficient as the primary means of training (TJH).

Potential equipment and/or facilities product can address:

- EOC
- Command Post
- Field response teams (some … involved with assessment) (TJH)

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- ICS process
- EOC decision-making
- Team communications & coordination
- Overall preparedness/readiness assessment

Training content description (what trained), in addition to preceding item (Brief):

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

- Basic-level proficiency, such as awareness training, or ICS-100 level.

Potential training/exercise types product can support:

Classroom - Yes, as a demonstration tool.

Individual self-paced -

- Individual, but not self-paced.

Seminar/workshop - Yes, providing a scenario context to support training.

Drill - Yes

Individual and small-team exercises - Yes
Simulation-supported - Yes
Gaming - No
Collaborative - Maybe
Tabletop - Yes, simulation-supported (which, may be functional).
Functional - Yes
FSE - Yes, if simulation is necessary to support parts of the exercise.
Other

- Small-team exercises.

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time exercise, simulation-supported. Fast-time and jump-ahead functions are also possible.
- Team context. Also, tabletop context.
- Instructor support is required.
- Has a capability to support immediate feedback, delayed feedback, positive guidance and demonstration.
- Can be used to support classroom, case studies, and real-time VTC training (but, no specific features tailored to these types of training strategies).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Simulation supported.
- Failures must be manually entered during scenario.
- Scenarios can be scripted and instructor-controlled.

Exercise/scenario length/time(typical):

- Typically, medium - long scenarios (4 - 8 hours).

Process and time to:

Develop new exercise/scenario:

- Data entry can be rapid.
- Typically for a complex full-scale exercise, assuming all data are well-organized, data entry can be 1-day or more (this is similar to other media of this type … TJH).
- Note, full scale exercise development often begins 9 months before the exercise.

Modify an exercise/scenario:

- 5 – 10 minutes … depending on the extent of modification.

Setup an exercise/scenario to run:

- 10-15 minutes, assuming a single station, or networked stations already connected and functioning.

Does a curriculum already exist?
If so, briefly describe its form and content:

- WMD curricula do not currently exist for CMS.

- ASA would use an external vendor for developing and providing WMD training using CMS.
- ASA does have curricula for ICS, primarily focusing on oil spill incident response.
- ASA created curricula both for the CMSMAP (without ICS) and for standard ICS training.
  - The ICS specific curriculum was developed for training sessions given in Singapore (see Appendix A).
- The CMSMAP curriculum (i.e., training on how to use CMSMAP) has been developed over several training programs. A typical agenda for CMSMAP training is shown below:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
A.M.					
0900	Introduction	Purchase Orders and Invoices	GIS	Incidents and Models	Exercise 10
0910	Course Schedule	Checklists			
0920	CMS Overview	Exercise 3	Exercise 6	Exercise 8	
1000	Exercise 1 Oil Spill Response	Messages			
		Exercise 4			
1030	BREAK	BREAK	BREAK	BREAK	BREAK
1045	Exercise 1 (cont.) Oil Spill Response				
P.M.					
1200	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
1330	Instructor View	Instructor-Student	Incidents and Models	Polaris	Open Discussion
1345	Suppliers and Resources	Exercise 5		Exercise 9	
1500	BREAK	BREAK	BREAK	BREAK	BREAK
1515	Exercise 2	Exercise 5 (cont.)	Exercise 7	Exercise 9 (cont)	Course Evaluation
					Wrap-up
1630	stop	stop	Stop	stop	stop

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

- Scripted Scenarios.
- Real-time instructor control.

- Can support positive guidance and demonstration.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

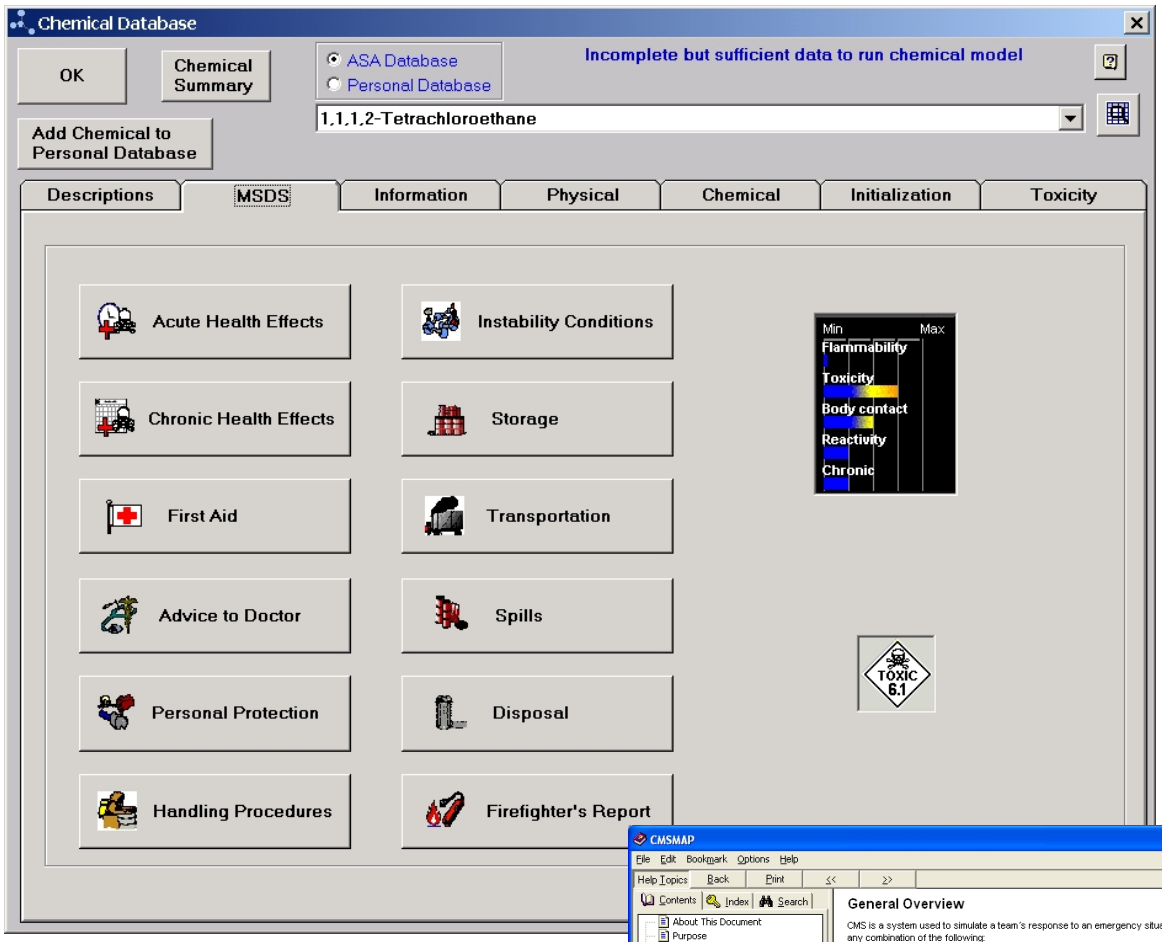
- Scenario/Exercise data recording.
- Instructor observations recording.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Open system so integrated linkages for video, web-base pages and any Windows document or object.
- Playback of scenario (as it occurred).

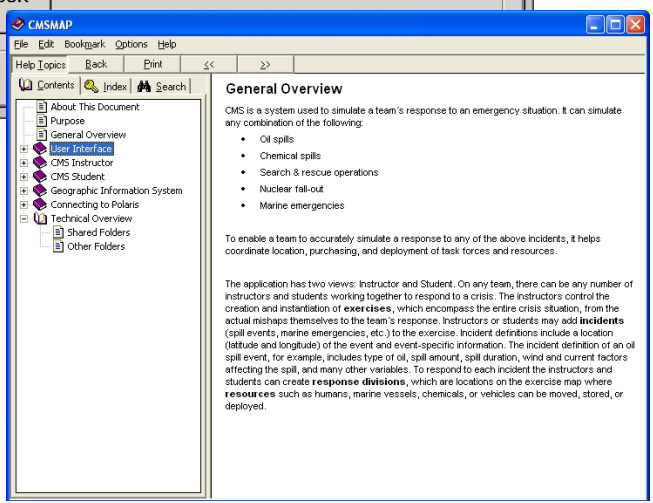
Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries])

- Integrated with chemical hazard database: Chemwatch. I am not sure of the content directly related to WMD



HELP features (Briefly identify):

- The CMS system is installed with a help file which allows the user to navigate



through various topics and assist the user to complete the exercise.

- HELP feature is a variant of the User Manual.

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Training documentation for the instructor.
- Simulation can be run in fast-time.
- Variety of scenario conditions can be controlled (set up) using control panels.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- All events and actions are recorded, and can be played back.
- Real-time, fast-time, jump ahead capability.
- Instructor cues, warnings, alarms (same thing).
- Instructor can control scenario.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

- See above.

Data recording & storage features (e.g., Scenario events; student performance):

- All events and actions are recorded, and can be played back.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- None specific.

Training/exercise fidelity:

Environment (including situation/scenario):

- Can be high, depending on models used.

Hardware:

- PC-based hardware. Can be high, to the extent the CMS is used as an operational tool. Would be medium - low for other tools.

Information (including interaction with other persons):

- Can be high, depending on models and information sources used.
- Simulation aspect can provide high information fidelity in certain types of scenarios (see CMS capabilities and limitations identified throughout).

APPENDIX A

ICS TRAINING CURRICULUM
5-Day Program

This course covers the effective management of oil spill responses, hazardous substances releases, tank vessel groundings, ferry mishaps, and nuclear release incidents using the United States National Interagency Incident Management System (NIIMS) form of the Incident Command System (ICS). Topics, contained in the NIIMS national curriculum, that are covered in this course include: Principles and Features of ICS; Organizational Overview; Incident Facilities, Resources and Responsibilities Associated with ICS Assignments; Organizing for Incidents; Incident Resource Management; Incident Planning; and Unified Command Structure (UCS). The course is structured to provide a balance of classroom lecture, instructional videotapes and hands-on student exercises featuring incident scenarios that might occur in regional waters. NIIMS training materials used in this course will be provided to each student. The topical curriculum that will be followed includes:

TOPIC BLOCK	TIME
Day 1	
Training introduction and objectives, introduction of instructors & students, and history of ICS in United States (w/video)	0800-0900
Principles and Features of ICS Presentation- An overview of ICS describing its principles and features	0900-1000
Organizational Overview, Organization, Staffing and Use of ICS-201 Form Presentation (w/video)- Discussion of standard organizational elements, position descriptions and use of the ICS-201 form to conduct operational briefings	1000-1200
Lunch	1200-1330
Organization Exercise (tank vessel grounding scenario)- Students develop the initial organization to an incident response using the principles of ICS	1330-1430
Incident Facilities, Resources and Responsibilities Associated w/ ICS Assignments Presentation- Standard facilities and resources nomenclature and common staff responsibilities are discussed	1430-1630
Day 2	
Resource Tracking Exercise (tank vessel grounding scenario)- Students use manual system to accurately track resources employed during an incident response	0800-0930
Developing the Tactical Organization for Incidents Presentation-	0930-1000

Methods to organize the Operations Section during an incident response are described	
Tactical Organization Development Exercise (tank vessel grounding scenario)- Students develop the Operations Section tactical organization for the initial response to an incident	1000-1100
Incident Planning Presentation- Explanation of the Planning Cycle elements and importance of setting objectives	1100-1200
Lunch	1200-1330
Objectives/Strategies Exercise (ferry mishap scenario) Students develop overall incident objectives and objectives for a future operational period	1330-1430
Incident Planning Presentation (continued w/video)- Complete the discussion of the Planning Cycle	1430-1530
Incident Resources Management Presentation- Identification, ordering, check-in, status maintenance and demobilization of resources needed during an incident response	1530-1630

Day 3

Resource Management Exercise (ferry mishap scenario)- Students determine resources needed to accomplish objectives during a future operational period	0800-1000
Incident Action Plan (IAP) Forms Presentation- Description of key ICS forms comprising the IAP	1000-1100
Incident Command Post (ICP) Organization and Communications Presentation-Layout, operations and effective communications at an ICP	1100-1200
Lunch	1200-1330
Workshop- Selected group discuss and plan for the integration of ICS into Regional Contingency Plans	1330-1630

Day 4

ICS Planning Cycle Demonstration (ferry mishap scenario)- Instructors and selected students demonstrate an iteration of the Planning Cycle	0800-0900
Incident Action Plan (IAP) Development Exercise (HazMat Scenario)- Students initiate the planning cycle in early stages of an incident response and prepare an IAP	0900-1200
Lunch-	1200-1330
Incident Action Plan (IAP) Development Exercise Critique- Students and	1330-1430

Instructors discuss and critique morning's exercise	
Unified Command Presentation- The adaptation of ICS to multi-jurisdictional, multi-agency incidents	1430-1530
Unified Command Exercise (Nuclear Release)- Students conduct a Unified Command formation meeting following a simulated nuclear release incident	1530-1630

Day 4

Introduction to ICSMAP- Students are given a presentation on the ICSMAP system and its application to the ICS processes	0800-0900
Incident Action Plan (IAP) Development Exercise (Oil Spill Scenario)- Students and instructors form a Incident Management Team and initiate the planning cycle in early stages of an incident response and prepare an IAP using ICSMAP	0900-1100
Course Summary/Critique/Graduation- A wrap-up of the course; students critique the course and are presented course completion certificates	1100-1200
Lunch-	1200-1330
Workshop- Selected group discuss and plan the development of a real-time response system for regional Port operations	1330-1630

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Summary of:

Decision Making Skills for Public Officials During a Hazardous Materials Incident

"Decision Making Skills for Public Officials During a Hazardous Materials Incident" is a CD-ROM computer based training (CBT) series. The 6 disk set is aimed at educating Public Officials about making decisions during a HazMat incident using the same information they would have available in an actual incident. The training is designed with audio and video clips to increase the interactive quality of the experience. It was developed by the Carley Corporation through a contract with the Emergency Management Institute (EMI) of the Federal Emergency Management Agency (FEMA).

According to the Carley Corporation home page, "FEMA wanted to present these officials with an accurate simulated emergency to test strategic decision making." The goal of this training is to "… allow public officials to build experience and confidence in their critical thinking and decision making skills before facing the next disaster." This training is designed to simulate the same data elements, time constraints, and political, safety, financial, and legal pressures that public officials would encounter in an actual incident.

Basic Product Information

Name of Product: "Decision Making Skills for Public Officials During a Hazardous Materials Incident"

Screen dumps and opening paragraph

Product is hardware, software, or both?

- Software:
  - Off –shelf, PCs (workstations)
  - Windows 95 or 98
  - CD-ROM
- Reference material:
  - Instructions and suggestions for use are included on the CD-ROM sleeve
  - Can print copy of 60 page Central City's Emergency Operations Plan from the CD-ROM

Large multi-user system, small multi-user product, or individual-user product?

- Individual- user product. However, a trainer could facilitate a group of students in a discussion as they went through the training.

Focus/specialty of product:

- This training is directed at public officials' decision making skills during an emergency. There are six different CD-ROMs, each giving the user an opportunity to play a particular role in the Emergency Operations Center (EOC). The EMS Coordinator role is reviewed in this document. The five other roles are Fire Chief, Police Chief, Emergency Program Manager, Public Works Director, and Mayor.

- The CD-ROM is a role-playing simulation of an emergency situation with audio and video components. The program allows for point and click retrieval of information in text, video, and audio formats. It comes with instruction for using the training simulation constructively. It can be used individually or with a facilitator and group discussion.

- The supporting literature (jacket sleeve) has a planning component. Questions are provided which community decision makers should discuss and address. These questions focus on evaluating elements of existing local emergency response plans.

- Decision making skills
- Emergency management
- Incident response
- Awareness of chemical hazards
- Computer Based Training (CBT) application
- Emergency response planning

Incident response operational tool/system:

Domestic, military, other users?

- This product is not designed to be used operationally

Incident response training/exercise tool/system:

Domestic, military, other users?

- This training is designed specifically for incident response training
- Domestic at the local government level

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

- none

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

N/A

Functional-area identification of product (Broad range, or specific):

- Incident response management/crisis management

- Chemical incident (hazardous materials)
- Decision-making skills
- Response planning

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

- Emergency Management Institute (EMI) of the Federal Emergency Management Agency (FEMA) developed under contract with Carley Corporation.

Contact info ref. technical questions (Person, title, organization, telephone, email):

Carley Corporation
Nancy Kaufman, Project Manager
6023 Selwood Place
Springfield, VA 22152
Phone: (703)981-9234
nkaufman@carleycorp.com

Contact info ref. buying the product (Person, title, organization, telephone, email):

This training is at least five years old, developed in 1998. There is one location in Ohio where it is listed on their website (see below). However, this training is not listed on the EMI website and a search on FEMA's website did not locate any information about the training.

Dennis Hickethier (301- 447-1148) of EMI, said that FEMA made 15 thousand copies of the six series set and distributed it to the Sates. EMI does not collect data on how the States use the training. States with larger populations received more copies.

Barbara T. Wisniewski Biehn
Training Program Analyst
Office for Domestic Preparedness
810 Seventh St., NW
Washington, DC 20531

202-353-0281
wisniews@ojp.usdoj.gov

COTS/GOTS (circle one).

- GOTS

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- Training is directly related to WMD incident response training. There is a chemical spill due to a train wreck, the consequences of which remain the same whether or not the cause was accidental or intentional.
- Some modification of roles would be required for application to a terrorist event

- The mayor would be more concerned with minimizing panic
- The chief of police would be looking for a perpetrator, evidence, secondary devices
- The EMS Coordinator would be concerned about reassuring staff of their safety

Product status (Production version in use; prototype in use; under development)?

The final version appears to be in distribution and no other versions seem to be in development.

If in use, identify users, types of use:

I was unable to locate many users; however it has been used by:

1) The Montgomery/Greene County (Ohio) Local Emergency Response Council lists the training on their website as accessible to first responders. They list contact information as follows: "The CD-ROMs are available in Windows format only and are housed at the Miami Valley Regional Planning Commission (MVRPC) Resource Library. To reserve a copy of an individual CD or the set please send an e-mail with your request. Click HERE to reserve your copy".

http://www.mgclerc.org/ematrain.html

2) This training was used to test an interactive live chat platform as a delivery method for training. The following is an excerpt of the description of that test:

On the Line
WEBEX: A Successful Experiment in Emergency Management

WEBEX was a recent experiment in the use of Internet live chat technology to conduct an on-line exercise in emergency management. The effort was an experiment to determine whether it is possible to conduct an exercise with a wide variety of players who have little or no live chat experience. The results were extremely positive.

The WEBEX experiment took place during the November 1998 Virtual Fire and Rescue Exposition (VFRE), an on-line conference hosted by ***National Fire & Rescue Magazine***, with an audience of fire and emergency management professionals. Almost all planning for the event took place on-line through weekly meetings using the Emergency Information Infrastructure Partnership (EIIP) chat facility.

We used a train derailment scenario involving hazardous materials and elements of terrorism (loosely adapted from a set of interactive training CD-ROMs, ***Decision Making Skills for Public Officials During a Hazardous Materials Incident***). Five separate chat rooms, representing the on-scene incident command post, staging and triage areas, an emergency operations center, and a media briefing area, were planned. Five communications officers were trained in chat techniques to facilitate communications among rooms. Potential roles were identified, and volunteer role players were recruited via various Internet media. Two practice sessions, using a different scenario, were held.

Conference attendees were invited to either observe or participate. Approximately 50 players and observers stayed throughout the event, and at least 77 were on-line at one point. Professionals from the private sector, fire services, emergency medical services, emergency management, and other local government agencies were involved.

Again, the objective was not to demonstrate technical perfection of response, but rather, to see whether the whole concept of conducting an exercise via the Internet was feasible and to learn what improvements

might be made. Further, the experience was designed to be challenging and stimulating to all involved, thereby encouraging similar exercises in virtual communities.

Again, the outcome was very encouraging:

- One practice session in chat technique appeared sufficient, even for those who had never chatted previously.
- Interaction among players was highly realistic and included the usual challenges in human communication.
- A planned formal debriefing was abandoned in light of the excitement generated by the exercise, and the time was used instead for participants to express their reactions. The most frequent question was, and continues to be, when are we going to do it again?

This training technique shows real promise. The Internet environment seems to have the appeal of on-line gaming while creating an interactive experience among professionals of similar backgrounds. Using this technique in real communities or regions may also help participants understand the wide range of concerns and problems typically involved in response to a disaster or major incident. Although no follow-up event is currently planned, we expect another WEBEX or similar exercise sometime in the future and encourage other organizations to conduct experiments of their own.

For further information about this experience in on-line emergency exercising, contact *Amy Sebring, EIIP Project Coordinator, 4121 Claudia, Corpus Christi, TX 78417; (512) 937-4177; e-mail: asebring@emforum.org*; or *Avagene Moore, EIIP Coordinator, 1017 Hayes Road, Lawrenceburg, TN 38464-4007; (931) 762-4768; e-mail: amoore@emforum.org*. The complete set of exercise materials can also be found on the Internet at *http://www.emforum.org/webex*.

Product Description

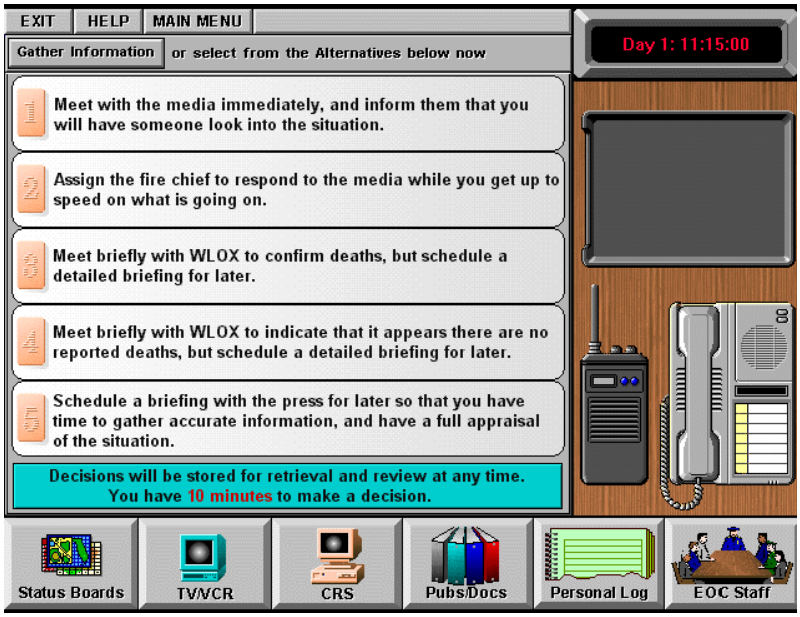
Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- The training is an individual CBT.
- It can be used as group training. I would recommend group training as the best way to use the product. It is more interesting with another user present to talk about the decisions. The volume of information is significant so it is easier to manage with more than one person. The interaction is more interesting as well.

The CD starts by telling users what role they are playing. In this case we were the EMS Coordinator, Paul Carroll. Next, the CD plays a video showing Central City, the train wreck, and the EOC. The voice-over describes the goal of this training: to provide public officials with practice in decision making for an emergency incident. Then the user sees the main menu which includes the following choices:

- Introduction to Central City
  - Background information about Central City
  - Lists of facilities and resources
- Responsibilities of Response Operations
  - Introduces EOC staff and describes their roles and responsibilities
- Simulation
  - This starts the training

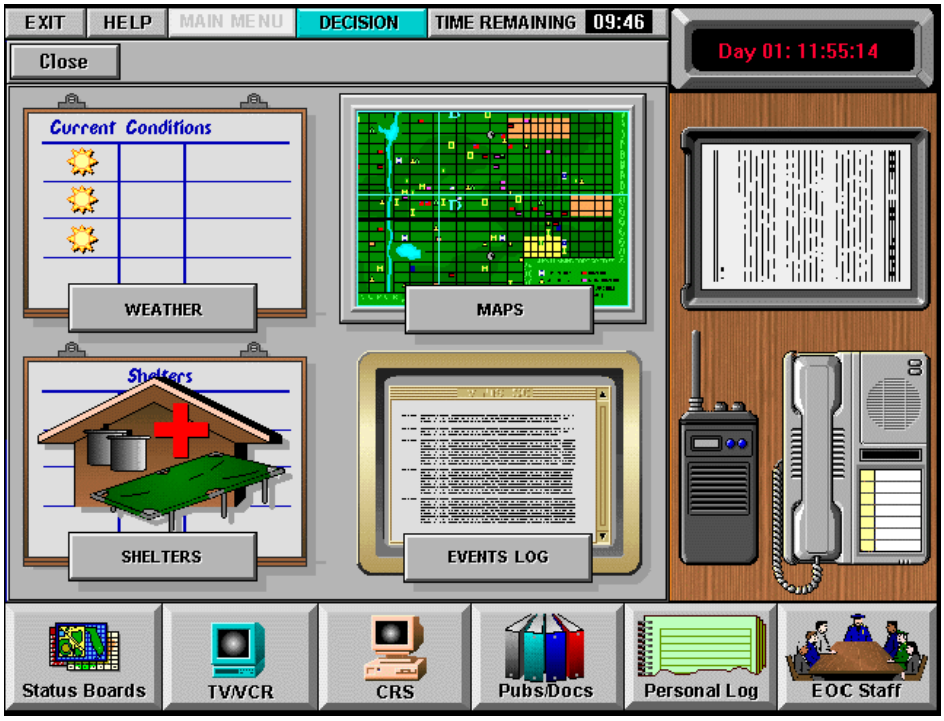
The Training simulation begins with a message to the EMS Coordinator, Paul Carroll that a train has derailed in Central City causing a fiery wreck. A video of the EOC is shown where Paul is presented with a problem and has to make a decision, quickly. The video stops and four or more text answers are available for the user to select in the allotted time. Time allowed varies anywhere from five to ten minutes.



During the time available a user can access the following information to answer the question.

- Clicking on Status Boards allows the user access to
  - Maps of Central City, Liberty County, and the State of Columbia listing facilities locations
  - Weather information including the strength and direction of the wind
  - An events log
  - Shelter information
  - Personal log
  - Plume model
- A video of the fire and derailment is available
- There is a library of documents and resources, which includes
  - Emergency Response Guidebook
  - Material Safety Data Sheets
  - Department of Labor & Safety
  - Policies & Procedures
  - Emergency Handbook of HazMat
  - Handbook of Infectious Diseases
  - Public Works Responsibilities
  - Evacuation Orders
- There is a graphic of a phone you can click on and “call” people for information
- There is a graphic of a radio/walkie talkie that allows the EMS coordinator to “talk” to the EMS Sector Coordinator and/or the EMS Fields Supervisor

- There are also reference materials
- There is a graphic of an inbox where users can get text memos and faxes from anyone who has to check on information and get it back to the EMS coordinator
- There are over 800 video files and 2000 audio files and 5, 000 data elements. (per Carley website)



- There are video answers from other EOC staff members

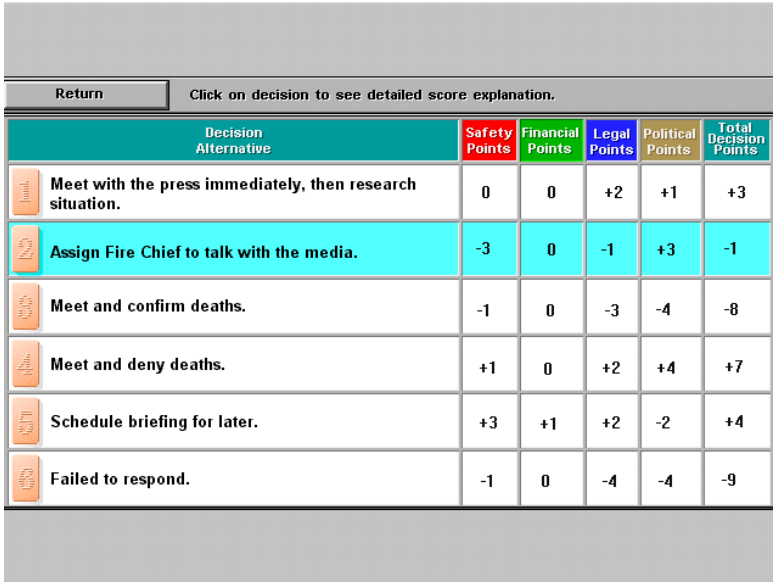
After gathering information the user selects the decision he prefers. If the correct answer is selected the user sees the video clip of the events that follow his decision. In this case, the user sees Paul Carroll telling the Mayor of his decision and being praised for it. If the answer is incorrect the user sees the video judge stating what the correct answer was followed by the

previously mentioned video clip of the correct answer. 9-10 decisions need to be made in each CD-Rom in order to complete the training.

Before moving on to the next question a user has three options, replay the previous question, continue, or review the scoring matrix for the previous question's answers. The scoring matrix shows the optimum answer based on four levels of consideration. Each possible answer is scored on four levels.

- Safety considerations
- Legal considerations
- Political considerations
- Financial considerations

This cycle of being presented with a problem, gathering information quickly, making a choice, and getting feedback on that choice continues for 8-9 questions more. The information you can review is cumulative. Subsequent questions draw upon all of the information and decisions the user has already made. Each information gathering session will help the user make decisions for future problems. The graphic below is the screen the user sees if he decides to review the scoring for the decision he just made.



Return | Click on decision to see detailed score explanation.

Decision Alternative	Safety Points	Financial Points	Legal Points	Political Points	Total Decision Points
Meet with the press immediately, then research situation.	0	0	+2	+1	+3
Assign Fire Chief to talk with the media.	-3	0	-1	+3	-1
Meet and confirm deaths.	-1	0	-3	-4	-8
Meet and deny deaths.	+1	0	+2	+4	+7
Schedule briefing for later.	+3	+1	+2	-2	+4
Failed to respond.	-1	0	-4	-4	-9

When you have made your final decision you get you're a break down of your overall score. The screen will list information about your overall score, highlighting excellent, good, average, etc:

Definition of Ranges for Scores	Lowest	Highest
Excellent	51	62
Good	40	50
Average	32	39
Below Average	23	31
Poor	-97	22

The screen also breaks down the scoring the user receives for each decision he made. There is another table describing the worst and best possible scores by category:

	Worst Possible Score	Best Possible Score	To Achieve Maximum Overall Points
Safety	-33	24	24
Financial	-8	6	5
Legal	-22	13	13
Political	-34	20	20

Clearly financial concerns are not a priority during an emergency. Safety concerns are weighted most heavily, but the maximum score is not reached by doing the safest thing in each case because that will cost you points from the financial, legal, or political columns. The highest score a user can obtain is 62 and -97 is the lowest. The user who does not respond in the time allotted for each question would receive the lowest possible score.

The simulation ends with a video of Paul Carroll making a short statement at the press conference where the mayor praises the efforts of her EOC staff.

Intended for operations, training/exercises, or both?

- Solely for trainings
- Would not be used in an exercise because the simulation takes place in a fictional city and there is no way to look at your own EOP

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

- Training Media
- There are tools to evaluate your performance on each decision (that you make while playing the game) and on all of the decisions combined

Intended for individual, group or team use[1]?

- Individual and group: there are two suggested methods for use of the training
  - Students each take a different role and play them on their own then meet later to discuss how to handle a similar hazardous materials incident in their community
  - Select one role that a group of students will play together. Discuss each decision as it is asked in the game

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- It can be used for a group discussion format there is still only one user-interface, so it is not intended for multiple users
- ??

Number persons usually trained simultaneously?

- It is not clear how many people can be trained simultaneously with this product. Ideally a group of no more than 15 would be an effective discussion size.
- The internet live chat test used up to 50 participants, online

Large multi-station system, or based on individual PC's?

- Individual PCs (stand alone product, game plays off of the CD-ROM, so it needs to be in the disk drive in order to work)

Custom/proprietary hardware required?

- No

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
  - Individual PCs
- Software:
  - Proprietary training simulation software
  - Played off of a CD-ROM
- Simulation:
  - Basic simulation with audio and video components
  - Simulation itself cannot be modified
  - Does not change elements based on user inputs
  - Simulates the events over two days for a fictional community responding to a train derailment that causes a chemical spill

If simulation models are used, identify their qualitative validity level (if possible):

- I do not have enough information about simulation models to truly evaluate the validity level
- The simulation does try to look realistic in its graphic presentation of tools an EMS coordinator would use while working at the EOC.
    - There is a graphic of a phone you can click on and "call" people for information
    - There is a graphic of a radio/walkie talkie that allows the EMS coordinator to "talk" to his immediate subordinate
    - There is a graphic of an inbox where you can look at memos and faxes
    - There are also reference materials
    - Players can get information from other EOC staff members
- It is not as realistic in that your decisions do not effect the scenario but rather your score in the game

Stand-alone product, or require other hardware and software to function[3] *(e.g., external simulation models, data base, operational equipment):*

- Decision Making Skills is a stand alone product

  If other hardware and/or software required, or typically used, identify it/them.
- N/A

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Home/office PC work station
- Conference room equipped with a PC and a projector for group method

Web-based application, LAN, or a single computer/system-based application?

- Single computer/system based application

  Can the training be administered over a wide area network or a local area network?
- No, it is loaded on a CD-ROM

Is an instructor or facilitator needed?

- No, this training can be administered by anyone, even to a group, no training expertise is required

  If not, how is training conducted (e.g., Individual self-paced)?
- Individual self-paced
- Group self-paced

  If not, how is training managed (e.g., Testing, certification of completion, etc.)?
- A scoring matrix is provided and can be printed out

Describe unique user interface characteristics:

- Standard PC interface , under Windows 95 or 98 (keyboard, mouse, display)

Other important product characteristics:

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- Free from ODP. Free from the States

Initial acquisition cost (purchase; licensing fees):

- None

Product itself:

- None

Other necessary support, software, equipment:

- Office consoles, conference rooms

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- None

Number of staff required to setup, and operate product:

- None

Staff training required to use product (identify briefly ... type, time):

- None

Cost for staff training on product (Cost to purchase training):

- None

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- None

Expected costs?

- Training time

Product maintenance requirements/recommendations (identify briefly):

- None

Maintenance costs (Expected or required software, hardware maintenance):

- None

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Windows 95 or 98

Can product be customized? How? Cost?

- No, Decision Making Skills is training course that has been finalized.

Product modifications required to support counter-terrorism training/exercises:

Modifications:

- No real modifications are needed the product can be used as is
- It might be nice to have another training of this nature deigned with the following attributes:

- Simulation includes the ability to modify it with community specific information instead of a fictional city
- The chemicals are deliberately unleashed on the community
- All roles can be played from one CD-ROM
- Put the entire training on an internet site so that is can be accessed by communities nationwide

Range of potential costs:
N/A

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).

- Pentium computer (I believe they mean it cannot be used on a 386 or 486 computer)
- 16 MB RAM
- 500 MB hard drive
- Super VGA monitor
- 64/65k color display (640 x 480)
- 16-bit multimedia sound card
- Multimedia speakers
- 4x CD-ROM reader
- Windows 95 or 98

Training/Exercise Characteristics

Product may support training, exercises, or both?
- Trainings
- Addressing a small number or response planning issues

Potential type of WMD event product can support:
Chemical – Yes
Biological – No
Radiological – – No
Nuclear – – No
Explosive – Yes

Constraints on supported exercises or scenarios?
- It cannot really be used for exercises as the scenario will not test existing response plans, however there is a guided discussion that addresses several response planning issues.
- The scenario is constrained to the preloaded scenario of a train wreck with chemical spill in a fictional town

Potential disciplines product can support:
- Emergency medical services
- Emergency management agency
- Fire
- HazMat
- Governmental administration
- Health care
- Law enforcement

- Public works

Global ... or other (Pelfrey)

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition
Improvement
Maintenance/refresher

- This training can be used to support all three types of learning

Target audience:

- Public Officials
- First responders
- Crisis managers
- Law enforcement
- Fire& Rescue

Potential responder training level(s)/categories product can support:

Awareness – Yes
Performance [Operations] - No
Technician [Specialist] - No
Planning & Management [Incident Command] - Yes
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) – Yes

Potential equipment and/or facilities product can address:

- EOC operation

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- EOC decision making
- Team communications or at least information gathering skills

Training content description (what trained), in addition to preceding item (Brief):

- Decision making and problem solving
- Command center skills
- Awareness of issues surrounding decisions
- Awareness of the type of information you would have to gather in order to make decisions
- Awareness of general incident response issues

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

- No prior training is required. Although the target training audience will most likely be familiar with the issues surrounding emergency response (except the mayor)

Potential training/exercise types product can support:

Classroom - Yes
Individual self-paced - Yes
Seminar/workshop - Yes
Drill - No
Individual and small-team exercises – Individual and group
Simulation-supported - yes
Gaming - yes
Collaborative - yes
Tabletop - no
Functional - no
FSE - no
Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- classroom/discussion with CBT
- self-paced individual CBT
- self-paced group CBT

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Short self-paced
- Simulation supported/guided
- Simulation scripted
- It has a tutorial

Exercise/scenario length/time(typical):

- 15 minutes to read the printed copy of Central City's Emergency Operations Plan providing the city's policies and procedures. Can be used as a reference during the game
- 15 minute introduction to Central City on the computer
- 5-15 minute computer description of role responsibilities
- 5-30 minutes Computer simulation tutorial
- 30-90 minute computer simulation decision choices (the game)

Minimum 1 hour and 10 minutes to maximum 2 hours and 15 minutes

Process and time to:

Develop new exercise/scenario: N/A

Modify an exercise/scenario: N/A

Setup an exercise/scenario to run:

- Very little time, simply load the CD into the computer
- There is more benefit from a little planning by assembling the appropriate target audience and going through the simulation in a group discussion format. Also there are questions for your own community provided dint the jacket sleeve that locals will want to address when they finish the training.

Does a curriculum already exist?

- yes

If so, briefly describe its form and content:

- Suggestions for delivery methods of the training are provided in the jacket sleeve, as follows:
  - How to Use the Program-Method 1: Load the appropriate program on computers that the Fire Chief, Emergency Program Manager, Police Chief, EMS Coordinator, Public Works director, and Mayor/City Manager can use to go through the program individually. After all the role players use their respective program, meet together and discuss how you would handle a similar hazardous materials incident in your community. Use the questions provided to guide the discussions
  - How to Use the Program-Method 2: Select one role (Fire Chief, Emergency Program Manger, Police Chief, EMS Coordinator, Public Works Director, and Mayor/City Manager) that the group will play together. Load the program on a computer where all the role players can gather around to go through the program together.

    To save time when all officials meet together, the person who will actually be operating the computer should go through the introductory modules and simulation tutorial before this meeting. After each decision, discuss what you would do the same or differently in your community. Use the questions provided to guide additional discussions.

  - Questions for YOUR community Related to This Simulation:
    - Have you identified the more likely places for accidents/releases involving hazardous materials (HAZMAT)?
    - Are public officials and responders aware of the implications for hazardous materials incident planning and response contained in: OSHA 29 C.F.R. 1910.120, SARA Title III, and the Hazardous Materials Uniform Safety Act?
    - Does planning for a response to a HAZMAT incident include use of the Incident Command System?
    - Has your community established binding mutual aid pacts with other Jurisdictions/organization for HazMat incident responses?
    - Has your jurisdiction planned for evacuation of citizens, clean-up, re-entry of citizens to evacuated areas, and transportation of casualties?
    - Has your community attorney reviewed laws that pertain to HAZMAT incident mitigation, preparedness, response, and recovery?
    - When was the last time your agency operations plan and SOPs were tested?

- Does your community have a public information plan to deal with the release of information regarding HAZMAT incidents?

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

- The scenario is scripted and automatic
- Discussion during the scenario is about the scenario, however, there is a guided discussion pertaining to your own community that follows the use of the simulation, if you choose to go through the questions listed above.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- The simulations records the answers you give
- There is immediate feedback on whether or not the question was right. A video of an official (maybe from FEMA) comes on to tell you were incorrect and what the optimal answer would be or you go onto the next decision question
- Each question can be evaluated separately –rating factors and categories here…
- Evaluation feedback at end of scenario with all the questions scored and totals…

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Immediate feedback in the form of a video clip following each decision the user makes: in text graphic information display
- The total score is presented in a matrix at the end of the simulation. It describes the optimal answers

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- There are descriptions of 5 of chemicals and the health risks associated with them. These are located in the resource documents
- Information concerning the chemicals effects and names can also be obtained from EOC staff or the Public Health director (you call him on the phone)

HELP features (Briefly identify):

- There is a tutorial
- There is a help feature to explain the scoring matrix at the end of the game

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- This training does not really contain any of these tools. The scoring matrix is the only evaluation tool provided

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

AAR support tools (May overlap with "Student/participant/team feedback features", above):

-

Data recording & storage features (e.g., Scenario events; student performance):

- Scoring and student performance is not saved upon leaving or finishing the training

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- The scoring matrix and discussion is the only analysis available.

Training/exercise fidelity:

Environment (including situation/scenario):

- The situation and scenario seem real
- The EOC seems real, too
- The acting is not that great, but that does not keep the user from learning information about emergency response and decision making

Hardware:

- No special hardware is used, so there are no fidelity issues here.

Information (including interaction with other persons):

- This training is enhanced when conducted as a group. Interacting with others adds to the enjoyment of the scenario, tenfold.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:

Review form filled-in by McDonald Research Associates.
Reviewed, edited, modified by TLI team.
Eagle Defender was not observed.

A. Basic Product Information

Name of Product:

Eagle Defender

Developer: McDonald Research Associates

Contact information: Dr. Bruce McDonald
120 University Park Dr., Suite 200
Winter Park, FL 32792
407-644-1900

Technical Support Contact Information: Ben Murphy
120 University Park Dr., Suite 200
Winter Park, FL 32792
407-644-1900

Website: www.mrassociates.com COTS/GOTS: COTS

Product status (version in use): Version 3.2

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
x	CD-Rom
x	Related Papers
	Other: please state

x	Material from Internet

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Incident Response Planning and Training.

  Eagle Defender is a desktop real-time computer simulation tool that allows leaders and decision-makers from multiple organizations to practice large and small scale incident responses without tying up large numbers of front line personnel. It is an outgrowth and expansion of Security Forces Distributed Mission Training technology developed for the Air Force. The tool simulates the incident, activities of the perpetrators, and activities of the assets (equipment and personnel) deployed by the incident response planners and decision-makers. With this tool, leaders can practice:

  - Deploying assets to prevent or detect an incident.
  - Responding to reports from field personnel.
  - Deciding on courses of action and which assets to deploy in response.
  - Directing field personnel to execute the courses of action.
  - Requesting and providing assistance and assets from/to other jurisdictions, including military Civil Support Teams

  The assets of the decision-makers are simulated in the virtual world and respond to commands transmitted over local area networks and long distance phone lines. Since communication and coordination are critical skills in incident responses, heavy emphasis has been placed on simulating the communication links between leaders and field personnel as well as the communication links between leaders. All communications are recorded for playback (fully synchronized with the replay of the events) during after-action-reviews.

  The initial purpose of Eagle Defender was planning and training for base security forces.

  It is a PC-based simulation system, for running incident scenarios in real/fast time.

- Current Target audience:

  Leaders and Decision-makers

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
3	Non-Electronic Simulation
3	Computer Based Training other than Simulation
	Game

	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	2	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
3	Equipment	3	Does not provide feedback or AAR
		0*	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* Eagle Defender communicates using VR-Link, which has an HLA certificate of compliance.

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- Eagle Defender™ is a multi-player collaboration simulation with 2-D interactive displays that simulate tactical maps.

- It runs on standard Windows PC compatible computers communicating over a LAN. Trainees use menu selections via mouse to give orders to Computer Generated Forces (CGF's) that simulate their subordinates in the field. CGF's issue verbal reports that trainees hear in headsets. Trainees (simulating other members of Incident Command Team) communicate with each other over LAN using headsets.

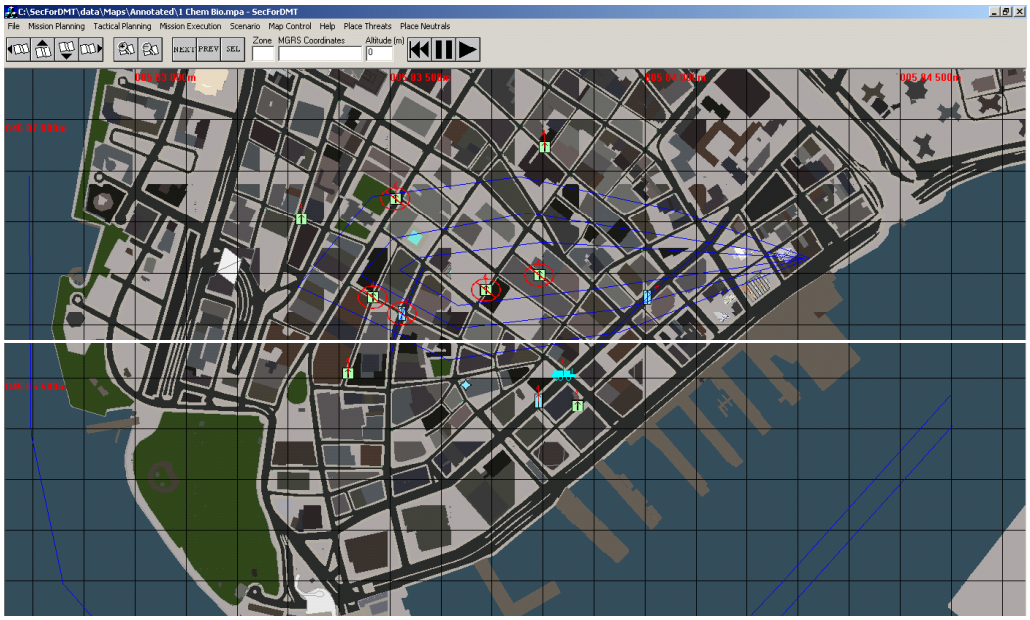
- The trainee display simulates a tactical map. Trainees place assets (equipment and personnel) on the map and use menu commands to give orders. Trainees then move the asset symbols to where they think the assets are based on mental dead-reckoning and location reports. Trainees also place suspected threat/friendly/neutral personnel symbols as well as incident

status and asset location symbols on maps based on situation reports from CGF's. No 3-D displays are used because leaders and decision-makers do not directly observe the threat, and 3-D models are available for a limited number of locales.

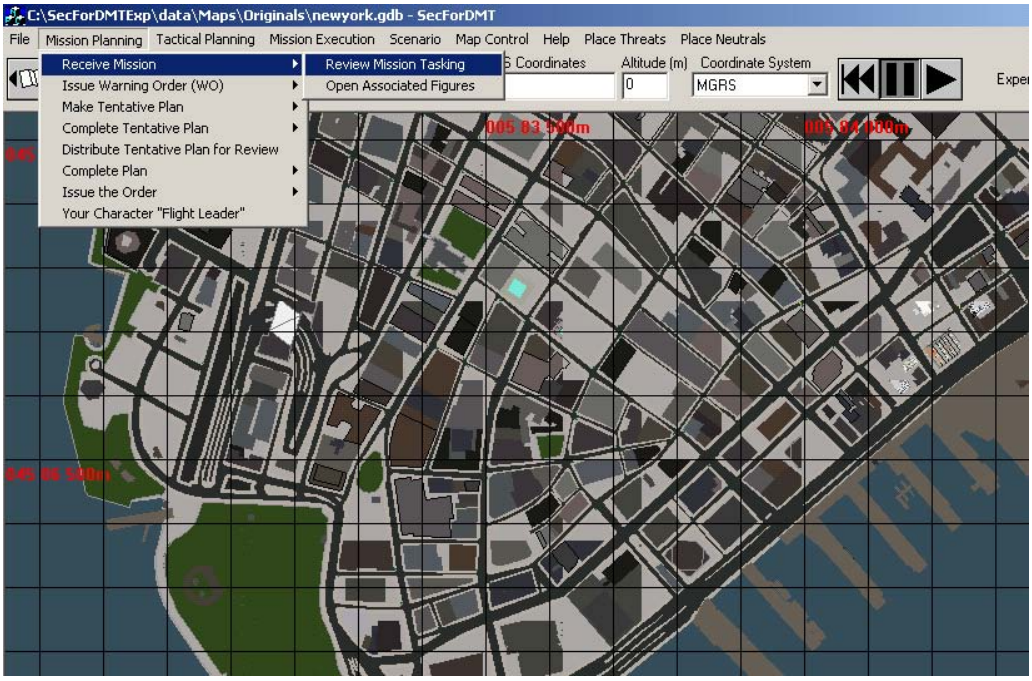
- The instructor display shows a God's Eye View of entity locations on maps. When trainees dispatch assets to a location, the instructor display shows the actual locations of the assets in real time as they attempt to execute the orders from the trainees. The instructor display shows real-time location and status of threat/friendly/neutral personnel as well as incident and asset status.

- Scenarios can contain outlines of a chemical plume gradient. Instructor can draw a plume on map during exercise and can move it to simulate wind shifts. CGF's report symptoms and die based on SBCCOM Material Safety Data Sheet formulas. No plume model.

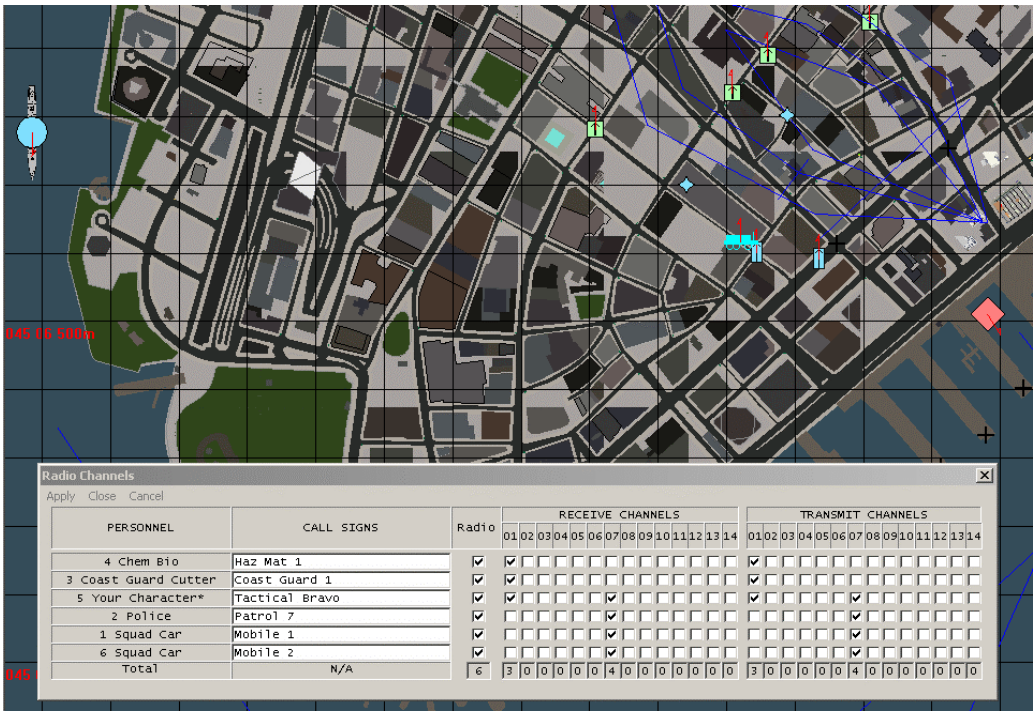
- Several example displays are presented below. They include menus of some functions.



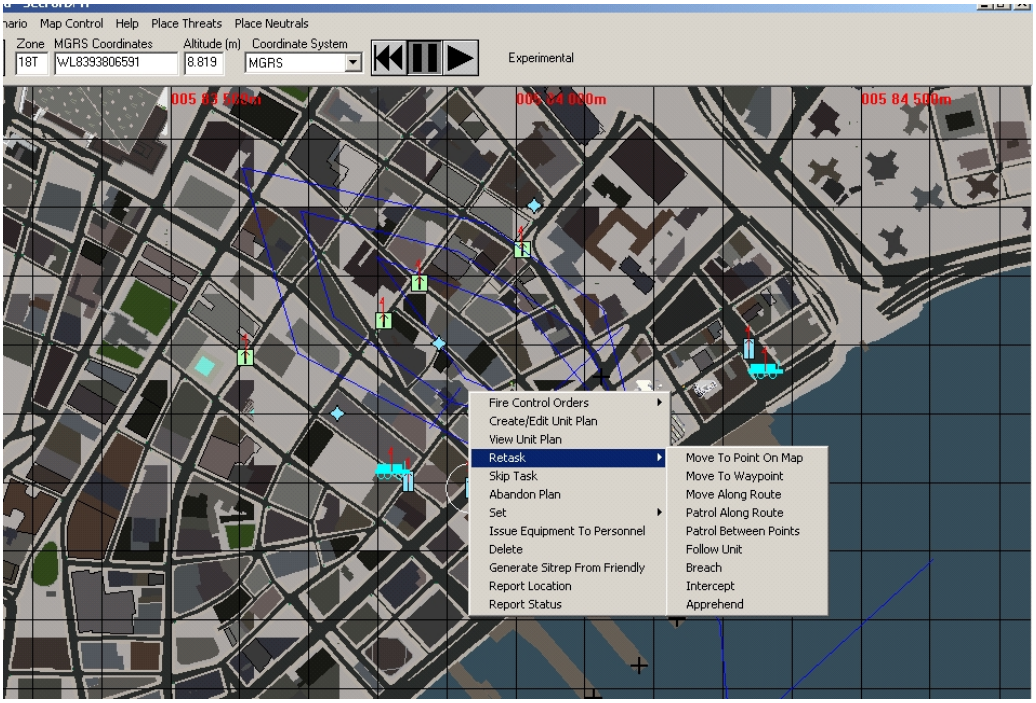
Example tactical map display.



Example tactical map display, showing a menu.

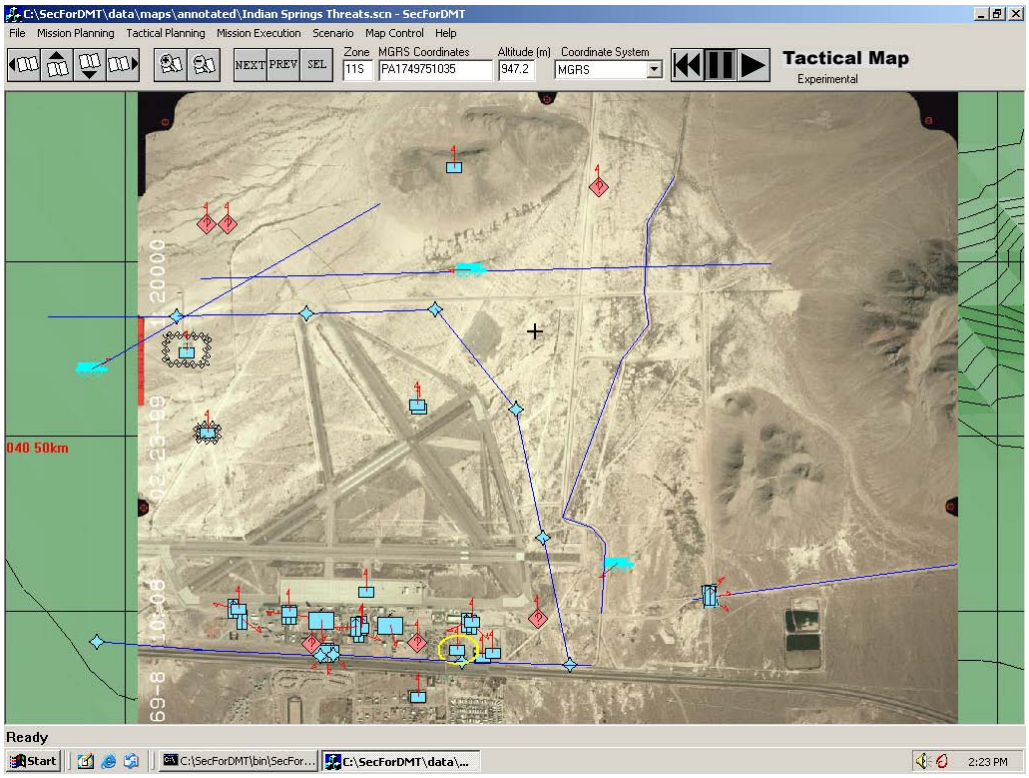


Example tactical map display, showing communications assignments.



Example tactical map, showing menu control of assets.

Example tactical map, showing inserted chemical plume.



Example tactical map display.

Example 3-D display of virtual world.

Example 3-D display attached to a simulated UAV for surveillance.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone.

c) Large multi-station system, or based on individual PCs?

- Individual PCs interacting over LAN.

d) If simulation models are used, what is the basis of the data and/or distributions used?

- Asset performance based on SME expertise and other authoritative sources such as Federation of American Scientists web site.

e) Web-based application, LAN, or a single computer/system-based application?

- Currently operates in stand-alone and LAN mode. Plans for Web-based..

f) Describe any debriefing after-action reporting support tools:

- Instructor activates logger at scenario start. It logs over time:
  - All verbal communications from trainees and CGF's .
  - Location and status of all simulated assets.
  - Incident status.

- Instructor plays back logger with God's Eye View on all trainee displays. All verbal communications synchronized with replay. Summary display shows killed/wounded/incapacitated personnel and damaged/destroyed assets.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- LAN and tables or cubicles.

5. **Personal Computer Requirements** *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 2000

b) Processor speed (in MHz): Min 1.0 GHz; Recommend 1.5 GHz

c) Memory (SDR/DDR): 512 MB

d) Free disk space: 300 MB

e) Internet connection speed (if any): None

f) Display adapter: Windows Compatible 2-D/3-D

g) CD-ROM speed: 4X

h) Optional accessory requirements[5]: PCI Sound Blaster Compatible Sound Card with Full Duplex support

5. Describe the user interface characteristics:

- Mixed initiative, menu driven interface with data manipulation. Trainees use menu selection to select scenario background and mission planning documents. Drag box on simulated map to zoom and pan. Right-click on map to place entities. Right-click on entities to set/check status or issue orders.

- Evaluated by 11 instructors and found to be very easy to use.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

1 - 40.

b) Number persons usually trained simultaneously?

10.

c) Custom/proprietary hardware required? If so, identify:

None.

7. Describe any user HELP features:

- Extensive user help that pop up PDF document with basic concepts, example setup, How Do I…?, and Troubleshooting.

8. Data recording & storage features (e.g., Scenario events; student performance):

- Stores threat scenarios, scenario background, mission planning documents, mission plan. Also stores events and actions, and communications, that occur during the scenario exercise.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- Instructors and trainees can learn to use the simulation in less than 4 hours based on field tests.

2. Attributes

	Application Environment:		**Content**
1	Training	2	Knowledge
2	Exercise	1	Applied
2	Operational	3	Hands-on
2	Analysis		
3	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	3	Awareness
1	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	3	Awareness
		3	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	3	Drills
1	EMA	1	TTX
1	Fire	1	FE

1	Govt. Administrator	2	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
1	Public Health		
0	Public Safety Communication		
0	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	1	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

- Multi-echelon ICS decision-making training.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

- CGF's report symptoms and die based on SBCCOM Material Safety Data Sheet formulas.
- No plume model.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- ICS process, EOC and field commander decision-making, team communications.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Short to long exercises, scenario driven but outcome depends on trainee responses, simulation-supported, normal and failed equipment, mistakes by CFF's in field.

e) Exercise/scenario length/time(typical):

- 1 - 4 hours.

f) Potential equipment and/or facilities product can address:

- Generic radio communications over assigned channels.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- Directly applicable to counter-terrorism in facility defense and response to CBR. To model fire departments will require fire propagation model. To model CBR plume in real time will require the SBCCOM plume model.

h) Are there any constraints on supported exercises or scenarios?

- Direct view of threat by trainees was originally supported but cost and availability of 3-D models drove us to eliminate them because leaders and decision-makers seldom see the threat directly.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- Trainees may run exercises in stand-alone mode.

- Instructor will select scenarios via menu selection in team training mode.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- Automatic reactive scenario. It is believed that there are limits to the reactiveness of the simulation (i.e., only certain types of assets are simulated at this time, most likely law enforcement). Also, it is believed that the various domestic response jobs are not simulated at this time (e.g., fire, EMS, etc.).

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- Instructor evaluates trainee performance. If they are not big shot government officials, they will certify them or not, based on performance.

e) Does a curriculum already exist? If so, briefly describe its form and content

- Scenarios and mission background documents exist in <u>facility defense</u>.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Trainee performance and communications is logged for instructor review. Instructor sets performance standards. It is believed that the built-in evaluation features, at this time, address human and facility losses only.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Feedback (personnel and civilian casualties/facility damage) is immediate when trainees make a mistake.

- In AAR, trainees see text tables summarizing losses, hear communications while watching ground truth replay of scenario.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Electronic instructor manual with procedures for creating/modifying scenarios, running exercises, giving AAR.

- Scenario library with MSEL.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- Scenario exercise is as follows:
  - Instructor double-clicks shortcut for instructor software.
  - Trainee double-clicks shortcut for trainee software and enters student ID.
  - Instructor selects scenario.
  - All displays automatically load map included in scenario.
  - Trainees select instructor directions for this scenario.
  - Trainees select scenario background (operations order).
  - Trainees download ICS documents and fill out as required.
  - Trainees communicate with other trainees, plan mission during time allowed.
  - Instructor starts exercise with threats/incidents included.
  - Instructor starts logger.
  - Instructor may add or delete threats/incidents to achieve instructional goals.
  - Trainees place their assets (strike teams) on map, request assets from other team members and send assets to other members as required.
  - Trainees dispatch CGF's (strike teams) under their control to prevent/mitigate incidents.
  - Trainees receive reports from field, and respond by communications with other team members and commands to CGF's (strike teams) under their control.
  - Instructor declares end of exercise, saves logger file, closes scenario.
  - Instructor directs trainees to close their simulation and open up AAR display.
  - Instructor and trainees select AAR Statistics and reviews losses during simulation.
  - Instructor points out what to look for in replay.
  - Instructor selects logger file and selects Play.
  - Instructor and trainees view God's Eye View of replay with all communications.
  - Instructor pauses replay periodically to comment on trainee mistakes.
  - Instructor declares end of AAR.

6. Customization

a) Can the product be customized? If so, how, and by whom?

- Instructors with subject matter expertise can create and modify scenarios. Changes in performance of assets or effects of incidents are simple to do but require support from the developer.

b) What is the process and how much time does it take to develop a new exercise/scenario?

- Scenario development is similar to the process used by trainees. The instructor places facilities/threats/neutrals on the map. Then a plan is developed for each threat/friendly that consists of a series of commands selected from menus. These commands consist of tasks(e.g. move to, move along, fire), Sets (e.g. speed, ROE, target, aggressiveness), and Conditionals (e.g. if, when, probability) Scenario development requires two or three times as much time as scenario run time.

c) What is the process and how much time does it take to modify an exercise/scenario?

- Scenario modification consists of taking the plans in 6(b) and cut, copy and delete commands. Scenario modification requires about one-fourth of original scenario running time.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- The process is described in 6(b). It takes about one minute.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Analysis features are:
  - Instructor declares end of exercise, saves logger file, closes scenario.
  - Instructor directs trainees to close their simulation and open up AAR display.
  - Instructor and trainees select AAR Statistics and reviews losses during simulation.
  - Instructor points out what to look for in replay.
  - Instructor selects logger file and selects Play.
  - Instructor and trainees view God's Eye View of replay with all communications.
  - Instructor pauses replay periodically to comment on trainee mistakes.
  - Instructor declares end of AAR.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High	**1**	Very
1	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		

1	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
2	Dissemination of best practices/expansion of learning benefits i.e. report generation
2	Tracking participant performance through multiple tries (automation)
1	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
2	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Part-task training
1	Pre-training
2	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. Yes (*proceed to Q2*)

2. Does the cost apply to: (choose one)
   a.
   b.
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a.
   b.
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)		$48K (1)		
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option		$7K (2)		
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License		$12K (3)		
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance		$12K (4)		
Daily Rate and/or Travel				
Instructor Fee		$0 (5)		
Trainee Fee		$0		

(1) Typical base system with 1 instructor station and 6 trainee stations.
(2) Each additional trainee station.
(3) AAR system $6K. Trainee comms over LAN $6K.
(4 Yearly support for base system $12K, for AAR system $2K & trainee comms system $1K.
(4) Daily rate ($600) plus per diem for product installation and system training.
(5) Simple enough for user to provide instructor.

Note: These are list prices subject to negotiation.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

EM/2000

Developer: BIZCOM USA

Contact information:
David Klein
Customer Solutions Manager
BizcomUSA
(800) 440-8515 ext. 212
DavidK@bizcomusa.net

And additional Contact information:
Michael Sullivan
MichaelS@bizcomusa.net

Website: http://www.bizcomusa.net/em2000.html Product status (version in use): 4.09

Date of Evaluation: 12/1/03

Source(s) of Evaluation: *check all that apply*

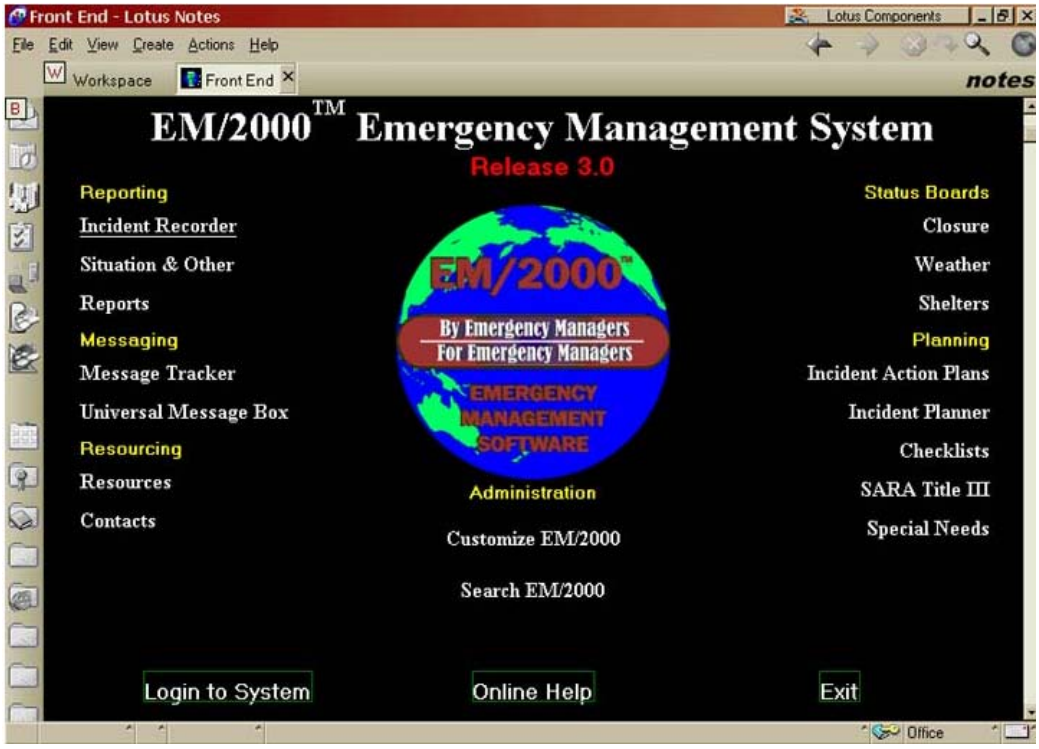
- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo (web)
- [ ] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

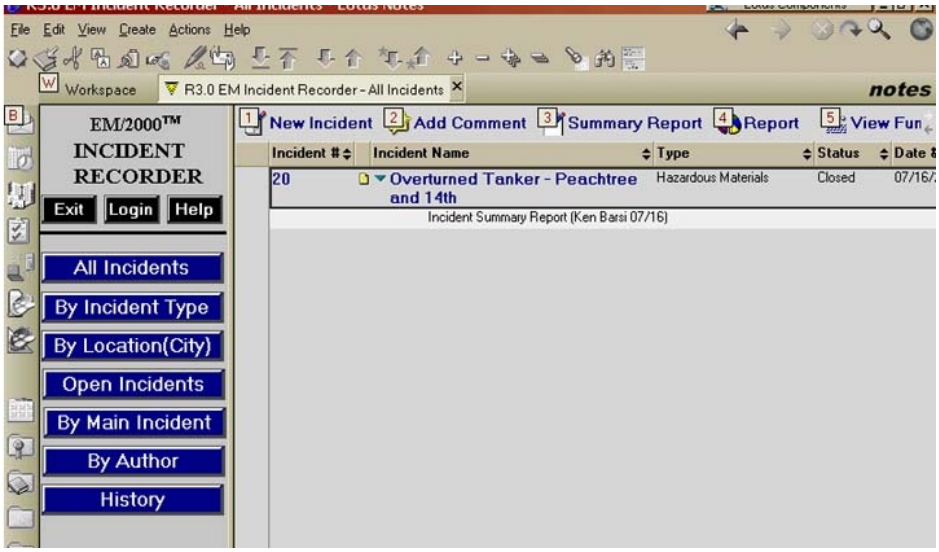
- [x] Brochure/Prospectus
- [ ] CD-Rom
- [ ] Related Papers
- [ ] Material from Internet
- [ ] Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

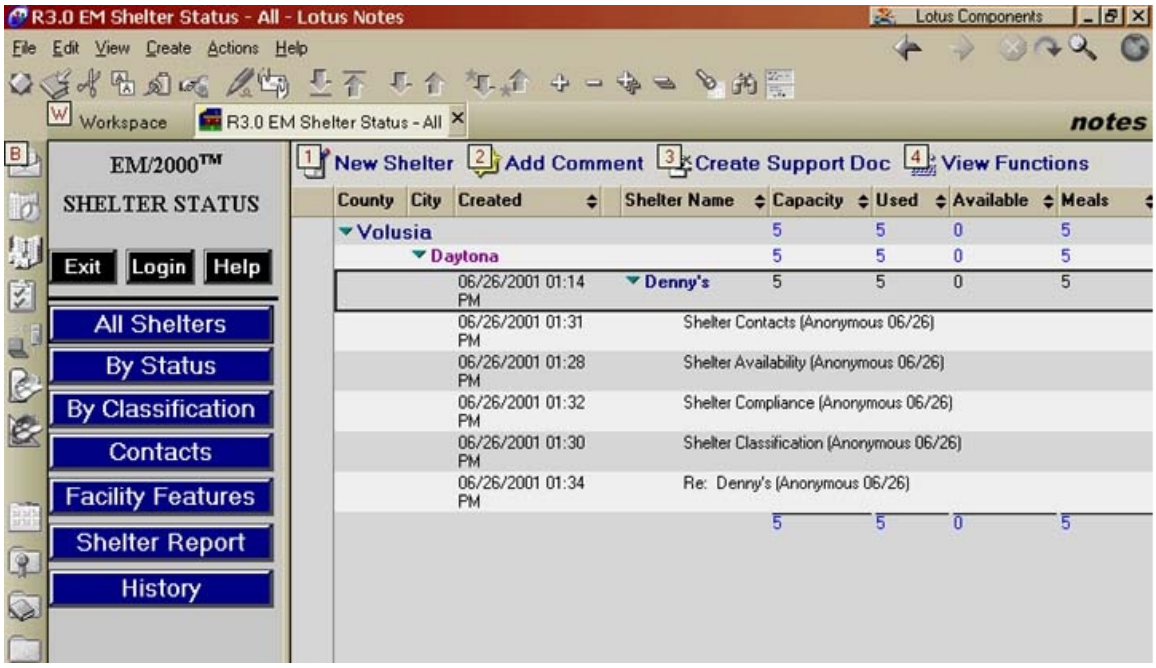
- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  "PC based emergency management software system that streamlines the flow of critical information during emergency incidents or major events".



Tool is based on Lotus Notes and it's composed of 14 databases. The first four are relational databases. Demonstrated capabilities included:
An incident Recorder (where incidents can be sorted by the parameters shown on the left side (navy blue) in the screen shot below.



Checklists of tasks to be performed during emergencies
An Incident Planner to create incidents
An Incident Manager which is the communications main page (e.g., where users manage email, messages, etc.
A logistics Manager for tracking event costs, etc.
Status Boards (show below) that display hospital, bridge and airport closures, for example



An Incident Action Plan where maps can be imported[11]

- Current Target audience: emergency management personnel.

[11] Map manipulations are not supported by the tool.

- Potential equipment and/or facilities product can address:
  Designed to be used operationally, during non-emergency periods, with daily use features such as contact and resource management, GIS mapping, task management, messaging, workgroup discussions, calendaring and scheduling, etc.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
  "Decision makers have used EM/2000™ to quickly ascertain the magnitude of an emergency or disaster, locate and deploy resources, log incident activities, track requests and tasks, generate situation reports and communicate critical information across local and wide-area networks and the Internet".

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
EM/2000™ can run in a client/server or web browser based environment. The full EM/2000™ program resides on the client machine and the server at all times. The client, through a process known as replication, regularly, through a schedule determined by the user, synchronizes all data on the client machine with the data on the server. It allows the user to operate a laptop computer in a standalone mode in a vehicle without any connection to a server. The system is not tied to an Internet connection in order for users to access information and input data in reference to an event. By dialing up to the Internet, directly into the server, or via a LAN connection, the client and server data are synchronized.

b) Large multi-station system, or based on individual PCs (if applicable)?
Product is usable by multi stations. It can also run stand alone on an individual PC if required.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Requires Lotus Domino Server to operate. EM2000 is based upon the Lotus Notes architecture. Can run on Notes client alone, or on a Domino server with either Notes clients or Web browsers.

d) If simulation models are used, what is the basis of the data and/or distributions used?
N/A.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
Product is flexible to the facility provided there is intranet or internet connectivity.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Server-Windows NT Server 4.0 or better or Windows 2000 with all server pack upgrades
Client-Windows 95/98/2000/ME/XP. Full GIS integration via EM Advanced has additional server and configuration requirements including Win2K server running in an

Active Directory Windows Domain with MSMQ configured. Full specifications can be provided to any interested customer. GIS integration via R4.1.0 with EmerGeo does not have this extra requirement.

b) Processor speed (in MHz): Intel (Pentium 400MHz or better).

c) Memory (SDR/DDR):

Server- 256 MB minimum
512 MB or greater recommended

Client- 128MB minimum
256MB minimum for XP
512MB recommended for GIS mapping

d) Free disk space:
Server- 1 GB minimum, more recommended depending on data size (typically governed by document attachments to Incident Planner).

Client- 100MB minimum free space
More space needed for replica sets

e) Internet connection speed (if any): 56K or better connection

f) Display adapter: 800x600 VGA compatible.

g) CD-ROM speed: N/A.

h) Optional accessory requirements: None.

3. Describe the user interface characteristics:
Web browser-like. Basic computer knowledge required.

4. If multiple users:

Identify the range of persons it can simultaneously support (min-max)?
One user scalable to thousands depending upon server characteristics. Distributable to multiple servers for greater scalability, failover and load balancing.

Custom/proprietary hardware required? If so, identify: None.

5. Describe any user HELP features:
24 hour customer support is included with purchase in first year. In recurring years customer must renew support & maintenance at 20% cost of original software purchase price. 24 hour "live" contact call center is available with return phone call from technical service rep within 30 minutes. Online help is also available (training manuals, how to guides, release updates). Embedded help is also available within the software.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
Incident planning and management data is all stored via the Notes Storage Facility as a part of normal application functioning.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Vendor provides one "installation day" and training for up to 5 administrators and all the users over a five day period with an exercise at the end of the training period (paper based table top exercise). Cost is approximately $1200 per day, per trainer or installer

2. Product Content

Training content description (briefly identify any relevant WMD-specific content):

i) Exercise/scenario length/time(typical): N/A

Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
Product users included the states of Florida, Texas & North Carolina (known product use is Hurricane management).

3. Instructional Attributes (if applicable)

Does a curriculum already exist? If so, briefly describe its form and content?
N/A

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Real time update of information displays and reporting capabilities.

5. Instructor/controller/evaluator tools

c) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support): N/A this is an operational tool.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
N/A this is an operational tool.

6. Customization

Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
By both the vendor and user (depending on modifications needed).

What is the process and how much time does it take to setup an exercise/scenario to run?
N/A. This is up to the user because this is an operational tool.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
2	Individual	3	Scenario replay
2	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	2	SME controls AAR
1	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
1	Operational		Hands-on
	Analysis		
3	Entertainment		**Target Audience**
			First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire		FE
1	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
1	Transportation		
1	Private Sector		
	Learning Supported:		
3	Initial Acquisition		
2	Improvement		
3	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity **Current Applicability to ODP**

1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		

Ease of Use

1	Easy
	Relatively Easy
	Difficult
	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
	Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1	Decision-making
1	Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

	Simulation Support

Selected FSE Observations: product allows for/can be used for:

	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

Can the vendor provide a price for a given (or typical) product or system? (choose one)

a. Yes (*proceed to Q2*)
b. No, Vendor must quote a system based on user requirements (*end here*)

Does the cost apply to: (choose one)

a. Product
b. Service

c. Product & Service Bundle

Product (content) configuration, as priced, is: (choose one)
a. Standardized
b. Vendor Customized
c. Allows User Customization

What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site license w/unlimited users not including Lotus licenses)	$25,000	$25,000	$20,000	$50,000
Product License (Base Server License)	$8,500	$8,500	$7,650	$9,500
Product License (Terminal)				
Product License (Base User)	$500	$500	$450	$800
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
Support/Maintenance (annual)	20% software cost	20% software cost	20% software cost	20% software cost
Daily Rate and/or Travel	Charged at cost	Charged at cost	Charged at cost	Charged at cost
Instructor Fee (per trainer/per day)	1200	1200	1000	1500
System Training (per 10 students/per day)	1200	1200	1000	1500
Trainee Fee	Incl. above	Incl. above	Incl. above	Incl. above

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Emergency Fighters for Life

Product is hardware, software, or both?

Software. Emergency Fighters for Life is provided on a CD-ROM disc and installed to the user's PC hard drive. The CD must remain in the CD-ROM drive for the program to operate.

Large multi-user system, small multi-user product, or individual-user product?

Individual user product in which the user plays against the computer simulation.

Focus/specialty of product:

This product is a computer-based game that allows the user to practice strategic and tactical decision-making in responding to thirty different accident or disaster scenarios. The main challenge is in choosing how to deploy emergency vehicles and teams according to the type of incident or scenario in a timely manner. Emergency responders must then be directed to perform certain actions to rescue victims, perform first aid, and transport them to hospital.

Incident response operational tool/system:

Domestic, military, other users?

Not applicable. The product is not intended for any actual incident response or operations support.

Incident response training/exercise tool/system:

Domestic, military, other users?

The software application is a game that has potential value in training civilian users. Potential applicable users may be incident commanders, fire and rescue, and other emergency services personnel.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

Not applicable.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

The Emergency Fighters for Life software is targeted to civilian consumers of PC-based video and simulation games.

Functional-area identification of product (Broad range, or specific):

Awareness within the First Responder and Fire/Police/Emergency commander arena, particularly regarding command and control (C2). The simulation tests basic incident response decision-making in pre-scripted scenarios.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

Developed by: Sixteen Tons Entertainment
Owned by: The WizardWorks Group, Inc.
2300 Berkshire Lane North, Plymouth, MN 55441
Subsidiary of Infogrames, Inc.
417 Fifth Avenue
New York, NY 10016
Tel. (212) 726-6500

Contact info ref. technical questions (Person, title, organization, telephone, email):

WizardWorks Technical Support Tel. (425) 398-3051

Support via World Wide Web: http://www.ina-support.com/

Infogrames
Attn: Consumer Services
13110 NE 177th Place
Suite B101, Box 180
Woodinville, WA 98072-9965

Contact info ref. buying the product (Person, title, organization, telephone, email):

The product is available for sale in retail outlets. For bulk purchase contact Infogrames at the New York address above. The product, however, was released in 1998, and is no longer supported by Infogrames.

COTS/GOTS (circle one).

COTS

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

There are scenarios including a terrorist attack and chemical spill that may be of value in training or increasing awareness within the first responder community. However, the product, as a game, does not provide the verisimilitude that most professionals would prefer for counter-terrorist training. No simple modifications can be made to the software to increase the suitability of this application to professional training.

Product status (Production version in use; prototype in use; under development)?

Commercial product, almost out of circulation.

If in use, identify users, types of use:

PC gamers are the primary target market, for entertainment purposes.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

The application is a PC-based game that allows the user to act as an incident commander who must decide what assets to use, what personnel, and how/when to deploy them according to the emergency scenario. Graphics are isometric 2D projections of 3D, using relatively crude rendering. There are three main user views: a map, stations and assets, and the event scene. A mouse or similar input device is used to select assets or entities and direct their behavior, in a relatively limited manner, in the event scene. Resources are assigned different costs, such that deployment of extra fire fighters or emergency vehicles, for example, might do the job faster, there is a cost penalty. Points are awarded based on response speed (time to complete a mission), cost, and efficiency.

Intended for operations, training/exercises, or both?

The product is intended for entertainment, but may possibly be applied to training to illustrate the importance of timely decision-making.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

Not applicable.

Intended for individual, group or team use[1]?

If multiple users, identify the range of persons it can simultaneously support (min-max)?

Not applicable.

Number persons usually trained simultaneously?

Large multi-station system, or based on individual PC's?

Individual PCs.

Custom/proprietary hardware required?

No.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:

  User-supplied PC is required, and a Soundblaster compatible sound card is recommended.
- Software:

  The application exists as gaming software with a fixed user interface. The player makes decisions in increasingly complex scenarios, manipulating entities with finite behaviors via a point and click type of graphic interface.
- Simulation:

  The product uses a proprietary simulation engine that simulates the behaviors of an entities ranging from vehicles, people, emergency response vehicles and crew, and their interactions with a virtual environment/scenario. Manipulated assets interact with random events in the environment (e.g., bystanders, vehicular traffic).

If simulation models are used, identify their qualitative validity level (if possible):

No claims of simulation validity are made by the vendor.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

The software is a stand-alone product.

If other hardware and/or software required, or typically used, identify it/them.

Direct-X multimedia drivers (no version level given) are needed. These can be downloaded from Microsoft without charge.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

User-supplied facility appropriate to gaming.

Web-based application, LAN, or a single computer/system-based application?

Single computer application. No multi-user functionality exists in this application.

Can the training be administered over a wide area network or a local area network?

No.

Is an instructor or facilitator needed?

No.

If not, how is training conducted (e.g., Individual self-paced)?

Learning (i.e., game play) is self-paced. The user must refer to the product pamphlet for use instructions, and learn by trial and error practice.

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Completion of the various scenarios of increasing difficulty in itself represents a form of testing. There is no formal training mechanism, per se.

Describe unique user interface characteristics:

The user interacts with the system on four levels:

- Game use, by selecting functions such as start a scenario, load a saved scenario, view credits, exit etc.;
- A simulation-wide "Map", by selecting to view "mission" information, entering the simulated event scene, or emergency facilities;
- A command interface, by selecting pre-scripted communications with different entities, or entering the Options menu or "Map" function;
- The event scene, by point and click direction of actions within the running simulation. The normal "cross hair" pointer changes to a "wrench" pointer to direct a responder to interact with an entity (vehicles, people, victims, buildings, tools).

Simulation graphics appear in relatively simple isometric views, and scrolling of the event scene field of view can be set to one of three speeds in the Options menu.

An Emergency Center, showing selectable response assets:

The simulation software determines the success or failure of each mission based upon successful task completion, timing, and victim health. The status of entities (vehicle damage, victim health) can be viewed in the lower left corner of the command interface, displayed as a colored bar graph. A long green bar is healthy, whereas a short red, flashing, bar represents serious injury or damage. Different degrees of victim injury require different types and speeds of emergency response. Similarly, entities have a limited range of behaviors (ambulance orderlies cannot fight fires, firemen cannot direct traffic, police cars cannot tow vehicles etc.).

A Fireman (full health) being directed to interact with a Pumper Truck:

Other important product characteristics:

The simulation can be run in one of three speeds: real time (one second in the sim is one second real time), twice the speed (2X) of real time, or approximately 3X real time. This feature is helpful in speeding up game play once the user is accustomed to the interface and the mission scenario. Music and sound effects can also be toggled on or off in the Options menu. Sound is used to convey emergency crew messages (e.g., "on the scene", "on our way", "understood"), and to play event sounds (sirens, helicopter flight, explosions, victim breathing etc.) that serve as cues to the user.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

The software may be purchased from specialty retailers of PC games. Distribution is now very limited, due to the age of the product.

Initial acquisition cost (purchase; licensing fees):

Product itself:

Initial purchase price varies by retailer, but street price is approximately $19.99, plus applicable tax and shipping.

Other necessary support, software, equipment:

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

No.

Number of staff required to setup, and operate product:

Not applicable.

Staff training required to use product (identify briefly ... type, time):

Cost for staff training on product (Cost to purchase training):

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

One PC running MS Windows 95, 98 or NT 4.0 operating system, with Direct-X drivers installed.

Expected costs?

Product maintenance requirements/recommendations (identify briefly):

None anticipated, apart from routine PC system maintenance and backup.

Maintenance costs (Expected or required software, hardware maintenance):

None anticipated.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

Microsoft Windows 95, 98, and NT 4.0. Evaluation of the product on Windows ME, while possible to run, led to a variety of application failure modes.

Can product be customized? How? Cost?

The product cannot be customized.

Product modifications required to support counter-terrorism training/exercises:

Modifications:
None anticipated.
Range of potential costs:

<u>Personal Computer Requirements</u> *(if appropriate)*
(Most software will offer minimum and recommended configurations).

Processor speed (in MHz):
Minimum: Pentium 120 or higher
Recommended: Pentium 200 or higher
Memory:(SDR/DDR)
Minimum: 16 MB RAM
Recommended: 32 MB RAM
Free disk space:
Minimum: 150 MB
Internet connection speed:(if any)
Not applicable.
Display adapter[4,5]*:*
Minimum: Direct-X compatible SVGA video card
CD-ROM speed:
Minimum: 4X CD-ROM
Optional accessory requirements[5]*:*
Soundblaster compatible sound card

Training/Exercise Characteristics

Product may support training, exercises, or both?
The game cannot support exercises but may support training.

Potential type of WMD event product can support:
Chemical – Yes
Biological – Yes
Radiological – Yes
Nuclear – No
Explosive – Yes

Constraints on supported exercises or scenarios?
The simulations are pre-defined scenarios that have either implicit or explicit constraints. Emergency bases are located in a given geography, vehicles and responder personnel have fixed rates of movement. Some scenarios require task completion in a given amount of time, or before a victim dies of injuries. Only certain types of responders can deal effectively with WMD type events (firemen in Hazmat suits or ABC suits, for example).

Potential disciplines product can support:
Emergency medical services Yes

Emergency management agency	Yes
Fire	Yes
Governmental administration	No
Health care	No
HazMat	Yes
Law enforcement	Yes
Public health	No
Public safety communication	No
Public works	No
Global ... or other (Pelfrey)	

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition
Improvement
Maintenance/refresher

Emergency Fighters for Life may support limited knowledge acquisition, skill development, or skill refreshment in directing multiple operational crews simultaneously.

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel

Although the software is targeted to civilian PC game players, it may be of interest to first responders, crisis managers, incident commanders, law enforcement or fire and rescue personnel to assist with decision-making training.

Potential responder training level(s)/categories product can support:

Awareness –	Yes
Performance [Operations]	No
Technician [Specialist]	No
Planning & Management [Incident Command]	Yes
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -	No

Potential equipment and/or facilities product can address:

Fire Response Vehicles:	Mobile Command Unit
	Supply Trucks
	Hose Truck
	Pumper Trucks
	Ladder Truck
	ABC-Defense (decon) Truck
	Flatbed Transporter
	Firefighting Plane
	Bridge Repair Vehicle
	Pumper Boat
	Flatbed with Bulldozer
	Flatbed with Motor Boat
Rescue Vehicles:	Ambulance
	Doctor’s Car

	Rescue Helicopter
	Mobile Medical Unit
Police Vehicles:	Police Car
	Police Truck
	Water Cannon Vehicle

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

The primary objective supported by the application is the EOC decision-making process, in which users may practice deployment of emergency equipment and crews for different types of incidents.

Training content description (what trained), in addition to preceding item (Brief):

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

The user must have basic computer proficiency to support game play. Within the application itself, the user will need to learn the GUI for the game partly by trial and error, and will have varying degrees of success depending on emergency response knowledge or understanding of response logic. Nevertheless, only basic proficiency is necessary to operate the software.

Potential training/exercise types product can support:

Classroom -	No
Individual self-paced -	Yes
Seminar/workshop -	No
Drill -	No
Individual and small-team exercises -	
Simulation-supported -	Yes
Gaming -	Yes
Collaborative -	No
Tabletop -	No
Functional -	No
FSE -	No
Other	

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Self-paced CBT.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Working through scenarios is self-paced. However, successful mission completion is time-dependent, and users must respond to conditions quickly. Learning occurs through repetition of missions, and by using the Hint function to find out the needed actions for mission completion. Missions can only be played in order (increasing in difficulty), so each mission must be completed successfully to move on to the next mission. Due to this limitation, only the first several missions (auto accident, apartment fire, mountain search & rescue, and car race rescue) were trialed for this review.

Exercise/scenario length/time(typical):

Introductory scenarios may take from 6 to 15 minutes depending on skill, and experience with the graphical user interface.

Process and time to:

Develop new exercise/scenario:

Not applicable. Scenarios are hard-wired.

Modify an exercise/scenario:

Not applicable. Scenarios are hard-wired.

Setup an exercise/scenario to run:

A pre-scripted scenario can be loaded only if earlier scenarios have been completed and then saved. To load a saved scenario takes less than one minute.

Does a curriculum already exist?

No training curriculum is a part of this product.

If so, briefly describe its form and content:

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

Scripted scenarios offer an introductory text-based Mission Information briefing, and begin with relatively simple accident events. At the successful conclusion of a mission, the user receives a score based on the time required, and efficient use of assets. During a simulation run, the user can access "Hints" in the Options menu to obtain guidance on the task requirements. The interface, however, is non-intuitive, such that users must read the instructional pamphlet accompanying the software to understand how to manipulate entities in a simulation. No information is supplied to the user about how to improve performance (score).

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

There are three metrics provided to the player upon mission completion:

- Time required
- Cost
- Efficiency

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback is provided by the above performance measures, which are delayed until mission/scenario completion. Visual or audio cues may proved the user intermediate feedback about the effectiveness of operations (e.g., the spread of flames through a building, health measures of victims).

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

None.

HELP features (Briefly identify):

There is a "Hint" function in the Options menu that provides users with the essential task order that must be accomplished to complete the mission.

Instructor/controller/evaluator tools:

Emergency Fighters For Life is not designed for Instructor-type use and therefore has no associated tools.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

AAR support tools (May overlap with "Student/participant/team feedback features", above):

Data recording & storage features (e.g., Scenario events; student performance):

The only storage feature is the ability to "Save" scenarios (up to 12) from the Options menu. This feature allows the user to load a certain scenario at a later time, without having to replay the preceding scenarios. There are no data recording features.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Upon completion of a scenario, the user/player is scored in terms of time, cost of asset use, and efficiency, and is awarded points accordingly. There are no interactive or real-time analysis tools.

Training/exercise fidelity:

Environment (including situation/scenario):

The graphical environment, by today's standards, is low fidelity. Topography, infrastructure, entities are presented in isometric 2D. The software, however, provide moderate fidelity in terms of scripting life-like accident or disaster scenarios, and providing for limited entity behaviors. There is no mechanism for changes in natural surroundings (weather, for example) or other dynamic effects.

Hardware:

Not applicable.

Information (including interaction with other persons):

Communication is extremely limited to scripted interactions chosen from a menu in an event scene. The software, therefore, has no beneficial value in regard to communications training, or studying information flows in emergency response drills or exercises.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Emergency Preparedness and Incident Command Simulation (EPICS)
also known as **Janus v7.06ep.**

EPiCS was originally funded by the National Institute of Justice (NIJ) in 1999-2000 to explore if a military simulation, Janus v7.06d, could be adapted for use by civilian public safety commanders. As part of the contract, US Army TRADOC Analysis Center (TRAC) White Sands Missile Range (WSMR)[12] conducted six exercises for NIJ to demonstrate principle and robustness. EPICS is a constructive simulation that acts as an event driver for the application of tactical doctrine in exercises.

Developer:

US Army TRADOC Analysis Center White Sands Missile Range and their contractor support team from Advanced System Technologies (AST), Inc. TRAC-WSMR is the software developer of Janus and provides the technical oversight and support for EPICS.

POC: Dr. Julie Seton
setonj.contractor@trac.wsmr.army.mil
EPICS Project Leader
TRADOC Analysis Center (AST, Inc.)
Building 1400
WSMR, NM 88002
Tel. - 505-678-4949

Product is hardware, software, or both?

EPICS is a set of 20 software packages – the two main elements of which are the Janus simulation engine and the visualization and exercise playback tool OTVIS (Operational Test Visualization). The software runs on a dedicated LAN consisting of PC computers. Although it exists as software, in practice, EPICS is usually deployed by contractor support teams using laptop computers. EPICS is the military Janus software, originally developed by DoD, enhanced to support emergency response capabilities and events. Included are upgrades to the Operational Test Visualization (OTVIS) Model, which provide after action review (AAR) support for EPICS exercise training audiences.

Janus Characteristics:

- Human-in-the-loop (HITL) simulation in which human participants control the action of simulated entities;

[12] TRAC-WSMR, located in Las Cruces, NM is a DoD facility with significant focus on operations research.

- Discrete events and behaviors attributable to individual entities
- Multiple team types (up to 6 sides) whereby entities of a similar type (e.g., fire, SWAT) can be grouped for tactical purposes;
- Stochastic (probabilistic results, not deterministic);

- Closed game, in which interactor awareness of the simulation is limited to their particular resources (i.e., they have no overall "game space" view);
- Host controller workstation is connected to a data logger and OTVIS (data playback/AAR capability).

OTVIS Characteristics:

- Captures displayed events from distributive interactive simulation (DIS) network packet traffic to graphics files. Output files are used to make Dynamic Scenarios, using AVI and QuickTime movies, for AARs;
- Visualization tool, based on PV-WAVE software by Visual Numerics, to display event data (different views: maps, floor plans, schematics, digital photos).

Large multi-user system, small multi-user product, or individual-user product?

Large, multi-user system

Focus/specialty of product:

Multi-purpose:

- Exercise decision making for incident and emergency operations commanders and staff;
- Provide stimulus to verify/validate procedures;
- Provide stimulus to develop procedures/plans.

Incident response operational tool/system:

Domestic, military, other users?

EPICS has been used to test emergency response operations plans for both civilian clients by both civilian and military participants.

Incident response training/exercise tool/system:

Domestic, military, other users?

The EPICS system is designed for HITL exercises for training both civilian and military users. To date, it has been used for domestic civilian exercises to train EOC and ICS teams.

The original Janus system was designed for human in the loop (HITL) warfighting simulation, in which human participants control the actions executed by the simulation. Janus is widely used by military trainers and analysts in research and development, testing, and analysis. In addition to being used by numerous Department of Defense (DoD) organizations, Janus is also fielded by other countries including Canada, Australia, France, United Kingdom (UK), and Korea. As of 1995, there were 28 installations at U.S. Army bases for use in brigade/battalion battle simulation training.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

Not Applicable

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

Not Applicable

Functional-area identification of product (Broad range, or specific):

Command center simulation, supporting a range of training exercise objectives (drill, C2 evaluation etc.). EPICS is typically used in conjunction with a Functional Exercise – where decisions of commanders are adjudicated against the simulation.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

TRAC/WSMR
POC: Dr. Julie Seton
setonj.contractor@trac.wsmr.army.mil
EPICS Project Leader
TRADOC Analysis Center (AST, Inc.)
Building 1400
WSMR, NM 88002
505-678-4949

Contact info ref. technical questions (Person, title, organization, telephone, email):

Dr. Julie Seton

Contact info ref. buying the product (Person, title, organization, telephone, email):

Dr. Julie Seton

COTS/GOTS (circle one).

- Software is GOTS
- Exercise services are conducted/supported by AST, Inc.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

EPICS supports counter-terrorism exercises, and has been used for three such simulations (D.C., Alexandria, VA, and Baltimore, MD). However, the system must be customized for specific scenarios (the terrain database must be developed for each individual scenario). While the Janus master entity database contains thousands of entity types, the EPICS-oriented database currently contains about 250 entity types (e.g., mounted and dismounted personnel/combatants, vehicles, weapons, munitions, booby traps), such that new entity types may need to be added.

Product status (Production version in use; prototype in use; under development)?

EPICS is an experimental version (prototype) of a production system that has been tested in seven proof-of-principle exercises. The Janus platform on which it is based is a military simulation, written in the FORTRAN programming language, has been developed and upgraded since the 1970s. TRAC/WSMR is seeking additional funding (get update from JS.) to pursue further development.

If in use, identify users, types of use:

Exercises have been conducted in:

- San Bernardino, CA (Sheriff, Fire/EMS, Hazmat, County Food Service, CALTRANS, and EOD) for a civil disturbance exercise;

- San Diego, CA (Police, School District, Fire & Life Safety) for a school safety/hostage exercise;
- Las Cruces, NM (Southern NM Correctional Facility, County Sheriff, State Police, Fire/EMS) for a prison riot exercise;
- Washington, D.C. (Metro Transit Authority, Metro Transit Police, Capitol Police, Federal Protective Service, D.C. EMA, Fire/EMS) for a subway WMD exercise;
- El Paso, TX (CCEOM, Police, Fire/EMS, FB Military Police, FB Fire/EMS, FB IOC, FBI, Sheriff, 2 School Districts, Texas DOT);
- Alexandria, VA (Police, US Marshal Service, Federal Protective Service, Fire/EMS, USMC CBIRF) for an exercise simulating a terrorist (chem.) attack on a Federal building.
- Baltimore, MD (Police, Fire, Harbor Police, EMS, Public Health Dept.) for an exercise simulating a terrorist ("dirty bomb") attack on the Inner Harbor, with snipers and mass casualties.

POC at NIJ: Charles Tillery
Email: tilleryg@eojp.usdoj.gov
Tel.: 202-305-9829

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

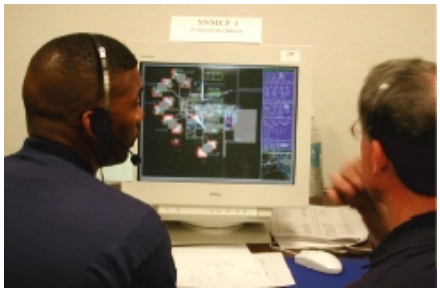
EPICS is a simulation and visualization training and exercise tool designed to provide realistic practice for public safety managers – including response to WMD. The system operates on a LAN of PCs, using the Distributive Interactive Simulation protocol (a standard for simulation interoperability), for interactive team training. EPICS integrates 2D graphical simulation workstations, human-in-the-loop responders, audio capture of operational comms, and 2D and 3D playback features for AAR analysis. It has been used to (1) train local, state, and federal agencies engaged in public safety in performing their operations center tasks at the incident-through-unified command levels; (2) assist in development and evaluation of operations plans; (3) analyze command and control (C2); and (4) develop tactics, techniques, and procedures (TTP) for the involved public safety agencies.

Intended for operations, training/exercises, or both?

EPICS is intended for use in exercises.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

The software is training media that simulates an emergency scenario to stimulate decision-making and response to specific exercise objectives. The primary training/exercise participants (i.e., commanders) do not directly interact with the simulation – they communicate with Field Supervisors (role players) who are interacting with the simulation. After the exercise, in an After Action Review, the training audience (both decision-makers



and role players) study the visualizations produced by playback of the simulation.

Graphics courtesy of TRAC-WSMR.

Intended for individual, group or team use[1]?

It is intended for team use to replicate EOC and incident command post functionality in multi-echelon and interagency environments.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

The minimum number of users is a function of the customer's training objectives, such that it could support a single emergency response team. EPICS is very scalable. Janus, the military platform, has run exercises for the Army that have included hundreds of commanders.

Number persons usually trained simultaneously?

The typical number of commanders in military exercises to date is approximately thirty. This number is not limited by EPICS but in how many operations centers the customer needs to meet its goals and objectives. The number of field supervisors is dependent on the number functional elements played in the scenario which require communications from the "on the scene" field supervisors. Typically, there have been an average ten field supervisors involved in a civilian exercise.

Large multi-station system, or based on individual PC's?

EPICS is a multi-station system comprising PCs linked in an Ethernet LAN. The simulation engine (Janus) operates from a server, while client computers run the graphical user interfaces for the "interactor" simulation input/output. Remote PCs can access the LAN through dedicated communications links (T1, T3 lines or SATCOM).

Custom/proprietary hardware required?

No. See Hardware requirements below. Industry standard PC equipment can constitute the simulation system and network.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:

  Although not part of EPICS itself, hardware is required to run the simulation and support the AAR visualization functionality. Hardware components consist of a LAN with a single server computer and multiple client computers (comprising industry standard PC systems and Ethernet hardware).

- Software:

  EPICS is a suite of 20 programs that can be used to model the physical, geo-specific environment and entities of choice. These packages include a terrain editor, a force editor, a database editor, an analyst workstation, and other simulation construction support and checkout tools. The complete documentation of this suite of software is available on CD if desired.

  OTVIS is a multimedia package that provides playback analysis of 2D simulations. It integrates audio capture, flagging and notation, and other features to support AAR.

- Simulation:

  EPICS runs the Janus "combat" simulation engine on the server machine, and RTX network client on the client machines. Client workstations only display 2D maps (depicting buildings, roadways, topography, waterways etc.). High-resolution 3D interactive, walkthrough models are used as part of the AAR.

If simulation models are used, identify their qualitative validity level (if possible):

Janus was selected as the technology platform for EPICS because it is the only force-level HITL high resolution model class accredited by the Army for both the Advanced Concepts Requirement domain (analysis) and the Training, Exercise, and Military Operations (TEMO) domains. For its applications, EPICS is regarded as offering a high degree of validity.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

EPICS integrates multiple software applications into one stand-alone product. It is DIS protocol compliant, and can therefore be interfaced with other DIS compliant packages.

If other hardware and/or software required, or typically used, identify it/them.

To support OTVIS AAR functionality other software is required.

Location specific models are supported by use of an image editor capable of handling jpeg file formats (e.g., Adobe Photoshop) to prepare building and terrain surfaces. The jpeg files are loaded into a program called Conoma to be applied over 3D CAD skeletons. Combined with GPS readings, this renders buildings and terrain allowing the viewing perspective to shift and be traversed, with accurate scaling of perspective

Walkthroughs of indoor models require the use of a digital camera and QuickTime VR software to encode VRML data. Room transitions are encoded in HTML, necessitating the use of a standard HTML editor.

Software needed to support the OTVIS functionality include a Paradox database to capture x-y-z coordinates, time of movement, heading and status data; and Bryce 3-D software to position 3D entities within the terrain model for 3D or 2D animated playback. Final Cut Pro software can be used to create videos as well as edit/enhance OTIVS playback for multimedia uses.

Data loggers, developed by Joint Advanced Distributed Simulation Joint Test and Evaluation (JADS JT&E) analyst and contract agencies, are needed to capture network packet traffic for later analysis.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Requirements for facilities will vary depending on the nature of the exercise. For a typical exercise, two rooms are needed: one for the command center, and one for the workstations. The emergency organizations participating in an exercise use their normal operational communications equipment and vehicles.

Web-based application, LAN, or a single computer/system-based application?

LAN based system.

Can the training be administered over a wide area network or a local area network?

LAN is the means by which training is currently supported. EPICS can operate on a dedicated WAN, assuming that all workstation servers are sending and receiving DIS Protocol Data Units (PDUs). The receiving PDU code has not been upgraded nor tested. TRAC-WSMR software developers estimate that it would take two weeks to upgrade and test receiving PDU capability.

Is an instructor or facilitator needed?

A support team (contractor) is needed to run the simulation and AAR. It is beneficial to have the client exercise/scenario designer to help select events for the AAR.

If not, how is training conducted (e.g., Individual self-paced)?

Training is conducted in two stages, as applicable to the exercise. Operational tactics are practiced during the exercise, whereas analysis and evaluation occur as part of the AAR. After an EPICS simulation exercise has been conducted, the recorded event is used to create a CD-ROM highlighting all of the events that occurred. This is called the "Dynamic Scenario" and can be used to reinforce lessons learned – either with the original training audience or new training audiences. Using the Dynamic Scenario CD – you can pick an event on a time line and listen to the radio transmission for that event. The Dynamic Scenario, if used to reach more people in the training audience, may help reduce the large costs associated with EPICS.

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

See above.

Describe unique user interface characteristics:

The user interface for the simulation primarily consists of menus and 2D maps. This interface, however, is not intended for use by the exercise participants, and requires trained workstation operators (contractor support team) to control. Field supervisors receive instructions from incident commanders (in a separate room) via radio and relay input to the operators, who each manage a station devoted to a particular emergency discipline (police, fire, EMS etc.). The field supervisors have situational awareness only for their own resources.

After the role play exercise is completed, an AAR is conducted by means of a "Dynamic Scenario" which combines 2D simulation playback, event timeline, excerpts from audio/radio traffic to provide instructional lessons.

Other important product characteristics:

It is important to note that emergency personnel use their existing communications systems during an exercise. EPICS incorporates a data logger that records audio from these systems for integration into the Dynamic Scenario upon simulation completion.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

Neither purchase nor licensing is normally required, because EPICS is provided as a service by AST, Inc. as part of a contract to support a functional exercise.

Initial acquisition cost (purchase; licensing fees):

As currently provided, EPICS software is not sold or licensed. Hardware system configuration and pricing for a regional training center, for example, would need to be based upon defined requirements.

Product itself:

Not applicable.

Other necessary support, software, equipment:

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

Yes. AST, Inc. is the contractor that supports both the Janus and Janus-EPICS systems and their use in exercises. A typical functional exercise requires a support staff of eleven to twelve, at an approximate cost of $132K to $150K plus TDY. The Alexandria, VA exercise (discussed below) serves an example of the typical scope.

In this exercise – the Unified ICS was made up of four tactical groups: Fire/EMS; Federal Response Agencies; Police; and USMC & Mutual Aids. The EPICS Simulation Center was made up of nine EPICS workstations assigned to the following functional areas (note: that how you assign workstations depends on the scenario and exercise objectives – the maximum number of PCs is parameterized at 96 workstations.):

E1: People, vehicles, reporters, TV copter
E2: Court personnel and prisoners
E3: FEDS, Marshal, CSO, FPS
E4: SWAT
E5: Traffic & crowd control
E6: Fire/EMS
E7: USMC & Mutual Aid
E8: OPFOR: Shooters, bombs, WMO
E9: Server/Training Control.

The exercise objectives were:

1. Respond to events in and around a federal building during a high profile trial.
2. Exercise the crisis managers at the Unified Incident Command level
3. Exercise capabilities to make decisions and coordinate activities of various organizations.

Number of staff required to setup, and operate product:

Twelve contractor staff are required for an average exercise.

Staff training required to use product (identify briefly ... type, time):

The contractor provides the staff to operate the computer consoles, limiting the need for customer staff to be trained. However, there have been reports of interactors who have difficulty seeing and interpreting visual representations of response assets – indicating the potential need for a GUI familiarization phase to precede a functional exercise.

Cost for staff training on product (Cost to purchase training):

Not normally required of customer staff.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

The contractor typically provides the system and LAN needed to operate the product.

Expected costs?

Equipment cost is normally part of the contract cost.

Product maintenance requirements/recommendations (identify briefly):

There are no maintenance costs borne by the customer for EPICS. TRAC-WSMR maintains the software (at an annual cost of approx. $1.5M plus TDY).

Maintenance costs (Expected or required software, hardware maintenance):

Hardware maintenance would be required only if the customer uses their own systems.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

The operating system is usually not a constraint or selection criteria for most customers. The contractor normally provides this (RedHat UNIX 7.3, or later versions) as part of their systems.

Can product be customized? How? Cost?

The product is designed to allow full customization of simulations to particular locations, assets, actors, and other entities. EPICS databases must be customized to match a geographical region, any buildings involved, and an accurate representation of the entities involved in the scenario.

Product modifications required to support counter-terrorism training/exercises:

To date, EPICS has been used for four counter-terrorism exercises (D.C., El Paso, TX, Alexandria, VA, and Baltimore, MD) using explosive, chemical and radiological attacks. Modifications would be necessary for any new exercise scenario.

Modifications:

Terrain database
Entities
Scenario scripting
Hazards

Range of potential costs:

Modifications are part of the overall contract cost, ranging, typically, between $130K and $150K.

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).

Systems are normally provided by the contractor such that system purchase is not necessary. Customers who wish to provide their own hardware should contact TRAC-WSMR for complete specifications. System design can be tailored to specific needs. General minimum requirements for the LAN host computer follow. Client workstations can use minimum specs available from source. Associated Ethernet hardware for a LAN is also required. EPICS runs on the RedHat Linux 7.3 (or later) operating system.

Processor speed:

2.4GHz processor, 2nd processor optional

Memory:(SDR/DDR)

1 GB PC800 ECC RDRAM

Free disk space:

2 hard drives 36 GB Ultra / 160M SCSI

Internet connection speed:(if any)

Not applicable. T1 or T3 lines are used for dedicated remote connections.

Display adapter[4,5]:

19" monitor, nVIDIA Quadro EX 32MB VGA graphics card

CD-ROM speed:

Assume 24X.

Optional accessory requirements[5]:

Training/Exercise Characteristics

Product may support training, exercises, or both?

EPICS supports exercises. The Dynamic Scenario has the potential to support training.

Potential type of WMD event product can support:

Chemical –	Yes EPICS explicitly models non-persistent chemical events. Units that are in the chemical cloud and not in Mission Oriented Protective Posture (MOPP) become incapacitated and, depending on the chemical dosage, may be killed. Units in MOPP are not affected by the chemicals but do suffer impediments to movement and firing times because of the MOPP status.
Biological –	Not directly. EPICS, as a high resolution event driven model, does not suit the objectives associated with long incubation times. The effects of a Bio attack would be modeled separately and then incorporated into an EPICS simulation. The issues related to a Bio event that could be directly simulated in EPICS are the quarantine of an area and then the related logistical requirements.
Radiological –	Not directly. An engineering model would be used to predict the effects of such a device, then these effects would be incorporated into the EPICS simulation.
Nuclear –	Not directly. An engineering model would be used to predict the effects of such a device, then these effects would be incorporated into the EPICS simulation.
Explosive –	Yes Many different types of explosions and delivery means are modeled in EPICS. The system uses data available on indirect fire systems including (but are not limited to) artillery (howitzers, cannons, and multiple rocket launchers), grenades, and mortars. They are usually used to deliver improved conventional munitions (ICM) and high explosive (HE) munitions but may also be used to deliver smoke, aerosol

chemicals, precision guided munitions (PGM), terminal guided munitions (TGM or fire-and-forget), and mines. Planning is done interactively by the user, either during the planning stage of the scenario (sequential and timed missions) or during scenario execution (sequential, timed, and priority missions). Planning criteria to be considered include mission type, number of volleys, munitions type, and type of sheaf (parallel or converged). Users may repeat, alter or cancel planned missions. Explosions can be used to suppress or inflict damage. Explosions are treated as an area weapon and do not differentiate between the sides of the units, it is possible to commit fratricide if friendly units are within the areas of effectiveness of friendly artillery fires.

Constraints on supported exercises or scenarios?

WMD events are not generic, "canned" models, and must be designed for each exercise (requiring 6 to 8 weeks of development time). EPICS currently supports 15,000 entities and about 250 entity types per simulation. Tactical teams must be organized into groups (typically ranging from six to nine, depending on scenario).

Inherent in the EPICS v7.06ep software structure are maximum limits (i.e., the maximum number of a particular type of entity that can be played in any one scenario) for various tactical and technical parameters. They are:

Number of workstations	96
Number of units	10000
Number of indirect fire units	2000
Number of system types	400
Number of indirect fire system types	100
Number of direct fire systems types	300
Number of direct fire weapon types	400
Number of preplanned missions/indirect fire unit	24
Number of special radars	400
Number of special flyer units	400
Number of large area smoke clouds	100
Number of clouds/plumes	1000
Number of ammo supply units	1000
Number of ammo types for an ammo supply unit	30
Number of fuel supply units	400
Number of obstacles	1000
Number of nodes in a movement route	150

Potential disciplines product can support:	Disciplines below have been demonstrated.
Emergency medical services	Yes
Emergency management agency	Yes
Fire	Yes
Governmental administration	Yes (school districts)
Health care	Possibly
HazMat	Yes

Law enforcement	Yes
Public health	Yes
Public safety communication	Yes
Public works	Yes (transportation)
Global ... or other (Pelfrey)	

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition	No
Improvement	Yes
Maintenance/refresher	Yes

In general, EPICS supports functional exercises in which C2 decision-making and performance can be improved or maintained.

Target audience:

First responders/Crisis managers/Incident Commander

Law enforcement/Fire& Rescue/Hospital personnel

Crisis managers, incident commanders and law enforcement are the primary target audience for EPICS. The functional exercises in which EPICS is used, however, have broad applicability to the first responder community.

Potential responder training level(s)/categories product can support:

Awareness –	No
Performance [Operations]	Yes
Technician [Specialist]	No
Planning & Management [Incident Command]	Yes

Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - Yes

Potential equipment and/or facilities product can address:

EPICS can assist in evaluating communications systems (equipment).

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

Inter-agency, multi-jurisdictional ICS process, EOC decision-making, and communications exercise objectives are supported.

Training content description (what trained), in addition to preceding item (Brief):

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

Exercise participants do not directly use the product. Instead, they are teamed with skilled computer operators supplied by the contractor. No computer proficiency is required during an EPICS simulation. Basic computer proficiency may be needed to view a Dynamic Scenario CD separate from a contractor facilitated AAR.

Potential training/exercise types product can support:

Classroom -	Yes
Individual self-paced -	The Dynamic Scenario may possibly support individual training
Seminar/workshop -	Yes

Drill – It is possible for EPICS to support drills, but has not to date

Individual and small-team exercises -

Simulation-supported - Yes

Gaming - Yes (in the sense of an intelligent opposing force)

Collaborative - Yes

Tabletop - No

Functional - Yes, this is the primary use

FSE - No

Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level … e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The instructional method is in the performance of the function exercise and subsequent After Action Review, in which issues from the exercise are addressed and discussed. The Dynamic Scenario CD supports the AAR by providing playback of the simulation combined with flagged events and audio transmissions. Although he AAR is generally conducted in a classroom or seminar type of process, the Dynamic Scenario CD has the potential to support other types of instruction or training (case study, individual CBT).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercises are constructive, simulation-supported, and stochastic in nature. EPICS stimulates the C2 system for response.

Exercise/scenario length/time(typical):

Six NIJ exercises averaged about 2.6 hours, and ranged in length from 1.4 to 3.5 hours.

Process and time to:

Develop new exercise/scenario:

The time for exercise development varies from exercise to exercise. The longest process took 12 months and the shortest development process took 4.5 months. The time is dependent on the size and complexity of the exercise and resources from participating agencies to support the exercise development.

Tasks required to prepare and complete an exercise include but are not limited to: data gathering, terrain building, entity database editing, software development for enhancements, entity routing, scenario development, interactor training and rehearsal, network administration, multi-media data gathering, Janus/OTVIS interfacing, agency coordination and scheduling, operational scenario development and documentation, dynamic scenario documentation and production, exercise set-up, performance, and facilitation.

Modify an exercise/scenario:

The time needed to modify an exercise depends on the nature of the changes required and the resources available. The two areas which have taken the most time in preparing these scenarios to date have been (1) collecting the data from the agencies involved and (2) creating the terrain within the model---the more urban terrain-the more time.

Setup an exercise/scenario to run:

Tasks needed to be performed include but are not limited to: assembly and testing of systems hardware, networking and communications equipment; facilitation/briefing of participants; deployment of emergency response assets involved in HITL operations

Does a curriculum already exist?

No standardized learning curriculum currently exists within EPICS and OTVIS. There is potential, however, to develop training tools that can help disseminate lessons learned without having to participate in an entire functional exercise.

If so, briefly describe its form and content:

Not applicable.

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

The simulation is a scenario construct that trainees do not interact with directly. Trainees respond to probabilistically modeled scripted events, and do not necessarily learn from the simulation itself.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Data from the simulation network traffic is recorded by data loggers for use in preparing the Dynamic Scenario. On average, seventeen events are chosen by the Exercise Coordinator for the contractor to include in the Dynamic Scenario to evaluate the exercise during the AAR. The Janus Analyst Workstation (JAAWS) and the Janus Plan View Display (JANPVD) provide the capability to replay the exercise exactly as it ran during the simulation in either a non-DIS or DIS mode, respectively. When a simple graphic replay provides insufficient detail for analysis, JAAWS and JANPVD offer the selective retrieval and graphic display of simulation results like time and location of direct fire kills. Also, the Post Processor displays detailed battle reports, either on the screen or in printed form.

EPICS contains extensive reporting capabilities to evaluate the combat effectiveness of forces and their tactics during and following scenario development and execution. Development reports include those for the scenario forces and scenario verification. Reports available during scenario planning and execution include those for unit and aggregate status, building status, and artillery missions. Intelligence and friends reports are available also during scenario execution. Post processing reports cover most aspects of the scenario including artillery impacts, direct fire shots, kills, minefields, detections, heat and chemical casualties, temperature and workload profiles, and effectiveness of firer versus target for any system used in the scenario.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The Dynamic Scenario provides 2D simulation playback, 2D and 3D imaging, voice/audio recordings for delayed feedback via AAR.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

EPICS is a physics-based simulation that includes parameters for entities such as vehicle speeds over different terrain types, munitions characteristics (penetration, blast radius etc.), and chemical dispersion properties.

In the D.C. Metro Safety Exercise, Argonne National Laboratory (the DOE PROTECT team) was responsible for the simulated release, detection and dynamic propagation of the hazardous chemical. POC for further information: Mr. Jacques Mitrani at ANL, Argonne, IL.

HELP features (Briefly identify):

Instructor/controller/evaluator tools:

a. The Exercise Director (or other observer) can view the simulation on the control station to flag events, locations, and transmissions for AAR evaluation. The Director meets with the EPICS Controller and the OTVIS technicians immediately after the exercise to determine the significant events that occurred during the exercise. The OTVIS technician flags potential events as they occur during the exercise and these help identify points for the AAR.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Tools to support scenario design and development include: a terrain editor, a force editor, a database editor, an analyst workstation, and other simulation construction support and checkout tools. The contractor is responsible for all of the technical development of scenarios, with scenario scripting support from the client organization.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The functional exercise and simulation are conducted in real time. Simulation and comms data are recorded on data loggers. The control station has multiple features that can support or alter game play within the simulation (e.g., reorganize tactical forces among workstations, hostage taking, and unit retrieval).

AAR support tools (May overlap with "Student/participant/team feedback features", above):

The OTVIS functionality, addressed above, provides support for AAR.

Data recording & storage features (e.g., Scenario events; student performance):

Data logging on the control workstation captures PDU network traffic from the client workstations. This data is used to construct the Dynamic Scenario multimedia playback presentation.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

See above Evaluation features and OTVIS features.

Training/exercise fidelity:

Generally, exercise fidelity falls between a TTX and a FSE. Note the survey responses from six NIJ exercises in the Appendix.

Environment (including situation/scenario):

Scenarios, according to the survey responses, are realistic. The environment modeling capability in EPICS is limited to 2D views of plan and elevation views, and aerial photographs. Nevertheless, positioning and movement of assets and entities within the model is robust (e.g., underground tunneling, multiple floors, roofs, door breaching etc.). For AAR, 3D graphics can be integrated into a multimedia presentation (e.g., QuickTime movies of building interiors).

Hardware:

Information (including interaction with other persons):

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Emergency Response Synchronization Matrix (ERSM)

Developer: Argonne National Lab

Contact and Technical Support Information:

Jacques Mitrani
Associate Director

jacquesm@anl.gov
Tel.: 630-252-7087
FAX: 630-252-3379

Paul Hewitt, Jr.
Deputy Director

plhewitt@anl.gov
Tel.: 410-436-3154
FAX: 410-436-3179

Center for Integrated Emergency Preparedness
Decision and Information Sciences Division
Argonne National Laboratory
Building 900
9700 South Cass Avenue
Argonne, IL 60439-4832

Website: http://ersm.dis.anl.gov/default.asp S/GOTS: GOTS

Product status (version in use): Version 2.1.1 (released October 2002) currently in use.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

X	Brochure/Prospectus
	CD-Rom
X	Related Papers
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

The ERSM is a software tool for planning emergency response processes that span multiple organizations and jurisdictions. Functionally, the product is a database with a graphical user interface that produces process/information flow charts as its main output.

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  The ERSM is a planning system for incident response. The current, single-platform version supports individual or small group use.

- Current Target audience:
  The current target audience (i.e., user base) is involved in the Army Chemical Stockpile Emergency Preparedness Program (CSEPP). Federal, state, and county agencies that have used ERSM include:
  Utah: State, Army, 3 counties
  Colorado: State, Pueblo Chemical Depot, Pueblo County
  Kentucky: State, Bluegrass Depot, 9 counties
  Arkansas: State, Pine Bluff Depot, 10 counties
  Illinois/Indiana: States, Newport Chemical Depot, 5 counties
  Alabama: Anniston Chemical Depot, Ft. McClellan, 8 counties.

  Secondarily, ERSM has been adapted for use by the City of Chicago Department of Public Health.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
1	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	1	Generic
1	GOTS	1	Locale Specific

	Media Scale		**Product Re-Playability**
1	Individual	3	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	3	Automated summary of data
1	Non-specific	3	SME controls AAR
0	Equipment	1	Does not provide feedback or AAR
		0	**HLA Compliance** (High Level Architecture)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

ERSM is a software tool, a standard extension of a Delphi database, which runs on standard Windows-based personal computers (PCs). The tool includes a graphical user interface for control, input and output, and a Help function.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

As software, the ERSM requires computer hardware to operate. The software can run on an industry standard PC with a Microsoft Windows 95 or later operating system. For generating large printouts, a 36” or 42” wide color plotter is very useful, but not required.

c) Large multi-station system, or based on individual PC’s?

Individual PC-based tool.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not applicable.

e) Web-based application, LAN, or a single computer/system-based application?

Currently, the ERSM (version 2.1.1) is a standalone application, but work is under way to port the tool to the Internet for use in a distributed interjurisdictional mode.

f) Describe any debriefing after-action reporting support tools:

Not applicable.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

For use, a work space for a single computer is necessary, plus a vertical area for displaying large printed diagrams (e.g., bulletin board, blank wall) is useful. For training users, a meeting room or classroom with adequate seating is needed. Computers and display equipment are necessary for user training – provided either by the client or Argonne per training agreement.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Microsoft Windows 95, 98, NT4.0, 2000, XP.

b) Processor speed (in MHz): Industry standard Pentium

c) Memory (SDR/DDR): 64 MB

d) Free disk space: 6 MB

e) Internet connection speed (if any): Not applicable

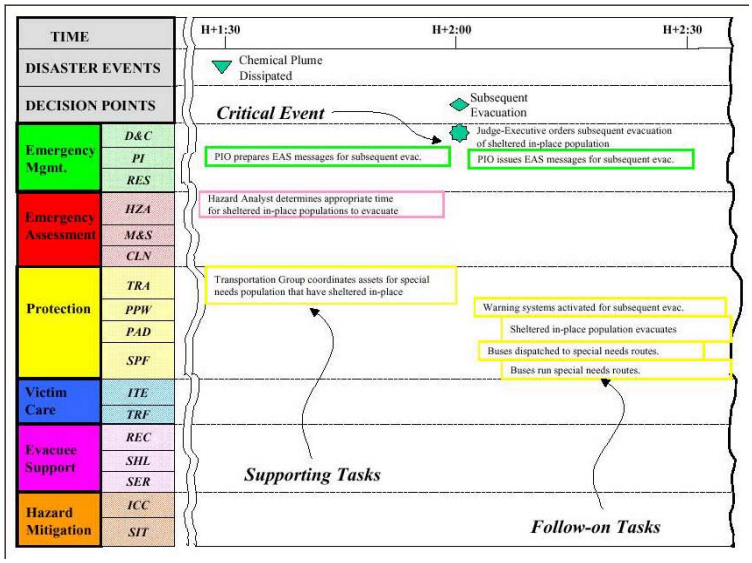
f) Display adapter: Industry standard

g) CD-ROM speed: Industry standard

h) Optional accessory requirements[5]: 36” or 42” wide color plotter

5. Describe the user interface characteristics:

The ERSM has a graphical, menu-driven interface that allows for user input via forms or data fields, and output display and printing. The software package includes a user tutorial and a robust Help function. The main graphic display is a format similar to a Gantt chart, with emergency response operations systems on the vertical axis, and response tasks, decision points on the horizontal axis timeline.



6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

While there may be multiple instances of ERSM software running on separate machines, the software architecture does not allow for shared, simultaneous access to the same database. In this sense, the tool supports one user at a time.

b) Number persons usually trained simultaneously?

The ERSM itself is not a training medium; rather it is a system that supports a training methodology practiced by Argonne's Center for Integrated Emergency Preparedness that was originally developed for the CSEP Program. Argonne training of ERS users can be done in groups of three (maximum of four) per instructor.

c) Custom/proprietary hardware required? If so, identify:

None.

7. Describe any user HELP features:

The Help menu is similar to Microsoft Windows Help. There are three tabs for accessing information: Contents, Index, and Find. The Find feature allows the user to search for information related to a user inquiry string. There are a large number of topics, many of which are illustrated with screen captures.

8. Data recording & storage features (e.g., Scenario events; student performance):

Not applicable.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Argonne provides two days (16 hours of contact time) training of up to four users per instructor. Training covers the theory of synchronized emergency management planning, and hands-on learning of the application of the ERSM tool to a hypothetical or real threat. Argonne can provide follow-on support service consulting at added cost.

2. Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
2	Exercise	1	Applied
1	Operational *(Output can be used)*	1	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders

	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	2	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	1	Pre-Training
0	EMS	0	Drills
1	EMA	1	TTX
2	Fire	1	FE
2	Govt. Administrator	1	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
2	Public Safety Communication		**Incident Stage Supported**
1	Public Works	2	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
0	Initial Acquisition	2	Recovery
1	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

The ERSM is not a training product per se, and therefore does not provide content for training delivery. Training of users in the application and use of the ERSM tool is done by Argonne staff.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

None.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

T&E objectives potentially supported are primarily related to ICS process, inter-organizational and inter-jurisdictional coordination. The ERSM can be used in a number of exercise support roles, including:

j. Exercise design – scenario development
k. Exercise control – determining critical activities and inject points
l. Post-exercise analysis – evaluating deviations between planned and actual response.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Not directly applicable. Output from the ERSM tool can be used to support any type of exercise.

e) Exercise/scenario length/time(typical):

Not applicable.

f) Potential equipment and/or facilities product can address:

As a planning template, the ERSM can apply to any type of response asset or any type of facility. There are no pre-existing limitations in this regard.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The product may be used for counter-terrorism T&E, depending upon the curriculum and instructional strategy chosen. As is, the product can be used to illustrate interdependencies of response systems that would be activated by a WMD event. The ERSM may also be used as a planning tool for T&E events, such as TTX or FSE, to outline expected actions, for example. As a training device in and of itself, significant modification would have to be made to the program to add instructional material, pre-scripted scenarios, testing, and other training-related content and functionality.

h) Are there any constraints on supported exercises or scenarios?

The ERSM has no product-defined constraints for potential use in exercises or scenarios.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

In its current form, the ERSM applies to classroom training. It may apply to real-time exercises or TTX, but there would be work required to integrate its use to meet the particular T&E objectives of programs other than Argonne training.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

Argonne product support training requires one instructor per four students. The product may be used afterwards without instruction or facilitation.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Not applicable.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

Argonne staff manages product support training. There is no current means of managing the use of ERSM in any other training program.

e) Does a curriculum already exist? If so, briefly describe its form and content

The Argonne product support training curriculum covers the theory and practice of the emergency planning process, covering four phases of a planning project (formulation, writing, execution, assessment). Users are then taught how to use the ERSM in the planning process, in a hands-on approach.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Not applicable.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Not applicable.

5. Instructor/controller/evaluator tools

d) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Not applicable. The ERSM, itself, is an exercise design and development tool.

e) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Not currently applicable.

6. Modification and Customization Table

Please denote if the product (as is) or the vendor supports the following changes by checking the appropriate box in the following table. Check the time scale box that applies to each type of change. If the change does not pertain to the product or cannot

be provided, check "No Support / NA". Please provide details (e.g., types of CBRNE, input models, communications media) below.

Nature of Change	Modified by Customer before Use	Modified by Customer during Use	Compiled / Initialized by Vendor	Engineering Change by Vendor	Time to Modify		No Support / NA
Set up a given training session, simulation, or exercise	X				x	Minutes	
						Hours	
						Days	
						Weeks	
						Months	
Add new scenario training objectives given product constraints			X			Minutes	
						Hours	
					x	Days	
						Weeks	
						Months	
Modify existing scenario training objectives given product constraints		X	X			Minutes	
					x	Hours	
						Days	
						Weeks	
						Months	
Shift location-specific databases (e.g. census, GIS) to new site in U.S.						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	
Change the type of CBRNE threat to any other type		X				Minutes	
					x	Hours	
					x	Days	
						Weeks	
						Months	
Logging/ data capture of email, instant messenger comms						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	
Logging / data capture of voice, voice over IP comms						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	
Change input models (e.g., plume, epidemiological, weather, damage)						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	
Provide trainee performance metrics						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	
Provide scenario playback						Minutes	X
						Hours	
						Days	
						Weeks	
						Months	

Setup of the ERSM for planning purposes is done by the user. Since Argonne uses the ERSM to support their training, any changes to training objectives would have to be performed by Argonne staff (as training objectives in this case would refer to the user training curriculum). Modification of a scenario under normal circumstances would be

performed by the user by operating the ERSM. However, in a training environment, Argonne staff may modify the threat scenario.

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

   Not applicable.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High	**X**	Very
	Medium		Somewhat
	Low		Limited
X	N/A *(Content is generated by user)*		
	Ease of Use		
	Easy		
X	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)[1]		$4000		
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel[2]				
Instructor Fee[3]		$2500	$2500	
Trainee Fee				

[1] **Product License:** Exact pricing was not determined when this document was prepared. Individual copy pricing is listed, but there are plans to offer volume discounts. Given that the product was developed using Federal government funds, the product is available to Federal agencies without charge.
[2] **Travel:** Instructor travel expenses must be paid for any training at sites other than Argonne National Lab or Chicago metro area.
[3] **Instructor Fee:** $2500 per Instructor per three students ($2500 minimum) for training at Argonne National Lab, or Chicago metro area.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Emergency Response to Terrorism: Basic Concepts (ERT:BC)

Developer: Illinois Fire Service Institute

Contact information: Illinois Fire Service Institute
11 Gerty Drive
Champaign, IL 61820

Email: fsi@uiuc.edu

And additional Contact information: Richard L. Jaehne
Director
217-333-8926
jaehne@uiuc.edu

David F. Clark
Deputy Director
217-244-9674
dfclark@uiuc.edu

Website: http://www.fsi.uiuc.edu

Product status (version in use): ERT:BC will be initially implemented in January 2004.

Date of Evaluation: December 2003

Source(s) of Evaluation: ***check all that apply***

Observed Product in use during a training or exercise
Observed Demo
Played/Used product
Attended Briefing
Reviewed CD-Rom or other software
X Reviewed Website
X Spoke/emailed with POC
Interview(s) with Product Users (please paste into the end of this document)
Product developer filled-in evaluation form
TLI team modified evaluation form

Materials in our Possession:

Brochure/Prospectus

CD-Rom
Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.
Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  The ERT:BC is a web-based course addressing awareness training. The first session of this course will be conducted in January 2004. This course is an evolution of a resident course that was taught at various venues throughout the State of Illinois. The resident course was classroom-based, and included a set of video tapes. This prototype web-based course is planned to be taught exclusively over the internet, with a video tape module (video tape is loaned to the students' local libraries), and limited remote instructor assistance (e.g., for certain homework items). However, this is the course's initial implementation; it may be subsequently modified as a result of experiences during its conduct. A variety of modifications are possible, in keeping with the instructional tools typically used by the IFSI (e.g., student internet chat rooms; video tapes loaned to students' local libraries; instructor availability to respond to student inquiries).

  This program is designed to help responders recognize and understand acts of terrorism, both domestic and international. It provides responders with basic knowledge on implementing self-protective measures, scene security and tactical considerations when dealing with terrorism. Explosives, chemical, radiological and etiological types of harm are discussed. This class also gives the responders an overview of the incident command structure and their role within a mass casualty disaster involving a multi-jurisdiction command system.

- Current Target audience:

  The primary target audience for this course includes three groups of people:

  Fire Service Personnel,
  EMS Responders, and
  HazMat Responders.

  In addition, this course is designed to benefit:

  Law Enforcement Personnel,
  Emergency Communications Personnel,
  Public Works Management,
  Public Health Workers,
  Armed Forces,
  Reserves,
  National Guard, and
  Disaster Response Agencies.

- Potential equipment and/or facilities product can address:

  Specific equipment is not addressed.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  This prototype course is an example of state sponsored technology-based training available to a wide variety of individuals with homeland security responsibilities, via the internet/web. As such, it is indicative of the type of training that could be efficiently provided to responders across the country (e.g., initial training). It is also indicative of a blended learning strategy within a course. This course, although predominantly web-based, includes elements of video tape and supplemental interaction with an instructor after completion of web-based activities, homework and tests. Finally, this course is one example-part of the multi-faceted approach undertaken by a state institution to provide needed homeland security training, including the use of modern instructional technologies.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   - Web classroom study
   - Video tape presentation
   - Course activities and homework assignments
   - Instructor review and approval of activities and submissions
   - Final examination

b) Large multi-station system, or based on individual PCs?

   Individual PC - the individual learner's PC, at home or office.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

   Stand-alone product, with the exception of requiring the individual to have web access via a PC.

d) If simulation models are used, what is the basis of the data and/or distributions used?

   N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

   None

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Any Windows operating system.

b) Processor speed (in MHz):

Pentium-2 machines, or higher.

c) Memory (SDR/DDR):

Corresponds to minimum Windows requirements.

d) Free disk space:

N/A

e) Internet connection speed (if any):

56k telephone modem.

f) Display adapter:

Not specific.

g) CD-ROM speed:

None.

h) Optional accessory requirements:

N/A

3. Describe the user interface characteristics:

Any web browser (e.g., Microsoft Internet Explorer, Netscape).
Windows/mouse interface.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Provides individual instruction. Multiple individuals may be simultaneously logged on and receiving training.

b) Custom/proprietary hardware required? If so, identify:

No.

5. Describe any user HELP features:

Instructor access of various types. At this time, the instructor will review some student homework and test results.
Student Internet Chat Rooms have been used in support of other courses. Although not a part of this initial course offering, it may be implemented for a course revision at a later time if needed.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Student performance is automatically recorded (e.g., homework, tests, responses to tutorial questions, etc.).

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

None required

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

- Recognition and understanding acts of terrorism;
- Basic knowledge about implementing self-protective measures, scene security and tactical considerations when dealing with terrorism;
- Explosives, chemical, radiological and etiological types of harm;
- Overview of the incident command structure and their role within a mass casualty disaster involving a multi-jurisdiction command system.

b) Exercise/scenario length/time(typical):

The course is student self-paced, hence its time can vary. It is replacing a 2-3 day course (i.e., tailored to meet needs of different student groups). The initial time estimate is 8-12 hours for a student to complete the course.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Illinois Fire Service Institute (IFSI) has used the resident version of this program to provide responder training; it was typically tailored to the needs of each student group, and conducted in different regions of the State of Illinois. The first implementation of the web-based course version will be in January 2004. This web-based course is planned to be offered over the web 8 times per year, 2 sessions per quarter.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Yes. It consists of a variety of CBT techniques implemented over the internet/web (via a low-speed connection, such as a 56k modem), including lecture/audio, tutorial, question & answer, embedded videos, reference sources, student activities and homework, text and graphics, and video tape (viewed outside of the PC, at the student's local library).

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Instruction is largely web-based CBT, with automated feedback (based on computer algorithms). Feedback to student responses is typically immediate, with the exception of instructor review of homework. A separate video tape is also required viewing as part of this course. The video tape is provided to the student's local library for access during the course. Immediate feedback from the web-based activities and test are provided.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Self-paced learning situation.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

No.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Training can begin as soon as the student is logged on.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A

E. Product Attributes and Ratings:

1. **What is the product?** (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
X	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	GO (Government Owned)	3	Multiple dynamic paths through the product and more than one out come possible
	CO (Commercially Owned)	1	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	3	Scenario replay
3	Group	2	Automated summary of data
3	Small multi-user team (up to 25 persons)	3	SME controls AAR
3	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
3	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
3	Equipment	3	Standalone
		2	LAN
	Environment	2	WAN
1	Generic	1	Internet
3	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
3	Exercise	2	Applied
3	Operational	3	Hands-on
3	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	3	Commanders
1	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials

		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
3	Intermediate	1	Awareness
3	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	3	Planning & Mgmt. (incl. ICS)
1	Chemical	3	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	1	Awareness
		3	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	3	Drills
1	EMA	3	TTX
1	Fire	3	FE
1	Govt. Administrator	3	FSE
1	Health Care	3	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	3	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
1	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
3	Improvement		
3	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
Medium
1 Low
N/A

Ease of Use
1 Easy
Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP
1 Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
3 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
0 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
3 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

3 Simulation Support

Selected FSE Observations: product allows for/can be used for:

3 Remote Observation
3 Enhanced Communication T&E/does it practice/train/exercise communications?
2 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

3 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)

2) Does the cost apply to: (choose one)
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized

4) What are the prices (in $USD) according to type: (fill in all applicable)

   No cost to students.

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage	$0			
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS
3/12/2003

Basic Product Information

Name of Product:

EMS Simulator
at **www.Lessstress.com**

Product is hardware, software, or both?

The product is a set of Web accessible software applications, available to Internet users without charge. The terms "product", "Web site", "application" and "tool" are used interchangeably in this review. The user provides the system hardware, software and Internet connection.

Large multi-user system, small multi-user product, or individual-user product?

The Web site provides individual training, delivered over a mass communication system (the Internet).

Focus/specialty of product:

The Lessstress.com Web site offers multiple services and products. Pertaining to MSG, the site contains sets of exercises intended to increase knowledge and awareness of "pre-hospital" medical emergencies. Two software applications are of interest:

- A first responder tool. This section of the Web site uses standard diagnostic methods to train emergency medical responders, by presenting the user with a range of diagnostic scenarios. The scenarios are written to improve responder choices to different types of medical emergencies, and are written in an idiosyncratic style in order to amuse as well as inform.
- A cardiopulmonary resuscitation (CPR) tool meant for training bystanders. It incorporates guidelines from the American Heart Association in training response in one of four scenarios: Adult, Child, Infant, and "Variable Outcome".

Incident response operational tool/system:

Domestic, military, other users?

Not applicable. These applications are not intended for operational use.

Incident response training/exercise tool/system:

Domestic, military, other users?

The tool is a Web-based medium accessible to the general public, such that any user type may access the applications. The site claims that the delivered content is not meant to replace normal "hands on" training courses, but rather to increase awareness. The tools target EMTs and bystanders (i.e., civilian users), but could be used by other types.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

Not Applicable.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

Not Applicable

Functional-area identification of product (Broad range, or specific):

In the spectrum of MSG offerings, Lessstress.com simulations are intended for First Responders/Awareness.

- First Responder training tool: uses a growing set of scenarios.
- CPR training tool: embodies a relatively fixed standard of practice.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

John Mateus, Mary Rongo
Less Stress Instructional Services
138 Buena Vista Ave
Hawthorne, NJ 07506
Tel: (973) 427-9692 * (888) 277-3671 * (888) CPR-EMS1
Fax: (973) 427-7776
E-Mail: jmateus@lessstress.com

Contact info ref. technical questions (Person, title, organization, telephone, email):

John Mateus. See above.

Contact info ref. buying the product (Person, title, organization, telephone, email):

Not applicable.

COTS/GOTS (circle one).

COTS. It is a Web-based service.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

No, the product is not directly applicable to counter-terrorism training in its present state. However, scenarios may be written to increase awareness of medical emergencies induced by WMD attack, given that best practice standards for diagnosis are used. Additional scenarios could be written with decision logic representing best practice, and coded in HTML for publication on the Web.

Product status (Production version in use; prototype in use; under development)?

The product is currently published and in use. New EMT scenarios are produced approximately every month.

If in use, identify users, types of use:

The targeted users for the EMT simulation are emergency medical personnel (technicians, medics) who opt to refresh their training in the delivery of first aid to a range of victims, and care in-route to the hospital. Targeted users for the CPR simulations are bystanders in non-specific or work settings.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

The CPR and EMT applications are Web-based, individual, fixed-path computer-based training tools. Strictly speaking, these applications are not simulations, but deterministic, discrete models used to test functional processes in a narrative format. Users progress through sets of Web pages by making decisions that conform to pre-defined decision logic representing first responder best practices.

Intended for operations, training/exercises, or both?

The intended use is for training – primarily the retention of first responder knowledge.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

Training is self-paced and self-directed, with no instructor/controller function.

Intended for individual, group or team use[1]?

Applications are intended for individual use, but may also be used by groups or teams to train in scenarios at the same time sharing computers or accessing the same scenarios simultaneously.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

There is no system-imposed limitation on the number of simultaneous users. Server capacity and Internet connection bandwidth may limit the number of simultaneous site "hits", but the number of maximum simultaneous users would more likely be constrained by physical and/or hardware limitations of user facilities.

Number persons usually trained simultaneously?

Typical use is geared to the individual. However, two or three users may be able to view an average PC video monitor and work through scenarios together.

Large multi-station system, or based on individual PC's?

Based on a Web server accessed by individual PCs connected to the Internet.

Custom/proprietary hardware required?

No. May be operated from standard COTS hardware.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:

  For the user, a desktop or laptop computer system (PC or Mac), connected to the Internet via dial-up, cable or DSL modem, Ethernet (fixed or wireless), or other physical connection is necessary.

- Software:

  A compatible software application able to display and interact with HTML-encoded content (i.e., a Web browser) and /x-illuminatus MIME encoding types is necessary for both training tools. The CPR tool and later EMT scenarios require the installation of a specific "plug-in" software applet, "iO Streaming Web Plugin, v1.04" from Digital Workshop, available as a free download at http://www.digitalworkshop.co.uk/downloads/opusplugin.shtml. The plug-in is a

1 MB file. Less Stress Institutional Services states that the web pages may be incompatible with some web browsers, particularly proprietary AOL versions.

- Simulation:

  The tools are not simulations (computer-based experimental models that are allowed to varying according to input parameters and decision rules). There is no simulation engine, but rather a set of fixed decision trees that guide the logic of the sequencing through successive Web pages.

If simulation models are used, identify their qualitative validity level (if possible):

Not applicable.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

Requires basic user-provided hardware and software to support PC system operation. Additional software is needed to support the CPR tool and later scenarios in the EMT tool.

If other hardware and/or software required, or typically used, identify it/them.

Web browser software is commonly run on desktop or laptop PCs that employ the necessary operating system and peripheral control software appropriate for the system. A software "plug-in" application called Opus iO is needed to run some of the multimedia content (specifically, the /x-illuminatus MIME encoding type). See the Software section above for details.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The user provides all necessary facilities.

Web-based application, LAN, or a single computer/system-based application?

The EMT tool is a Web-based application, whereas the CPR tool can be used as either a Web-based application or a single computer system-based application available by free download from the Web.

Can the training be administered over a wide area network or a local area network?

By definition, the training is administered over a WAN (the Internet).

Is an instructor or facilitator needed?

No instructor or facilitator is needed to use the tools.

If not, how is training conducted (e.g., Individual self-paced)?

Individual, self-paced.

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

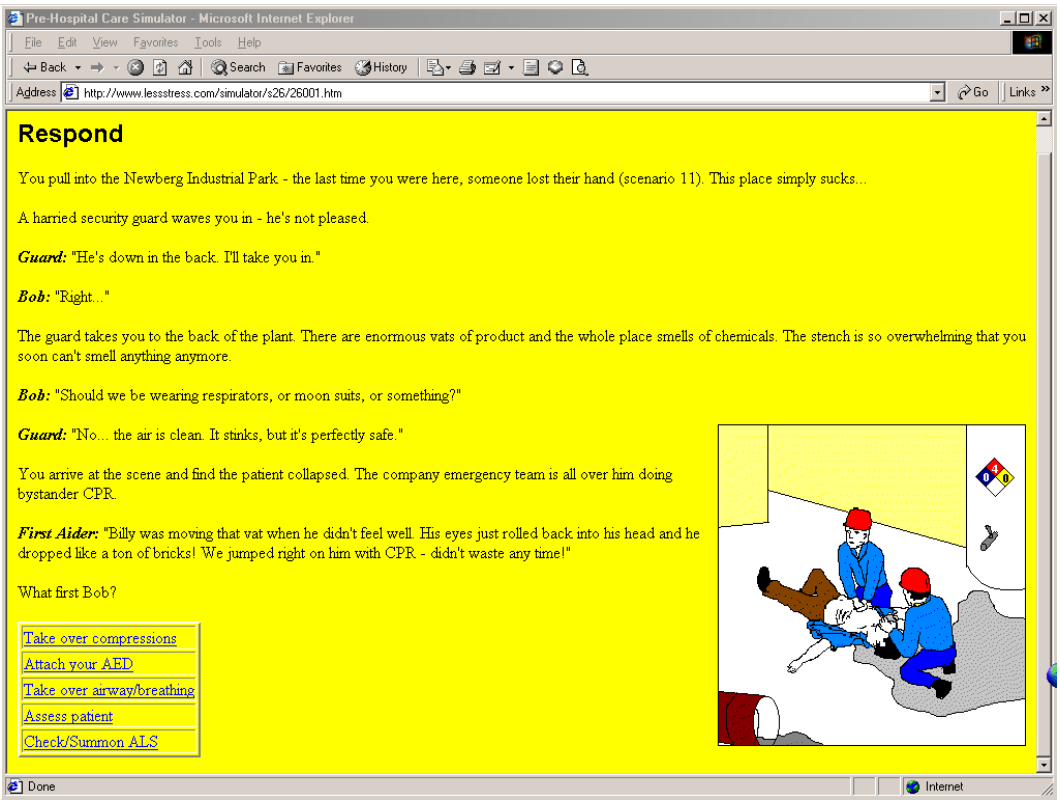
Not applicable.

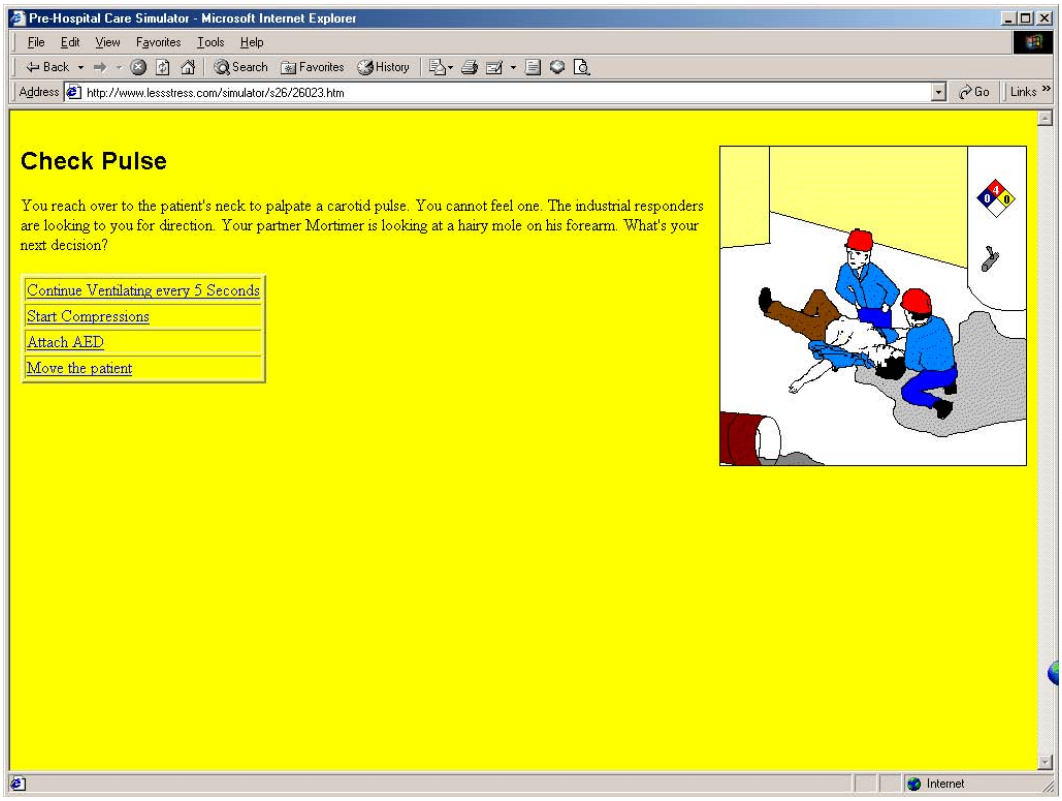
Describe unique user interface characteristics:

The tool narratives are written in a somewhat humorous style intended to appeal to first responders. Graphics are presented in 2D, generally as static displays of drawings or photographs. The user selects choices by making mouse clicks on graphical button selections. In later EMT scenarios (e.g., Scenario #29), the user can also "drag and drop" items, and make selections on icons other than buttons. The first two screen shots below are representative of an EMT scenario, while the second two screen shots are from the

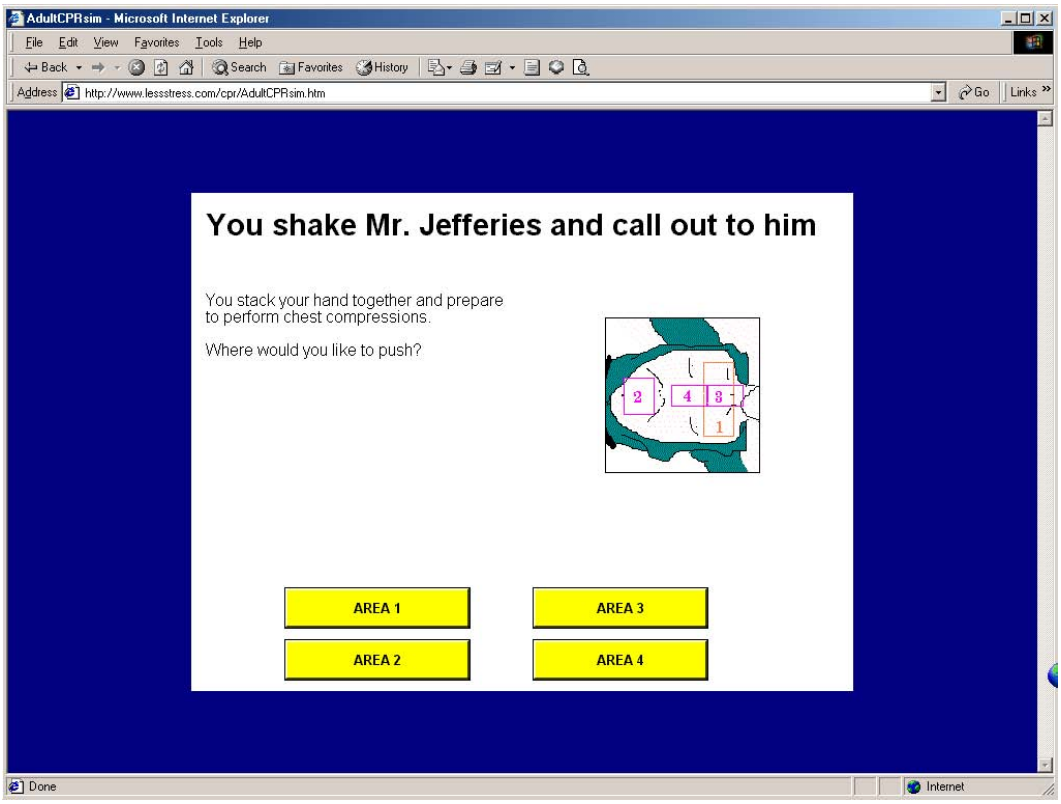
Adult CPR tool. These screens show some of the choices to be made by the user in each scenario as it progresses.

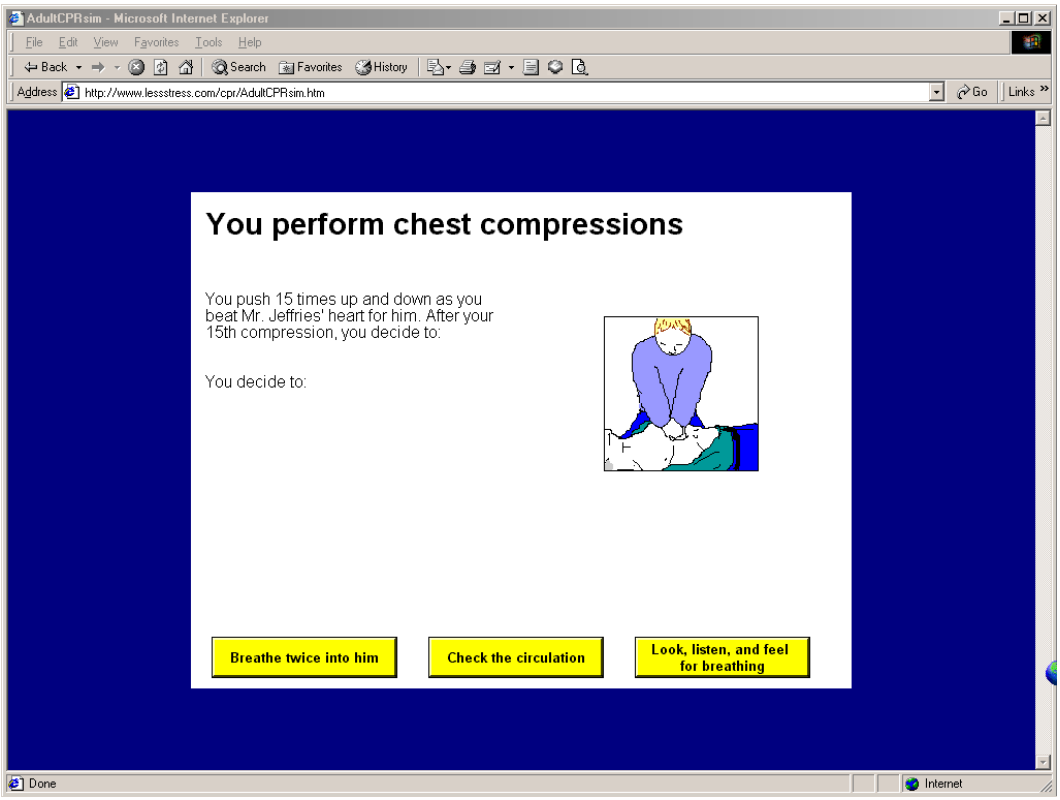
EMT Scenario Screen Shots:





Adult CPR Screen Shots:





Other important product characteristics:

The user selects discrete choices of action in a given stage of each scenario. If the wrong decision is made, the user is coached that there is a more appropriate selection and forced to return to the previous screen. Later scenarios, incorporating the Opus iO plug-in, provide gross performance measurements for the user. These include:

- Time on site
- Time in transit to hospital
- Number of non-optimal choices.

All scenarios for both the CPR and EMT tools are fixed-path training, providing the user with an established decision logic.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

This product is not for sale or for licensing.

Initial acquisition cost (purchase; licensing fees):

None. Not applicable.

Product itself:

Zero dollars.

Other necessary support, software, equipment:

As necessary to support a typical computer with Web access.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

Not applicable.

Number of staff required to setup, and operate product:

Staff training required to use product (identify briefly ... type, time):

Cost for staff training on product (Cost to purchase training):

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

Not applicable.

Expected costs?

Product maintenance requirements/recommendations (identify briefly):

No product maintenance of the Lessstress Web site is borne by the user.

Maintenance costs (Expected or required software, hardware maintenance):

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

Any capable of supporting a compatible Web browser and Opus iO plug-in.

Can product be customized? How? Cost?

More “static” narrative scenarios can be added to the EMT tool to aid with proper response to a wide range of “pre-hospital” emergencies including WMD events.

Product modifications required to support counter-terrorism training/exercises:

The logic flow dictating how subsequent screens (Web pages) are accessed through decision-making by the trainee must first be prepared by an organization with domain expertise. This logic, combined with a storyline, would be used to develop Web pages by coding in HTML and any necessary scripting languages.

Modifications:

Add WMD scenarios based on best practices.

Range of potential costs:

Personal Computer Requirements *(if appropriate)*

(Most software will offer minimum and recommended configurations).

A typically configured system for use in multimedia applications is necessary.

Processor speed (in MHz):

Not a system constraint.

Memory:(SDR/DDR)

Not a system constraint.

Free disk space:

Not a system constraint.

Internet connection speed:(if any)

Minimum connection can be made at slow dialup speeds (e.g., 19.2 kbps).

Display adapter[4,5]:

Not a system constraint.

CD-ROM speed:

Not applicable.

Optional accessory requirements[5]:

Opus plug-in required for Web browser functionality in displaying CPR application and later EMT scenarios.

Mouse input device (or similar).

Training/Exercise Characteristics

Product may support training, exercises, or both?

Training.

Potential type of WMD event product can support:

Chemical –

Biological –

Radiological –

Nuclear –

Explosive –

Product does not currently, but has the potential to, support WMD events.

Constraints on supported exercises or scenarios?

The primary constraint is the static nature of the decision logic used to develop the scenarios. This allows for no process variations that one might normally find in natural systems.

Potential disciplines product can support:

Emergency medical services	Yes
Emergency management agency	No
Fire	No
Governmental administration	No
Health care	No
HazMat	No
Law enforcement	No
Public health	No
Public safety communication	No
Public works	No
Global ... or other (Pelfrey)	No

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition	Yes, but this is not a vendor sanctioned use.
Improvement	Yes
Maintenance/refresher	Yes

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel
First Responders.

Potential responder training level(s)/categories product can support:

Awareness – Yes
Performance [Operations] - No
Technician [Specialist] - Yes
Planning & Management [Incident Command] - No
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - No

Potential equipment and/or facilities product can address:

Automatic external defibrillators.

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

Emergency response medical equipment, knowledge of potential agents.

Training content description (what trained), in addition to preceding item (Brief):

Knowledge of cardiopulmonary resuscitation and/or emergency "pre-hospital" medical treatment.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

Basic computer literacy is required to operate the tool, and any level of functional expertise can be reviewed by both applications.

Potential training/exercise types product can support:

Classroom - Yes
Individual self-paced - Yes
Seminar/workshop - No
Drill - No
Individual and small-team exercises -
Simulation-supported - No
Gaming - No
Collaborative - No
Tabletop - No
Functional - No
FSE - No
Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Without changing the inherent nature of the product, the applications are limited to classroom and self-paced, fixed-path CBT.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Narrative scenarios are short, self-paced training. Later EMT scenarios provide performance feedback giving the user a basic measure of response capability.

Exercise/scenario length/time(typical):

Narrative scenarios typically take about 5 to 10 minutes to complete, depending on Internet connection speed. Slow dial-up speeds may increase latency in screen display, and thereby lengthen typical times.

Process and time to:

Not applicable to user.

Develop new exercise/scenario:

Modify an exercise/scenario:

Setup an exercise/scenario to run:

Does a curriculum already exist?

A set of emergency scenarios already exists on the Web site.

If so, briefly describe its form and content:

Numbered scenarios may be chosen from sub-menus on Web site. Content includes a range of common first aid situations, including CPR, diagnosis of unconscious victims, application/use of an automatic external defibrillator, and transport to hospital.

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

Training is a fixed-path CBT, using narrative, discrete choices and cues.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Performance measures are included for later scenarios in the EMT section of the Web site. The measures include: time on site, time to transport, number of non-optimal choices in decision-making, and have no absolute scale ranking. Performance measurement is included as a tool for assessing self-improvement.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

There are immediate narrative cues for decision choice mistakes for all tools and scenarios. Later EMT scenarios, incorporating the Opus iO streaming web content, provide summary statistics after completion of the mission/scenario.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

None.

HELP features (Briefly identify):

None.

Instructor/controller/evaluator tools:

None. Not applicable.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

AAR support tools (May overlap with "Student/participant/team feedback features", above):

Data recording & storage features (e.g., Scenario events; student performance):

None.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

None.

Training/exercise fidelity:

Not applicable in terms of virtual reality modeling.

Environment (including situation/scenario):

Hardware:

Information (including interaction with other persons):

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Emergency Simulation Program (ESP)

Developer: Straylight Multimedia

Contact information: Jay Storey

Additional Contact information:

5512 Broadway
Burnaby, B.C. Canada V5B 2X7
(604) 298-5521
jstorey@telus.com

Website: www.straylightmm.com Product status (version in use): Version 4.2.2

Date of Evaluation: December 12, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- X Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- CD-Rom
- Related Papers
- X Material from Internet
- Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  ESP is an authoring/presentation software program. It is designed to control the creation and presentation of multimedia simulations used to train personnel involved in emergency response.

  The simulations are composed of a variety of multimedia components, including MPEG or AVI video, .WAV or MP3 audio, still images, and video from videodisc. Those components can be predefined in an authoring phase, and assigned to a series of icons.

  In an actual training session, the components of the simulation are 'played back' to create a dynamically changing simulation of a particular training scenario. The path taken through the scenario can be adjusted in real-time based on the decisions made by the trainees.

  The simulations allow trainees to 'act out' a particular role in a simulated emergency, and to view the consequences of their decisions. It provides the trainees with important experience that could otherwise only be obtained on the job, where mistakes can be costly.

- Current Target audience:

  The software is general purpose, dependent only on available input media. It is ideal for training personnel to handle situations where it is difficult for them to acquire first hand experience, such as earthquakes, oil spills, or terrorist attacks.

  The target audience ranges from entry-level workers to team leads and managers. The tool is particularly useful for building the communication and decision-making skills of emergency personnel, since they have to communicate and to make decisions in a highly realistic setting.

- Potential equipment and/or facilities product can address:

  The product can be used to simulate a wide range of training situations, which could include equipment and/or facilities, when combined with appropriate visual and audio media.

  A bank of simulated 'radios' can be attached to the ESP system to allow the various role-players to communicate as they might in an actual emergency situation.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  The ESP product can be used to simulate the environment surrounding a potential or actual terrorist attack. Its ability to present a scenario that dynamically changes in real-

time can be used to prepare trainees to deal with events as they arise, just as they would have to deal with them in a real-life situation. Its visual capabilities can be used for training personnel to quickly identify dangers and hazards, to gather information from their environment, and to make key decisions under pressure.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The product is a Microsoft Windows-based software program that controls simulations composed of multi-media components. It is designed to be operated by a simulation manager (usually the instructor), who controls the direction and pace of the training session.

b) Large multi-station system, or based on individual PCs (if applicable)?

The product is based on individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The product is stand-alone. Since it uses the Windows multiple-monitor feature, it requires either an additional video card or a dual-head video card be installed in the computer.

d) If simulation models are used, what is the basis of the data and/or distributions used?

No simulation models are used.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The most appropriate environment for the product is a small theatre-like setting, with media components displayed on a large screen or projection system. A projection system is desirable but not required.

1. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

The product requires Windows 98, Windows 2000, or Windows XP.

b) Processor speed (in MHz):

Min: 133 MHz

c) Memory (SDR/DDR):

Min. 128 MB

d) Free disk space:

1 MB for the actual software, though considerable additional space would probably be required for multimedia components.

e) Internet connection speed (if any):

Not required.

f) Display adapter:

Since it uses the Windows multiple-monitor feature, it requires either an additional video card or a dual-head video card be installed in the computer.

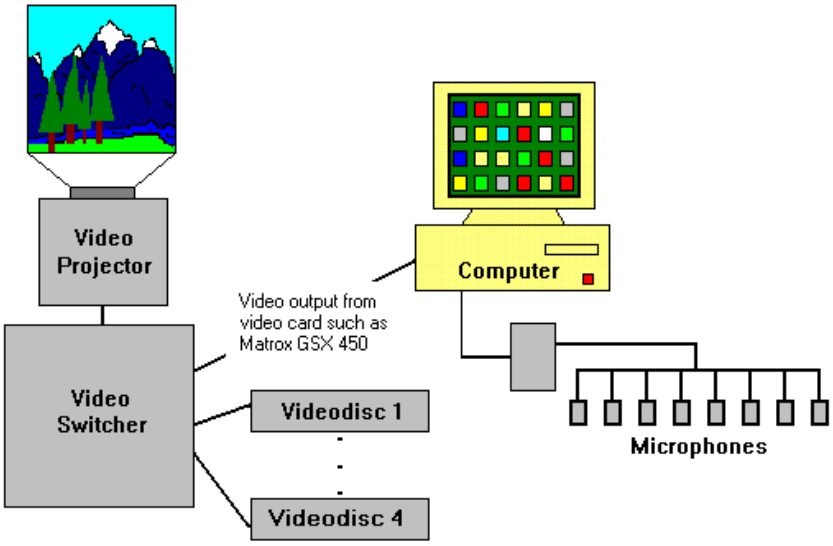
g) CD-ROM speed:

If the CD-ROM is used to store multimedia components, the speed of the CD-ROM would significantly impact on the speed at which multi-media components could be presented, and therefore impact the realism of the simulation.

h) Optional accessory requirements:

The product can support video from up to 4 videodisc players. These players can be included as part of the system, but are not required.

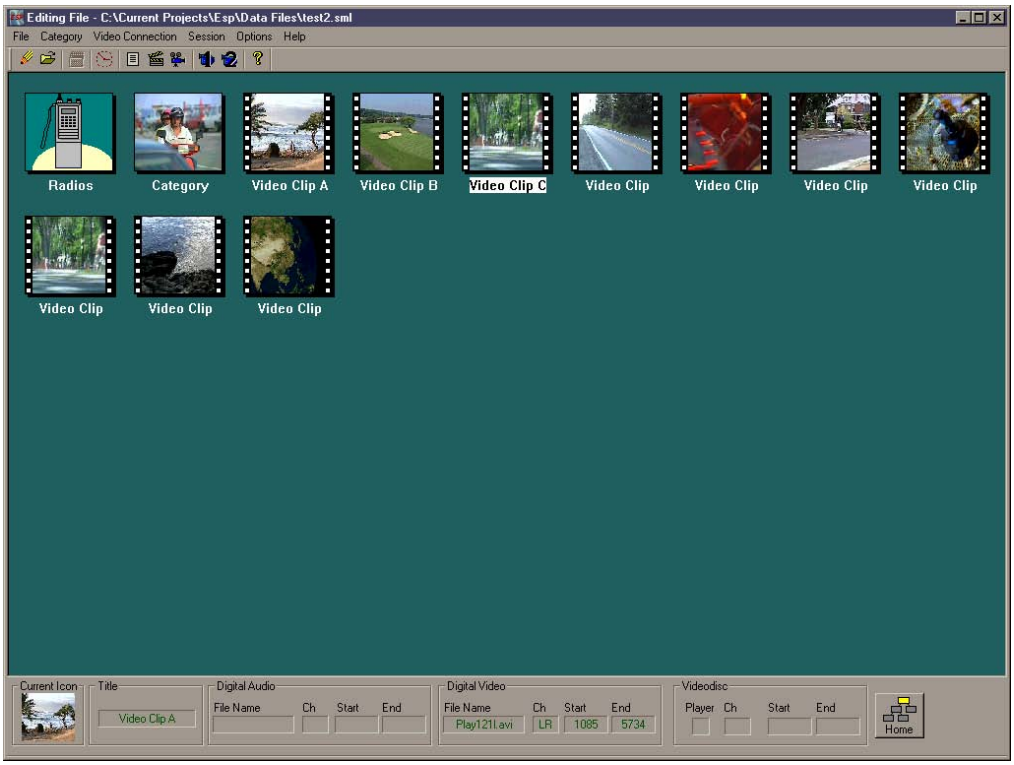
Maximum ESP Configuration - 4 Videodisc/DVD players, video output computer video card, video switcher, video projector, microphone interface



2. Describe the user interface characteristics:

The product operates in 2 distinct modes: Edit or Authoring Mode, and Run Mode. Edit Mode is used to predefine the components of a simulation scenario. Run Mode is used to actually play back the components previously defined.

Both modes consist of a matrix of picture-based icons representing the multi-media components that represent the currently defined simulation. In Edit Mode, each icon can be expanded to allow the addition of media components. In Run Mode, the icons are used to access the media components in real time.



3. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The product is intended for groups of 3 to 10 trainees.

b) Custom/proprietary hardware required? If so, identify:

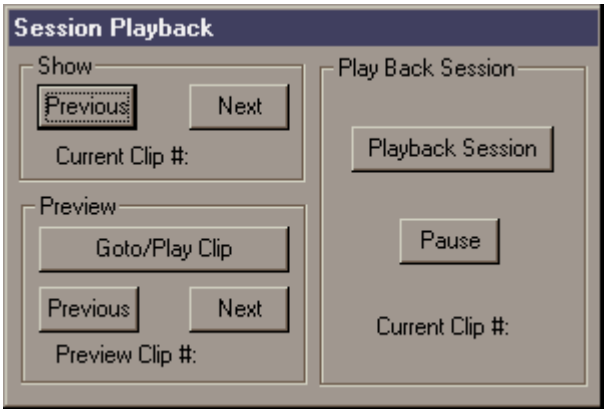
None

4. Describe any user HELP features:

The product contains a comprehensive help archive, including context-sensitive access for individual program features. The help feature includes an index of help topics in the Windows format.

5. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

The product provides simple tracking of the progress of a simulation, along with the logging of the personnel involved. Sequenced scenarios that are pre-arranged can be played back to reemphasize critical tasks and each scenario can be timed.



D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The product requires an instructor or instructional designer to create training scenarios. It also requires a simulation manager (usually the instructor) to present simulations. Those personnel would have to become proficient with the product. The product is user-friendly, and features a detailed help system and User Manual to aid in training.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The product is not designed for a particular type of training, but can be used in a wide variety of training scenarios when combined with media specific to those scenarios.

It is particularly useful for training for highly visual situations, such as in the recognition and handling of dangerous situations or the identification of hazards.

The product is currently used widely in training Forest Fire fighting personnel. As part of their training, the Fire Fighting trainees are expected to gather such information as the types of fuels involved, terrain, etc. from the simulated environment in which they find themselves. In the same way, trainees in the area of WMD might be required to recognize certain products or materials, or identify installations that pose a potential danger.

b) Time required for a typical exercise or scenario (if applicable):

1 – 2 hours

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

No modifications of the product would be required. However, the product requires video, audio, and still media specific to the training application. That media would have to be produced or otherwise obtained.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

The product has not, as yet, been used to provide WMD-related counter-terrorism training.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

The product is currently being successfully used worldwide to train Forest Fire fighting personnel. Curriculum is available in that training area.

However, because of the highly flexible nature of the product, and the highly individual training requirements for most clients, curriculum is usually developed by the client.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The product is used to control video vignettes that are presented to students. However, this sequence of vignettes provides a simulation of actual emergency scenarios, and students would be expected to respond to events taking place in that scenario. In effect, the students would 'act out' the role they were assigned in the scenario. Immediate feedback would consist of changes in the path through the simulation based on their decisions.

4. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The product provides a user-friendly environment for development of training scenarios. It also features a detailed User Manual which includes design tips.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The product features a time clock that can be adjusted to 'compress' or 'expand' the perception of time passage. Simulated events can be introduced into the scenario at any time. Immediate feedback would be provided by the dynamic changes in the path through

a particular scenario based on their decisions and the decisions of others participating in the simulation.

5. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

In terms of the content presented, the product is highly flexible, and can be used in a large number of training scenarios, provided the appropriate media is available. The user can change the scenarios via re-sequencing of the video vignettes or adding their own video clips and pictures to the program. The product also features the ability to launch other applications in real time, allowing weather information, computer models, spreadsheet data, or other information to be incorporated into a simulation.

The length of time required to set up a scenario is completely dependent on the level of sophistication of the scenario being developed. The time to develop a typical scenario would be a few hours.

Modifying an existing scenario could take anywhere from a few minutes to hours, depending on the work done. Modifying a single functional component of the system would typically take a few minutes.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Once a scenario is designed, it can be set up to run in a few minutes. If the program is connected to a projection system or videodisc players, it would be necessary to make the hardware connections to those systems. The program could then simply be launched like any other Windows program.

6. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The product can record the 'path' taken through a particular scenario. It is also possible to re-play, or step through, a previously run scenario, in order to emphasize important events and decision points. Students can review the consequences of their decisions, and be provided with alternatives and shown alternative outcomes.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
X	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	1	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	3	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
2	Individual	1	Scenario replay
1	Group	0	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
2	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
1	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
2	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
1	Generic	3	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	2	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	2	Equipment Training
2	Explosion	2	Awareness

		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	2	Drills
1	EMA	2	TTX
1	Fire	2	FE
2	Govt. Administrator	3	FSE
2	Health Care	2	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
2	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
1	High
0	Medium
0	Low
0	N/A

	Current Applicability to ODP
0	Very
1	Somewhat
0	Limited

	Ease of Use
0	Easy
1	Relatively Easy
0	Difficult
0	Requires trained support staff

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
2 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

0 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

0 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*) *
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: *(choose one)*
   a) **Product** *
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: *(choose one)*
   a) **Standardized** *
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: *(fill in all applicable)*

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$3795.00	$3795.00	$3795.00	$3795.00
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				

Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Employee Awareness Video

Developer: SBCCOM

Contact information:
WMD Installation Preparedness Program Services
Commander, U.S. Army SBCCOM
ATTN: AMSSB-REN-HD (E3331/117)
5183 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5424
Tel: (410) 436-3674
Email: homeland.defense@sbccom.apgea.army.mil

And additional Contact information:
Linda Harris
EAI Corporation
Ph: 410-676-1449

Website: Product status (version in use): version 1

http://hld.sbccom.army.mil/ip/fs/wmd_ip_courses_fact_sheet.htm

Date of Evaluation:
December 19, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- CD-Rom
- Related Papers

X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Employee Awareness training is a 30-minute video presentation intended to provide basic weapons of mass destruction (WMD) awareness to a diversified audience of installation military, civilians and dependents. There is a separate module in the video that specifically targets 911 call takers and dispatchers. The training is presented in layman's terms and is available in both English and Spanish. There is no instructor requirement, however, a facilitator is recommended to guide you through the video.

- Current Target audience:

  Target audience is any employee that may encounter a facility's WMD incident while on the job. EAI contact reported that video is geared towards receptionists, cleaning staff, security guards, and other similar occupations.

- Potential equipment and/or facilities product can address:

  A portion of the video addresses a 911 call taker's and dispatcher's checklist.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Content of video includes:
  General aspects of WMD terrorism
  Information to recognize a WMD terrorist incident through signs and symptoms and possible dissemination devices
  Self-protection measures and notification to the proper authorities

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   A VHS player and monitor are required. A CD version is currently available and can be viewed on a personal computer.

b) Large multi-station system, or based on individual PCs (if applicable)?

   N/A

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Product can be purchased as a VHS cassette tape or a CD-ROM.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

It can be viewed in a large auditorium or smaller conference room.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other)*:
N/A
b) Processor speed (in MHz):
N/A
c) Memory (SDR/DDR):
N/A
d) Free disk space:
N/A
e) Internet connection speed (if any):
N/A
f) Display adapter:
N/A
g) CD-ROM speed:
N/A
h) Optional accessory requirements:
N/A

3. Describe the user interface characteristics:
N/A

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Video can be viewed by as many trainees as deemed necessary or room will facilitate.

b) Custom/proprietary hardware required? If so, identify:

N/A

5. Describe any user HELP features:
N/A

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
N/A

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Included with the video is an introduction supplement to be used by the trainer to facilitate the videos introduction and highlight critical information.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Intent of video is to increase the average employee's awareness regarding WMD incidents that might occur on the job. How to recognize potential incidents and how to respond to these incidents of WMD are the primary focal points addressed.

b) Exercise/scenario length/time(typical):

Video is 34 minutes and 18 seconds in duration.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Product is intended to increase awareness for WMD events.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

At an additional cost, a facilitator's guide can be purchased to assist in presentation of material.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
N/A

b) What is the process and how much time does it take to setup an exercise/scenario to run?
N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
X	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	0	Multiple dynamic paths / probabilistic outcomes
0	Commercially owned	1	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	3	Automated summary of data
3	Small multi-user team (up to 25 persons)	2	SME controls AAR
3	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
3	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		

1	Non-specific		**Interconnectivity**
2	Equipment	1	Standalone
		0	LAN
	Environment	0	WAN
1	Generic	0	Internet
3	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
3	Exercise	3	Applied
3	Operational	3	Hands-on
3	Analysis		
3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	3	Commanders
2	Self-paced	3	Local Officials
1	Instructor/Facilitator	3	State Officials
		3	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
3	Intermediate	1	Awareness
3	Advanced	2	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	3	Planning & Mgmt. (incl. ICS)
1	Chemical	3	Multi-jurisdictional Integrated Systems
1	Biological		
2	Radiological		**Training Type Supported**
1	Nuclear	2	Equipment Training
2	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
3	EMS	3	Drills
3	EMA	3	TTX
3	Fire	3	FE
3	Govt. Administrator	3	FSE
3	Health Care	3	FSE Reinforcement
3	HazMat	3	Distributed Collaborative Exercise
3	Law Enforcement	3	National Training Exercise
3	Public Health		
3	Public Safety Communication		
3	Public Works		
3	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		

2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
0	High
0	Medium
0	Low
1	N/A

	Current Applicability to ODP
0	Very
1	Somewhat
0	Limited

	Ease of Use
1	Easy
0	Relatively Easy
0	Difficult
0	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

0 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
0 Tracking participant performance through multiple tries (automation)
0 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
0 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

0 Simulation Support

Selected FSE Observations: product allows for/can be used for:

0 Remote Observation
0 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

0 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) **Product**
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) **Standardized**
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase		70.80 CD w/guide	44.62 video only	88.95 video w/guide
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

eRoom

Developer: Documentum, a division of EMC

Contact information: Documentum Headquarters
6801 Koll Center Parkway
Pleasanton CA 94566
info@documentum.com or salesinfo@documentum.com
1-888-59-eroom (1-888-593-7666)

Website: http://www.documentum.com/solutions/collaboration/index.htm

Product status (version in use): 7

Date of Evaluation: 12/19/03

Source(s) of Evaluation: *check all that apply*

Observed Product in use during a training or exercise
Observed Demo
Played/Used product
Attended Briefing
Reviewed CD-Rom or other software
X Reviewed Website
X Spoke/emailed with POC
Interview(s) with Product Users (please paste into the end of this document)
Product developer filled-in evaluation form
TLI team modified evaluation form

Materials in Possession:

Brochure/Prospectus
CD-Rom
Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  This is a general-purpose collaboration environment.

- Current Target audience:

  Business and government

- Potential equipment and/or facilities product can address:

  N/A

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  One good match is in support of T&E development and analysis. eRoom provides a central location for sharing digital files and has a robust document revision and tracking capability. Putting together an exercise is often a complicated coordination process, requiring lots of scheduling coordination, as well as tracking of milestones and documents generated along the way: schedules, scenario injects, supporting reference documents, etc. eRoom's collaboration and document capabilities are a natural fit for this kind of process. eRoom might also be used for an online distributed exercise, so long as player interaction can occur primarily asynchronously.

  General description:
  eRoom is a commercially available collaboration environment. Features include: project planning capabilities like Gantt charts and task tracking; robust document handling including version tracking, full-text search, and group editing of files; threaded discussions, dynamic polling, and automated alerts.

  Most of the collaboration is asynchronous (threaded discussions, file sharing); the real-time synchronous capability is application sharing, where multiple users can share the same application view simultaneously and have a chat capability while doing so.

  Additional synchronous collaboration can be provided by also purchasing another Documentum product: Real Time Services. This provides application and desktop sharing, whiteboard and annotation tools, public and private chat, and presence indication. Non-eRoom members can join a real-time meeting. Meeting leaders can present PowerPoint slides to all participants, and meeting annotations and chats can be done in real-time.

  The interface is browser-based. Maximum functionality is achieved when Internet Explorer is used. This includes drag and drop to and from eRoom and the desktop or Windows Explorer. eRoom is closely integrated with Microsoft Office and Outlook products.

Security is incorporated at different levels. Various kinds of encryption are supported; users have to log in to the system; and user access is controllable at the individual item level.

From: http://www.documentum.com/solutions/collaboration/eroom_government.htm
Click on Sample Applications: Emergency Response Planning

Application Scenarios: Government

An environmental agency uses Documentum eRoom to respond to environmental emergencies, quickly marshalling disparate resources into a contextual digital workplace that is accessible anywhere via the Internet. The agency can create a new digital workplace on-the-fly according to pre-defined templates that match their regulatory methodology. The team can invite participants from other state and local agencies, environmental waste management contractors, and local authorities so that everyone has secure, on-demand access to the crisis management workplace. Documentum eRoom provides the team with integrated real-time meeting capabilities, so team members in the field can collaborate with environmental experts stationed around the globe. Event-based notifications keep team members up-to-date with the latest developments in the response effort. By using eRoom, the agency quickly responds to the crisis, minimizing the impact on the surrounding area while working to prevent a reoccurrence of this type of emergency.

Figure 1. Entering a workspace

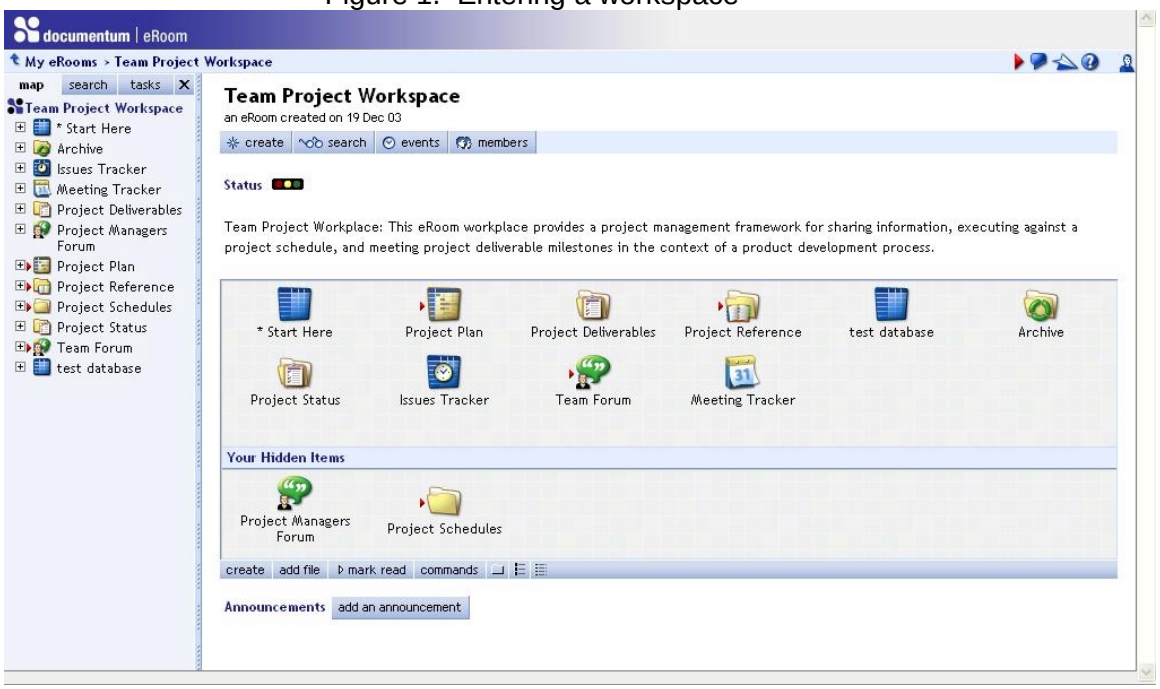


Figure 2. Team Forum – an asynchronous threaded discussion

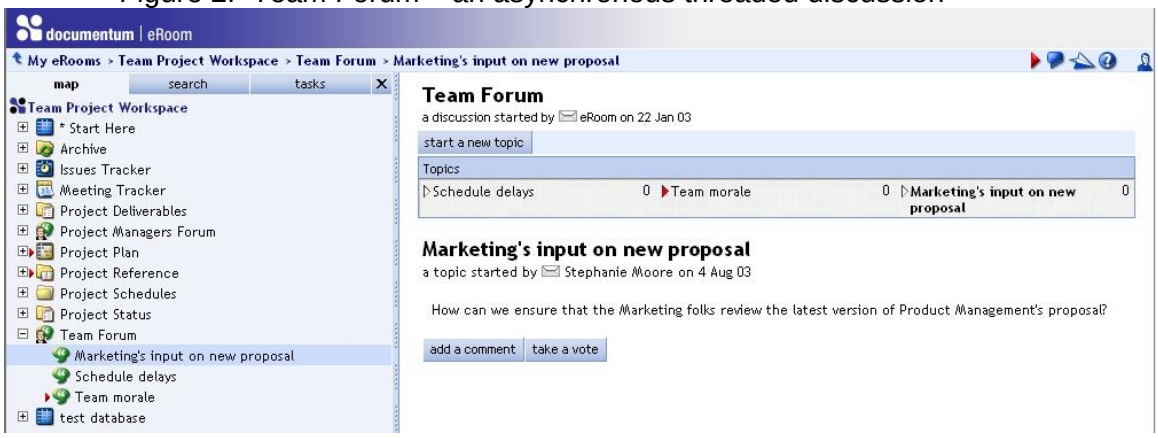
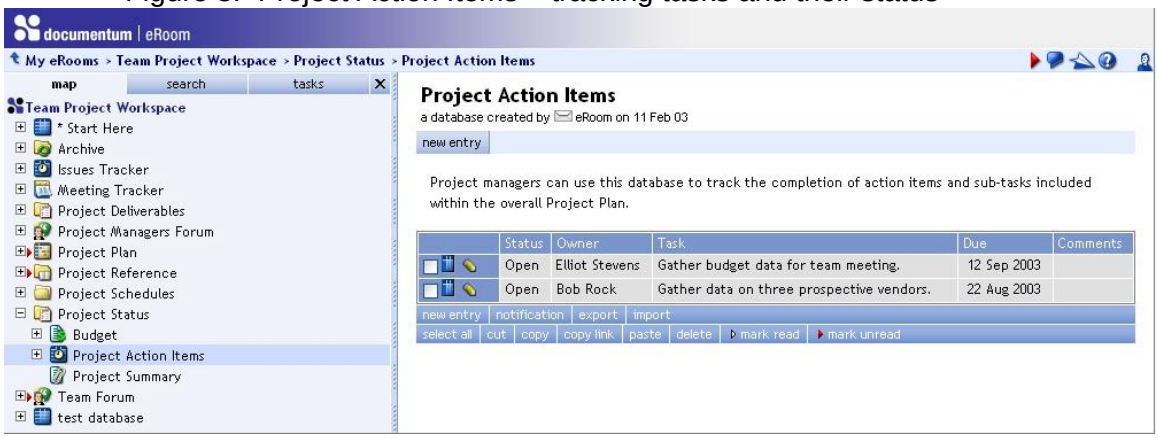


Figure 3. Project Action Items – tracking tasks and their status



C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Online distributed collaboration environment.

b) Large multi-station system, or based on individual PCs (if applicable)?

Software runs on a server and multiple individual client PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Requires an Internet browser. MS Office is not required, but it's what eRoom is designed to work with and fullest functionality derives from its use.

d) If simulation models are used, what is the basis of the data and/or distributions used?

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

For the client application

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Microsoft Windows 98, NT 4 Workstation, 2000 or XP
Internet browser: IE 5 or higher, Netscape Navigator 4.7x and 7.x, Mozilla 1.x and others
To get fullest functionality, need to download a 4 MB plugin, this includes drag and drop to and from the desktop

b) Processor speed (in MHz): 300MHz

c) Memory (SDR/DDR): 128MB

d) Free disk space: 50 MB

e) Internet connection speed (if any):

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements:

For the server:

Recommended minimum requirements for the server, from
http://www.documentum.com/products/glossary/tech_specs/techspec_collaboration.html,
accessed on 12/19/03

Hardware:

1 GHz single processor, 512 Mb memory, 512 Mb free disk space

Note for the standard edition: The file storage and indexing services are running on the same machine; and the database server engine may optionally be running on same machine. This means that additional disk space is required. The Indexing server will need approximately 50% more space than is being used for file storage.

Database Server:
MS SQL Server 2000 (optional for the Standard edition, required for the advanced installation).
Please see the published system requirements for MS SQL Server 2000.

File Server:
900 MHz single processor, 512 Mb memory, disk space required will depend on usage.

Index Server:
900 MHz single processor, 512 Mb memory, 200 Mb disk minimum
Index server will require approximately 50% of the space of the files indexed by it.

eRoom 7 Real-Time Server:
1 GHz Pentium, 512 Mb RAM, 500 Mb available disk space.

Software:
Microsoft Windows 2000 Server or Advanced Server with IIS 5.

3. Describe the user interface characteristics:

eRoom is designed to be accessed from a Internet browser, so it has a fairly intuitive point-and-click interface.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

This is dependent on the server capabilities.

b) Custom/proprietary hardware required? If so, identify:

No.

5. Describe any user HELP features:

Online, Web-based help is available.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Not available in the standard eRoom product. In the eRoom Enterprise version, which supports multiple servers for an enterprise-wide capability, there is audit trail tracking of user actions.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

This product is designed to be usable without training. There is an online help manual. Optionally, customers can purchase consulting services.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

N/A. No content is provided with the product.

b) Exercise/scenario length/time(typical):

User dependent.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Training content would have to be developed, if this were to be used for a counter-terrorism event.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

No.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Since this is not a training or exercise system, there are no feedback features. However, changes to any objects stored in a room, such as documents or maps, are immediately flagged for all users. Information shared in a collaborative setting, e.g., a threaded discussion or poll, is immediately available to those with permission to view it.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
Content is added by the user. The product software itself can be customized by using an API as well as integrating it with other third-party software products.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
1	Instructor/Facilitator Aid
1	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	3	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned	3	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
2	Individual	3	Scenario replay
2	Group	3	Automated summary of data
1	Small multi-user team (up to 25 persons)	3	SME controls AAR
1	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
1	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
3	Equipment		Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
1	Operational		Hands-on
	Analysis		
3	Entertainment		**Target Audience**

			First Responders
	Mode of Delivery:	2	Commanders
2	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
2	Intermediate	3	Awareness
2	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
2	Chemical	2	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear		Equipment Training
2	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
2	EMS		Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
2	Health Care		FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
2	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
Medium
Low
1 N/A

Ease of Use
1 Easy
Relatively Easy

Current Applicability to ODP
Very
1 Somewhat
Limited

Difficult
Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes (*proceed to Q2*)**
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) **Product**
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

Purchase costs for the regular eRoom product: $17K for server and $200/named user. There is also a hosted version. For a single eRoom, it runs from $300/mth for 1-10 users to $1200/month for 41-100 users. There's another pricing plan for customers who want to have multiple hosted eRooms. See http://www.eroom.net for more details

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase – server	$17,000			
Product Purchase – client	$200/named user			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

E Team

Developer: E Team

Contact information:
Charles Mancini
877-546-7892 x257
cmancini@eteam.com

Website: http://www.eteam.com COTS/GOTS: COTS

Technical Support Contact Information:
support@eteam.com
818-932-0670
818-932-0661
E Team, Inc., 7301 Topanga Canyon Boulevard, Suite 300, Canoga Park, CA 91303

Product status (version in use): 2.1

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo (given by user and by developer: webminar available through the website)
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
	Spoke/emailed with POC
X	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers: The E Team Emergency Management Application (provided by vendor)
X	Other: Introduction chapter to User's Guide

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  Browser based information management software that allows users to share a common operational picture in the form of standardized summaries, reports, requests, notifications, directives, annotated maps and a resource tracking utility. Current Target audience: EOC staff, command personnel, and any other user responsible for information tracking/posting/requests for an incident (permissions can control the level of information access).

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
X	Instructor/Facilitator Aid: Student Interfacing
X	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	3	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
			Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific		SME controls AAR
	Equipment		Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- **ICS compatibility:** Software supports teams using the Incident Command System at all levels of command.
- **Data Sharing:** Allows users to post information to and retrieve information from a commonly accessible virtual information space. Everyone has access to the specific view of the overall status that they need and are authorized to see. When anyone updates a report or map display, the new information is automatically available to everyone.
- **No Client Software or Configuration:** User workstation requires recent version of Internet Explorer or Netscape, then user needs only be assigned a User ID and password to access E Team via the web browser.
- **Security and Audit Trail:** Users can be given different levels of access. All transactions are captured and stored automatically. They can be re-played for after action reviews and investigations.
- **Notifications:** can be delivered to multiple users on a variety of devices (PC, laptops, wireless laptops, email, cell phones and alphanumeric pagers). Features a call log that tracks notification attempts and successful contacts; and broadcast pop-up alert (messages. Groups can be set up to alert large groups of users and non-users, (e.g., the media). Users can send text messages to any e-mail enabled device.
- **Checklists:** When a user first logs onto E Team, a checklist can be set to pop up on the screen telling the user what they are responsible for while on duty.
- **GIS and mapping functionality:** ArcIMS Geographical Information System (GIS) is included with the E Team license. Users can display maps detailing the location, type and status of events, incidents, resources, facilities, hospitals, shelters, road closures, etc. using dynamic icons. All reports with an identifiable geographical location can be geo-located by address, intersection, latitude/longitude, or by clicking on a spot on the map. When the user selects a map view, a map appears with icons at the locations cited in the reports. The icon colors indicate status, and their shapes define the type. Users can click on an icon to bring up the E Team report associated with that icon. Users can also mouse-over icons and see the name of the incident, resource, facility, etc. When viewing the map, a user can pan, scroll and zoom from the highest level down to street layers. Additional map detail appears as the zoom level increases, and users have full control over map layers. E Team can provide county, metropolitan area, state, national or world maps; or users can use their existing ArcIMS map services and data. ArcIMS can use shape files, ArcSDE coverages, TIFF, metadata, geo-referenced images, etc. E Team maps can be augmented with campus map layers and building floorplan layers generated from your existing CAD drawings. E Team also supports hand-drawn map overlays.
- **Situation reports**:
  - Jurisdiction Situation Report: summarizes key information found in other areas of E Team to present for a particular political jurisdiction; suited for senior executives and elected officials.
  - Agency Situation Report: captures information related to the overall capabilities and fiscal expenditures of a specific agency during a disaster.
  - Intelligence Threat Reports: provides a high level summary of threats and provides links to more detailed information about threats to locations and about terrorist

organizations. The Location Intelligence Reports provide threat information specific to a location. The Entity Intelligence Reports provide information about specific terrorist organizations and provide links to members of those organizations. The Biography Intelligence Report provides information, including pictures if available, on known terrorists. Law Enforcement can also use the Entity and Biography reports to track gang activity and members.

- Corporate Situation Report: designed to receive information from major private employers within an area impacted by a disaster.
- Public Information Report: designed to coordinate the release of information between key agencies and officials; fully workflow enabled with editing, comments, approval and automatic posting to a public website.
-
- Infrastructure Reports: tracks the status of critical infrastructure elements & provides a status overview of facilities or systems. All infrastructure elements can be posted to the E Team map, with type and status indicated by shape and color of the dynamic icon. Clicking on an icon brings up the detailed status report on that infrastructure element. The different types of Infrastructure reports are:
- Hospital Report: track ability to accept and treat victims of an emergency (e.g., number of personnel available broken out by specialty, bed space available broken out by type, and contact information).
- Shelter Report: Some of the data elements captured are status of shelter, number of people sheltered, remaining capacity, location, special services available and contact information.
- Utility Report: track the status of utility service for a specific geographic area (e.g., overall status, number with out service, cause of disruption and contact information).
- Facility Report: Some of the critical data elements collected by the report are name of facility, status, contact information and estimated damage.
- Road Closure Report: designed to track the status of roads and the effect that damage or disruptions may have on traffic flow (e.g., name of road, directions closed, cause of closure and contact information).
- Transit System Report: Some of the critical data elements collected are overall status, number of commuters effected, estimated time of restoration and contact information.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand alone product.

c) Large multi-station system, or based on individual PCs?
Based on individual PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?
E team software does not have modeling capabilities embedded. Other models produced by programs (e.g., Consequence Assessment Tool Set, CATS) can be requested within E Team.

e) Web-based application, LAN, or a single computer/system-based application?
Web-based.

f) Describe any debriefing after-action reporting support tools: Record of all changes can be made into reports and are logged into the history database

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Minimum Recommendations
- Intel Pentium 4 Xeon: 1.8 GHz or equivalent (dual processor capable)
- 512 MB RAM (1 GB RAM recommended)
- 9 GB of free hard disk space

Maximum Performance Recommendations
- Intel Pentium 4 Xeon: 2.8 GHz or equivalent (dual processor capable)
- 1 GB RAM (2 GB RAM recommended)
- 27 GB of free hard disk space with RAID 5

E TEAM SERVER SOFTWARE REQUIREMENTS
- NT Server 4.0 with Service Pack 6a or Windows 2000 with Service Pack 3 (Windows 2000 preferred)
- Domino 5.0.12 or higher

REALTIME SERVER HARDWARE REQUIREMENTS
- Intel Pentium 4: 1.0 GHz or equivalent (dual processor capable)
- 512 MB RAM (1 GB RAM recommended)
- 9 GB of free hard disk space

REALTIME SERVER SOFTWARE REQUIREMENTS
- NT Server 4.0 with Service Pack 6a or Windows 2000 with Service Pack 3 (Windows 2000 preferred)
- Domino 5.0.12 or higher
- Lotus Sametime 3.0 with Service Pack 1

5. Describe the user interface characteristics:

Inputs are through basic windows navigations (e.g., point and click, typing in information, & adding attachments, etc). Outputs are forms and reports include message logs and views allow for sorting and collating.

There are 2 modules: an operational one an identical training environment that can be accessed through the internet/intranet. These environments have identical functionalities.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
1-infinite

b) Number persons usually trained simultaneously?
Varies per user.

c) Custom/proprietary hardware required? If so, identify:

None.

7. Describe any user HELP features:

To learn to use all of the system's operational features takes a few hours. The interface is a Web page. The forms ask clear, self-explanatory questions. On-line help is provided.

8. Data recording & storage features (e.g., Scenario events; student performance):
All inputs to the system and time stamped and recorded.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Designed so users can learn how to use it for his or her specific function in 15 minutes or less. Most untrained users participating in exercises are fully comfortable with the system in under an hour. Full end user training can be completed in less than 4 hours, including a simulated exercise. Train the trainer training conducted at vendor facility or user site. Cost varies between packages (I.e., training cost is included in large contracts)./

2. Attributes

	Application Environment:		**Content**
	Training	1	Knowledge
2	Exercise		Applied
1	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
1	EMS		Drills
1	EMA	1	TTX
1	Fire		FE
1	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement

1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
	Initial Acquisition		
2	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
This tool can support training/exercises (operational tool) but alone does not contain training materials.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
None. Users can import library information and/or specify Internet links.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
Information and action tracking system that supports decision-making.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Normal operation enhancement tool.

e) Exercise/scenario length/time(typical): Up to the user.

f) Potential equipment and/or facilities product can address:
Electronic reporting and geographical mapping of incident and response elements.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

h) Are there any constraints on supported exercises or scenarios?
None known.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
real-time web-based collaborative exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*
No. Once user is familiar with operations he/she can access the application from his/her computer without assistance.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.
Normal information inputs now consolidated and in electronic format.

d) How is training managed (e.g., Testing, certification of completion, etc.)?
Up to the user.

e) Does a curriculum already exist? If so, briefly describe its form and content
N/A.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
Data and requests are time stamped and recorded.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Dependent upon user inputs (e.g., users can compose situation reports and send notifications to users.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
Up to the user, independent of the tool.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
Real time information input is possible.

6. Customization

a) Can the product be customized? If so, how, and by whom?
By the vendor. Cost is varied.

b) What is the process and how much time does it take to develop a new exercise/scenario?
Up to the user, independent of the tool.

c) What is the process and how much time does it take to modify an exercise/scenario?
Up to the user, independent of the tool.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
N/A.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Time stamped inputs (e.g., resource requests, report generation, messages sent).

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)

a) Yes (*proceed to Q2*)
b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)	1900 per user			
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option	Free			
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance		19.5% of base license price (optional)		
Daily Rate and/or Travel				
Instructor Fee		200/hr		
Trainee Fee				

F. Current Users Interviewed

City of Orlando, Office of Emergency Management
POC: Manny Soto, Assistant Emergency Manager
P.O. Box 2846, Orlando, FL 32803
Email: manuel.soty@cityoforlando.net
Phone # 321.235.5438

The E Team software is used by "many" Florida counties, e.g., Osceola, Brevard, and Orange counties, as well as the cities of Orlando and Miami. It was reported that the intention is for this software to be used "state-wide". Some parts of the state are currently using different software: EM2000, but all counties will convert over to ETeam after the EM2000 4-year contract period expires. E Team has been used to date "for training mostly", and is partially activated.

- It is browser-based – runs on Orlando's server with a backup capability via E Team's servers. It appears to be a document tracking and notification system, and includes ArcView capabilities. TJH: E Team does not appear to have built-in ICS functionality or forms; these materials would have to be developed external to E Team, and manually inserted into the system (after which, it would track them and make them available to users).

The EOC people give other employees a 2-hour block of instructions on E-Team, then they can use it back at the office.

Orlando has not used this in an actual event. They did a Bio TTX in late October using E Team with Orange County (everyone was at the same location) to test out the system, but they've never tried overloading it (recall that in the LA County Nov exercise, the volume of messages overwhelmed their network capability). They also used E Team in an annual hurricane exercise.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

Note: This survey was completed with input from Pacific Northwest Laboratories, and substantially reflects their judgment of system capabilities. This document jointly covers two products of substantially similar functionality: FEMIS, a government-developed system (available to Federal agencies), and EMADAVANTAGE, a privately-developed system (available to industry).

A. Basic Product Information

Name of Product:

FEMIS and EMA*DVANTAGE*

Developer: Pacific Northwest National Laboratory, and the Battelle Institute

Contact information: David Millard
Systems Planning and Response
Pacific Northwest National Laboratory
P.O. Box 999, MS K7-28
Richland, WA 99352
Tel. (509) 375-2947
FAX: (509) 375-3641
Email: dave.millard@pnl.gov

Additional Contact information: Blanche Wood, FEMIS Program Manager
Tel. (509) 375-2615
Email: blanche.wood@pnl.gov

Website: http://www.pnl.gov/emadvantage/ Product status (version in use): v 1.5.3

Date of Evaluation: 12 November 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

X Brochure/Prospectus
CD-Rom
X Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  EMA*DVANTAGE* is an automated decision support system for use in incident response management by Emergency Operations Centers (EOCs). While the system is primarily intended for operations, it includes a training and exercise mode.

- Current Target audience:

  Incident response staff and commanders in EOCs. The operations status boards (OSB) component also targets information sharing between emergency personnel in the extended EOC. This could include, but is not limited to, schools, hospitals, and other key facilities as well as public affairs officers and other government officials that need to view or share information with the EOC and incident command center.

- Potential equipment and/or facilities product can address:

  Chemical storage, and similar facilities (currently used by the U.S. Army Chemical Stockpile Emergency Preparedness Program, and Utah Comprehensive Emergency Management); oil refineries (used by Petroléos de Mexico).

- In one paragraph, how is this product potentially relevant to ODP's Training &Exercise program?

  FEMIS / EMAdvantage has a planning module that allows new students and trainers to create and manage exercises, hazards, and scenarios. For any defined hazard / exercise / scenario the system allows emergency managers to examine threat and risk information, make and track protective action decisions, and share status information across the extended emergency operations center. FEMIS / EMAdvantage was designed to support planning, operations and response using information from multiple users and jurisdictions. It provides the ability to identify all of the key facilities, sensors, traffic control points, etc., impacted by a specific hazard or threat. It supports the preparedness, daily operations and response activities for multiple hazards and threats. The operations status boards subsystem allows status boards and other highly dynamic information to be viewed, edited, and added from multiple locations and users.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Client-server computer architecture using the UNIX operating system, and application software. Most of the FEMIS / EMA*DVANTAGE* application software resides on the network client PCs, whereas the support software resides on the network server.

The UNIX server provides an Oracle relational database management system (RDBMS) service, file management services, and optional GIS (geographic information system) capabilities. PNNL-developed utilities, which reside on the server, include the Notification Service, the Command Service that executes the Evacuation model, and AutoRecovery. Client software includes the FEMIS / EMA*DVANTAGE* application, government furnished dispersion and evacuation models, and COTS software applications, such as the ESRI ArcView GIS.

A standalone product to support the design and implementation of operations status boards also exists. OSB status board information resides in an Oracle database and can be accessed via the OSB PC client software or through Web OSB using Internet Explorer. OSB supports the same information sharing model as FEMIS / EMAdvantage. It also supports the same security, notification, operations/exercise, and multi-user capabilities that exist in the FEMIS / EMAdvantage architecture. OSB allows smaller EOC's to support status boards and other information sharing capabilities at a nominal expense.

b) Large multi-station system, or based on individual PCs?

EMA*DVANTAGE* is a multi-station system.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

EMA*DVANTAGE* requires COTS software:
- Oracle RDBMS and ODBC driver
- Microsoft Windows NT/2000
- ESRI ArcView GIS
- Samba Team (open source)
- Sun Microsystems Solaris OS.

Operations Status Boards (OSB)
- Oracle RDBMS and ODBC driver
- Standard Web service (TomCat, Solaris)
- Internet Explorer.

The system utilizes COTS PC-compatible computer and networking hardware.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Three simulation models, developed by U.S. military and national lab sources are used in FEMIS:

- D2PC, February 2000 version (SBCCOM)
- PARDOS v.3.1, May 1997 (SBCCOM)
- Evacuation Simulation Model, ESIM, v.2 1f13 (Oak Ridge National Laboratory).

EMA*DVANTAGE* supports the integration of the following models:

- ERG2000
- Explosion, fire and vapor fire models developed by Battelle

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

FEMIS / EMA*DVANTAGE* use a LAN to connect multiple PCs within the EOC to the emergency management database. The system was designed to acquire real-time information from sensors and other emergency operations centers via the wide area network (WAN). Decisions / information from one EOC is automatically distributed to other EOCs via Oracle replication via the WAN.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

UNIX server system examples include Sun Enterprise 250 and 450 systems. Requires 10/100baseT network interface equipment. Refer to complete Bill of Materials (BOM) and updates at: http://www.pnl.gov/femis/about/bom15.htm.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Server OS: Sun Solaris 7 or 8 UNIX
Client OS: Microsoft XP, 2000 Service Pack 2, or NT Service Pack 6

Server: Oracle 8i (v8.1.6), TCP/IP Adapter, and ODBC driver
Client: Oracle Net8 Client v.8.1.6

Server: ESRI ARC/INFO v.7.1.2 or later (optional)
Client: ESRI ArcView GIS v.3.1 and 3.1.1 patch

Samba Team v.2.0.6 (open source network file system for PC network communications).

Email application: see Bill of Materials for details.

b) Processor speed (in MHz):

UNIX Server: Sun Ultrasparc II or III, 250 MHz or better
PC Client: 600 MHz or better

c) Memory (SDR/DDR):

UNIX Server: 256 MB per CPU
PC Client: 512 MB plus 256 MB per CPU beyond 2

d) Free disk space:

UNIX server: 2 GB system disk space for OS plus swap space and > 15 GB on disk storage array for EMADVANTAGE applications
PC Client: 10 GB

e) Internet connection speed (if any):

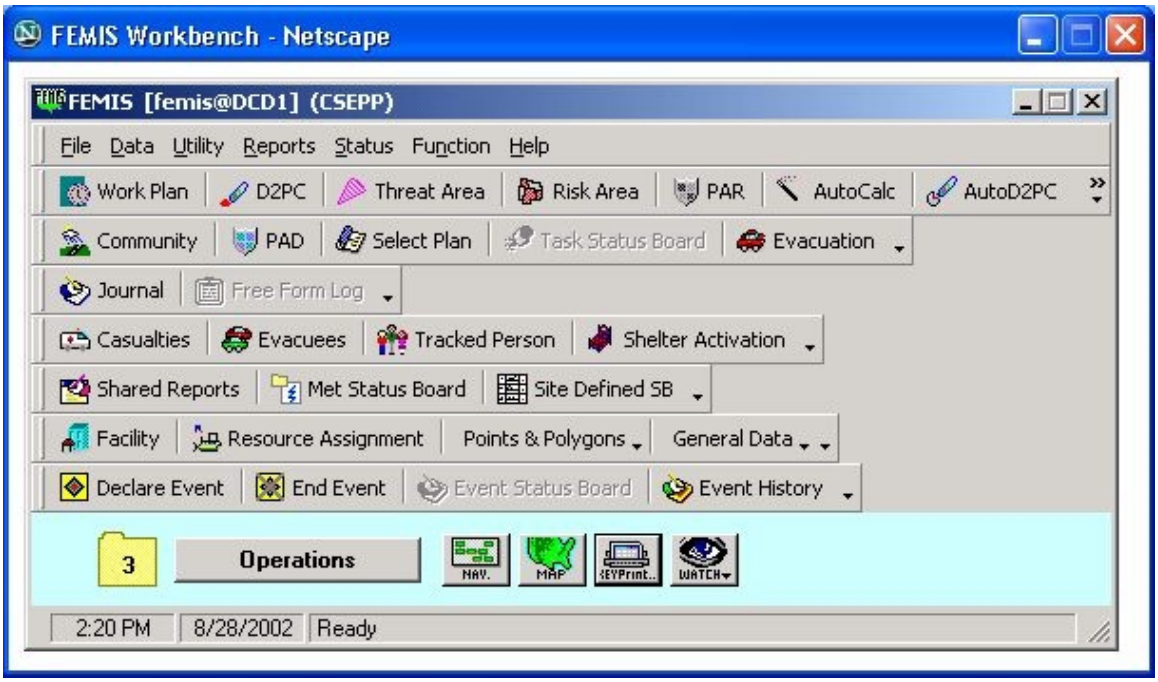
f) Display adapter: Color VGA minimum with 1024x768 resolution

g) CD-ROM speed: 8X or better

h) Optional accessory requirements: Printers, screen projection equipment (for 800x600 minimum resolution), Uninterruptible power supply.

3. Describe the user interface characteristics:

The graphical user interface allows use of keyboard and mouse inputs to manipulate a typical Windows-type screen. The Workbench provides tabs to all parts of the FEMIS system (see below). Geographical displays are provided through integrated ESRI ArcInfo and ArcView applications.



4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

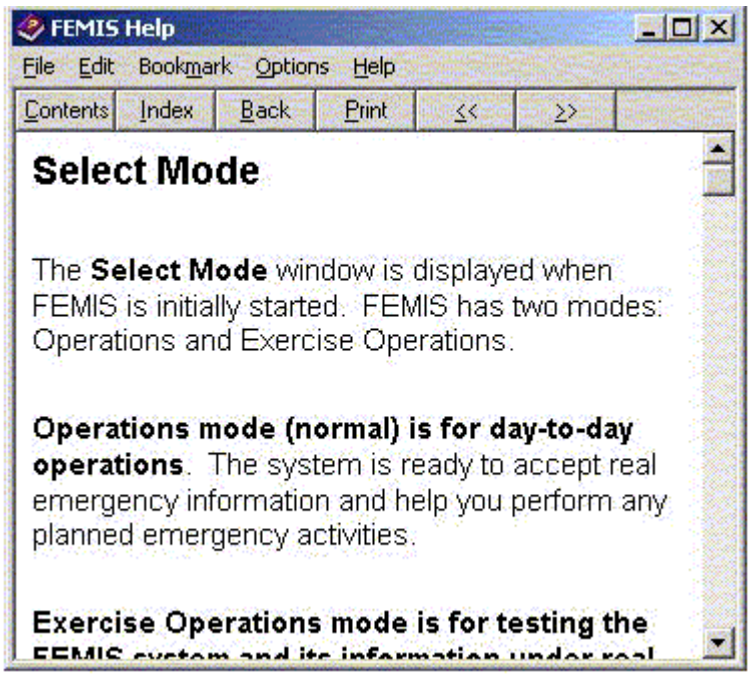
From one to 500+ users. FEMIS / EMA*DVANTAGE* use a centralized relational database to share decisions and information across multiple users and PCs. The GIS, modeling, and analytical processing are done on the PC client. This reduces the amount of information transferred via the LAN / WAN and greatly increases performance.
The number of people that can be supported on a single FEMIS / EMA*DVANTAGE* server is dependent on the size of the server and the configuration of the hardware and Oracle database. Operationally, PNNL / CSEPP has had over 150 people simultaneously using the system at a single EOC without performance degradation. Conceptually, it could support an unlimited number of users, assuming the database performance was adequate.

b) Custom/proprietary hardware required? If so, identify:

None required.

5. Describe any user HELP features:

The application includes a context sensitive Windows-style Help menu that the user can access via keyboard or mouse. It includes a search function and index of topics covered.



6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

FEMIS / EMA*DVANTAGE* has a planning module that allows users to create what-if scenarios that is stored separately from the conditions established during daily operations. The system can use operational information to select the best protective action decisions and / or electronic plan

based on previously created scenarios. The system architecture supports the concurrent storage and access of both operational and exercise information. Operational data can be used to construct an exercise. The exercise can be used for training, table-tops, or full scale exercises – without impacting the original operational data. The system consistently displays whether or not it is in operations or exercise mode, both visually and in generated products. Because exercise information is uniquely identified in the system, exercise data can be kept for later review and assessment. The system does not track the status of individual students and training activities.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Initial training products can be obtained from Innovative Emergency Management, Baton Rouge, LA. These include CD-ROM and Web-based tutorials.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

- FEMIS currently supports the D2 chemical dispersion model.
- PNNL has demonstrated that FEMIS can import the results of the new D2-PUFF chemical dispersion model being developed by SBCCOM.
- PNNL has demonstrated that threat areas (polygonal shape files) from CATS, DTRA's consequence assessment tool can be imported into FEMIS.
- PNNL has demonstrated that threat areas from the APGEMS radiological dispersion model can be imported.

b) Exercise/scenario length/time (typical):

Exercise conduct is dependent upon user design.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

PNNL believes that the product can be directly applied without modification. However, some effort will be needed to identify / import GIS base maps, key facilities and geographical information desired for threat analysis. Operations Status Boards (OSB) can be applied immediately.

PNNL recommends that some effort be spent to ensure the seamless, automatic integration of modeling information from CATS, APGEMS, D2-PUFF or other WMD models desired by the sponsor.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

None documented.

3. Instructional Attributes (if applicable)

a) Does a curriculum exist? If so, briefly describe its form and content.

Yes, the curriculum is available from Innovative Emergency Management (IEM).

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

As primarily an incident management information system, FEMIS / EMA*DVANTAGE* does not include student/participant feedback features as part of the system. AAR is conducted by a subject matter expert.

5. Instructor/controller/evaluator tools (Training/Exercise Mode)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

This is one of the strengths of the system. Because of the multi-user architecture and the information sharing components the SimCell is able to use its privileges to view the status of decisions / protective actions without impacting exercise play. Because the system supports operations and multiple exercise databases the MSEL team can prepare a scenario and test database that contains the exact conditions desired to support play. Because it is a multi-user system the SimCell can inject information into play. Using the MSEL to determine what information is desired the SimCell can inject weather, emergency declarations, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
The system was built to provide real-time notification of new decisions and information to multiple users and jurisdictions. This same notification capability is a benefit during training and exercises. The ability to save an exercise database to review the exercise Log and status information is an additional benefit, especially since this can be done without impacting daily operations (e.g., it can be done offline on a standalone computer).

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Yes, the system was designed to be customized in the field. FEMIS / EMA*DVANTAGE* has a suite of definition / design tools that can be used to configure the system and its actions. Design and definition tools include:

a. *Hazard Definition Tool*: allows a site to define the hazards being addressed. Hazard information includes the 'type' of hazard, protective action decisions (note: different hazards may require different protective actions), planning and response zones, emergency levels, etc.

b. *Exercise Setup*: allows an administrator to create a new exercise. Exercises can be created using the current operational database, or copied from a previous exercise. Copying from a previous exercise allows the SimCell to set up a standardized exercise, copy it, and replay the actions as needed.

c. *Status Board definition tool*: allows the local administrators to identify the status boards needed to share information for an extended EOC. Status board information is accessible via FEMIS / EMA*DVANTAGE*, OSB, and Web OSB.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The physical creation of the exercise database takes minutes. The generation of the data needed to support the goals of the exercise is based on the objectives of the exercise. Once a base exercise is created it can be reused as needed.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

There are no built-in post-exercise analysis tools in FEMIS / EMA*DVANTAGE*. Incident analysis tools are addressed above in the Technical Attributes section.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government Owned- *FEMIS was developed using government funds and is available to government clients.*	1	Multiple dynamic paths through the product and more than one out come possible
1	Commercially Owned- *EMAdvantage and Web OSB were constructed using private funds. These capabilities can be licensed to commercial sponsors.*	0	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
2	Individual	2	Scenario replay

2	Group	2	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)	1	Does not provide feedback or AAR
1	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone – *The system can be run standalone on a PC for training and review purposes. The desired database is exported / imported for training or review.*
		1	LAN
	Environment	1	WAN
0	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
1	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX

1	Fire	1	FE
1	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
1	Public Safety Communication		
1	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X High
Medium
Low
N/A

Ease of Use

Easy
X Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

X Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
0 Dissemination of best practices/expansion of learning benefits i.e. report generation
0 Tracking participant performance through multiple tries (automation)
2 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

0 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) **Service**
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) **Allows User Customization**

4) What are the prices (in $USD) according to type: (fill in all applicable)

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Fire Studio

Developer: Digital Combustion, Inc.

Contact information:
9121 Atlanta Ave., #705
Huntington Beach, CA 92646

800-884-8821
949-582-5549 fax

Technical Support Contact Information:
9121 Atlanta Ave., #705
Huntington Beach, CA 92646

949-348-1120

Website: www.digitalcombustion.com.

COTS/GOTS: COTS

Product status (version in use): Fire studio 2.0

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
1	Observed Demo
1	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
1	Reviewed Website
1	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

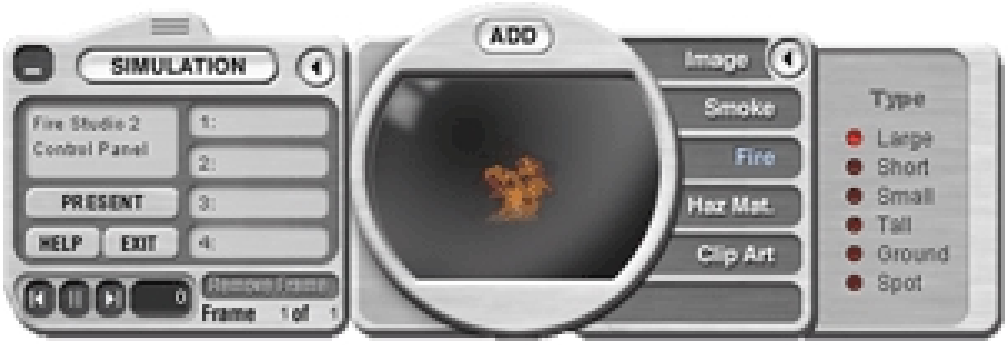
Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Fire Studio is a versatile instructor aid that allows trainers to create fire scene simulations on a PC to use in training and exercises for firefighters. The instructor creates the scenario/simulation. Fire Studio is a software program that allows users to create their own simulations by adding animated smoke and fire to pictures of buildings, landscapes, planes, anything that can be photographed; even the inside of the building. Fire Studio is entirely customized; it allows customers to prepare for fires in their own city. Customers take pictures of structures, landscapes, planes, etc in their own city and load it into the program. Users can also load in clip art and add in equipment, fire hydrants, etc. Once the picture of the location of the fire is loaded into the program, users can select from a menu of different types of fire and smoke to create the simulation. Then they let the fire burn down. The program includes HazMat cues such as the type of flames, smoke/vapor color and thickness. Customers can also bring in sound files and set it up to play them automatically to simulate reality.

Instructors can also open four windows in a frame and set up four monitors with a student at each monitor (each with a different view of the fire) and see how the students coordinate the response. The program is used primarily in a classroom setting however; individuals can use it to prepare for promotional exams. The program allows the user to save and repeat simulations or change in them is any way they want. Customers can also email the scenarios and share them with others who have the same software. Users do not interact with the program but rather with each other in an effort to extinguish the fire. Once the scenario is created it plays out as planed by the instructor. Version 3 is coming out soon (October 25, 2003) and it will allow the use of a camcorder so people or cars around a building will be moving.



This is the Fire Studio 2 Control Panel

Quote from the Digital Combustion Help Forum online:

I am a Battalion Chief with the City of Fairfax Fire Department in Virginia. We have been utilizing FIRE STUDIO for several years, beginning with version 1.0. We do, of course, utilize the simulations to evaluate the effectiveness of pre-incident planning and target hazards and train company level officers as well as command level officers. It has tremendous potential for re-creating incidents and is most effective when conducting critiques and reviews of these events.

I find it extremely useful in training new recruits as well. I frequently illustrate basic fire scenarios of single families, garden apartments, town homes, shopping centers, etc and discuss hose advancements, ladder placement, forcible entry and ventilation. It serves as an excellent prop to illustrate the various skills listed above. I developed a power point presentation around fire studio simulations for new firefighters preparing for graduation. These simulations are used to better explain what their officers will expect of them, rather than for them to recognize the how to of tactics and strategies. It has been quite an effective learning tool. I would highly suggest you incorporate this for the entry level firefighter.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

0	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
0	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	0	SME controls AAR
0	Equipment	1	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Software, photo-realistic animation, audio and video clips

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand-alone product requires photos to populate for specific jurisdictions. It also requires the CD to run.

c) Large multi-station system, or based on individual PCs?

Individual PCs. Not networked.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Users can take pictures or video of a building/plane/location and load them into the software program. Then the user can select the type of fire and conditions affecting the fire to create customized simulations.

e) Web-based application, LAN, or a single computer/system-based application?

Single computer/system based application. Users can email simulations to others who have the software. You need a copy of the CD from Fire Studio in your computer to run the program

f) Describe any debriefing after-action reporting support tools:

The simulation can be saved and used later.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Office space

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 95/98/NT/2000/XP

b) Processor speed (in MHz): 7200 rpm for Fire Studio 3.0

c) Memory (SDR/DDR): 128 MB of RAM (256-512 recommended)

d) Free disk space: 600 MB

e) Internet connection speed (if any):

f) Display adapter: SVGA Video Card w/2 MB ram (4+ recommended) at 800x600 screen resolution

g) CD-ROM speed:

h) Optional accessory requirements[5]: sound card/projector

5. Describe the user interface characteristics:

Traditional PC interface with monitor, keyboard, and mouse. The instructor will see a menu and can left click to choose the item he wants to use. There are choices as to what buildings to use as well as different views of the building, different types of fires are also in a menu, smoke cloud types, etc can be chosen from a menu. See control panel image above.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
One to the number of people who can realistically participate in a classroom setting. Technically it is an unlimited number who can view the product on-screen with a projector

b) Number persons usually trained simultaneously?
The typical set up is a classroom setting at the simulation is projected on a screen for the students to see. Classroom size varies per fire department.

c) Custom/proprietary hardware required? If so, identify:
No

7. Describe any user HELP features:

There is a help menu and an online manual which requires internet access to use. Digital Combustion has a help forum on its website and it trying to encourage users to share information.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): scenarios can be saved for re-play and shared with other Fire Studio users.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

2. Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	0	Local Officials
1	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
0	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
0	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
0	EMS	0	Drills
0	EMA	1	TTX
1	Fire	0	FE
0	Govt. Administrator	0	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
0	Law Enforcement	0	National Training Exercise
0	Public Health		
0	Public Safety Communication		
0	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

The simulation is used by an instructor in a pre-existing training curriculum developed by the user not by Fire Studio

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

The program does visually simulate fire and smoke. The program includes HazMat cues such as the type of flames, smoke/vapor color and thickness.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Instructor controlled. Instructors plan out the fire and sequence of events including the time the simulation runs.

d) Exercise/scenario length/time(typical):

This varies depending on what the instructor plans/creates in the simulation. It can be unlimited. Slides are sequenced together to create the fire build up and burn down. The program works well with Photo shop so users can add black char marks to indicate something has been burned in the fire.

e) Potential equipment and/or facilities product can address: anything that can be photographed can be a part of the simulation

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes.

g) Are there any constraints on supported exercises or scenarios?
No

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Classroom, table top exercises, part-task training, FSE reinforcement

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

Varies per fire department

c) How is training managed (e.g., Testing, certification of completion, etc.)?
Varies per fire department

d) Does a curriculum already exist? If so, briefly describe its form and content

No, it is used to introduce realism into pre-existing trainings

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

The scenario or simulation can be saved.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback comes from the facilitator

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Digital Combustion has a help form where they encourage users to share information/clip art, etc that may be helpful to other users.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The product requires graphic representation of fires as a tool for discussion

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, by user.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
Not long, but it varies. The customer takes digital photos, video, and sound and puts it into the software. The hardest part is planning out the simulated fire or using clip art.

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Customer

d) What is the process and how much time does it take to setup an exercise/scenario to run?
Varies per fire department

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
1	Easy		
0	Relatively Easy		
0	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)

b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)	550.00			
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

First Responders Situational Awareness Tool (FiRST)

Developer: ALION Science and Technology

Contact information:

Technical Support Contact Information:

Marc Erlandson, Division Manager
1901 N. Beauregard St., Suite 400
Alexandria, VA 22311

703-933-3323
703-933-3325 fax
888-566-7672

E-mail: msiac@msiac.dmso.mil.

Website: www.msiac.dmso.mil
www.alionscience.com

COTS/GOTS: COTS

Product status (version in use): version 1.3

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
1	Observed Demo
	Played/Used product
1	Attended Briefing
	Reviewed CD-Rom or other software
1	Reviewed Website
1	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

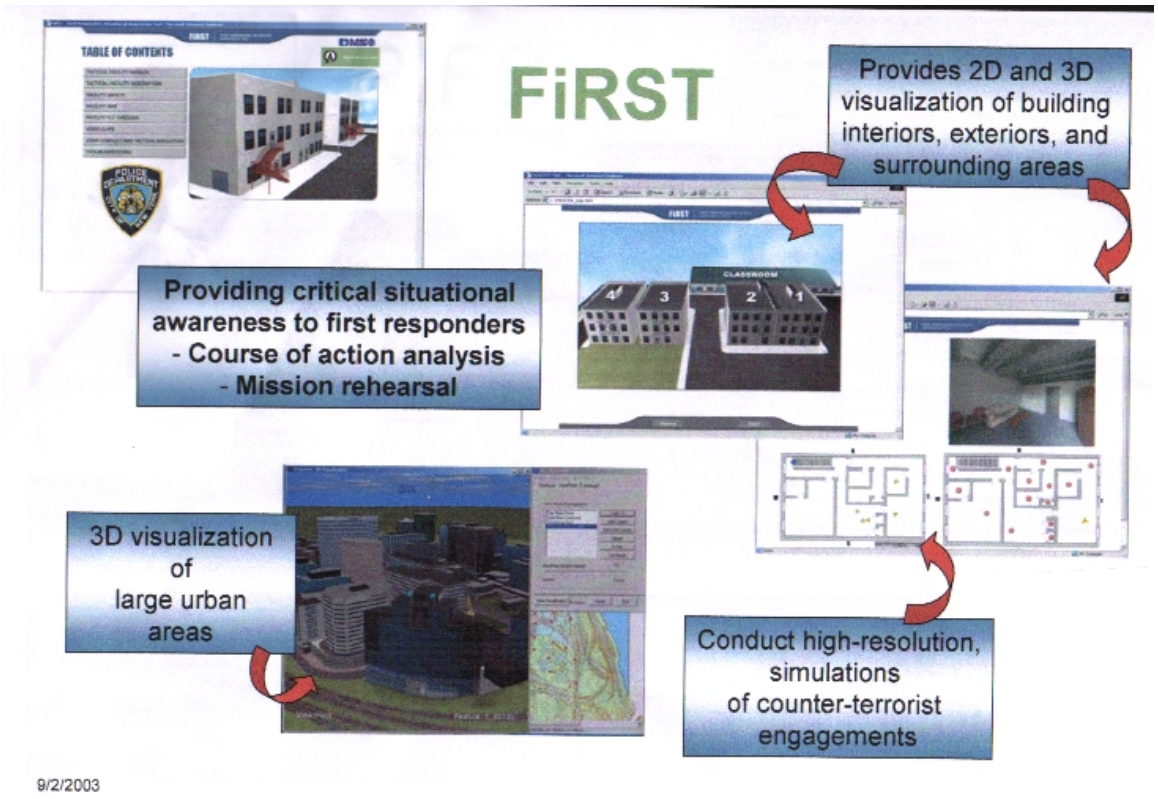
1	Brochure/Prospectus
	CD-Rom
1	Related Papers
	Material from Internet

	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

FiRST is a suite of programs/tools designed to make simulations more accessible and usable. It allows mission planning, rehearsal, and analysis. It can also be used operationally and provides information on demand about terrain and buildings. FiRST has a set of capabilities that can be configured in different ways for the customer by the vendor. These capabilities include the 3-D Immersive models and panoramic views of building interiors, exteriors and surrounding areas, GIS capability, and 2-D topography with interactive simulation (usually JCATS). The user will see a 3-D image of a building they can navigate as well as a 2-D map of the same installation. The image and map are synchronized.

First responders can use this product in planning response to particular incidents at specific locations in their community. The maps and building images are created from actual locations in a community. A hypothetical or generic location can also be created so users have options with regard to specificity of terrain and location.



FiRST is easy to use and only requires familiarity with Power Point and web browsers. Users can rotate and zoom in on an image, navigate on an image, with an arrow click on a door and open it and see the room behind the door, and view video clips too. Users can also navigate on the 2-D map underneath the picture. FiRST provides an interface with interiors; first responders who use these programs do not necessarily want to touch the

things in the building but they do want to see them and FiRST provides that capability. Additionally, it allows users to interact with the images and map; one can place a vehicle or police officers' image in the building and its grounds. Users can scale the image to the building if need be. Users can create a scheme and maneuvers to execute a planned response.

In the future users will be able to populate FiRST with images on their own.

Currently, The NYPD uses FiRST in their training facility in Queens. The NYPD has loaded FiRST with pictures of their training facility which they use as a generic location. They can create TTXs where FiRST is used to plan a response to an incident. For example; there are bomb-makers in the building and the SWAT team is going to take them down without harming any innocent family members that may be there. During the TTX participants can create a response using FiRST.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
0	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
	Small multi-user team (up to 25 persons)		
	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	0	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

FiRST is a software program that includes a 3-D interactive model usually JCATS or JANUS and 2-D topography. The 3D urban viewer is integrated with the ArcView Geographic Information System (GIS). This tool provides custom PowerPoint-based drawing toolbox icon and clip art incident management toolbars for the creation of training scenarios and scheme of maneuvers. An optional module featuring indoor/outdoor position location is also available for this tool.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Yes, it can be used as a stand alone product. It requires the user to download some freeware (QuickTime BR) which is a free plug in to use the panoramic shots feature.

c) Large multi-station system, or based on individual PCs?

Based on individual PCs, typically laptops.

d) If simulation models are used, what is the basis of the data and/or distributions used?

JCATS, JANUS, OneSAF, or JSAF provides the simulation

e) Web-based application, LAN, or a single computer/system-based application?

Web based, either via intranet, Internet, or standalone

f) Describe any debriefing after-action reporting support tools:

Any scenario created in FiRST can be saved and replayed. There is no formal after action capability.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

None, FiRST can be used on any computer or laptop and is portable and meets the computer requirements listed below.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 2000/XP

b) Processor speed (in MHz):
PII 450 MHz minimum

c) Memory (SDR/DDR):
64 MB minimum

d) Free disk space:
Varies depending on size of terrain database

e) Internet connection speed (if any):
Optional
f) Display adapter:
VGA or better
g) CD-ROM speed:
Basic
h) Optional accessory requirements[5]:
N/A

5. Describe the user interface characteristics:

Very easy to use traditional computer set up with mouse, keyboard, and monitor. FiRST uses PowerPoint and web browser technology.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Variable

b) Number persons usually trained simultaneously?
Variable

c) Custom/proprietary hardware required? If so, identify:
None

7. Describe any user HELP features:

Help button with access to very basic help information and contact information for phone and e-mail tech support

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Scenarios events are created by the trainer facilitator. Slides can be saved and reviewed later.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Very little training required for becoming a proficient user of FiRST itself.

2. Attributes

	Application Environment:		**Content**
0	Training	0	Knowledge
1	Exercise	1	Applied
1	Operational	1	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	0	Drills
1	EMA	1	TTX
1	Fire	0	FE
1	Govt. Administrator	0	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Training content/scenarios would be provided by the user, or can be developed by Alion.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

n/a

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Simulation supported. Facilitators can create scenarios for discussion and provide participants with pictures of facilities and resources that can be manipulated. During a TTX participants would plan their response to a particular incident and be able to "see" the action in FiRST.

d) Exercise/scenario length/time(typical):

Varies depending on what the trainer develops.

e) Potential equipment and/or facilities product can address:

Any facility can be photographed and put into FiRST…..

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes, training scenarios involving WMDs can be created with in FiRST. Trainers could create any scenario with this program.

g) Are there any constraints on supported exercises or scenarios?
There is no existing curriculum per say. Trainers create their own scenarios.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Classroom, case study, real-time exercise, interactive.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

Real-time interactive

c) How is training managed (e.g., Testing, certification of completion, etc.)?

By the customer or Alion

d) Does a curriculum already exist? If so, briefly describe its form and content

N/A

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Fast-time models.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Real-time features.

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, the Alion software development team can add different terrain and functionality.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
Variable depending on the complexity, but lower than average tool in the market

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Could be done by either

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Variable. It differs by trainer and training needs.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
1	Easy		
0	Relatively Easy		
0	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)

b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Force Protection Operational Requirements Testbed (FORT)

Developer: US Army Research, Development, and Engineering Command Aviation and Missile Research, Development, and Engineering Center.

Contact information:

Dr. Dan Belk
AMSRD-AMR-SS-AE
Redstone Arsenal, AL 35898
Dan.belk@us.army.mil
256-876-4466

Additional Contact information:

Ms. Laurie Fraser
AMSRD-AMR-SS-AE
Redstone Arsenal, AL 35898
Laurie.fraser@rdec.redstone.army.mil
256-876-1353

Website: N/A Product status (version in use): N/A

Date of Evaluation: 12/19/2003

A. Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- Played/Used product
- X Attended Briefing (teleconference)
- X Reviewed CD-Rom or other software: product capabilities summary
- Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in Possession:

- X Brochure/Prospectus
- X CD-Rom: with developer presentation and demo information
- Related Papers

Material from Internet
Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  FORT is a suite of simulations and 3-d viewing tools depicting terrorists, responders, vehicles, and others moving within a synthetic environment. The environment size is scalable, but would generally correspond to a DoD installation, a city, or county.

- Current Target audience:

  Exercise support has been provided to the Redstone Arsenal (RSA) and the Camp Shelby Training Support Brigade. Battlefield simulations adapted from legacy force-on-force modeling, and actual commercial 911 software linked seamlessly with DIS have been used to date, but any DIS or HLA compliant simulation is a candidate for inclusion.

- Potential equipment and/or facilities product can address:

  Responders (both within RSA and which may be reasonably expected to respond to calls for mutual aid from the surrounding community), unmanned aerial and ground vehicles, fire, MP, quick reaction forces, and NASA protective services have been modeled.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  FORT is a "State-of-the-art virtual reality three-dimensional immersive environment viewing is then driven by the physics and decision-based simulations, allowing decision makers and responders to quickly assimilate the results of experiments or scripted training scenarios. Responders are presented with an immersive environment, which is immediately recognizable. The immersive environment enhances any learning system that incorporates responders that do not deal with analytical situations on a day-to-day basis".

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   The FORT uses 3-d computer generated immersive visualization software driven by legacy DoD force-on-force simulation models and Intergraph Computer Aided Dispatching (ICAD) software/hardware. The legacy force-on-force software can include: MODSAF, OneSAF, IDEEAS, JCATS, etc, or any simulation which adheres to the IEEE DIS protocol standards.

   A major part of the FORT is its visualization tools, such as MAK Stealth, MUSE, and CATI XIG. These tools present the simulation to participants who may be untrained in the use of simulations as recognizable scenes, with vehicles and people

within those scenes. Inherent in the 3-d visualization are the actual topography and features of the area being studied (initially RSA), so that movements are seen against true-to-life terrain and features.

Depending on customer requirements, other training aids can be incorporated via the immersive environment to assist decision makers, commanders, or facilitators. The immersive environment, coupled with well defined injects such as messages from computer generated players, or dispatcher communications, or even mock television transmissions featuring computer generated graphics.

The ICAD system has been integrated with the simulations to allow fielded ICAD systems (used throughout the US and abroad) to accept the simulations as actual live events. Furthermore, dispatching information from the ICAD system can appear within the simulation environment, much as a distributed simulation from another agency would appear.

b) Large multi-station system, or based on individual units/PCs?

DIS was designed to bridge the gap between dissimilar simulation platforms and simulation methodologies. It is capable of concurrent representation of live, virtual, and constructive simulations, each gleaning from DIS the information needed for battlefield awareness. Because of this, several different types of simulations can be incorporated, including PC based, mainframe, live vehicles, man-in-the loop simulations (such as trainers), depending on the needs of the study.

DIS also allows “ownership” of different entities by different platforms. Multiple instantiations of MODSAF, OneSAF, IDEEAS, or JCATS can be used to incorporate “responder-in-the-loop” or even allow role playing for terrorist activity. Each platform will “own” one or more entities, which will then be represented in each and every simulation.

Nonetheless, FORT is readily configurable to the customer requirements. While exercise support generally uses the components of simulations, ICAD, and visualization tools, other customer requirements have been met with a subset of these three. For instance, the Army and FBI have a partnership developing and using a 200 acre bomb disposal training facility on RSA, and components of the FORT were customized to provide a robust situational awareness security tool, including GPS tracking, zone alarms, and visualization the current condition of training areas.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

FORT requires several computers, running multiple operating systems, linked with Ethernet. The terrain databases must be developed a priori, and depend on the physical area of study.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The models (vehicle & people) move within the simulation based on the physical characteristics of the terrain database. Also, each entity has predefined characteristics which each simulation uses within its own data structures. The model is essentially

deterministic, with variability being derived from the human-in-the-loop. If scripted, it will produce the same base case each time. Data-driven objective decisions can be made by starting with the base case, and then changing alternatives of interest (technologies, tactics, techniques, and procedures) as needed to support the customer.

The FORT architecture is immediately adaptable to augmentation of existing courses of instruction, adding realism with the virtual environment. Furthermore, this augmentation could then be varied to target particular learning objects of a facilitator responding to individual groups.

Monte Carlo techniques are available via DIS linkage to stochastic models, but these are not currently needed in FORT applications.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The 3-D visualization of the FORT is best seen on prominent displays (such as projectors or plasma screens). The FORT environment can be taken to the customer (such as with the RSA Garrison exercises 2 or 3 times a year, or can be instantiated at the customer's location for frequent usage, such as with schedule training classes.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Most components of the FORT use Windows operating system (WIN2K or XP) on standard Pentium PCs. Some components use LINUX on standard Pentium PCs. The ICAD systems require two high-end relational database servers. High-end PCs improve performance.

b) Processor speed (in MHz): Varies

c) Memory (SDR/DDR): Varies

d) Free disk space: Varies

e) Internet connection speed (if any): DIS can be supported on ISDN lines, or the Defense Research & Engineering Network (DREN).

f) Display adapter: High-end PC graphics cards for visualization tools.

g) CD-ROM speed: N/A

h) Optional accessory requirements: Plasma screens or high definition projectors.

3. Describe the user interface characteristics:

The FORT allows human-in-the-loop free play decisions to be made in real time. Scripting is also supported. Runs can be captured for post-processing and after action reviews, with "what-if" sensitivity drills. This capture and AAR capability provide support for non-threatening professional-group instruction.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Computer simulations and platforms can be added almost indefinitely. DoD DIS exercises have exceeded 3000 entities.

b) Custom/proprietary hardware required? If so, identify:

N/A

5. Describe any user HELP features:

While each component has help available online, the operation of the FORT is done by a simulation team, with Subject Matter Experts (SMEs) advising the simulation team concerning movements and interactions. Participants are able to learn the system in a matter of minutes, by observing examples.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

All DIS traffic can be recorded during execution and played back (and modified) in AARs.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

3-D visualization greatly reduces the time it takes to familiarize participants with the FORT environment. Generally, a presentation of a past exercise will suffice, and since the participants interface with the simulation environment via the simulation team, they do not have to learn to operate the simulation.

The ICAD operator is trained either by OJT or the contractor, Intergraph. Since the interface with the simulation is transparent, the operator uses everyday skills.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The FORT currently incorporates rudimentary plume modeling, and higher resolution modeling can be incorporated as needed by the customer. WMD effects on the architecture can be added, if needed, via DIS compliant components or SME inputs.

b) Time required for a typical exercise or scenario (if applicable):

Actual exercises last a few hours (real-time). Preparation of the terrain database is the most time-consuming activity prior to the exercise. Once a terrain database is generated for a location, it can be reused without modification for any exercise on that terrain.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly related. It is useful for training exercises, and also for optimization of counter-terrorism infrastructures and procedures. It can also be used a planning tool (e.g., simulate vulnerabilities and response time with implemented technologies).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

A terrorist releasing chlorine gas near a crowded office complex on RSA was modeled. While the primary customer has been the RSA Garrison, the FORT architecture is exportable to all Force Protection and Homeland Security exercise and installation optimization studies.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

The customer determines the curriculum (study scenario), and the FORT is readily adaptable to the customer's requirements.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

AAR is via 3-D visualization. A 2-D simulation map is also available, but the 3-D immersive environment has proven to be far more useful to the customer.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Free-play depends on the simulations incorporated, but as an example IDEEAS allows the operator to alter the execution via drag-and-drop mouse operations. Also, events can be initiated via ICAD operator dispatches.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Participants dictate decisions to dedicated operators during the execution, freeing the participants to think about their responses and not the operation of the tool. All actions can be captured for AARs.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The FORT architecture is highly customizable, and is developed for each application. The modular nature of the FORT architecture provides a robust framework to satisfy a wide range of customer requirements.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

If the terrain database already exists, it takes the simulation team a few days to script the initial base case. Actual hardware setup (if required at the customer's location) can be done in as little as a few hours for a temporary, one-time use. The FORT does not typically need network capabilities beyond its internal Ethernet.

c) **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

DCAT (Distributed Data Collection and Analysis Tool) was developed specifically to capture activity during DIS exercises, and is available for post-processing and statistical analyses. However, the FORT's 3-d visualization has been the tool of choice for AARs.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

See Appendix A for classification descriptions.

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
x	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government Owned	1	Multiple dynamic paths through the product and more than one out come possible
	Commercially owned		Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
	Individual	1	Scenario replay
	Group		Automated summary of data
1	Small multi-user team (up to 25 persons)		SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR

	Multi- Agency Participation		
		2	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone
		0	LAN
	Environment	1	WAN
1	Generic	0	Internet
2	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
1	Exercise	1	Applied
	Operational	0	Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
2	Public Health		
1	Public Safety Communication		
1	Public Works		
2	Transportation		
2	Private Sector		

	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X High
Medium
Low
N/A

Current Applicability to ODP

X Very
Somewhat
Limited

Ease of Use

Easy
Relatively Easy
Difficult
X Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

X Records User Specific Performance
X Requires Active User Decision-making
Automated Recording of Learner Unit Information Sharing
2 Simulation support
Enhanced communication T&E
Remote observation
Distributed-collaborative decision-making environment
Hospital T&E

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: *(choose one)*
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: *(choose one)*
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: *(fill in all applicable)*

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Full

Spectrum Command (FSC)

Developer: Institute for Creative Technologies, University of Southern California

Contact information:
Karen Williams
RDECOM Simulation and Training Technology Center
AMSRD-STTC
12423 Research Parkway
Orlando, FL 32826
Tel.: (407) 384-3937
DSN 970-3937
Fax: (407) 384-5430
Email: karen.e.williams@us.army.mil

Additional Contact information:
Johnathon Cothrin
RDECOM Simulation and Training Technology Center
AMSRD-STTC
12423 Research Parkway
Orlando, FL 32826
Tel.: (407) 384-5427
Email: Johnathon.Cothrin@peostri.army.mil

Website: http://www.ict.usc.edu/disp.php?bd=proj_games_fsc

Product status (version in use): 1.0.2 (2/25/03)

Date of Evaluation: 12 December 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- X Played/Used product
- Attended Briefing
- X Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- X CD-Rom
- X Related Papers
- X Material from Internet
- Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Interactive game for training military operations in urban terrain (MOUT) with a peacekeeping mission.

- Current Target audience:

  Future U.S. Army Light Infantry company commanders.

- Potential equipment and/or facilities product can address:

  FSC simulates use of night vision goggles, man-portable forward-looking infrared sensors, and chemical detectors.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

Full Spectrum Command combines a number of training and functional characteristics that would be useful in ODP's T&E program. Training elements that would be useful include tactical planning, a "gaming" approach involving an intelligent OPFOR (human-controlled or automated forces), and potential for facilitated or self-guided AAR. Functional presentation elements that could be applied include: 3D virtual reality "gaming" action, automated scenario capture and replay from any vantage point, automated performance-related statistics and AAR, and a scenario editor that can be used to modify training content so that trainees are not presented with the exact same scenarios.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Full Spectrum Command is 2D and 3D interactive gaming software with AAR and review question and answers. It includes a Scenario Editor that allows the user to modify or develop new scenarios (within the same McKenna MOUT terrain).

b) Large multi-station system, or based on individual units/PCs?

Individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

It can be used in standalone mode or in a multiplayer mode over a LAN.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not applicable.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Computer workspace, and, optionally, a LAN.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

IBM-compatible PC.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows XP

b) Processor speed (in MHz): Pentium 4, 2 GHz or better

c) Memory (SDR/DDR): 512 MB or better

d) Free disk space: 200 MB approx.

e) Internet connection speed (if any): Not required.

f) Display adapter: nVidia GeForce4 with 128 MB RAM (or equivalent)

g) CD-ROM speed: Industry standard

h) Optional accessory requirements: 100baseT LAN for multi-player support.

3. Describe the user interface characteristics:

There are three main parts to the program: the Scenario Editor, the simulation, and AAR. All function inputs are mouse and keyboard driven. The Scenario is a text-based screen organized in tables, with selection boxes and other pre-arranged parameter selection features. The simulation has multiple screens, but is essentially separated into two main sections: a 2D battleboard for reviewing operational orders, analyzing and planning the mission, and issuing fragmentary orders; and the 3D point of view (POV) representing the simulated environment that allows the user to move through the virtual world, issue orders, track troop movements etc. The commander POV provides "radio" icons that enable the user to send simulated radio messages to his units. The AAR section is a combination of text and animated feedback, whereby the user is presented summary statistics on the mission, and can review the entire scenario (described more fully below).

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

One to two users.

b) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is required.

5. Describe any user HELP features:

Full Spectrum Command comes with a User's Manual in Adobe Acrobat (.PDF) format. The User's Manual describes force structures, program components, menus, the Play Scenario screen and submenus, mission planning and execution, scenario editing, and AAR.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

The entire scenario is saved for later playback during AAR. A range of statistics are recorded based on the scenario play, including:

- Weapon distribution
- Ammunition expenditure by Maneuver Element, time period
- Casualties taken (killed, wounded), by weapon type, by time period

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

None specified.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The training in which FSC engages the user is intended to help develop situation analysis and decision-making skills of infantry commanders. The application simulates the planning, deployment, command and control of troops in military operations in urban terrain. Of relevance is the tactics used by, and used to counter unconventional forces. FSC does not contain WMD-specific training content.

b) Time required for a typical exercise or scenario (if applicable):

Two to three and a half hours of scenario time.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The product applies to military operations in urban terrain. To the extent that MOUT missions may be similar to counter-terrorism missions, Full Spectrum Command is applicable. However, it is likely that new, alternative scenarios and entity behaviors would be necessary to extend the simulation's applicability beyond MOUT. For example, it would be necessary to include more CBRNE threat types. It may also be necessary to change the terrain to an urban setting other than McKenna in order to provide a more realistic threat environment for domestic terrorism.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

U.S. Army Infantry School, Ft. Benning, GA.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

FSC is being integrated into company commander training at Ft. Benning, GA.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback to the user takes multiple forms. Prior to the mission, the user receives an Intel briefing and operational orders in text format, scenes and terrain displays. During the

Mission Execution phase in the Commander point of view, 3D real-time computer generated graphics and audio provides cues to the user. After the mission, an After Action Report provides text feedback, and scenario replay with pause, and fast-forward, and a moveable "camera view" of the scenario.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

FSC includes a user-level Scenario Editor for developing new or modifying existing scenarios. The program includes a set of about 16 existing scenarios with differing missions, time of day, rules of engagement, weapons, and technological aids. All of these parameters are adjustable. The User's Manual includes instructions on using the Scenario Editor.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Training can be conducted in a self-guided mode or in an instructor evaluation mode for curriculum-based use. Both modes support automated data and scenario recording for AAR. The user can pause, stop, save, and restart scenarios as necessary, and may choose to append or start a new separate AAR data file.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The user may edit scenarios or create new scenarios using the Scenario Editor feature. It is possible to tailor specific attributes of an existing scenario for play in as little as five minutes. Development of an entirely new scenario would take considerably longer and depend on the complexity of the mission and training objectives.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Pre-scripted scenarios can be selected from the main user menu under Play Scenario. This is a matter of a couple mouse clicks and letting the computer system load the scenario (time varies depending on CPU speed, but generally takes less than one minute).

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

There is a fully-featured AAR capability with a Review screen that includes playback controls, a moveable "God's eye" 3D view of the scenario, time bar, decision points, and a soldier query feature called "Explainable A. I." A range of statistics are recorded based on the scenario play, including: weapon distribution among maneuver elements, ammunition expenditure by maneuver element and time period, and casualties taken (killed, wounded), by weapon type, by time period. An example of an AAR screen is shown below.

(Screenshot courtesy of I.C.T.)

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government Owned *(US Govt. has unlimited use)*	1	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned *(ICT owns commercial rights)*	0	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
0	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR

0	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
0	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone
		1	LAN
	Environment	0	WAN
0	Generic	0	Internet
1	Locale Specific (McKenna MOUT)		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
0	Exercise	1	Applied
0	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	0	Local Officials
1	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
0	Intermediate	2	Awareness
0	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
0	Chemical	0	Multi-jurisdictional Integrated Systems
0	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
0	EMS	0	Drills
0	EMA	0	TTX
0	Fire	0	FE
0	Govt. Administrator	0	FSE
0	Health Care	0	FSE Reinforcement
0	HazMat	0	Distributed Collaborative Exercise
2	Law Enforcement	0	National Training Exercise
0	Public Health		

0	Public Safety Communication		
0	Public Works		
0	Transportation		
0	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X High
Medium
Low
N/A

Ease of Use

Easy
Relatively Easy
X Difficult
Requires trained support staff

Current Applicability to ODP

Very
X Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

X Specific objectives, criteria, metrics/measure or level of preparedness
X Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
X Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

X Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

X Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
X Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

Distributed, collaborative, decision-making environment

Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) **No, Vendor must quote a system based on user requirements** (*end here*)

2) Does the cost apply to: *(choose one)*
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: *(choose one)*
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: *(fill in all applicable)*

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Gaming and Multimedia Applications for Environmental Crisis Management Training (GAMMA-EC)

Developer: The GAMMA-EC Consortium

TNO Physics and Electronics Laboratory
PO Box 96864, 2509 JG The Hague, The Netherlands

University of Barcelona, Department of Theory and Education
Passeig de la Ball d'Hebron, 171, 08035 Barcelona, Spain

Italsoft ingegneria di sistemi, s.r.l.
52 Corso del Rinascimento, 00186 Rome, Italy

Agence MTDA
298, Avenue du Club Hippique, F-13084 Aix-en-Provence, France

Nederlands Instituut voor Brandweer en Rampenberstrijding
PO Box 7010, 6801 HA Arnhem, The Netherlands

L'Escola de Bombers de Catalunya
Ctra. Nacional 152, Km.20, 08100 Mollet del Vallés, Spain

Regione Toscana – Dip. Per lo Sviluppo Economico – Foreste e Patrimonio Forestale
Via di Novoli 26, 50127 Firenze, Italy

Centre d'Essais et de Recherche de l'Entente, E.P.A.
Domaine de Valabre, F-13120 Gardanne, France

Mafrau Srl
Via del Gesú 62, I-00186 Roma, Italy

Contact Information:
Dirk Stolk
GAMMA-EC Program Manager
TNO-FEL
gamma-ec@fel.tno.nl
Oude Waalsdorperweg 63
2597 AK The Hague
The Netherlands

Technical Support Contact Information:

Tel +31 70 3740165
Fax +31 70 3740642

Website: http://www.tno.nl/instit/fel/gamma_ec/index.html COTS/GOTS: COTS+GOTS

Product status (version in use): Prototype

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  GAMMA-EC is a prototype training system for disaster managers consisting of a multimedia educational program and a crisis management simulation.

- Current Target audience:

  Emergency response managers for man-made and natural disasters in the European Union, including fire academies in The Netherlands (NIBRA), Catalonia, Spain (EBC), Tuscany, Italy (UOC Foreste), and France (CEREN).

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
1	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	2	Multiple dynamic paths through the product and more than one out come possible
1	Group	1	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
2	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	0	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

GAMMA-EC is a set of software applications that includes multimedia 2D topographic mapping, animation, and testing capabilities accessed on a computer network. A course/module database resides on the network server, and trainees use workstations for, primarily, self-paced computer-based training (CBT).

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The system requires personal computer (PC) and client-server network hardware to operate. The server must have Windows NT Server 4.0, SQL Server 7.0, and Internet Information Server (IIS) 3.0 installed. The number of PC workstations is dependent on user training requirements.

c) Large multi-station system, or based on individual PCs?

GAMMA-EC is a multi-station system that has no predetermined size, and can therefore be used as a large multi-station system. Team-oriented training, however, will limit the necessary number of stations in practice.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Simulations are deterministic, set according to instructional design and are not probabilistic.

e) Web-based application, LAN, or a single computer/system-based application?

GAMMA-EC is configured as a client-server architecture that can be access via intranet (LAN) or Internet.

f) Describe any debriefing after-action reporting support tools:

GAMMA-EC records decisions, actions, and times taken by trainees in each scenario.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Minimally, facilities are needed to house a local area network, and workstations according to user requirements for self-paced CBT. For classroom instructional purposes, a classroom and associated facilities would be needed in addition to computer needs. For distributed training via Internet, the client-server system must be networked accordingly.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

The client-server network allows for two forms of access to the course database server: Administrative (or "Authoring") access via intranet, and "Trainee" access via intranet or Internet. Both are tested to be compatible with the Netscape Navigator 4.7 HTML browser application. The courseware database is in Microsoft (MS) Access format.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Server:	Microsoft Windows NT Server 4.0, service pack 5 Internet Information Server 3.0 SQL Server 7.0
"Admin/Author" Client:	MS Windows NT 4.0 with an intranet connection to server
"Trainee" Client:	Any operating system with an HTML browser

b) Processor speed (in MHz): 266 MHz Pentium II minimum

c) Memory (SDR/DDR): 128 MB minimum

d) Free disk space: 200 MB minimum

e) Internet connection speed (if any): Unknown

f) Display adapter: Industry standard

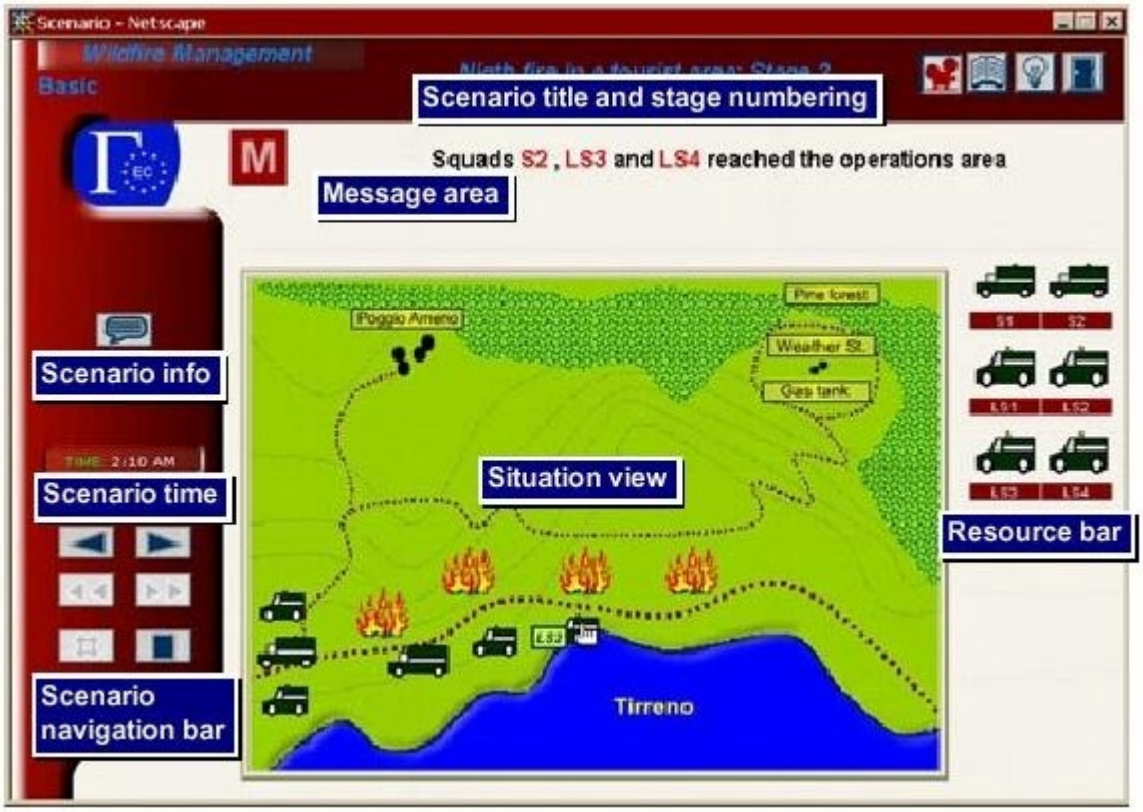
g) CD-ROM speed: Industry standard

h) Optional accessory requirements[5]:

For creating courseware: GAMMA-EC multimedia authoring services; Macromedia Flash 3.0 or higher, and other third-party software for creating and editing pictures, video, animation, audio and related multimedia files.

5. Describe the user interface characteristics:

The user interface is a graphical, mouse accessible screen with multiple functional areas for displaying menu navigation choices, help access, map-based scenarios, and tests. The screenshot below (courtesy GAMMA-EC Consortium) shows an emergency scenario view.



6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The system can support an arbitrarily large number of users via the Internet.

b) Number persons usually trained simultaneously?

User dependent.

c) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is needed.

7. Describe any user HELP features:

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

GAMMA-EC records a wide range of trainee performance parameters for each student, and produces a report at the end of each scenario and/or test. Metrics include elapsed time, number of stages or steps taken, average time per stage, test time, test results, and most time-consuming steps.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Supporting documents describe the steps necessary to install and prepare the GAMMA-EC application and support software on a client-server computer system.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
0	Exercise	1	Applied
0	Operational	0	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**

1	Intermediate	0	Awareness
2	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
0	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		2	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	0	Drills
1	EMA	2	TTX
1	Fire	1	FE
0	Govt. Administrator	0	FSE
0	Health Care	0	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
0	Public Health		
0	Public Safety Communication		**Incident Stage Supported**
0	Public Works	2	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

The prototype system includes training modules for a forest fire scenario, and a chemical spill. Trainees must choose a course of action by evaluating information, sending messages, directing resources, and responding to events. Content is provided in the form of an interactive simulation and supporting/background information on the characteristics of response vehicles and chemicals, for example.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Reference information is arranged by topic, of which chemical spills would be relevant. Each topic is then segmented into: Key Information, Key (search) Words, Background Knowledge, Practical Tips, Additional Information, Cross References, Bibliography, Web Sites, and Test sections.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

While GAMMA-EC is designed primarily for self-paced learning over a distributed network, it can also be used for classroom instruction. Potentially, the system could be integrated into an online collaborative workspace application for virtual training. The emergency response scenarios are scripted.

d) Exercise/scenario length/time(typical):

Tens of minutes for existing scenarios. New scenarios may take more or less time.

e) Potential equipment and/or facilities product can address:

Current scenarios support the modeling of such entities as police and fire squad vehicles, medical helicopter, aerial fire tanker, ambulance response units.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

GAMMA-EC is a prototype product that has training capabilities for chemical spills and attacks, and large-scale fires (forest, and wildland). In these areas, the product is applicable to T&E.

g) Are there any constraints on supported exercises or scenarios?

Constraints (such as the numbers and types of response entities, potential response actions etc.) are determined by the course designer/author.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Currently supported training strategies include self-paced, CBT, and classroom.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

The system includes student cues (messages, icons etc.), and hints.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

For each scenario, there is an accompanying test that the trainee takes within the application.

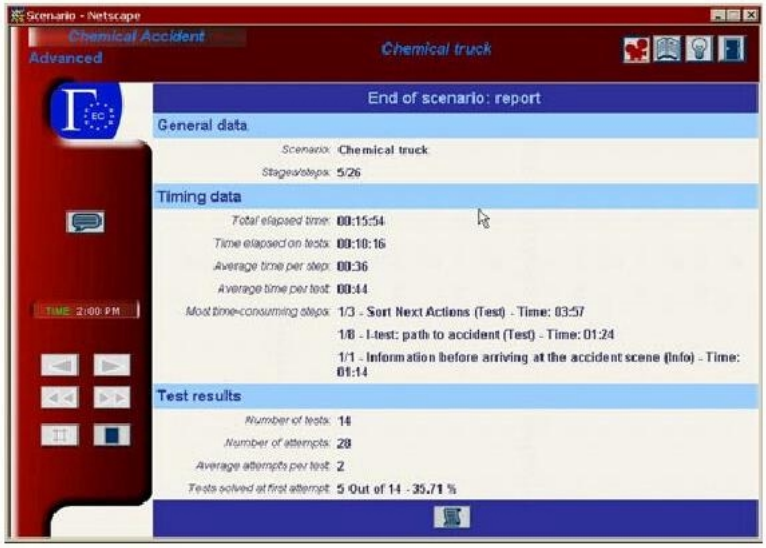
d) Does a curriculum already exist? If so, briefly describe its form and content

The GAMMA-EC Consortium began the development of a curriculum in 1998 and published general pedagogical direction for designing multimedia and interactive

simulation training[13]. Current status of the curriculum is not known, but the original content focused on chemical spill/attack and forest fire disaster management.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Student/trainee performance is captured in terms of decisions, time, and test results. After the end of each emergency scenario, measurements are displayed for the user (screenshot courtesy of GAMMA-EC Consortium).



f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Within the multimedia educational application, trainee feedback occurs during a simulated scenario via animation, text and audio cues, and test feedback immediately follows conclusion of each module.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

The GAMMA-EC application includes administrator/user manuals, and a suite of multimedia course authoring software including an event scripting tool.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording &

[13]"Development of an Education and Training plan", Núria Gou, Begoña Gros, Inés Ruiz, Daniël van Gelooven, Sept. 1999. Accessed from: http://www.tno.nl/instit/fel/gamma_ec/gamma_report_disaster_management.html on 9/14/2003.

real-time analysis & display; displays & controls to support immediate feedback to participants):

6. Customization

a) Can the product be customized? If so, how, and by whom?

The customer can add or modify multimedia course modules, using the included authoring tools and administrator privileges over an intranet.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

User and scenario dependent.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The customer develops new scenarios.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Each scenario is authored and input to the course database on the server from which it is accessed by trainee workstations using Web browsers. Scenarios are not centrally administered for self-paced training, but may be done for classroom instruction. All that is required to begin a session (assuming the network is functioning) is to log onto the system and select a module.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

GAMMA-EC does not include analytical tools per se, due to its nature as a training system.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium	**1**	Somewhat
	Low		Limited
1	N/A *(unknown)*		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) P Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

No pricing information was available at the time this survey was prepared.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Groove

Developer: Groove Networks, Inc.

Contact information:
877/747-6683
info@groove.net

Technical Support Contact Information:
877/747-6683
info@groove.net

Sales offices, headquarters, and other locations can be found at
http://www.groove.net/about/contact.html

Website: http://www.groove.net

COTS/GOTS: COTS

Product status (version in use): v 2.5

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
X	Played/Used product *(used evaluation version, with limited functionality)*
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC *(spoke to sales staff)*
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

This product is designed to support online collaboration among multiple users, in different geographic locations. This is a generic collaboration product designed for business use. It is not designed explicitly for training or exercises, and thus there is no existing training or exercise content.

Given the flexible distributed collaboration methods it supports, Groove could be used in a variety of trainings or exercises involving multi-agency or intra-agency coordination and planning. Digital scenario elements (text or video) could be sent to participants via email or communicated via text chat/messaging. Participants could work on the scenario by communicating with each other and/or reviewing plans and other materials stored in the virtual workspace or on the Web. Digital communications can be archived and analyzed for AARs.

Persistent workspaces can also be useful for T&E planners and developers. Scenario elements, agendas, briefings, etc. can be developed, saved, and stored for later use, and materials can be easily found and reviewed by other planners.

Best practices and case studies can stored in the shared environment with easy accessibility to Groove users.

Groove uses a virtual workspace metaphor. Users are given access to one or more "spaces" and each space can accommodate about 100 users total, or about 25 simultaneously active users. Once a user logs in to a space, he or she can see a list of all users currently in the space. Documents or other digital items can be stored in the space and worked on by users, using MS Office products. Users can communicate with each other synchronously (in real time) or asynchronously (at different times) using a variety of interactive tools.

Groove supports:
- awareness of other users. It shows which users are online and where they are, in the virtual space.
- synchronous communication. Users can talk to each other using: voice (click to talk, with a microphone-equipped computer), text chat, or instant messaging.
- asynchronous communication. Users can use a bulletin board or forum.
- a variety of work tools. Groove provides 15 tools shown below in Table 1; other 3rd party tools are also available; and users can develop their own customized tools.
- shared navigation. Users can share control of the mouse, navigating within the current view or selecting a new tool or view. All the participants see the same information as it changes.

Tools can be used online or offline. If working offline, once a user reconnects to the space, it will be updated. Users customize a space by adding in only the specific tools of interest.

All information sent over the network is automatically encrypted using 192-bit encryption.

Table 1. Tools provided by Groove

Groove-provided Tools	Use of Tool*
Calendar	Manage the schedule of events and meetings for members of a space

Contact Manager	Share contact information with members of the space in this shared address book
Discussion	Conduct and maintain threaded, hierarchical discussions, optionally add file attachments to entries
Document review	Include files and comments to initiate a review cycle with selected members.
Files	Store, share, and preview files. Launch co-edit/co-review sessions for Word and PowerPoint files
Forms	Organize data in a structured and customized way, allows you to look at data in different views
Meetings	Set up meeting agendas, record meeting minutes, and assign action items
Notepad	Record multiple pages of presentation notes, instructions, or directions
Outliner	List, move, promote, and demote brainstorming ideas organized in rows
Pictures	Store, share, and view .bmp and .jpg files
Project Manager	Set up projects with the help of a wizard, manage tasks, and assignments
Sketchpad	Create sketches using lines, shapes, and even add text. Mark up a background image
Text	Collaborate on content with other members in an ad hoc manner. Write or edit a collaborative document
Web Browser	Store and share favorite links and co-browse Web sites
Welcome page	Include a picture and a summary message for the space

* material in this table comes from "Quick Reference Guide: Groove Workspace Basics" at http://ww.groove.net/pdf/QRG-WorkspaceBasics.pdf?tip=lc, accessed on 9/9/03

- Current Target audience:
  This product is currently focused at small to large businesses.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

0	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
1	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
3	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
2	Individual	3	Multiple dynamic paths through the product and more than one out come possible
2	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	2	Automated summary of data
1	Non-specific	3	SME controls AAR
3	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

This is a client-server product. Each user downloads client software that runs on their machine. For organizations with less than 100 users, the server software is hosted by Groove.

There are 2 versions of the product: Standard edition and Professional edition. The Professional edition provides additional integration with MS Outlook, works with MS SharePoint, and is designed for a business manager who uses mostly MS Office applications.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Full functionality comes from using MS Office products, however, users can share files and collaborate with each other without using MS Office. Full functionality includes the option of co-editing Word or PowerPoint documents and integration with MS Outlook. With the Professional edition, it can include integration with MS SharePoint.

c) Large multi-station system, or based on individual PCs?

Requires one or more PCs. Multiple user accounts can be set up on a single PC, so it does not require one PC per user. Requires a server; for less than 100 users, Groove provides hosting for the server software.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?
Web-based

f) Describe any debriefing after-action reporting support tools:
N/A

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).* **This describes the client software requirements**.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
MS Windows 98, NT 4.0, 2000, ME, or XP
b) Processor speed (in MHz):
Pentium 400MHZ or higher

c) Memory (SDR/DDR):
128 MB RAM

d) Free disk space:
160MB for software and data

e) Internet connection speed (if any):
56 kbps minimum. DSL, cable modem or LAN are better

f) Display adapter:
800x600, 15-bit color minimum
g) CD-ROM speed:
N/A
h) Optional accessory requirements[5]:

5. Describe the user interface characteristics:

The user interface is designed to be straightforward and simple to use, incorporating Windows-style drop-down menus and browser-like “back” and “next” buttons. Each user has a home page that shows their spaces, messages, contacts, etc. as shown in Figure 1. From here, a user can log into a space and access various tools – see Figure 2.

Figure 1. The welcome page

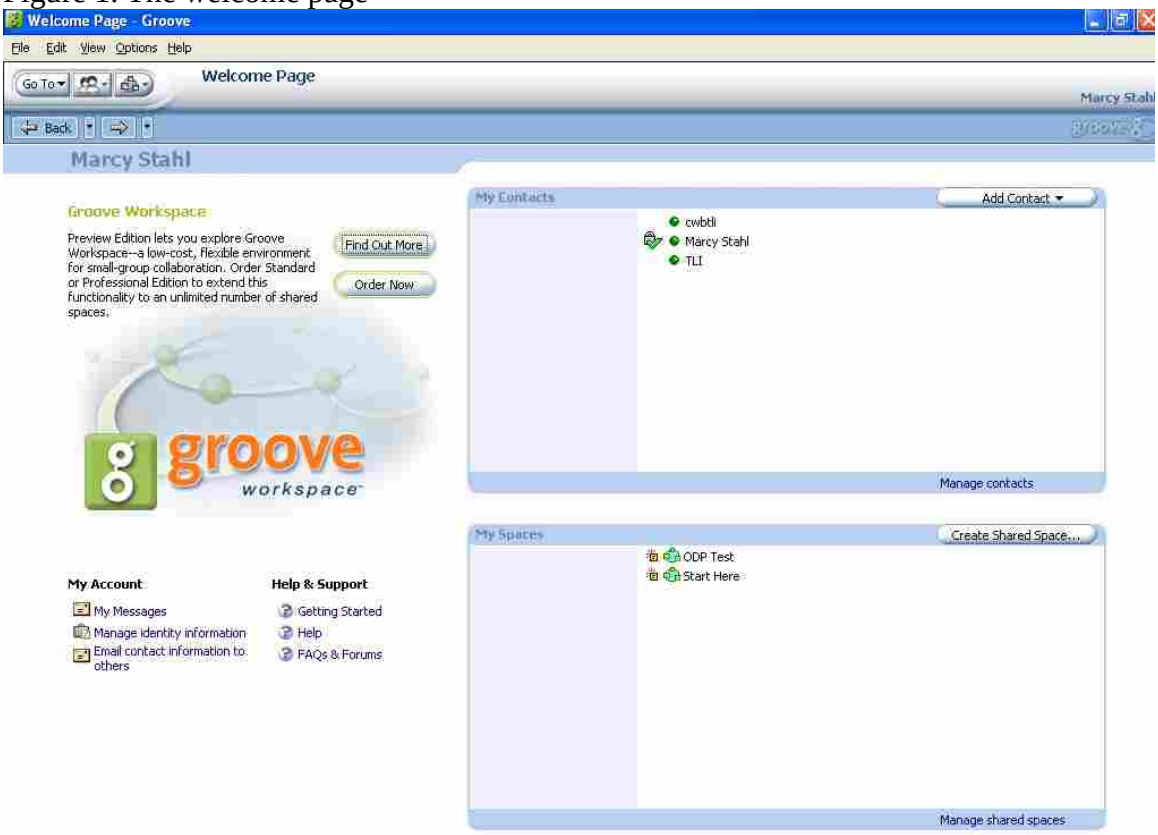
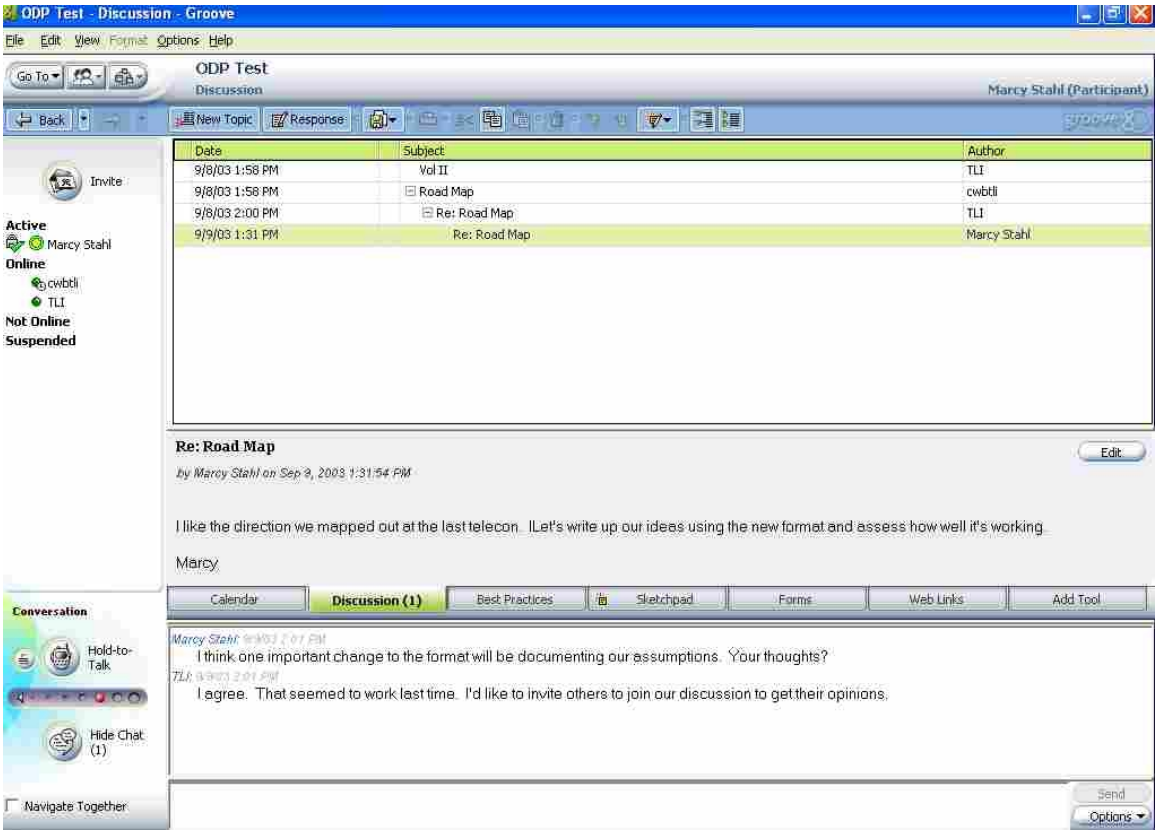


Figure 2. Using the Discussion tool and Text Chat



6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Within a space, the maximum number of users that can comfortably be active at the same time is about 25. Spaces can accommodate over a hundred users so long as not all are actively working simultaneously.

b) Number persons usually trained simultaneously?
N/A

c) Custom/proprietary hardware required? If so, identify:
N/A

7. Describe any user HELP features:
There is an extensive variety of help available, including a searchable Help section within the product, organized like a book with chapters and sections. At the Groove.net web site, help includes various Quick Start Guides, Best Practices, Flash demos, FAQs, forums, and online training. Classroom courses are offered at Groove's location or the customer's site.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
All information shared within a space is saved, unless the user chooses to delete it. This includes files, calendar information, emails and messages, text chat, etc.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Online training available via the web site.

2. Attributes

	Application Environment:		**Content**
2	Training	2	Knowledge
2	Exercise	1	Applied
1	Operational	0	Hands-on
0	Analysis		
3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
2	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
0	Intermediate	2	Awareness
0	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
1	EMS	0	Drills
1	EMA	1	TTX
1	Fire	0	FE
1	Govt. Administrator	1	FSE
1	Health Care	0	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		**Incident Stage Supported**
1	Public Works	1	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
0	Initial Acquisition	1	Recovery
1	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
None. User can add training materials if desired.
b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
None.
c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
N/A (This tool can support an exercise in that it can track communications and facilitate information sharing, however it alone does not constitute an exercise tool).
d) Exercise/scenario length/time(typical):
N/A
e) Potential equipment and/or facilities product can address:
N/A
f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable in that it facilitates communications by providing a common communications platform. However, it is designed as a generic tool and does not currently contain any counter-terrorism related content or templates.
g) Are there any constraints on supported exercises or scenarios?

This collaborative product does not come with any WMD-related training or exercise material. In order for it to be used in a collaborative T&E event, scenario material would need to be developed and transferred into a space.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
Potentially could be used for real-time discussions, web-based collaboration, as a communications tool and/or as information management tool.
b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)
N/A
c) How is training managed (e.g., Testing, certification of completion, etc.)?
Up to the user (I.e., if desired to be used for training)

d) Does a curriculum already exist? If so, briefly describe its form and content
N/A.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

This has the potential to be used in an intra-agency or multi-agency team training or exercise event, in which participants work collaboratively online. This could be done with an instructor/facilitator guiding participants through a process and controlling the timing, or it could self-paced (in a team vs. individual sense).

This could also be used as a repository for sharing T&E-related data, including case studies and best practices, which could be used by an individual.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Up to the user.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?
Groove can be customized by programmers who develop code that integrates with the Groove environment. In a T&E context, developers can create scenario content to add into the environment without any programming required.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
N/A

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Customer.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Potentially useful features are the archiving of communication information: logs of messages, email, and chat. However, specific analysis or AAR tools are not included.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium	X	Somewhat
X	Low		Limited
	N/A		
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
X	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
X	Decision-making
X	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
X	Remote Observation
X	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
X	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

For fewer than 100 users, only client licenses are needed. There are 2 versions of the software: the Standard edition is $69/user and the Professional edition is $199/user. For larger organizations, server software hosting would be needed at an additional charge.

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)	$69/user			$199/user
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Guard Force

Developer: Semi Logic Entertainments, Inc for the National Guard

Contact information:

9434 Deschutes Rd., Ste. 200
Box 923
Palo Cedro, CA 96073

530-547-3730
530-547-5723 fax

www.semilogic.com.
Glen Thompson, V.P. glen@semilogic.com

Technical Support Contact Information:

same as contact information also
National Guard Website, see below
1-800-GO-GUARD

Website: http://www.slegames.com/guard.html.
http://www.1800goguard.com/guardforce/info.asp.

COTS/GOTS: GOTS

Product status (version in use): version 2002

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
X	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

X	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet

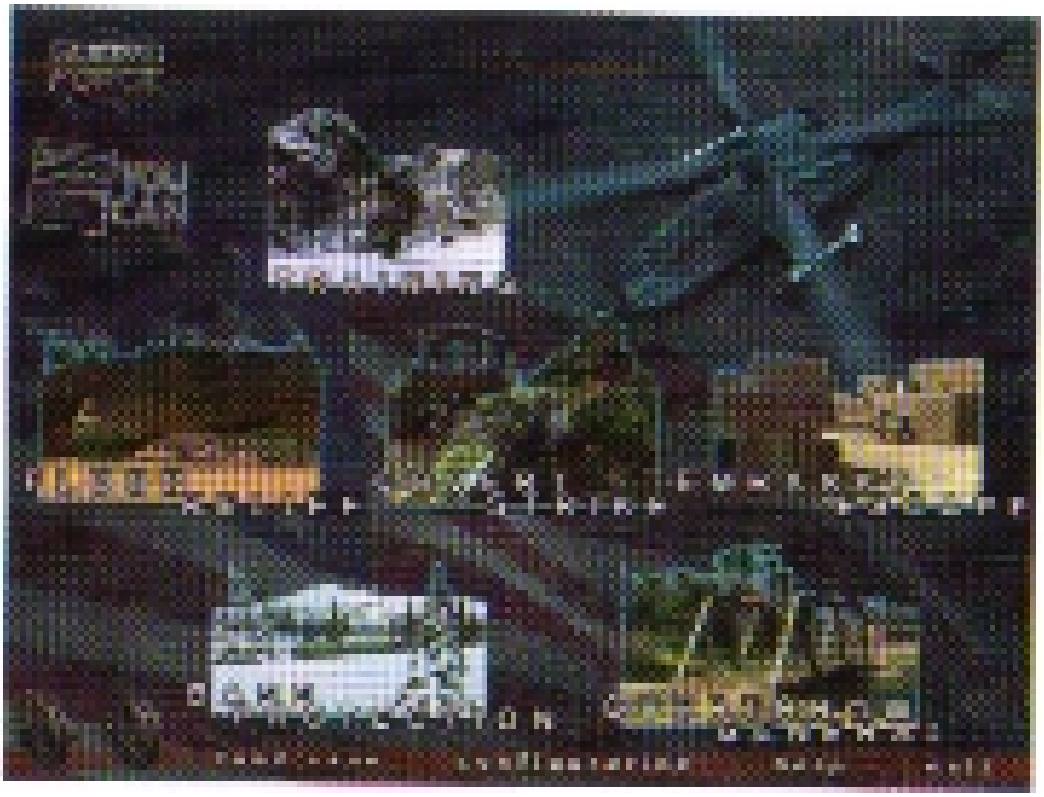
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

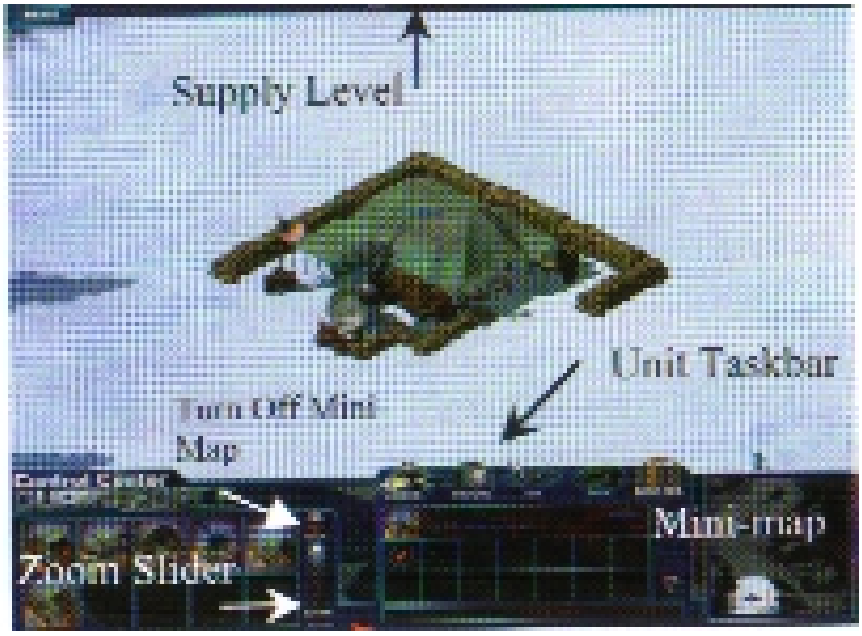
Guard Force is a computer game developed by Semi Logic Entertainments, Inc. for the National Guard in its effort to market the Guard to recruits. The game is primarily for entertainment by design. It is neither used for nor designed for training. It is a single player real time strategy game that requires you to build and defend a military base and perform other tasks that reflect National Guard missions. There are six missions for a player to complete including the training mission. The missions are Training, Flood Relief, Covert Strike, Embassy Escape, Base Protection, and Overthrow General. It is not a single-shooter game although you can order individual troops (e.g. snipers) to fire on the enemy. Building the base starts with a Headquarters building after which a player can add other types of buildings such as supply depots. Buildings can only be constructed if there are enough supplies. The cost of each building is provided. Each building has specific units attached to it (the Rotary Air Center deploys helicopters). You can move units and troops around as well as buildings and supplies. An enemy army will attack the base and your troops in each mission except for Flood Relief.

The enemy usually attacks with tanks, helicopters, and guns. It is difficult to tell the difference between your troops and the enemy because they look so alike on the screen. All of a sudden troops show up and there are explosions killing off the users resources. It would be helpful to be able to locate your own helicopters and tanks at this point and return fire to the enemy. If you the user can differentiate between friendlies and enemy then he can return fire, otherwise he is liable to be completely blown up and destroyed.

Anyone can access Guard Force by downloading the game from http://www.1800goguard.com/index.asp. The National Guard asks users to type in their email address and age. The Guard will then contact the user about joining the National Guard. Guard Force was created with a limited budget to allow the National Guard to evaluate its effectiveness. It is currently being revised and improved as the Guard has found it a useful element in their recruitment efforts.



This is the main menu. Courtesy of Semi Logic Entertainment, Inc.



This is in play mode. Courtesy of Semi Logic Entertainment, Inc.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

0	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
1	Game
0	Instructor/Facilitator Aid: Student Interfacing
0	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	1	Generic
1	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	0	Multiple dynamic paths through the product and more than one out come possible
0	Group	1	Static configuration: fixed path, only one right way to use the product
0	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	0	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Gaming (single player), 2-d topography with 3-d units. The tanks/buildings/planes are represented in 3d and the topography is 2d. There is a mini-map in 2d
1) 2-D TOPOGRAPHY WITH 3-D UNITS
2) FULL MOTION INTRO AND REWARD VIDEOS
3) INTERACTIVE TUTORIAL

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Standard PC Computer; if you download the game you will need an internet connection. If you obtain the CD-ROM from the National Guard you do not need an internet connection.

c) Large multi-station system, or based on individual PCs?

Individual PCs

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?

Single computer/system based application. The game can be downloaded from the internet or from a CD sent to the user by the National Guard.

f) Describe any debriefing after-action reporting support tools:

None.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 98 ME/XP, Windows 2000
Direct X 8.0A or higher included on disk

b) Processor speed (in MHz):
Pentium III 600 MHZ (Pentium III 800 MHZ or better recommended)

c) Memory (SDR/DDR): 64 MB RAM (128 MB RAM recommended)

d) Free disk space: 380 MB

e) Internet connection speed (if any): None to use, any to download although high-speed will be faster to download.

f) Display adapter: 3-D acceleration requires 32 MB 3-D video card

g) CD-ROM speed: 4x

h) Optional accessory requirements[5]: N/A

5. Describe the user interface characteristics:

Users see a large play area and the geography of it is 2d and the troops, units, buildings, planes, tanks, etc are 3d. There is a 2d mini map. Users can scroll the large map by moving the cursor to the edges of the screen, using the arrow keys, or pressing the right mouse button when the mouse cursor is over the mini map. The center mouse toggle can be used to move the view closer in or farther away. To move a unit select it by moving the mouse cursor over it and pressing the left mouse button to select and then move to cursor to the location that the unit should move to and select it by pressing the left mouse button again. To select more than one unit drag a box around them with the left mouse button held down. Units can also be selected by left clicking (pressing) the mouse over the picture in the resource menu on the lower left. Commands are given by moving the mouse and left clicking to select units, locations, load and unload troops, and select targets.

This reviewer found the game difficult to use because it was hard to differentiate between enemy and friendly troops. It was difficult to know how to respond to enemy attacks. Usually my forces were destroyed before I could even figure out which one to select and which one to target. It was also hard to know when you failed to meet objectives, for example the first time this reviewer played the flood relief I managed to rescue all of the civilians from the tops of their cars and houses. I even rescued the dog from a row boat. I placed sandbags in front of the road to protect it from the river. However, the mission kept going at that point with no indication as to what happened. I finally exited the mission and it said that the road had flooded. When this reviewer played it again I realized there was another section of sandbags to put down.

This reviewer asked the vendor about the level of difficulty and was told that people who are interested in gaming know how to navigate these types of programs and do not find it difficult to use.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
One

b) Number persons usually trained simultaneously?
N/A. Guard Force is a recruiting tool and not used for training

c) Custom/proprietary hardware required? If so, identify:
None

7. Describe any user HELP features:

Guard Force has a help menu that can be accessed by hitting H. There is an instruction manual if you receive the game on a CD-ROM. There is also a training mission that can be played prior to beginning the game that will educate users in how to play.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): None

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

There is a training mission that provides hands on instruction on how to play the game. It is labeled Training and involves learning to: navigate, select units, attack targets, build and deploy units, load and transport units. The game is played by using the mouse and moving the cursor and selecting units and targets, etc with a left click.

2. Attributes

	Application Environment:		**Content**
0	Training	0	Knowledge
0	Exercise	0	Applied
0	Operational	0	Hands-on
0	Analysis		
1	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	0	Commanders
1	Self-paced	0	Local Officials
0	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	0	Planning & Mgmt. (incl. ICS)
0	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
0	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
0	Explosion	0	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
0	EMS	0	Drills
0	EMA	0	TTX
0	Fire	0	FE
0	Govt. Administrator	0	FSE
0	Health Care	0	FSE Reinforcement
0	HazMat	0	Distributed Collaborative Exercise
0	Law Enforcement	0	National Training Exercise
0	Public Health		
0	Public Safety Communication		**Incident Stage Supported**
0	Public Works	0	Prevention

		0	Detection & Identification
	Learning Supported:	0	Response
0	Initial Acquisition	0	Recovery
0	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

There is no training content other than that provided to train users to play the game itself

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries): None

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): self-paced gaming missions.

d) Exercise/scenario length/time(typical): 20 minutes

e) Potential equipment and/or facilities product can address: None

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

No. A new product would need to be created to address counter-terrorism exercises.

g) Are there any constraints on supported exercises or scenarios?

N/A

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

N/A

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

N/A

c) How is training managed (e.g., Testing, certification of completion, etc.)?

N/A

d) Does a curriculum already exist? If so, briefly describe its form and content

N/A

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)): N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?

No.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario? N/A

c) Does the customer or the vendor modify or develop a new exercise/scenario? N/A

d) What is the process and how much time does it take to setup an exercise/scenario to run? N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): N/A

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**

0	High	**0**	Very
0	Medium	**0**	Somewhat
0	Low	**1**	Limited
1	N/A		
	Ease of Use		
0	Easy		
0	Relatively Easy		
1	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
0	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
0	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
0	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

This product is free to anyone who can download it from the National Guard website, you do not need to be a U.S. Citizen.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	0.00			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Guardian Suite

Developer: PeopleSoft

Contact information: Raymond Vigil
Business Development Manager
Peoplesoft, Inc.
Tel.: (877) 414-9212
Email: Raymond.Vigil@peoplesoft.com

Additional Contact information: Pierre Roulier
Program Manager
Peoplesoft Consulting
Tel.: (877) 709-7683
Email: Pierre_Roulier@peoplesoft.com

Website: http://www.peoplesoft.com Product status (version in use): 8.8

Date of Evaluation: 12/3/2003

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Guardian Suite is an integrated set of PeopleSoft's existing enterprise application software that includes solutions for recruitment, skills assessment, and deployment of the nation's first responders. It utilizes many of PeopleSoft's core software solutions, with some extensions built specifically for first responder business processes, to provide a comprehensive operational management information system that addresses the range of domestic preparedness processes: Plan, Prepare, Respond, and Assess.

- Current Target audience:

  Federal, state, and local government agencies involved in managing emergency planning and response.

- Potential equipment and/or facilities product can address:

Because the Guardian Suite is based on an integrated set of proven enterprise application software, it contains a broad range of functionality that can potentially be applied to planning, inventorying, and deploying a wide range of response assets.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Guardian Suite leverages existing functionality from PeopleSoft applications to address the challenges of homeland security, including the recruitment, assessment, training, and deployment of first responders. The applications provide a wide range of options for governments to construct their own information system solutions for homeland security. Guardian Suite aggregates and organizes data from many different sources through a customized web portal interface. As part of the solution, the Command Center Console provides a complete 360-degree view of personnel information and skills, enabling agencies to respond to a crisis with the right people and resources. In addition, the Command Center Console is designed to manage the information and communication needs of emergency command centers both in times of crisis and in the daily management of their workforces. It can be used to monitor emergency alerts, track resources and assess personnel skills, allowing users to manage emergency response from any location.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Guardian Suite is comprised of the following integrated application software components:

The Command Center Console

The Command Center Console manages the information and communication needs of emergency command centers both in times of crisis and in the daily workforce management. It is a flexible, user-defined collection of PeopleSoft applications that best suits the first responder needs of an organization. It monitors emergency alerts, tracks human and capital resources, and assesses personnel skills, allowing users to manage emergency response from any location. Emergency command center commanders can access critical information, analyze potential threats, establish a response plan, and deploy resources in real time. Aside from human capital information, agencies may also employ functionality to keep them abreast of their financial and supply chain information impacting first responder effectiveness.

PeopleSoft portal technology is the foundation of the Command Center Console. The PeopleSoft Portal gives ready access to planners, responders, employees, and suppliers to all information from all systems, in real-time. The Portal will give emergency personnel a customized real-time view of the information they need, based on their role and the emergency situation, to better respond to emergencies.

<u>Human Capital Management (HCM)</u>

The Guardian Suite includes Peoplesoft Human Capital Management (HCM) solutions for recruitment, skills assessment, and deployment of first responders. The Guardian's Command Center Console provides a single point of access to critical information that is pulled from the HCM applications. This provides a comprehensive view of personnel information and skills, enabling agencies to respond to a crisis with the right people and resources, in real time:

- Recruit critical personnel.
- Perform continuous skills assessments.
- Provide ongoing training from any location.
- Locate and mobilize critical resources.
- Identify and communicate urgent needs.

PeopleSoft claims that HCM, as a core component of the Guardian Suite, increases workforce productivity and reduces costs. Organizations can streamline human resource systems and processes for attracting, developing, optimizing, and rewarding their workforce. They can deploy self-service and align their workforce to drive organizational performance goals. Integrated workforce analytics deliver real-time insight so managers can take deliberate action to improve workforce performance.

Analytics

PeopleSoft provides pre-packaged analytics to help plan and assess preparedness of incidents from skills and training of first responders to tracking response times on incidents based on key performance indicators. PeopleSoft Enterprise Performance Management (EPM) technology integrates data warehouse tools and technology with analytic applications. Data is captured in the transactional systems (PeopleSoft or other vendors) and mapped to the warehouse. The analytic applications support analysis across the core functions of any organization.

For example, Workforce Analytics provides the ability to create response teams based on strategies, models, tasks, and competencies. Customer Relationship Management (CRM) Analytics enables you to analyze incident response performance metrics and look for improvements to feed back into the planning process. With Financial Analytics managers can analyze the cost to respond to incidents. The PeopleSoft Enterprise Warehouse collects, aggregates, and analyzes data from all front and back office applications to help responders make informed decisions in preparing and assessing their response to emergencies. The Enterprise Warehouse comes with a predefined data model, over 1200 business metrics, and over 1700 predefined ETL maps to connect to core business applications out-of-the-box. Improved business insight is available in real-time, and results can be integrated into core business applications via Web services to improve performance at all levels of an organization.

Application Integration

Guardian Suite includes an integrated set of technologies that unify responder access, connect processes between all systems, and consolidate data across all application environments. Because the suite of applications works "seamlessly" together, it reduces the need for expensive custom development and enables organizations to efficiently unify their entire operation.

To ensure seamless integration among multi-vendor business processes across the extended enterprise, a mechanism must be in place to route and transform messages between systems in real-time. PeopleSoft has developed the Integration Broker, using Web services standards such as XML and SOAP, to connect the Guardian Suite processes.

Financial Management Solutions

Guardian Suite consists of pre-mapped financial management pagelets that provide the ability to view and receive alerts, as well as act upon financial information that would be important to agencies regarding first responder activities. These include:

- Operating budget variance.
- Expense variances.
- Budget alerts.
- Expiring projects.

PeopleSoft Financial Management Solutions (FMS) enables agencies to extend financial transparency and accountability throughout an organization. PeopleSoft FMS combines best-practice business process models with robust transaction systems and comprehensive analytics solutions, all accessed through role-based pagelets.

The Suite is embedded with key performance indicators that enable organizations to represent vital pieces of information to first responder organizations, including the costs of first responder activities. Key performance indicators that will assist in this effort are:

- Available spending.
- Operating activity to plan.
- Projected activity to plan.
- Capital activity to plan.
- Projected capital expenditure to plan.

Incident Tracking and Deployment Management

Guardian Suite provides the ability to report incidents, track incidents, resolve incidents, deploy resources, and analyze the results. First responders will be notified of incidents and can be immediately deployed based on their competencies and type of incident activity.

Incident tracking and deployment management capabilities are provided via PeopleSoft Customer Relationship Management (CRM) solutions. CRM delivers pre-integrated, “best-in-class” applications for coordinating all incident tracking and deployment activities. Automated workflow ensures proper steps are taken to resolve the incident. Unresolved incidents are automatically escalated to the appropriate management level. Also available are embedded analytics that track performance measures and incident statistics for management and first responders to view in real time. In addition, the CRM component is integrated with Environmental Systems Research Institute (ESRI) mapping software, which allows responders to quickly deploy resources through visual representation of incidents on a map. The following pagelets/alerts are part of the Command Center Console:

- Incident overview—A summary of incidents along with status or alert level.
- Deployment overview—A summary of first responders who have been deployed and their locations.
- Analytics—Reporting capabilities to track incident response statistics and perform cost analysis.

To provide a real-time view of where responders are at all times, PeopleSoft's CRM mobile technology can send and receive critical information to/from responders' en route to, or at incident scenes.

Procurement and Supplier Management

First-responder organizations are significantly dependent on the supplies necessary to carry out their duties. Pagelets within the PeopleSoft enterprise solution enable commanders and supervisors to track information on purchase history, procurement, and billing details. The following pagelets enable assistance in these areas:

- Most recent bills.
- Most recent consolidated bills.
- Account balances.
- eProcurement worklist—showing items requiring approval.
- Recent orders.
- Recent quotes.
- Invoice summary.
- Purchase/shipment summary.

The Supplier Relationship Management (SRM) application provides the processes, controls, and measures to control spending and optimize supplier performance.

b) Large multi-station system, or based on individual units/PCs?

Guardian Suite is an enterprise-level system capable of supporting a large number of dispersed users. The PeopleSoft Internet Architecture is a completely server-based architecture. Using the Internet Architecture as the foundation, agencies can provide a wide range of end users with access to PeopleSoft applications over the Web, as well as integrate PeopleSoft applications with existing internal and external systems. The n-tier architecture is designed to be open, secure, scaleable and extendible. Clients to this architecture can be nearly any kind of Internet access device:

- Web browser running on a PC or Macintosh
- Wireless device or cell phone
- External or third-party system with XML/HTTP protocols.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

As a combination of application software solutions, Guardian Suite requires an enterprise-level infrastructure platform (computer system hardware, operating system software, database software, networking equipment etc.) upon which to operate. PeopleSoft provides a choice of infrastructure platforms on which to run its Guardian Suite applications. Mainframe, UNIX, and NT operating systems are supported, as are

IBM, Microsoft, Oracle, and Sybase databases. In addition, IBM WebSphere or BEA WebLogic is bundled with all Peoplesoft applications.

Each PeopleSoft application resides in its own database and coexists with other PeopleSoft applications regardless of their release version. Customers can deploy and upgrade applications without affecting an existing PeopleSoft implementation running a different version.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not applicable.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Information technology infrastructure platform on which to run applications. Mainframe, UNIX, and NT operating systems are supported, as are IBM, Microsoft, Oracle, and Sybase databases. IBM WebSphere or BEA WebLogic is bundled with all applications.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Application and Database Servers: Sun Solaris, IBM AIX, Compaq UNIX, HP-UX, Windows NT/2000, DB2 on OS/390, etc.

Clients: Any PC, Macintosh, or Linux system supporting standard Web browsers (supporting HTML and JavaScript); any wireless device or cell phone supporting WML and WMLScript (WAP) standards; and external or third-party systems communicating with the Peoplesoft Internet Application Server using XML and HTTP standards.

b) Processor speed (in MHz):

Application and Database Servers: Specification of server hardware must be done in conjunction with hardware vendors and system integrators that partner with Peoplesoft.

Clients: 800 MHz Pentium or equivalent processor. CPU speed affects HTML page rendering and refresh time.

c) Memory (SDR/DDR):

Application and Database Servers: Specification of server hardware must be done in conjunction with hardware vendors and system integrators that partner with Peoplesoft.

Clients: 48 MB RAM minimum, 256 MB RAM preferred.

d) Free disk space:

Application and Database Servers: Specification of server hardware must be done in conjunction with hardware vendors and system integrators that partner with Peoplesoft.

Clients: No Peoplesoft code installed on the client. Standard Internet devices that access Guardian Suite should already have all the software and configuration required.

e) Internet connection speed (if any): Dial-up through broadband speeds supported.

f) Display adapter: Depends on client device type.

g) CD-ROM speed: Not applicable

h) Optional accessory requirements:

Web Browsers and Web Servers -- PeopleTools 8.42 supports the following web browsers on Windows platforms:

- Microsoft Internet Explorer 5 and later
- Netscape Communicator 4.7x (also on Linux and Unix)
- Netscape Navigator 6.2x

PeopleSoft supports the following web servers with PeopleTools 8.42:

- BEA WebLogic Server 6.1
- IBM WebSphere Server 4.0

PeopleSoft supports the WebLogic and WebSphere servers across the following operating systems:

- Windows NT4
- Windows 2000
- HP-UX 11 and 11.11(i)
- AIX 4.3 and 5.1
- Solaris 7 and 8
- Tru64 Unix 5.1
- Red Hat Linux 7.2

PeopleSoft packages and supports two Java servlet engines with PeopleTools 8.42:

- BEA WebLogic Server 6.1
- IBM WebSphere Server 4.0.

3. Describe the user interface characteristics:

- The PeopleSoft interface provides a consistent browser-based “look and feel” across all applications with toolbars, error messages, online help, menus, and navigation tools (e.g., hyperlinks, Back and Forward browser buttons, bookmarks, search etc.). The PeopleSoft Enterprise Portal provides a centralized interface to Guardian Suite applications as well as third party and legacy applications. It provides a consistent Web page graphics designed to improve user efficiency of in operational tasks. The browser-based applications provide a simple and intuitive user interface for individuals with limited computer skills. End users just click on a hyperlink to enter the PeopleSoft applications, and users who access the applications frequently can bookmark the PeopleSoft system in their web browser.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

There are no limits to the number of users allowed to access the system. BEA Systems Tuxedo provides enterprise level scalability, load balancing, failover, and pooling and caching of transactions. PeopleSoft typically works with the customer's preferred hardware vendor to properly size the servers for robust performance, reliability, and scalability.

b) Custom/proprietary hardware required? If so, identify:

Third-party hardware and software are required to operate Guardian Suite. PeopleSoft applications operate on a wide range of computer hardware. Mainframe, UNIX, and NT operating systems are supported. A third-party relational database management system (RDBMS) is required from such vendors as IBM, Microsoft, Oracle, and Sybase. In addition, transaction and web services middleware is necessary, such that IBM WebSphere or BEA WebLogic is bundled with Guardian Suite.

PeopleSoft has an alliance with many hardware vendors and integrators that can help determine the right hardware for a customer's environment. SUN, IBM, Compaq, DELL, and HP have extensive knowledge of PeopleSoft applications and can provide technical assistance for hardware sizing. PeopleSoft anticipates customers will choose a platform and RDBMS system that they are familiar with or have expertise for as it makes sense from a cost and support perspective.

5. Describe any user HELP features:

PeopleSoft delivers online context sensitive help called PeopleBooks. PeopleBooks is HTML based and fully accessible from a web browser. It is integrated with the Verity search engine for contextual searches of information.

All PeopleSoft system messages are displayed to the screen and need to be acknowledged by the end-user prior to moving forward. Error messages provide a detailed description of the message and these error messages can be configured via the error message catalog to meet a customer's specific needs. Error messages generated off of certain fields will move the cursor back to that field. End-users can click on the "Help" hyperlink for contextual help based on the current highlighted field.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

PeopleSoft Education (PSE) provides training worldwide on PeopleSoft software applications. Through PSE, the customer's project team will learn how to structure the software to make it

most productive for the specific organization's needs. Their complete, blended course curriculum uses alternative delivery vehicles including Web, CD, and classroom (over 150 training centers worldwide), to deliver training where, when and how it is needed.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

No WMD-specific content is supplied with Guardian Suite. Database content is provided by the customer.

b) Time required for a typical exercise or scenario (if applicable):

Not applicable.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The applicability of Guardian Suite to domestic preparedness training and exercising depends largely on customer intent. For example, the Command Center Console is an operational interface allowing real-time incident response coordination and management. It may be possible to use this application and others (the Call Center and Field Service Dispatch applications) in a variety of operational training or exercising roles, with or without modification. The Field Service application could be modified to provide MSEL functionality to drive exercises. The Human Capital Management solution can be used to track the recruitment, training, certification and licensing of emergency responders (as it does for all U.S. Army personnel). The Financial Management application can be used to manage the programmatic aspects of running training sessions and exercises, including tracking all necessary goods/assets required.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Not applicable.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

The Guardian Suite per se is not supported by an existing curriculum. However, the underlying Peoplesoft applications are supported by Peoplesoft Education (see D.1 above).

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Not applicable.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Not applicable. The Field Service Dispatch application may be modified to provide MSEL support.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

As an operational management information system, Guardian Suite supports real-time collection, integration, and analysis/display of a wide range of emergency information. Given its standards-based Internet architecture, Guardian Suite can communicate with a wide range of fixed and mobile Internet access devices that could be deployed for both training and operational purposes. Such capability could support messaging for multiple uses such as participant cues, controller injects, data collection etc.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Guardian Suite can aggregate and organize data from many different sources through a customizable portal interface. The PeopleTools Development Environment allows customers to develop as many custom data input screens (Web pages) and fields as necessary. Output reports and files can also be developed using the reporting and integration tools bundled with the PeopleSoft applications such as Query, Crystal, SQR, and Application Engine.

PeopleSoft Consulting (PSC) can assist in implementing, upgrading, and optimizing PeopleSoft products to improve organizational performance. PSC provides a range of tailored delivery options to ensure accountability for project failure or success. PSC expertise can help in maximizing functionality of the software according to customer objectives; reducing timelines and costs; and minimizing specialized customizations.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Not directly applicable.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

See the discussion of analytics above.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation

	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
X	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	1	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	0	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
2	Individual	3	Scenario replay
2	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
1	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	0	Standalone
		0	LAN
	Environment	0	WAN
1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training	1	Knowledge
2	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		

0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
2	Explosion	0	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	1	Drills
1	EMA	2	TTX
2	Fire	1	FE
1	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
2	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
2	Public Health		
1	Public Safety Communication		
2	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
Medium
Low
X N/A *(User provides content)*

Ease of Use
Easy
X Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP
Very
X Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
0 Tracking participant performance through multiple tries (automation)
2 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

2 Simulation Support

Selected FSE Observations: product allows for/can be used for:

0 Remote Observation
2 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) <u>No, Vendor must quote a system based on user requirements</u> (*end here*)

2) Does the cost apply to: *(choose one)*
   a) Product
   b) Service
   c) <u>Product & Service Bundle</u>

3) Product (content) configuration, as priced, is: *(choose one)*
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: *(fill in all applicable)*

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Hazard Prediction and Assessment Capability (HPAC)

Developer: Defense Special Weapons Agency (DSWA)

Sponsored by the Defense Threat Reduction Agency and Strategic Command of the U.S. Department of Defense (DoD).

Contact information:
Consequence Assessment Branch (TDOC)
Defense Threat Reduction Agency
8725 John J Kingman Road MSC 6201
Fort Belvoir, Virginia 22060-6201
HPAChelp@dtic.mil
Phone: (703) 325-6106
FAX: (703) 325-0398

Technical Support Contact Information:
Same

Website: http://www.dtra.mil/td/acecenter/td_hpac.html COTS/GOTS: GOTS

Product status (version in use): Version 4.0 (versions 4.0.1 and 4.0.3 are available upgrades)

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in TLI Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  HPAC is a 3D plume model consisting of codes and data that calculate probabilistic dispersion, transport and ground deposition of hazardous nuclear, biological, and chemical materials released to the atmosphere. The model is linked to worldwide population information to estimate the acute and long-term doses of various releases (e.g., how many people are being exposed to potentially dangerous concentrations of such materials) at a one-kilometer resolution

- Current Target audience:

  United States DoD, government users (FBI, CDC), military (CINCS, JFCOM, CBIRF), and civilian users.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
1	Instructor/Facilitator Aid: Student Interfacing
2	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	2	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	0	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay *(plume map redisplay)*
	Applied Context	1	Automated summary of data

1	Non-specific	3	SME controls AAR
0	Equipment	3	Does not provide feedback or AAR
		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

HPAC is software code that models CBRNE dispersion and potential affects on civilian and military populations in local to regional areas. It can be used independently or integrated into other HLA-compliant systems (e.g., CATS – Consequence Assessment Tool Set).

HPAC consists of several components:

- SCIPUFF is the atmospheric transport model. SCIPUFF utilizes a second order closure model for turbulence. There are six incident and source term description modules contained in the Hazard Assessment System for Consequence Analysis code (HASCAL): Nuclear Facility, Biological Facility, Chemical Facility, Nuclear Weapon, Chemical/Biological Weapon, and Radiological Weapon.

- The SWIFT mass-consistent wind field model for flow over terrain (derived from Electricite de France models). The graphical user interface (GUI), provides flexible input for all types of particle, liquid and gas hazard sources through SCIPUFF advanced editor. The worldwide climatology database on the HPAC CD allows assessment of typical and climatic bounds on hazards transport.

- The worldwide terrain elevation database at 1 km horizontal resolution is used with the SWIFT model. HPAC accesses weather data from multiple sources. Standard weather reports available over the Internet can be imported into HPAC readable formats. Additionally, DSWA maintains Meteorological Data Servers that provide up to date weather observations and wind field forecasts worldwide.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Standalone product, but can be integrated into other systems.

c) Large multi-station system, or based on individual PCs?

Based on individual computers using either PC or UNIX platforms.

d) If simulation models are used, what is the basis of the data and/or distributions used?

All quality assurance documentation: Bradley, S., et al., "Initial Verification and Validation of HPAC 1.3", Defense Nuclear Agency, DNA-TR-96-8. Bradley, S., et al.,

"Verification and Validation of HPAC 3.0", Logicon Corporation, LRDA-TR-211-8261-3103-001, June 1998. (To be published as DSWA Technical Report (TR)).
Benchmark runs: 17 Test Cases are used with various options turned on and off to ensure verification standards between versions. These cases are documented in Table 4-1 of Bradley, S., et al., "Verification and Validation of HPAC 3.0", Logicon Corporation, LRDA-TR-211-8261-3103-001, June 1998. (To be published as DSWA TR). Many of these benchmark tests are run against data referenced in Attachments A and B.
Validation calculations: DSWA has an active and extensive HPAC Verification and Validation Program. This program is reflected in Attachments A and B.
Verification with field experiments that has been performed with respect to this code: 770 events with thousands of data points have been compared to HPAC predictions. These are documented in the V&V documents by Bradley et al. Data points are listed in Attachments A and B.[14]

e) Web-based application, LAN, or a single computer/system-based application?

HPAC is currently deployed by DTRA as a standalone PC version in which a single PC is used for data storage, model calculation, and graphical display. Other government organizations (e.g., Oak Ridge National Lab) have worked on developing a thick client version for use on a secure client-server local area network (LAN). Web-based instruction, help and user resources including technical help are available.

f) Describe any debriefing after-action reporting support tools:

Not applicable.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Apart from the computer, the user determines facility/space requirements.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Microsoft Windows 98, XP Professional, 2000, and NT4.0.

b) Processor speed (in MHz): 300 MHz

c) Memory (SDR/DDR): 128 MB

d) Free disk space: 150 MB

e) Internet connection speed (if any): N/A

f) Display adapter: Industry standard

g) CD-ROM speed: Industry standard

[14] www.ofcm.gov/atd_dir/pdf/hpac.pdf

h) Optional accessory requirements[5]:

5. Describe the user interface characteristics:

HPAC has a graphical user interface (GUI) that allows for keyboard and mouse inputs, and uses multi-layer maps for output display. Data can be exported in a variety of formats including ArcView. The project editor allows for basic or advanced model inputs. While rapid model development is supported by "smart" default values based upon limited descriptive inputs, more accurate models can be generated using advanced editing features.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

HPAC code can support any number of independent system installations. A standalone HPAC system may be used concurrently by a small group or team for training or exercise related purposes as constrained by the interface.

b) Number persons usually trained simultaneously?

HPAC itself is not a training medium but may be used for training and exercising. The number of participants to which HPAC might apply would depend upon training and exercise design.

c) Custom/proprietary hardware required? If so, identify:

No proprietary hardware is required to run HPAC code. HPAC, as integrated into other systems, however, may require purchase of other proprietary software and/or hardware.

7. Describe any user HELP features:

The software has an online, context-sensitive Help feature.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Not applicable.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Beginning, advanced, executive classes, as well as Web-based instruction, are offered to registered HPAC users by DTRA on a regular basis. For the 2003 training calendar see: http://www.dtra.mil/td/acecenter/td_training.html.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	2	Pre-Training
0	EMS	2	Drills
1	EMA	2	TTX
2	Fire	1	FE
1	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
1	Public Health		
0	Public Safety Communication		**Incident Stage Supported**
1	Public Works	2	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Not applicable.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

m. World-wide climatology database
n. Source term databases (Nuclear Facility, Biological Facility, Chemical Facility, Nuclear Weapon, Chemical/Biological Weapon, and Radiological Weapon.)

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

User dependent. HPAC would be appropriate for simulation-supported exercises, and potentially other exercise types.

d) Exercise/scenario length/time (typical):

User dependent.

e) Potential equipment and/or facilities product can address:

HPAC can be used to model nuclear, biological, and chemical facilities as sources.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

HPAC is applicable to counter-terrorism T&E without modification (either as a standalone application or, potentially, as a module in other systems).

g) Are there any constraints on supported exercises or scenarios?

The code supports local to regional spatial modeling, but does not calculate the effect of individual structures (and, therefore, may be unsuitable for accurate dispersion modeling in intra-city landscapes). HPAC requires typical execution time between one and ten minutes, and may therefore be unsuitable for uses requiring faster computation.[15]

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

There are multiple means by which HPAC could be incorporated into an instructional/training system including classroom, TTX, FSE, CBT and web-based education. It is incumbent upon the instructor or trainer to determine how to incorporate plume modeling into the training curriculum.

[15]. Integrated Chemical and Biological Defense Research, Development and Acquisition Plan – Chemical & Biological Point Detection, Decontamination, Information Systems, April 2003, p. 56. Accessed on 8/28/03 from http://www.nti.org/e_research/official_docs/dod/2003/dod0403.pdf

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

Not applicable.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

User dependent.

d) Does a curriculum already exist? If so, briefly describe its form and content.

HPAC does not support a given training or instructional curriculum. However, the curriculum DTRA uses to support user training may possibly serve as a basis for such a curriculum.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Not applicable.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Not applicable.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Not applicable.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Not applicable.

6. Customization

a) Can the product be customized? If so, how, and by whom?

HPAC is maintained and updated by DTRA. It is not a user customizable product.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Changes to exercise design are user dependent. Scenario changes, in terms of modifying input variables for recalculating a model may take a user in the range of minutes to tens of minutes depending on complexity.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

There is no vendor support for exercise scenario development as part of HPAC software. The user can produce new or modified dispersion models.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

User dependent.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
1	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
0	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal) [16]	$0			
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				

[16] HPAC code is free to registered government and civilian users approved by DTRA.

Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Homeland Security Response Action Model (HLS-RAM)

Developer: Software written by Advanced Technology Systems, McLean, Virginia for the Joint Forces Staff College

Contact information:
Claire Marie
mariec@jfsc.ndu.edu
Joint Forces Staff College
7800 Hampton Blvd
Norfolk VA 23511-1702
757-443-6542

Website: Product status (version in use): v 1.56

Date of Evaluation: 10/24/03

Source(s) of Evaluation: *check all that apply*

X Observed Product in use during a training or exercise
X Observed Demo
Played/Used product
X Attended Briefing
Reviewed CD-Rom or other software
Reviewed Website
X Spoke/emailed with POC
Interview(s) with Product Users (please paste into the end of this document)
Product developer filled-in evaluation form
TLI team modified evaluation form

Materials in our Possession:

X Brochure/Prospectus
CD-Rom
Related Papers
Material from Internet
X Other: please state *HLS-RAM Briefing dated 10/29/03, Student Guidance Vol II for Lessons 9 and 10: Exercise Purple Guardian*

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Incident response training and exercise. In DOD terms, this is used primarily for operational level exercises, though it might have strategic or tactical uses as well.

- Current Target audience:

  As currently used at the Joint Forces Staff College (JFSC), the audience is DOD and civilian US government (USG) officials who would participate in the Federal response to a WMD event. As described below, the simulation could easily be customized, via text input files, for any jurisdiction, thus extending the potential target audience to city or state officials who would be involved in planning and executing the response to a WMD event. This could include first responders as well.

- Potential equipment and/or facilities product can address:

  XML-formatted text data files containing types, locations, and quantities of actual or generic resources are read into the simulation. Users make decisions regarding the movement/deployment of those resources. Currently, these unclassified data files define DOD units that might be involved in WMD response and their equipment. The simulation operates from inputs in a very generic way, so any data file for any city/state/region could be substituted immediately, with no changes required to the simulation.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  HLS-RAM could be used as a stimulus for decision making, coordination, and communication in a functional exercise or TTX. One unique aspect is the ease with which a jurisdiction's resources and terrain can be played. XML-formatted text files are inputs describing resource types, starting locations, and quantities – this means that any jurisdiction, of any size, could create a text file and have their assets immediately appear in the simulation. HLS-RAM relies on GOTS map data – any jurisdiction represented in MapInfo can be played in the simulation. The simulation of resource movements, chemical or radiological plumes, and potential number of casualties is fairly simplistic – user actions do not affect plumes or casualties, so this product is more an exercise driver or stimulus than a simulation.

  HLS-RAM main purposes are to 1) drive decision-making and coordination among participants and 2) do course of action analysis. It lets participants play out a response plan (subject to HLS-RAM's simulation constraints) and promotes interaction among groups of participants.

  It is an exercise driver with a very limited adjudication capability. There is minimal simulation in HLS-RAM: the movement of assets, a simplistic creation of a plume, and a notional number of casualties. The entire scenario is pre-scripted and changes during execution occur in only two ways. 1) Players can decide which units to move and where

they're going. Unit movement can also be pre-scripted. However, the arrival of units at the scene does not change the plume in any way – only controllers can change the plume. 2) Controllers can directly change the plume or alter message traffic.

As used at JFSC in exercise Purple Guardian, participants are role-playing DOD staff at NORTHCOM. They receive email messages containing scenario events and they watch news videos. Participants can see a map view, ranging in resolution from the entire country down to individual streets, showing the location of resources and any plumes.

Participants can view lists of units, their current location, and their equipment. They can then decide to move these units to affected areas, responding to the events. Those decisions are passed to exercise controllers, who actually interface with the model and make any changes. The effect of resources is not simulated – when units or equipment arrive at the site of a chemical or radiological release, they do not mitigate the plume effects.

Participants can email the various groups simulated during the exercise, some of which are being played by participants (e.g., the operations group within the staff or the logistics group) and some are played by the white cell, typically including FBI, FEMA, DHHS, DHS, and state or local responders. So when an email arrives stating the DHS or the FBI is doing something, participants can email that group, asking for status, and the white cell would respond. In 2004, JFSC plans to upgrade this by adding more pre-scripted responses from these other agencies describing their anticipated activities during the scenario.

The simulation is controlling the plume, based on user inputs of its emission rate, lethal and minimum concentrations, wind speed, and direction. This is a very simplified model. A number, showing the casualties, is displayed by the plume depiction on screen; this number is based on a rate entered by the scenario developer – it is not driven by the plume effects within the simulation.

The simulation can run from real-time to 3600 times faster than real time.

It was developed to run under Windows 2000, over a local area network but JFSC doesn't have the right operating system to test it out. If they had Windows 2000, it should immediately be able to run over a LAN. Currently, JFSC uses it running on one PC, with several other PCs showing the user interface (one PC per group, each group can change their display of the simulation but cannot alter any inputs to the simulation), plus one PC with a projector for a large-screen view.

"Scenario developers work directly in the model to build scenario events, unit information, map data and message traffic. Audio/video injects can also be linked as well as other reference material to include student lessons, web sites and simulation documents relative to each exercise. The system allows the developer to design anywhere from a totally scripted exercise to any desired level of "hands-on" student participation.

Simulation Attributes:
1. Units. Create new or incorporate user defined entity/unit information databases in digital format....

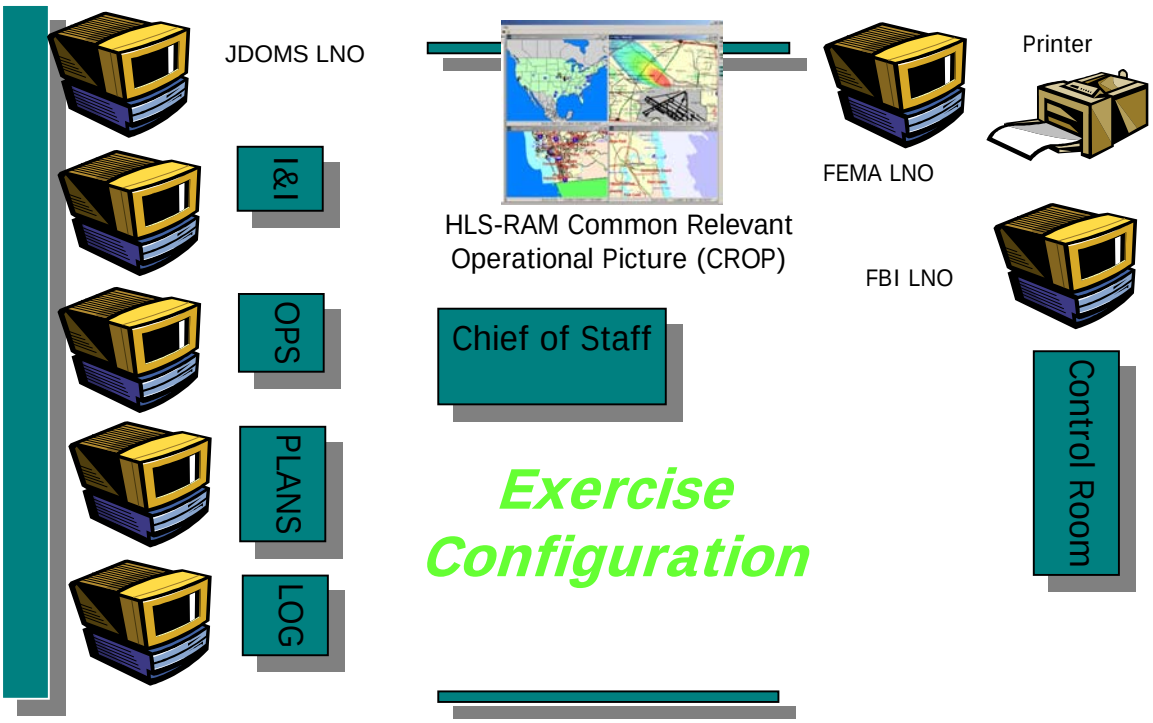
2. Maps. Incorporate non-proprietary mapping data. May also use commercial, proprietary or other user supplied digital and raster maps.
3. Messages. Uses standard military message traffic format or import/create user specific format. Messages may be pre-scripted or created "on-the-fly".
4. Newsgroups. Message traffic is dropped at a preset time or triggered manually to specific newsgroups on LAN workstations.
5. Command and Control. Standard drawing tools create user-defined objects; real-world distance and time factors provide "reality check" for response plans created by participants.

Homeland Security Scenarios
Purple Guardian: Crisis Response/Consequence Management exercise with three distinct scenarios: terrorist related chemical train derailment in the Midwest, enhanced chemical truck bomb explosion on the West Coast and a rogue liquid natural gas ship on the East Coast
Purple Island: Enhanced radiological devices – "dirty bombs" – isolate East Coast city"
[From the HLS-RAM tri-fold brochure as of 1 Dec 2003]

Use of HLS-RAM in Exercise Purple Guardian

When used at JSFC for their 5-day homeland security planners course, the last day is devoted to use of the HLS-RAM simulation in exercise Purple Guardian. Students are divided into small groups and role play various NORTHCOM staff activities, e.g., Logistics, Operations, Plans, Information & Intelligence, Chief of Staff, and the Knowledge Management officer. A scenario containing 51 messages unfolds over about 4 hours real time (about 52 hours in scenario time): it begins with a chemical explosion on a train in St. Louis requiring large-scale evacuation and medical treatment, determined to be a terrorist attack and so the Federal Response Plan is initiated. As the scenario unfolds, there are also explosions in San Diego and a suspicious ship traveling directly towards the coast of Florida. The students are asked to identify potential missions they might undertake and determine the availability of resources. At various points in the scenario, they brief the Chief of Staff role player on their views.

The following figure shows the setup of HLS-RAM at JFSC.



Students consider the larger Consequent Management Course of Action issues:

- what's the end-state
- who's in charge
- who's the enemy
- what can DOD contribute (considering risks of action as well as inaction)
- what is recommended force composition and allocation of resources and actions.

Part of what they do is resource management: if DOD is asked to help provide medical assistance for the chemical explosion in St. Louis, what kinds of medical teams are available and where are they located, what kinds of specialized equipment is available and where, how long would it take to transport those assets to St. Louis, and is it desirable to begin that transport? What if this is a feint and the larger threat shows up elsewhere in the US, after resources have already been committed to the Midwest?

Another part is to interact with other USG agency groups – this is currently not fully fleshed out. Via email, questions can be sent to FEMA and FBI "liaisons" and limited information is returned. The liaisons are played by supporting white cell players who are not SMEs; the white cell responds to these emails. For 2004, plans are in place to develop more scripted activity representing FEMA, FBI, and DHS actions that would likely occur in this scenario

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

HLS-RAM runs on one computer, with potentially many views displayed on additional computers, but note that participants at the additional computers are looking at or manipulating only the display of information – they are not interfacing with simulation itself.

The major components are the messages and audio/video injects; the underlying simulation of resources and a very simplified plume model; and commercial map data.

b) Large multi-station system, or based on individual PCs (if applicable)?

Runs on one PC – additional PCs can provide a read-only interface.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

It requires MapInfo software. Optionally, more detailed GIS data at the street level, found in StreetPro software, can be added but is not required for operation.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Data for DOD resources currently used at JFSC come from unclassified sources. Parameters controlling the plume display and simulated casualty rate are input by exercise controllers.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

For use with a group/team, depending on its size, additional PCs would be used to provide multiple views for various sub-groups. Most likely it would be used in conference room with projector for a large-screen view, but that's not required.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Win2000 w/service pack 3. Direct X 7.0 or higher

b) Processor speed (in MHz): 1.5 GHz

c) Memory (SDR/DDR): 256 MB, Video memory 32 MB

d) Free disk space: 500 MB for the simulation – the maps require extra space

e) Internet connection speed (if any):

f) Display adapter: Screen resolution 1024 X 768

g) CD-ROM speed:

h) Optional accessory requirements: CD ROM, 2 button mouse

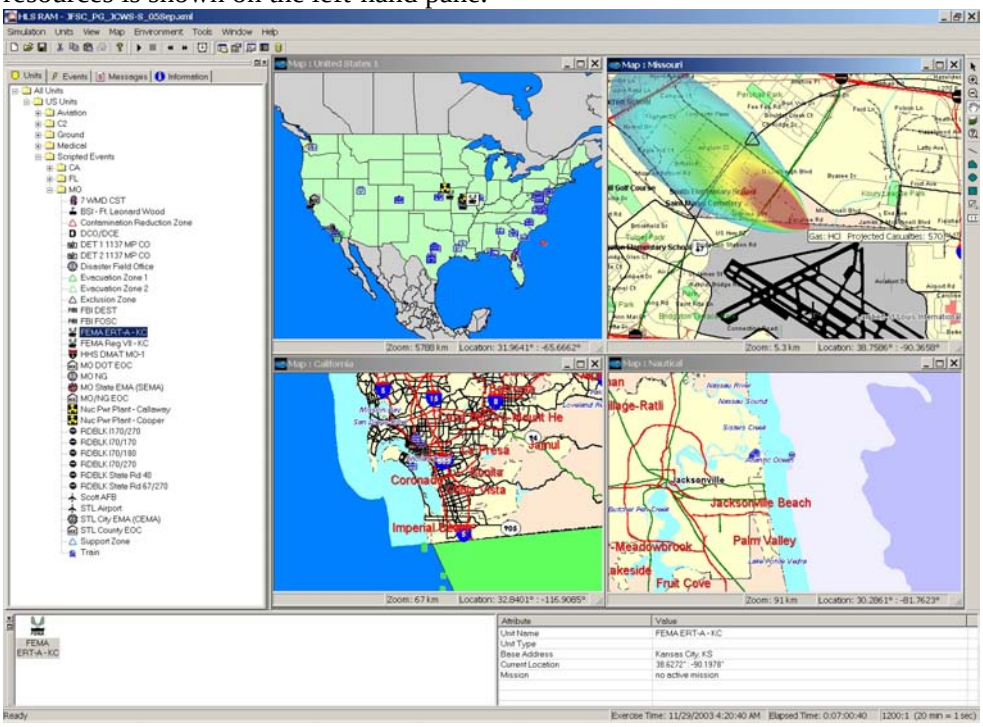
3. Describe the user interface characteristics:

The users see a map view, which they can zoom in and out, and a hierarchy of resources they can collapse and expand, moving to finer levels of detail and ultimately getting down to an individual resource. They also have an email interface, so they can receive email injects and send email to other groups in the exercise. They may also view video injects at their PC.

There are some tools referred to as "command and control tools" that let users measure distances on the maps and mark out zones around plumes or anything else on the map.

Users also have an online reference library with various documents and links to relevant web sites.

In the figure below, 4 map views are shown, at varying levels of resolution, and a list of DOD resources is shown on the left-hand pane.



4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The minimum is one; the maximum has not been reached. JFSC has used it with 40 people. In simulation terms, the maximum is probably limited by the number of participants that can effectively be working together.

b) Custom/proprietary hardware required? If so, identify:

None required.

5. Describe any user HELP features:

None available yet. JFSC is currently developing a user manual for users and exercise developers.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Scenario events are captured, as are resource movements: which units were tasked and how long it took them to move from their original position to the final position.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

No training provided now. Users immediately start working with HLS-RAM. There is an older training manual and a new one currently being developed, estimated to be finished by January 2004.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Currently have 2 scenarios available: Purple Island (PI) and Purple Guardian (PG). PG has 3 major events: derailment of a train carrying chemicals outside St. Louis, enhanced chemical truck bomb explosion in San Diego, and a rogue ship heading directly for the coast of Florida. It includes 51 messages, uses US maps, and includes a list of potentially relevant DOD units. This can be executed in 3-5 hours elapsed time – the time of the simulation is about 52 hours. Purple Island is a shorter exercise, simulating a terrorist attack on bridges in the Norfolk area with a radiological device. That scenario has 8 messages that occur up front and are handed out to users in advance.

b) Exercise/scenario length/time (typical):

Times are dependent on the number of messages in the scenario and have varied from 1 to 8 hrs. Typical times for the PG scenario, with 51 messages, would be 3-5 hours. The PI scenario runs in about 1 hour.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

- Used in the JFSC HLS Planners Course as described above in 2.a) and 2.b).
- The PG and PI scenarios are also used in JFSC's two joint professional military education schools and the Flag/General Officer CAPSTONE program, often in a more compressed version and in a tabletop-style where participants talk over their potential response.

- The system was also used to support EUCOM during "Olympic Guardian", an exercise for Greek Ministers in advance of the 2004 Olympics.
- The FBI has HLS-RAM at their Training Academy. The FBI used it in Oct 2003 in Puerto Rico for an exercise involving the release of sarin on a cruise ship. This incorporated 7 messages and Puerto Rico maps and resources.
- The MC Expeditionary Warfighting Training Group Atlantic-Anti-Terrorism Force Protection Group has a copy.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

As used by JFSC, this is part of their HLS Planners Course, described separately in a ThoughtLink report documenting related initiatives. HLSPC participants are collocated at JFSC; media used in the curriculum include briefings, lots of documents describing DOD and USG policies for WMD events, military support to civil authorities, etc. as well as lessons learned, and HLS-RAM.

The learning objectives for the use of HLS-RAM at JFSC are: 1) promote awareness among DOD personnel that homeland security operations are different from other operations, particularly in that DOD is in a supporting role, 2) understand the DOD forces available for and relevant to HLS, 3) learn about civilian USG agencies' capabilities and resources, and 4) learn about synchronization of the various USG activities involved in HLS operations.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

On an immediate basis, multiple views of terrain, resources, and email messages are available, customized as the user wishes. As seen during the JFSC site visit, participants are typically viewing one or two displays: the large projection at the front of the room and their group's computer, which might be focused on specific resources or message traffic relevant to them (e.g., medical units only, or newly arrived messages).

HLS-RAM has a very limited built-in AAR capability. At the end of the exercise, three reports are available. The most relevant is the unit mission report – where the units started, where they ended up, and how long it took them to arrive. That information can also be made available for later use by a separate program, such as Excel or Access.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

A revised training manual is being written now that will tell exercise developers how to bring in map, create events & messages, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording &

real-time analysis & display; displays & controls to support immediate feedback to participants):

HLS-RAM runs from 1:1 to 1:3600. Resources and plumes are shown to participants and can be viewed at various levels of resolution, from looking at the entire US to zooming down to the street level. Data about simulated entities are saved and are available on a limited basis.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Customization for HLS-RAM means developing a new scenario or substituting new terrain. For a detailed scenario on the scope of Purple Guardian, being developed from scratch, it would take 3-4 months for a new user to create and about one month for an experienced developer.

Any terrain included in MapInfo can be used with HLS-RAM.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Once the scenario is developed, it runs automatically so there is essentially no set up time for existing scenarios.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned		Multiple dynamic paths / probabilistic outcomes
	Commercially owned	1	Static configuration: fixed path / deterministic outcomes

	Media Scale		**AAR Capability**
2	Individual		Scenario replay
1	Group – TTX format	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		1	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		2	LAN
	Environment		WAN
2	Generic		Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
	Training		Knowledge
1	Exercise	1	Applied
2	Operational		Hands-on
2	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
2	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
	Biological		
1	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
	Explosion		Awareness
			Part Task Training
	Functional Area Supported:	2	Pre-Training
	EMS		Drills
	EMA	1	TTX
	Fire	1	FE

1	Govt. Administrator		FSE
2	Health Care	2	FSE Reinforcement
2	HazMat		Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
2	Public Health		
	Public Safety Communication		
2	Public Works		
2	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
1 Medium
Low
N/A

Ease of Use
1 Easy
Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP
Very
1 Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
2 Enhanced Communication T&E/does it practice/train/exercise communications?
2 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*) – Executable provided free to government agencies – MOU will need to be signed. Contact Claire Marie to obtain product.
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Human Patient Simulator (HPS)/Emergency Care Simulator (ECS)

Product is hardware, software, or both? Both.

- Hardware: Instructor remote lab where patient features and scenarios are controlled, instructor workstation that attaches to the monitor emulator (can be connected to standard patient monitors instead), mannequin and HPS control rack (where gas analyzer and air compressor resides. Clients can choose bottled or piped gases-Oxygen, Carbon Dioxide, Nitrogen and Nitrous Oxide if using anesthetics—but the former option, a compressor, is more economical). The instructor remote workstation can be controlled from a different room.
- Software: 5 human patients (e.g., gender, age), and 12 scenarios (e.g., illness and vital statistics patient presents with—see HPS Patient Profiles Drug Library Scenarios sheet attached).
- Support documents from the instructor guide for printing: pre/post tests, student handouts. Adobe Acrobat PDF files of 3 WMD Handbooks for printing and reproduction.
- Reference materials:
  - 5 copies of METI WMD Instructor's guide (binder).
  - 5 copies of each: USAMRIID—Medical Management of Biological Casualties Handbook, USAMRICD—Medical Management of Chemical Casualties Handbook, Medical Management of Radiological Casualties Handbook (Armed Forces Radiology Research Institute).
  - 1 copy of Medical NBC Battlebook.
  - 15 scenario cards color coded for categories 5 chemical, 5 biological, 5 radiological (BZ, Anthrax, Criticality Rad, Cyanide, Botulism, Rad Contam/ Trauma, Mustard, Ebola, RDD W/wound, Phosgene, Pneum-Plague, UF6 Exposure, Sarin, Small Pox, Rad Exposure w/burn for instructor reference. These are meant to guide the instructor in the scenario progression and contain indices for checking student actions. Cards are available for all scenarios (not just WMD) and contain algorithms for the scenario, background information on the scene, expected learning outcomes and expected student actions.
- Other:
  - Accessories: Gas supply kit, external air compressor, isolation transformer, tool kit.1 moulage kit.

- Upgrade options: Portable computer and control rack, anesthesia delivery system (also available portal), enhanced drug recognition system, instructor remote wireless laptop, monitor interface, monitor emulator (also available in flat screen), periocardicentesis, trauma/disaster casualty kit (allows for blood and fluid secretions, cost is about $16,000), diagnostic peritoneal lavage, pharmacology editor, pediatric patient simulator, portable self-contained gas supply system

Large multi-user system, small multi-user product, or individual-user product?

- Large & small multi-user system. Various students can "treat" the HPS and/or instructor can demonstrate. Can also be used individually and multiple mannequins can be linked and treated as a patient's progress would change at different stages of treatment.

Focus/specialty of product:

- Multi-purpose: 6 medical education areas: anesthesia, medicine, emergency medicine, nursing, respiratory care, paramedic/EMT, military medicine (see HPS clinical features brochure for specific treatment options featured).

Incident response operational tool/system:

Domestic, military, other users?

- Domestic and military.
- Federal & state governments.

Incident response training/exercise tool/system:

Domestic, military, other users?

- Same as for above.

Other operational tool/system (Identify): NA

Functional-area identification of product (Broad range, or specific):

- Victim treatment/dealing: EMS, P.D., F.D., HazMat.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

- Medical Education Technologies Inc. (METI).

Contact info ref. technical questions (Person, title, organization, telephone, email):

- Ron Carovano, Director of New Business Development
  6000 Fruitville Road
  Sarasota, FL 34232
  Tel: 941-504-5563 Fax: 941-377-5590
  Website: www.meti.com Email: rcarovano@meti.com

Contact info ref. buying the product (Person, title, organization, telephone, email): Main POC is same as above. Alternate POC:

- Dina Dennis, Southern Regional Sales Manager.
  6000 Fruitville Road
  Sarasota, FL 34232
  Tel: 770-599-9366 Fax: 941-377-5590 Cell 941-504-5455
  Website: www.meti.com Email: rcarovano@meti.com

COTS/GOTS (circle one).

- COTS/GOTS.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- System has basic capabilities to support training/exercises today. Exercises and scenarios have been adapted to portray effects of biological (5 agents), chemical (5 agents) and radiological/nuclear (5 exposures) weapons on humans. Emphasis is on victim treatment.
  - Performance measures, and supporting displays, would be the same as for the other scenarios.

Product status (Production version in use; prototype in use; under development)? If in use, identify users, types of use: See HPS installation sheet attached or on line at http://www.meti.com/downloads/hps_install_list.pdf

- Latest HPS and ECS versions: 6.
- HPS currently in use in several countries. Emergency medicine, government systems, health sciences, nursing/CRNA, universities/medical schools.
- WMD scenarios and train the trainer course will be rolled out on the Human Patient Simulator Network Conference in Sarasota, FL on 2/26-2/28/03.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- Incident response focusing on medical diagnosis and treatment.
- Medical training.
- Two versions: HPS and ECS. Both have the same physiological reactions and utilize the same software (e.g., can support same scenarios).
- ECS is less costly (it has less features) and is portable via use of wireless Ethernet control of up to 150 ft. distance. It's the one typically utilized by first responders in the field. It has no bar code reader for drug recognition and no Oxygen reader. It cannot be given shock treatment. These conditions can be simulated via software.

- HPS has additional instruments, can be given shock treatments and has monitors for this as well as for anesthesia. Typically used in hospitals to simulate patient treatment.

Intended for operations, training/exercises, or both?

- Training/exercises.
- I*f training/exercises, is it an instructor/controller/evaluator tool, or training media?*

- Both.
- Contains capabilities to support instructors/controllers/evaluators (e.g., computer records student actions).
- Presents real-time feedback to participants (team of trainees) as the HPS will directly react to their actions and/or instructor controls.

Intended for individual, group or team use?

- Small group and individual.
- Can also be used for team instruction.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- Full EMT, nursing, triage, teams etc... From individual user to small team (about 3-4 depending on the procedures/treatment scenarios).

Number persons usually trained simultaneously?

- Three to four depending on the procedure being trained. The system is designed to mimic real patient treatment (i.e., the same number of individuals that would perform a procedure would be training).

Large multi-station system, or based on individual PC's?

- Individual workstations (one entire system—see above—needed per mannequin).

Custom/proprietary hardware required?

- Yes. See above.

Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- System is intended for patient care training/exercising. It can individual through small-team training and it supports the training/exercising of field responders.

- Simulation: The mannequin systems are equipped with a variety of electronic, hydraulic and mechanical subsystems that imitate patient physiology.
- Pulmonary System capabilities: Chest rises and falls like real respiration, real lung sounds, airway obstructions may be introduced, supports intubation, consumes oxygen and produces carbon dioxide, can simulate atelectasis, pneumothorax, asthma, and COPD, has blood gases that correspond with the CO2/O2 concentration in the lungs.
- Circulatory System capabilities: realistic heart sounds, palpable carotid, radial, brachial, femoral and pedal pulses, blood pressure that can be checked with BP cuff, emits 5-lead EKG signals with correctly positioned monitor, scenarios can change arrhythmias, responds to defibrillation, simulates hypo/hypervolemia, chest compressions actually register, cardiac circulation, output, palpable pulses and blood pressures.
- Airway management and ventilation: mouth-to-mouth, bag-valve-mask, and endotracheal, intubation are reflected in blood gases and pupillary responses.
- Pharmacology and Drug Recognition System: has parameters for over 50 intravenous medications. Mannequin will respond to medications administered. These are interpreted by a barcode reader attached to the syringe and read by the mannequin.

- Information displays on the monitor emulator: patient vital statistics (e.g., heart rate, pulse, oxygen level).

Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Basic stand-alone system.

Web-based application, LAN, or a single computer/system-based application?

- No.

Can the training be administered over a wide area network or a local area network?

- No, but the mannequins can be networked so that simulators can carry data over from one simulator to the next, so that one patient can be tracked through every echelon of care (e.g., from front line casualty collection to a combat support hospital). This allows for practice of collective tasks, such as triage and evacuation, and to see how decisions made on the "front line" affect the patient's outcome down the line.

Is an instructor or facilitator needed?

- Yes and no. Presumably a student experienced with the simulator can run through scenarios on his/her own. Multiple instructors/facilitators may be needed depending on the number of mannequins used simultaneously.

If not, how is training conducted (e.g., Individual self-paced)? Instructors control the flow of the simulation, can pause, fast-forward simulation(s) and stop them as desired.

If not, how is training managed (e.g., Testing, certification of completion, etc.)? Up to the individual instructor/program.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- Purchase.

Initial acquisition cost (purchase; licensing fees):

- $36,000 for the base system (ECS) up to $200,000 for the high-end simulator (e.g., HPS with all capabilities). Installation cost is included at the client's facility for the HPS.
- *Other necessary support, software, equipment:* Included with purchase.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- No.

Number of staff required to setup and operate product:

- One.

Staff training required to use product (identify briefly ... type, time):

- Training includes: theory of operation, user interface (buttonology), case based learning (help think through student objectives, student outcomes and scenario stages). Emphasizes scenario construction.

- Human Patient Simulator V6.0, Level One Training Course: two-day workshop consists of sixteen hours of didactic and hands-on instruction in the use and application of the Human Patient Simulator. Level One is the basic component of two levels of training and is a prerequisite for Level Two training. The cost of training is included in the purchase cost. Level One will give the participants (limited to 10 to enhance learning) the opportunity to learn basic components and operations of the simulator, and basic software navigation.
- Human Patient Simulator V6.0 Level Two Training Course: participants Continue didactic and hands-on learning with a basic review of the Level One Training Course followed by an additional 16 hours of instruction. This includes setup and configuration of the Monitor Emulator, Defibrillation of the HPS, system overview and theory of operation, device Driver explanation and creating advanced patients and scenarios. Cost is $500.
- On site training is available for $5,000 for the HPS and $500 for a 2 day ECS Installation and set up training. Training also addresses hardware and software Functions and the conduct of preventative and routine maintenance.
- The Center for Total Access (CTA) at Fort Gordon, Georgia has opened a medical simulation laboratory to provide more realistic training for military medical units: active duty; reserve; and National Guard. The laboratory uses computerized networked casualty simulators to reproduce real-world medical mission scenarios. POC: Willie D. Bido, Willie.Bido@se.amedd.army.mil, www.cta.ha.osd.mil.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Installation is included in the price.

Expected operating costs? About $1,000/year, depending on re-order of mannequin parts and use of gases.

Product maintenance requirements/recommendations (identify briefly):

- Minimal, per users interviewed.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Mac OS X graphical interphase (version 6. Prior versions used DOS program but they are all backwards compatible. I.e., new scenarios can be used in old versions).

Can product be customized? How? Cost?

- Yes.
- Customization can be achieved via The Patient Editor (component of the main application software, not stand alone) and can be done real time (i.e., while a simulation takes place):
  - Patients/scenarios: Any patient profile can be created or modified from pre-configured profiles (i.e., infinite number of patients and scenarios). These can also be downloaded and shared amongst users using the Internal Data Exchange Protocol (HIDEP) (allow for software writing and other computers to communicate

with the HPS). The HPS' cardiovascular, pulmonary, and metabolic characteristics and responses (e.g., eye lid flutter) can be controlled through the main computer or a hand-held remote control. No limit on the number of stored scenarios.
  - Pharmacology Editor: Stand-alone program separate from the main application software allows identification of specific patients/populations (e.g., geriatric, liver disease). Students can learn to recognize the real-world effect of a given dosage on a specific type of patient (for more information see HPS Clinical Features brochure).
  - Performance measures: Any time during a simulation exercise the instructor can "book mark" the patient's condition without interrupting the session. S/he can then return to that "bookmark" allowing repeated measures of the student's treatment.
  - AAR focus: Data recorder—time-based record of patient physiology and interventions by the student, instructor or control software. Can be printed or exported into databases (ASCII data).
  - Customization would also be achieved via the simulation models used.
- Can additional scenarios/patients be purchased yearly? Yes. This will be available next year and users will be able to download additional scenarios. Cost: TBD.

Product modifications required to support counter-terrorism training/exercises:

- No. (See "Is product directly applicable to counter-terrorism training/exercises" question above).

Performance measures, and standards already supplied for WMD? Performance indices for student actions supplied with scenarios. Highly customizable and up to the instructor, however.

- Objective performance assessment: record of treatment activities, scenario cards list expected actions.
- Run same course of scenarios for all students. Useful during evaluation and can measure test/retest reliability.
- Subjective measure of performance: Measure of effectiveness depends on patient outcome based on treatment (e.g., not just the right course of treatment, but the most effective). Based on instructor evaluation.
- Modify scenarios as they are conducted and observe treatment. Useful for instruction.

<u>Personal Computer Requirements</u> *(if appropriate)*

- Typically, hardware (PC's) would be part of the system purchase. Additional PC's would not be necessary.

Processor speed (in MHz): N/A

Memory:(SDR/DDR): N/A?

Free disk space: N/A

Internet connection speed:(if any): N/A

Display adapter: See above question (Hardware requirements)

CD-ROM speed: N/A

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Both

Potential type of WMD event product can support:

Chemical - Yes
Biological - Yes.
Radiological - Yes
Nuclear - Yes.
Explosive – Yes (e.g., patient rescue and treatment under rubble).

Constraints on supported exercises or scenarios?

- HPS cannot be completely submersed under water because it would damage electronics. Certain areas can be wet.

Potential disciplines product can support:

Emergency medical services
FireDepartment
Health care
HazMat
Law enforcement
Public health

- Directly supports field activity training.

Potential types of learning product can support (S&K):

Initial/acquisition
Improvement
Maintenance/refresher

- Can support all 3 types of learning.

Target audience:

- *First responders and hospital personnel who treat victims.*

Potential responder training level(s)/categories product can support:

Awareness - No.
Performance [Operations] – Yes.
Technician [Specialist] – Yes.
Planning & Management [Incident Command] – No.
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - Yes.

Potential equipment and/or facilities product can address:

- Victim treatment and contamination decision-making and hands-on actions.

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Hands on medical treatment.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

- Awareness level should be considered as minimum, since primarily team training/exercising.
- Basic level should be considered as a minimum for this training/exercise medium; but, intermediate or advanced levels may be required for specific training objectives.

Potential training/exercise types product can support:

Classroom - Yes.
Individual self-paced - Yes.
Seminar/workshop - Yes.
Drill – Yes.
Individual and small-team exercises – Yes, both.
Simulation-supported - Yes
Gaming – No.
Collaborative – Yes.
Tabletop - Could, but probably not needed (as tabletop are currently conducted) except maybe for hospital personnel.
Functional – Yes.
FSE – Yes.

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time team exercises (sub-team, and/or full-team).
- Role-play—Instructor can utilize a radio transmitter (e.g., phone) to supply the simulator with a real-time voice as a response to participant actions (e.g., cough, cry out in pain, refuse treatment, show desperation).
- Classroom lecture with instructor conducted demonstrations.
- Real time exercise at different locations (with multiple simulators).
- Immediate feedback (simulator actions) and delayed (AAR and instructor comments).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Typically, 20 minute-1 hr exercises (depending on the procedure/scenario).
- Normal operations, and failure modes are feasible.
- Simulation-supported exercises would be the norm.
- Scripted exercises and would be the norm, although improvisation by the instructor is common.

Exercise/scenario length/time(typical):

- Varies greatly.

Process and time to:

Develop new exercise/scenario:

- Varies from minutes to infinite.

Modify an exercise/scenario:

- Same as above.

Setup an exercise/scenario to run:

- Minutes.

Does a curriculum already exist?

- Yes. (See HPS Clinical Features brochure for available scenarios).

Instructional Assistance Features

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- See next item below.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Exercise debrief (AAR)

  E.g., History data printout (trainee responses by time) in raw data form.
  Events, actions, analysis of trainee performance by instructor.
  Exercise replay. Does it run course with participant actions?

HELP features (Briefly identify):

- None.

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Support for the following training/exercise-related development functions:
  Exercise/scenario construction; library.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- See exercise debrief.

Training/exercise fidelity:

Environment (including situation/scenario):

- Very high fidelity (e.g., HPS will die if not treated properly).

Information (including interaction with other persons):

- Can be very high fidelity.

Information on current users interviewed:

Nelson Peña
Human Patient Simulator Laboratory Coordinator
MDCC Medical Center Campus
950 N.W. 20th Street
Miami, FL 33127
Phone: 305-237-4130
Email: npena@mdcc.edu

Versions: Adult HPS & Pediatric (old version 4 y/o)

- Use: health program at Miami Date Community College Medical Center Campus (http://www.mdcc.edu/medical/) Go under learning resources for HPS training schedule. Assessment, treatment and concept instruction (e.g., what happens when the body fills with fluid). Team of students gather in the lab and observe and practice. Will use it on continuing education in the near future. No direct application for WMD right now.
- Audience: Health program, nursing, physician training and other visiting students.
- Feedback: students really enjoy it & he's very pleased with it.
- Opportunities: Learning how to create new patients and scenarios. It takes some time to do this. Will learn more about AAR capabilities to be able to "play back" student actions and point out better courses of treatment.
- Adaptability/Upgrade: Unsure if they can upgrade the software/hardware or both to the newest version. There are limitations with this model. The new version can have 3 virtual patients running together this one can only use one at the time.
- Upkeep costs: not substantial. Recently purchased insurance and package for parts ordering and replacement. Unsure of costs or coverage.
- Troubleshooting: tech support easily talks him through resolution of problem.

Holly Murphy
HPS Lab Coordinator
Orlando Tech
(321) 843-3165
(407) 419-0320 (pager)
murphyh@ocps.k12.fl.us
Versions: Human Patient Simulator and Pediatric simulators V.5.

- Current students/employees trained include nursing teams, the Emergency Department, mobile care center, the Pediatric Intensive Care Unit.
- Observed a Conscious Sedation (A.K.A. moderate sedation) procedure at the Orlando Regional Medical Center hands-on orientation session with 4 students (Registered Nurses) 1 instructor and 1 operator. The operator did not use a pre-configured scenario for this session. Instead she modified patient reactions (those that are not automatic based on student treatment) depending on the interventions performed. For example, she closed the mannequin's eyes after a few moments of being injected with an anesthetic and opened them once again when it was given drugs to regain consciousness. The operator usually controls the mannequin's reaction instead of running automated scenarios. This requires medical knowledge (she is an R.N.). The HPS has capabilities to respond to drugs administered after recognizing them (reads the barcode on the syringe) but they are waiting for that piece of equipment upgrade. The mannequin currently reacts to the software inputs instead of the actual drug.
- Optimal sessions are with no more than 3-4 students (depending on the procedure) to ensure everyone has a hands-on role. Some sessions are conducted with a large number of students and are just demonstrations. However, then they have 1 on 1 with the instructor and the HPS for about an hour.

- There is a remote control pad the operator can use to control the HPS from another room. This is attached to the control rack (large cart on wheels).
- The HPS reacts in real time (same time as a person would) but typically this is expedited (I.e., procedures/reactions are accelerated) for the sake of expediency. They are very pleased with this capability.
- Scenario creation time varies greatly. Uses a DOS program (versions prior to 6) and at first took a long time to learn. Most of the time she does not create scenarios and let them run on their own. She prefers to control HPS actions as the students perform their treatment (note—a lot of the patient reactions are automatic, a few require software or instructor inputs). She just finished a scenario that took about a year to perfect. She often consults the network of METI users when she has questions about procedures/patient reactions to ensure realism.
- Regarding artificialities, she is mostly pleased with the capabilities. She would like less position prompts on the limb. On each mannequin (at least her version) there is a lifelike limb with soft "skin" and there is a harder mannequin-like one with patches indicating where interventions (e.g., check for pulses, injection locations) are to be performed. She would rather the students figure out where to perform a procedure.
- Upkeep is not very costly. Gases run about $15/month because they utilize a compressor. The warranty/tech support is covered with purchase for a year. Yearly cost thereafter is $10,000. Instead they have their own technician who helps to troubleshoot. However there are hardly any problems with either mannequin. They order skin replacements per packages and those are relatively inexpensive as well.

Available evaluation support materials:

- METI, HPS introduction video: "Changing the face of Medical Education". Shows product uses, capabilities and hardware requirements.
- The Center for Total Access (medical simulation laboratory in Fort Gordon, Georgia that train military medical units) CD describing capabilities via Real Player video, Word documents describing the Combat Trauma Patient Simulation (CTPS) System Functionality and POCs, and PDF files with brochure and map of the Center.
- HPS Network (HPSN) Conference CD (Real Player video) and information brochure about HPSN '03.
- WMD Train the Trainer Program fact sheet.
- HPS Scenarios, Patient Profiles, and Drug Library fact sheet.
- HPS current installations.
- HPS Clinical Features brochure. Describes: the METI tool set, PediaSim, METI Applications and features, upgrades, options and accessories.
- Trauma Disaster Casualty Kit fact sheet.
- Emergency Care Simulator Clinical Features brochure.
- Sample biological agent (Small Pox) scenario algorithm.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Information Source:

Review form filled-in by ATMET, LLC.
Reviewed, edited, modified by TLI team.
HYPACT was not observed.

A. Basic Product Information

Name of Product:

Hybrid Particle And Concentration Transport Model (HYPACT)

Developer: ATMET, LLC

Contact information:

Craig Tremback
ATMET, LLC
PO Box 19195
Boulder, CO 80308-2195

303-530-5200, extension 201

Technical Support Contact Information:

Same

Website: www.atmet.com

COTS/GOTS: COTS

Product status (version in use): 1.3

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet

	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  HYPACT can provide dispersion simulation of any type of pollutant (i.e., plume model). HYPACT requires access to a weather data base, such as RAMS.

  HYPACT represents a state-of-the-art methodology for predicting the dispersion of air pollutants in 3-D, mesoscale, time dependent wind and turbulence fields. HYPACT allows assessment of the impact of one or multiple sources emitted into highly complex local weather regimes, including mountain/valley and complex terrain flows, land/sea breezes, urban areas, and other situations in which the traditional Gaussian-plume based models are know to fail.

- Current Target audience:

  Organizations using pollutant dispersion prediction (e.g., all emergency responder organizations, cities, states, commercial organizations).

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
3	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
2	Individual	0	Multiple dynamic paths through the product and more than one outcome possible
2	Group	1	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		

2	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		2	Scenario replay
	Applied Context	2	Automated summary of data
1	Non-specific	3	SME controls AAR
2	Equipment	1	Does not provide feedback or AAR
		0	HLA Compliance (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP)

- Plume model.

- Batch mode running.
  - No interaction with users, after initial setup.

- Generates 3-D pollutant distributions over time (time is 4th dimension)
  - Concentrations
  - Locations

- Model can run fast, which would allow real-time viewing of plume generation/change over time.
  - No interactive capabilities as currently configured.
  - Would be good for classroom illustration.
    e.g., Observe a daylong weather simulation for a major city, as a function of weather events, and other scenario events.

- Setup tools:
  - Documentation.
  - Tools for error checking at beginning of run.

- Inputs: 4-dimensional weather field … e.g., RAMS.
  - Currently setup to use RAMS format.
  - But could be modified to use any 4-D weather data base.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone.

- Needs input data.
  - RAMS, or other similar weather data base.
  - Pollutant source … manual input, usually.

Usually few parameters:
Latitude, longitude, elevation, amount released, over what time period.
Pollutant: molecular weight.
Option: Rectangular sources, polygon shape sources, etc.
Would take longer to enter data.

- Set up for passive tracers … doesn't' have chemistry.

▪ Output:
- Numeric data … basic output.
- Graphic outputs … interfaces with visualization tools.
  Plume map, vertical cross sections, etc.

c) Large multi-station system, or based on individual PC's?

▪ Single PC or workstation … typical

d) If simulation models are used how realistic do they seem:

▪ Very realistic.

e) Web-based application, LAN, or a single computer/system-based application?

▪ Single computer system.

f) Describe the AAR support tools

▪ Output graphics … maps.

▪ Post processing tool, used for statistical verification of RAMS output (e.g., validation; output vs. observed conditions).

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

▪ None needed.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

▪ Linux, Unix, Windows.

▪ Maybe Macintosh … source code is/will-be distributed with the RAMS model.

b) Processor speed (in MHz):

▪ Above 1GHz is suggested, but model can run on lower speed processors.

▪ If real-time running (not yet implemented), 1GHz would be required.

c) Memory (SDR/DDR):

- HYPACT can run on computers with 64MB.
- Suggested: 512MB minimum > 2GB.

d) Free disk space:

- 1-10 GB range

e) Internet connection speed (if any):

- Usually need a good LAN connection speed for obtaining data (e.g., from RAMS). Broadband is not usually sufficient; usually need over 1GB of data.

f) Display adapter:

- Animation, etc. desirable

g) CD-ROM speed:

- NA

h) Optional accessory requirements[5]:

- NA

5. Describe unique interface characteristics:

- None
- Use text editor, typically.
- Some graphically-based input tools are available (i.e., mouse, windows, menus) for setup.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

- Any number the primary training/exercising media can support.

b) Number persons usually trained simultaneously?

- NA

c) Custom/proprietary hardware required? If so, identify:

- No

7. Please describe the HELP features

- No built-in HELP features.

- Printed documentation is available.

8. Data recording & storage features (e.g., Scenario events; student performance):

- Model output is contained in a data base (numerical data).
- Input configuration data are available in the data base.
- Other simulations would access generated data base.
  - Feed into GIS
  - Information to responders

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- A customized training program is provided.
  - Customization is usually based on the expected trainee level of expertise.
  - 3 days of customized training is typical, conducted at the client's site.
  - $7,000-$8,000 order-of-magnitude cost for a 3-day customized training program, at the client's site; travel costs are included.

2. Attributes:

	Application Environment:		**Content**
2	Training	1	Knowledge
2	Exercise	1	Applied
2	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
3	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
2	Intermediate	2	Awareness
2	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training

	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
2	Health Care	2	FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	0	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	0	Recovery
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content:

a) Training content description (what trained, brief):

- Training content is dependent on the user.
- In a classroom context, HYPACT may be used to address gas/particle dispersion.
- Typically may be used in a training/exercising context to support other scenario simulation (i.e., provide accompanying plume data over time).

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- None specific … plume propagation related phenomena are addressed by the model.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Plume/weather-related phenomena; but, would have to be developed by the user.
- May support a wide range of scenarios involving plumes.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- None specific.

- Depends on other associated media and training/exercising strategies.

e) Exercise/scenario length/time(typical):

- Can vary widely, from a few seconds to 1 month.

f) Potential equipment and/or facilities product can address

- NA

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- Yes, in support of other tools, media, training strategies, etc. It would be used to generate the plume model, in accordance with weather effects and other scenario events (real-time).

- It may also be used to support classroom training.

h) Are there any constraints on supported exercises or scenarios?

- Model runs as a discrete batch operation. It could support real-time scenarios with multiple executions during the scenario (this technique has been used in the past by simulators using available plume models, such as ALOHA).

4. Instructional Attributes:

- None of the following items are specifically relevant to HYPACT. This model would be integrated with other instructional media, and depend on how those media are used.

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- N/A

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- N/A

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- N/A

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- N/A

e) Does a curriculum already exist? If so, briefly describe its form and content

- N/A

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- N/A

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- N/A

5. Instructor/controller/evaluator tools:

- None of the following items are specifically relevant to HYPACT. This model would be integrated with other instructional media, and dependent on how those media are used.

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- N/A

6. Customization:

a) Can the product be customized?

- Model inputs can be customized at the time the model run is setup.

- Chemistry effects could be implemented.
  e.g., Changes to, and interactions between, chemicals over time.

b) What is the process and how much time does it take to develop a new exercise/scenario?

- By developer:
  - Minutes, typically, to two days (if complex arbitrarily shaped source regions).
  - Depends on adequacy of source characteristics.
    e.g., quantity of release (how much is known).

- By trained user:
  - About same time as developer.

c) What is the process and how much time does it take to modify an exercise/scenario?

- Modification requires several minutes, generally, by either developer or trained user. Note, however, if many sources (pollutants) are involved, it will take more time.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- Same as above.

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Graphical visualization tools are available to view the HYPACT output.
  e.g., 3-D dispersion visualization.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High … operational tool		Very
	Medium	**1**	Somewhat
	Low		Limited
1	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
1	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
2	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
0	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?

3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
3	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Costs

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

   Yes.

   Decision has not been made whether to release HYPACT under general public licensing. However, this decision is expected. Hence, HYPACT will probably cost $0.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

   Product, not service.

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

   Standardized (source code will be provided, along with the run-time version).

4) What are the costs (in $USD) according to type: (fill in all applicable)

   - Train user to run model

	COST			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				

Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage		See training cost above, under D.1		
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel		$110 per hour	$80-$130 per hour	
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:

Review form filled-in by National Simulation Center.
Reviewed, edited, modified by TLI team.

A. Basic Product Information

Name of Product:

JANUS

Developer: US ARMY STRICOM

Contact information: Joe Whitworth, JANUS Team Leader
(913-684-8329)
whitworth@leavenworth,army.mil

Ray Hanes

National Simulation Center
410 Kearny Avenue
Fort Leavenworth, KS 66027-1306

Website: http://www-leav.army.mil/nsc/famsim/janus/index.htm

COTS/GOTS: GOTS

Technical Support Contact Information: Same as Contact Information

Product status (version in use):

- Janus version 7.2 and 7.31.
- Version 7.31 is the latest/Army version. Version 7.2 is the latest National Guard version used to support domestic counter-terrorism training/exercising. It is expected that the National Guard will begin using version 7.31 in the near future.

Source(s) of Evaluation: *check all that apply*

x	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  - Incident response training/exercise simulation. It was developed for Army training, and has been adapted to civilian incident response training and exercising.

  Janus is an interactive, six-sided, closed, stochastic, ground combat simulation featuring precise color graphics. Interactive refers to the interplay between the military personnel who decide what to do in crucial situations during simulated combat and the systems that model that combat. Up to six sides may be simulated. Closed means that the disposition of opposing sides is largely unknown to the players in control of a side. Stochastic refers to the way the system determines the results of actions like direct fire engagements, according to the laws of probability and chance. Ground combat means that the principal focus is on ground maneuver and artillery units. Janus also models weather and its effects and fixed wing aircraft, resupply, and a chemical environment.

  The simulation uses digitized terrain developed by the National Imagery and Mapping Agency (NIMA), displaying it in a form familiar to military users with contour lines, roads, rivers, vegetation, and urban areas. Buildings, fences, generic areas tailored to be highly restrictive terrain, restrictive terrain, swamps---and generic strings tailored to be pipelines, power lines, railroads, berms---can be represented. Colors are slightly different than those used on military paper maps; open, clear terrain is black on the screen verses white on a map. Contour lines are brown, rivers and bodies of water are blue, roads are brown or gray with white outlines, urban areas are yellow, and vegetation is green. Fences are red, and generic areas and strings can be in various colors. Additionally, terrain realistically affects visibility and movement.

- Current Target audience:

  - Incident command team, including the incident command post.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	1	Generic
1	GOTS	1	Locale Specific can generate mapping of almost any local
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	1	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
3	Equipment	1	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- Multi-player collaboration simulation. Provides simulated environment, for interaction with a subset of the response forces (e.g., EOC, Incident Command Post).

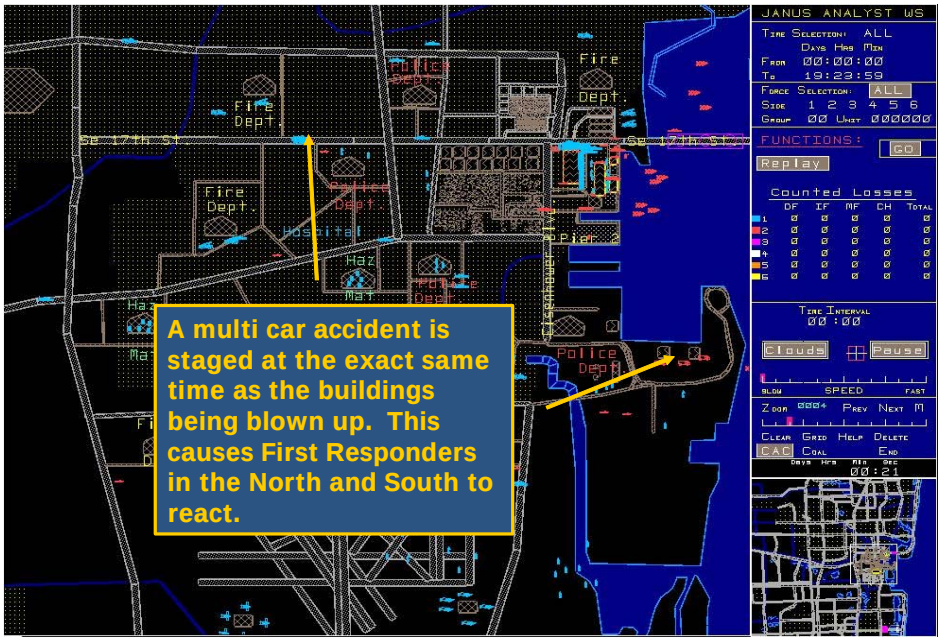
- Models (simulates) response systems/resources (e.g., forces, such as police, fire; vehicles; fire fighting model; etc.).
  - Automatic engagement models (mostly military).
  - Terrain data base, including urban terrain conditions (e.g., roads, traffic); 300 km x 300 km playing area. JANUS has hundreds of already-developed terrain (geographic area) data bases, including many relating to areas in the U.S. (i.e., including areas pertinent to domestic counter-terrorism training/exercising).

- Buildings of various types (99 different building types), and ability to operate inside the buildings, on any floor.
- Weather (16 types), including simple gas plume.
- Scenario.
- Real-time status reports (e.g., unit status, situation report, etc.).
- Extensive real-time control capabilities (e.g., vehicle movement, actions of simulated forces, weather).

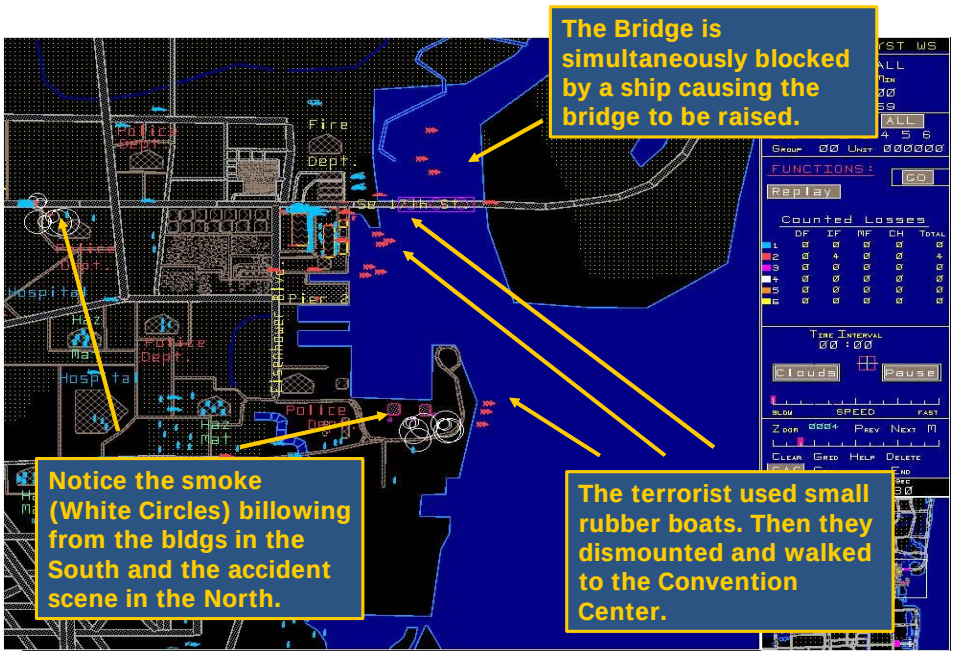
▪ Geographic birds-eye view displays of playing area, with various overlays, for monitoring during exercise.

▪ AAR:
- Replay, showing entity movements over time (real-time, fast-time, freeze), on geographic plot (birds-eye view).
- Analysis tools and status information (military).
- Plots/graphs.

Example control display, also used during AAR.

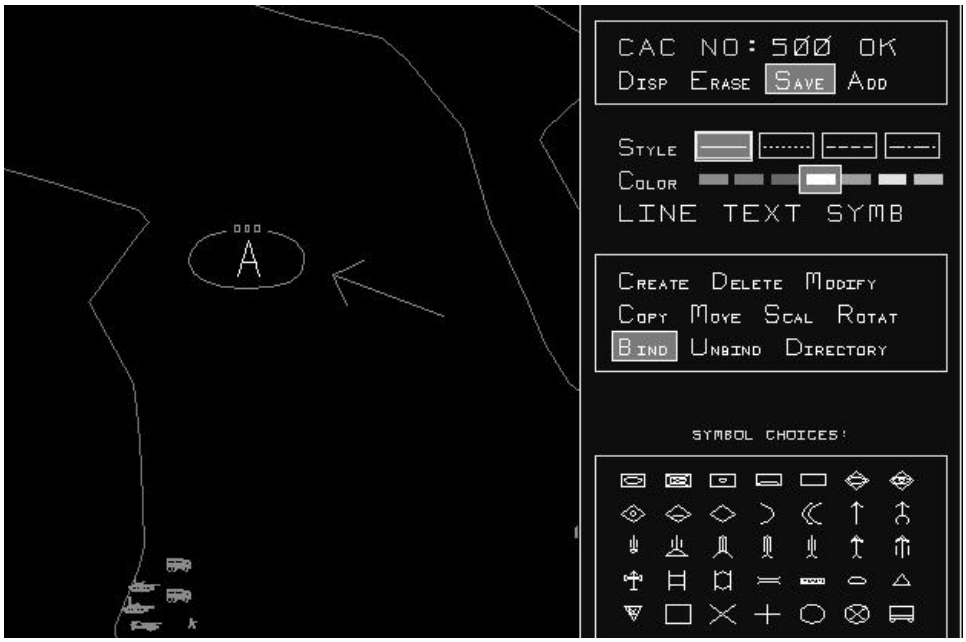


Example control display, also used during AAR.

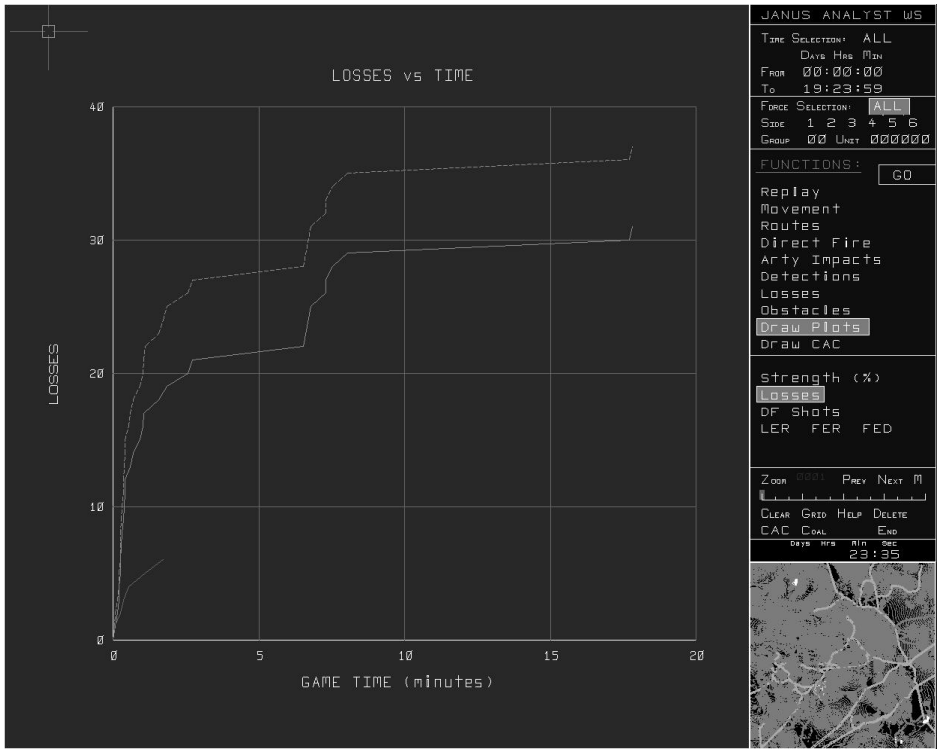


Example control display, also used during AAR.

Example control display, also used during AAR.



Example control display, also used during AAR.



Example of a graphic plot illustrating performance parameters.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone product. But, typically requires operational equipment to support participants.

c) Large multi-station system, or based on individual PCs?

- Can run on 50 workstations at one time.
- Typically, 16 - 24 workstations.

d) If simulation models are used, what is the basis of the data and/or distributions used?

- U.S. Army Doctrine for Army models.
- Modified models have been used to support domestic response scenarios (e.g., fire, police). These are usually modified by the users.

e) Web-based application, LAN, or a single computer/system-based application?

- LAN.

f) Describe any debriefing after-action reporting support tools:

- Janus has a Janus Analyst Workstation that will replay the entire battle or simulation.

- AAR:
  - Replay, showing entity movements over time (real-time, fast-time, freeze), on geographic plot (birds-eye view).
  - Analysis tools and status information (military).
  - Plots/graphs.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Room large enough to hold all workstations.

- Participant playing area (e.g., Incident Command Post).

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other)*:

- Linux Red Hat 7.3.

b) Processor speed (in MHz):

- 800 MHz or higher.

c) Memory (SDR/DDR):

- 512 MB min.

d) Free disk space:

- 4GB minimum.

e) Internet connection speed (if any):

- N/A.

f) Display adapter:

- NVIDIA or Matrix video

g) CD-ROM speed:

- 40X min.

h) Optional accessory requirements[5]:

- 3-button mouse is required.

- Back-up Method: CD-R recommended.

5. Describe the user interface characteristics:

- Individual workstations for major participant entities (e.g., NYC police, Port Authority Police, NYC Fire, Hospitals, etc.). Typically, JANUS-knowledgeable controller works side-by-side with an operationally-knowledgeable responder-controller. The responder-controller decides the actions taken by simulated field personnel, relating them to the JANUS controller, who inputs the actions into the system. The JANUS controller also assists by interpreting the JANUS outputs (e.g., displayed actions), providing information about the JANUS capabilities/features, and overseeing the schedule of activities for that responder entity.

- Workstation display shows map of play box and unit icons - Geographic birds-eye view displays of playing area, with various overlays, for monitoring during exercise.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

- Strictly based on exercise design. As noted above, the maximum number of workstations (i.e., responder entities) is 50, each of which may be related to many responder participants. A typical domestic counter-terrorism exercise using JANUS would involve between 30 and 150 participants.

b) Number persons usually trained simultaneously?

- Based on exercise design. See previous question.

c) Custom/proprietary hardware required? If so, identify:

- No custom hardware required. Red hat Linux 7.3 software is required.

7. Describe any user HELP features:

- On the workstation, the JANUS help menu explains every function.

8. Data recording & storage features (e.g., Scenario events; student performance):

- JANUS will replay the entire battle of every exercise (military application). It can replay the entire scenario in a domestic counter-terrorism exercise.

- The AAR can support the following:
  - Replay, showing entity movements over time (real-time, fast-time, freeze), on geographic plot (birds-eye view).
  - Analysis tools and status information (military).
  - Plots/graphs.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- One week of interactor training.
- One week of systems and database training.

  Note, however, in domestic exercises, the State National Guard often operates JANUS (as described in 5.a), such that other controllers, participants, etc. require only minimal training (i.e., the National Guard performs the interfacing with JANUS).

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
3	Operational	3	Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
3	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
2	Nuclear	2	Equipment Training
1	Explosion	1	Awareness
		3	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	1	Drills
1	EMA	2	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
1	Transportation		**Incident Stage Supported**
2	Private Sector	2	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response

1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

- Janus is exercise driven. Training received from the exercise is dependent on the specific exercise characteristics.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

- None specific.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- High level. Can be used for Squad thru Brigade requires commanders to make decisions on all levels of play. Plays six sided can be used for almost anything needed. (i.e. Develop and implement a response to almost any situation or specific event). With regard to a WMD incident, it would primarily support command team training, such as the command post and EOC teams.

- Scenario driven, meaning, the training and/or exercise objectives depend on the scenario design.

- JANUS has been used by State National Guards to support domestic counter-terrorism exercises. In these instances, JANUS was used to addresses objectives of local interest.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Simulation-supported exercise. User develops the scenario and database for the training/exercising. The exercise length may be short (less than an hour), or long (several days).

- The scenario is typically scripted, with real-time actions and reactions. Some actions are modeled, and some are inputted in real-time by controllers (in response to the scenario's evolving situation and participant actions).

e) Exercise/scenario length/time(typical):

- Can be developed for short duration (less than 1 hour) or sustained operations for a week.

f) Potential equipment and/or facilities product can address:

- For a domestic counter-terrorism exercise, JANUS would typically simulate an environment (e.g., geographical area, weather), adversaries and their actions (e.g., dispersal of chemical agent), and parts of the responding forces (e.g., responders in the field and on-scene).

- The actual responder participants would interact with their actual equipment (e.g., radio, charts) and each other (e.g., in a Command Post), and through them with the simulated elements of the scenario. In this instance, JANUS would be used to support command and control training (e.g., decision-making of the command post team).

- JANUS has hundreds of already-developed terrain (geographic area) data bases, including many relating to areas in the U.S. (i.e., including areas pertinent to domestic counter-terrorism training/exercising).

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- JANUS has been used to support domestic counter-terrorism training/exercises, as described previously in this document.

h) Are there any constraints on supported exercises or scenarios?

- None specific.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- The Janus simulation drives exercises. The exercise developer tailors a training program based on objectives and training requirements. Training for interactors (e.g., evaluators, controllers, facilitators) is a requirement prior to start of the simulation.

- The general instructional-strategy employed is similar to that of an FSE, with evaluators scrutinizing the actions of player-participants. The evaluators take notes to provide evaluative feedback during the AAR. Occasionally, the evaluator may provide a cue to participants (e.g., if participant action, or lack of action, will seriously degrade the ensuing training value of the scenario). The AAR is conducted after conclusion of the scenario, in a presentation-discussion format.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- Yes—Instructors/facilitators are required to oversee the exercise, and provide instruction.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- Janus is an event driven simulation.

- Student cues are, on occasion, given by an evaluator; positive guidance is usually not provided. Usually, the scenario is conducted according to a script, with automated real-time actions performed by the simulation models, and other real-time reactions to unanticipated events injected by a knowledgeable controller (similar to that of an FSE).

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- Managed by the controlling authority (i.e., the authority conducting the training or exercise). This will vary with the user.

e) Does a curriculum already exist? If so, briefly describe its form and content

- A curriculum does exist for training persons to operate, and work with, JANUS.

- Various curricula exist for using JANUS to support particular training; these are mostly military (Army).

- Exercises have been developed for domestic counter-terrorism training/exercising with JANUS. These are resident with the organizations that have used JANUS (e.g., New Jersey National Guard).

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Exercise, scenario play and AAR. Some performance measures have been developed to support military training; these, however, would not likely be applicable to domestic counter-terrorism training.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Excellent AAR product plus commanders work station that is a “see all” station.

- AAR capabilities include the following:
  - Replay, showing entity movements over time (real-time, fast-time, freeze), on geographic plot (birds-eye view).
  - Analysis tools and status information (military).
  - Plots/graphs.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- The exercise design and development are taught as part of the initial training. Tools are provided for scenario development.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- Each workstation has a geographic plot display of the playing area. A variety of overlays are available, to display isolated entities (e.g., police vehicles, fire vehicles).

- Branch point replays.

- Can change run speed up to 10 to 1.

- AAR (delayed feedback). In addition, as noted previously, the evaluators sometimes provide cues to the participants (i.e., near-immediate feedback); however, this is seldom done.

6. Customization

a) Can the product be customized? If so, how, and by whom?

- Yes. The Army version of JANUS has been customized for domestic counter-terrorism training/exercising. The National Simulation Center is the JANUS agent; PEOSTRI is the JANUS developer (Anteon, Corp. is their JANUS development contractor).

b) What is the process and how much time does it take to develop a new exercise/scenario?

- A brigade exercise can be built in about four hours by an experienced person. Someone with less experience will take longer.

- The length of time to build an exercise can be considerably longer if terrain and resource data need to be entered into the system. Also, as with any large-scale exercise, planning the exercise with the multiple participating agencies can require substantial time.

c) What is the process and how much time does it take to modify an exercise/scenario?

- Modification can be accomplished quickly. Depending on the type and extent of modification, it can take as little as several minutes. Note, also, exercises are typically modified in real-time during their conduct (e.g., injects).

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- It is a plug and play simulation.

- Exercise setup will depend on the number of consoles being used. For a typical large-scale exercise (e.g., 50 player-participants, 50 controllers/facilitators), I estimate at least 4-8 hours to move the equipment into the control center (e.g., 15 workstations), network connection and equipment setup (e.g., large-screen display in debriefing room), testing, and scenario start.

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- AAR support (see earlier/above AAR descriptions in this document)

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
1	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
2	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
2	Remote Observation
2	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
3	Distributed, collaborative, decision-making environment

2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

   Yes

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

   Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

   Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

   Unknown - This is a government owned product, without a history of sale.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

The Joint Conflict and Tactical Simulation is a product primarily used by the U.S. military, but recently licensed from Lawrence Livermore National Laboratory and the Regents of the University of California by Auburn University for application to civilian emergency response training and exercising. Auburn University has partnered with a commercial contractor, Emergency Response Training Systems (ERTS) to provide training and exercising services using JCATS. The following survey, while incorporating information related to military training, focuses mainly on the deployment of JCATS for civil training and exercising as deployed by Auburn University and ERTS.

A. Basic Product Information

Name of Product:

Joint Conflict and Tactical Simulation (JCATS)

Developer: Lawrence Livermore National Laboratory (LLNL)

Contact information:
Dr. Paul Waggoner
Program Manager
Emergency Response & Homeland
Security Training Program
Auburn University
410 Green Hall Annex
Auburn University, AL 36849-5532
Tel.: 334-844-4541
Email: waggolp@auburn.edu

Technical Support Contact Information:
Mr. Patrick Aguillard
VP Operations
Emergency Response Training Systems
PO Box 297
Salem, AL 36874
Tel.: 334-468-0250
Email: Patrick.Aguillard@ertsinc.com

Website: www.ertsinc.com

COTS/GOTS: GOTS

Product status (version in use): Version 4.0 (October 2002)

B. Summary Product Description:

1. What is the focus/specialty of the product?

JCATS is an interactive, high resolution, entity-level war fighter simulation that represents air, ground, sea-borne combat between discrete and aggregate units on a digitized polygonal terrain. The system is a constructive simulation used to drive exercises and rehearse missions ranging from small teams to joint task force level. Besides combat scenarios, JCATS can simulate exercises for drug interdiction, disaster relief, peacekeeping, counter-terrorism, hostage rescue, and site security. The system is currently being adapted by multiple organizations to meet new needs with respect to theater-level combat simulation (the JCATS-

JTLS federation effort), and to civil emergency response simulation. Intended uses are for planning and rehearsal, training and exercises, experimentation and analysis.

2. Current target audience?

The primary audience for JCATS is the U.S. military for tactical war fighting simulation, and other U.S. governmental organizations for simulating operations other than war (OOTW). There are 95 major users at over 150 sites, including:

- Six Military Unified Commands: JFCOM, CENTCOM, EUCOM, PACOM, SOCOM, SOUTHCOM
- Military branches: Army, Navy, Marines, Air Force
- Other DoD organizations: DMSO, DTRA, DARPA, OSD
- Non-DoD organizations: Secret Service, DOE, DOJ.

JCATS was used by the U.S military to rehearse possible combat operations for several international conflicts. The system was also used by the Marine Corps and Navy to plan and execute an exercise in the San Francisco Bay Area. During the exercise, JCATS tracked the live participants, and adjudicated in real time the effects of virtual air and artillery attacks on the participants. The system has been used several times to exercise civilian emergency operations center, law enforcement, HazMat, and school district personnel in Lee County, AL.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation *(constructive exercise driver)*
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	2	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
0	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data

1	Non-specific	1	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

JCATS is a 2D terrain-based, line-of-sight simulation software application that supports multiple resolutions. It has the capability of using HLA-compliant models for threat assessment and prediction.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

JCATS is software that requires computer hardware to run. The actual configuration of the computer system and network will depend upon user needs, but will generally require multiple personal computers (PCs), and local area network (LAN) hardware and support software. As currently offered by Auburn University through their commercial partner ERTS, JCATS is provided as a service whereby ERTS supports the training or exercising with a complete system.

c) Large multi-station system, or based on individual PCs?

JCATS is a multi-station system of networked PCs. The number of stations depends upon the nature of the exercise. A command post or EOC type exercise may employ eight participant stations and a control station. A military joint task force rehearsal, on the other hand, may use hundreds of workstations.

d) If simulation models are used, what is the basis of the data and/or distributions used?

JCATS combined and upgraded the capabilities of two earlier programs, the Joint Conflict Model, an advanced version of Janus, and the Joint Tactical Simulation, an urban conflict model. Calculations governing damage, fatalities etc. are performed using probability of hit and probability of kill Ph/Pk algorithms. JCATS is an Army certified training system.

e) Web-based application, LAN, or a single computer/system-based application?

JCATS runs on a local area network, and can also be deployed on a secure wide area network (WAN).

f) Describe any debriefing after-action reporting support tools:

JCATS features an analyst workstation (AWS) that can be used to assess lines of sight, target hits and kills, entity movements, mounts/dismounts according to work cell,

segment and aggregate levels. The system captures and records segments of simulation activities for future playback.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Multiple workstations, several rooms (participant cell stations, EOC, debrief/AAR etc.), and a LAN are necessary. The number and size are dependent on exercise design and number of participants.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

The minimum configuration below is capable of running simulations with fewer than 1000 entities. For larger simulations, follow the recommended configuration.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

JCATS 4.0 runs only on RedHat Linux 7.3. Note that the forthcoming release of JCATS 5.0 will use RedHat Linux 9.0.

b) Processor speed (in MHz): Server: 2.2 GHz Pentium 4 (minimum)
Client: 2.0 GHz Pentium 4 (minimum)

c) Memory (SDR/DDR): (recommended) Server: 768 MB (minimum), 1.5 GB
Client: 512 MB

d) Free disk space: (recommended) Server: 8 GB (minimum), 20 GB
Client: 8 GB (minimum), 20 GB (recommended)

e) Internet connection speed (if any):
Optional secure WAN connection: 22 Mbps (minimum)
100 Mbps WAN (recommended)

f) Display adapter: 1280x1024 minimum resolution, 24bit SVGA with 32MB RAM (minimum)

g) CD-ROM speed: Industry standard

h) Optional accessory requirements[5]: Digital projector and screen, color printers (Postscript capable), wireless communication system.

5. Describe the user interface characteristics:

JCATS features a graphical user interface that is controlled by mouse and keyboard inputs. Trained operators execute all interface functions, such that exercise participants do not need to use the system directly. JCATS output consists of 2D terrain maps that show geo-specific and geo-cultural features, and simulated assets and entities at multiple levels of resolution. Workstation views are constrained by the role and LOS limitations that each participant would encounter in the field.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

There is no system constraint on the number of simultaneous users. A realistic minimum number of participants is eight (for an EOC type exercise). JCATS has been used for military rehearsals using 250 workstations.

b) Number persons usually trained simultaneously?

The number trained simultaneously depends upon the training objective. Small or large teams can be trained simultaneously (squad level to battle staff or multi-jurisdiction level).

c) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is required. Access to JCATS is controlled by LLNL, such that the user must obtain an activation key from LLNL.

7. Describe any user HELP features:

The GUI includes pop-up screen tips that describe the functions of buttons/menus over which the mouse is positioned.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

Data segments of simulation events are recorded for analysis and playback.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

One week of training is needed for workstation operator proficiency. Exercise participants do not need workstation training. Typically, a short preview scenario is run before STARTEX in order to acquaint participants with the JCATS console, game play, and potential actions to be taken.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders

	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
1	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	2	Drills
1	EMA	2	TTX
2	Fire	1	FE
1	Government Administrator	2	FSE
2	Health Care	2	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
1	Public Safety Communication		**Incident Stage Supported**
1	Public Works	0	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

User dependent. Each training exercise is developed according to client training objectives.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Although JCATS can integrate WMD dispersion models (e.g., HPAC, VLSTRACK), the system does not contain specific WMD training content.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

JCATS is used to drive a constructive simulation and adjudicate decisions of exercise participants. It can be used for short, repeated exercises or long, single-run exercises. These are planned with the cooperation of the client and participating organizations, whereby scenarios are scripted to provide the desired training benefits. Exercises are controlled and facilitated by the contractor, ERTS.

d) Exercise/scenario length/time(typical):

A typical civil emergency response scenario may take several hours to run, such that multiple runs can be performed per day. Scenarios have ranged from 20 minutes (site security scenario) to 2 weeks (drug interdiction mission involving multiple agencies).

e) Potential equipment and/or facilities product can address:

JCATS can model a wide range of entity types, and allows for aggregation or disaggregation (mounting/dismounting). Because a geo-specific database must be developed by the contractor for a specific locale, virtually any facility type can be included in a scenario.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

JCATS is applicable to counter-terrorism T&E without modification. Modification of the existing civilian version may be required to model biological, radiological, and nuclear threats or events. This would entail integration of an HLA-compliant dispersion model.

g) Are there any constraints on supported exercises or scenarios?

Simulation scenarios are custom designed for the client. The software supports the modeling of 60,000 elements, and 10 friendly/unfriendly sides/teams. Typical terrain playbox size for military applications is 660 x 660 Km.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

JCATS is primarily designed to drive a real-time team exercises, but can be used in a distributed collaborative manner by remote participants over a secure WAN.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

The controller station can alter game play, weather, clock speed etc.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

User dependent.

d) Does a curriculum already exist? If so, briefly describe its form and content

Currently, no curriculum exists that applies JCATS to civil emergency response training. JCATS supports military training through the Joint War Fighting Center, Joint Forces Command. See: http://www.jwfc.jfcom.mil/about/fact_jcats.htm for more information.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

JCATS supports scenario activity recording and playback for after action review (AAR). Participant evaluation is conducted by the exercise coordinator/facilitator.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Participant/team feedback occurs through after action review conducted by subject matter experts. "Hotwash" debriefings take place immediately after each simulation run, and results from multiple runs are collected for post-exercise review and analysis. The contractor facilitates this process.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

There are editing tools for the different system databases. The VISTA tool is used to edit system characteristics, and other editors are used for terrain and symbol databases. There are a number of JCATS reference manuals for system administration, Ph/Pk, algorithms, and behavior models.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The JCATS controller station can alter simulation play through control of events (via injects) and weather, and can be used to alter clock speed or pause the simulation.

6. Customization

a) Can the product be customized? If so, how, and by whom?

The contractor develops the scenario and modifies the simulation database. The contractor must customize all parameters for the types, numbers, and behaviors of simulated entities, and the terrain database according to user requirements. JCATS system software, itself, is maintained and periodically upgraded by LLNL.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

The process to develop a new exercise depends upon the complexity of the scenario and the number of agencies involved. The planning process, involving multiple agencies, may typically take several months. The system implementation of importing data, customizing parameters, developing structure plans etc. may take on the order of two to four weeks.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The customer provides the general scenario and training objectives, for which the contractor develops the simulation model. The customer does not directly use or modify the JCATS application.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

For an exercise at a customer location, one day is required to setup and test the PCs, a local area network and the JCATS system.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The analyst workstation provides post-exercise tools for analyzing simulation run details. Other HLA-compliant tools may be integrated into JCATS to provide enhanced functionality.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High	**X**	Very
	Medium		Somewhat
	Low		Limited
X	N/A *(Content is generated by user)*		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
X	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation

3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) **No, Vendor must quote a system based on user requirements** (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Not specified.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Joint Integrated Database Preparation System (JIDPS)

Developer: United States Joint Forces Command (JFCOM)

Contact information:
Jeff Irwin JT86-1916
JIDPS Configuration Mgr/Helpdesk
JTIMS Configuration Team
Northrop Grumman Mission Systems
jeffrey.irwin@jfcom.mil
(757) 686-6973 Comm
668-6973 DSN
(757) 686-7967 Fax

And additional Contact information:

Website: http://www.jwfc.jfcom.mil/about/fact_jidps.htm

Product status (version in use): 3.4

Date of Evaluation: December 9, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- CD-Rom
- Related Papers
- Material from Internet

X Other: Unclassified presentation at JFCOM, JIDPS System Specification & Software Requirement Specifications Document, Terrain Processing System (TPS) manual.

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  A computer software system that accesses source data and uses that data to generate application –ready files. "JIDPS accesses and retrieves data from various authoritative data sources (ADS) and uses that data to produce simulation-ready force, target, and terrain files in support of training and exercise, analysis, planning, and mission rehearsal".

- Current Target audience: United States Joint Forces Command Joint Warfighting Center

- Potential equipment and/or facilities product can address: realistic exercise simulation development.

  Data sources currently available include:

Source	Definition	From	Data Content
MIDB	Modernized Integrated Database	Defense Intelligence Agency	Foreign unit and target data
CFDB	Conventional Forces Database	Office of the Secretary of Defense, Program Analysis and Evaluation (PA&E), Joint Data Support (JDS) Office	U.S. unit data, all service
OBDIF	Unit Order of Battle – Unclassified	Defense Modeling & Simulation Office (DMSO) Modeling & Simulation Information Analysis Center (MSIAC)	Generic U.S. force data (all services) generic light and heavy foreign ground force.
OBDIFC	Unit Order of Battle – Classified	Defense Modeling & Simulation Office (DMSO) Modeling & Simulation Information Analysis Center (MSIAC)	U.S. and foreign forces, all services.
DAFIF	Digital Aeronautical Flight Information File	National Imagery and Mapping Agency (NIMA)	Worldwide airfield and navigational aid data.
MTOE	Modified Table of Organization and Equipment	Requirements Documentation Division, Fort Belvoir, VA	Personnel and equipment authorizations for U.S. Army units.

  JIDPS provides access to the following terrain data sources:

Abbreviation	Full Name	From	Data Content
DTED0	Digital Terrain Elevation Data Level 0	National Imagery and Mapping Agency (NIMA)	Elevations data with 1KM postings
DTED1	Digital Terrain Elevation Data Level 1	National Imagery and Mapping Agency (NIMA)	Elevation data with 100M postings
DTED2	Digital Terrain Elevation Data Level 2	National Imagery and Mapping Agency (NIMA)	Elevation data with 30M postings

Abbreviation	Full Name	From	Data Content
VMAP0	Vector Smart Map Level 0	National Imagery and Mapping Agency (NIMA)	Feature Data at 1:1,000,000 resolution
VMAP1	Vector Smart Map Level 1	National Imagery and Mapping Agency (NIMA)	Feature Data at 1:250,000 resolution
UVMAP	Urban Vector Smart Map	National Imagery and Mapping Agency (NIMA)	City features at 1:12,500 resolution
SEE	Synthetic Exercise Environment	Defense Threat reduction Agency (DTRA)	Notional terrain data in VMAP0, VMAP1, DTED0, and DTED1 format

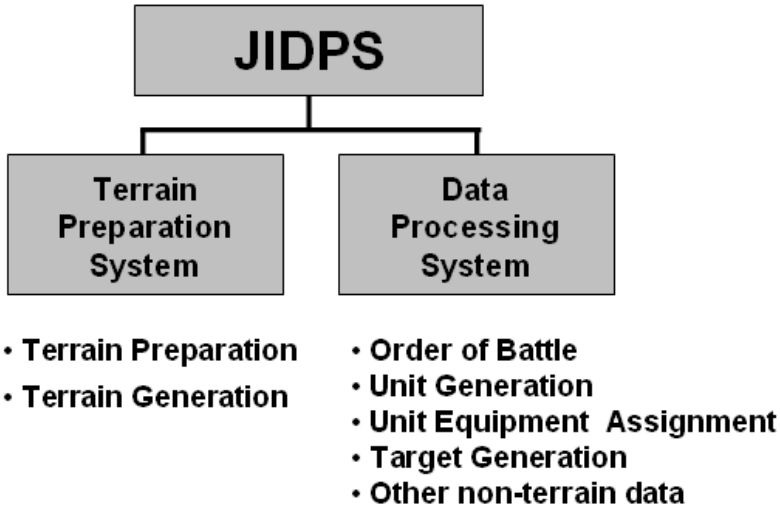
- In one paragraph, how is this product potentially relevant to ODP's T&E program? JIDPS can "reduce the time and resources to produce simulation databases, increase data credibility & increased flexibility in exercises". It is a tool that can be used for reducing the time required to create exercises for simulated training & exercises (I.e., build accurate simulation databases to be executed by a compatible simulation).

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
Features integrated force, target, and terrain production, and produces simulation-ready files from authoritative data.

JIDPS consists of two modules joined by a common graphical user interface (GUI): The Data Processing System (DPS), which produces force, unit, and target-related data, and the Terrain Preparation System (TPS), which produces terrain-related data. The following screen shot illustrates this:

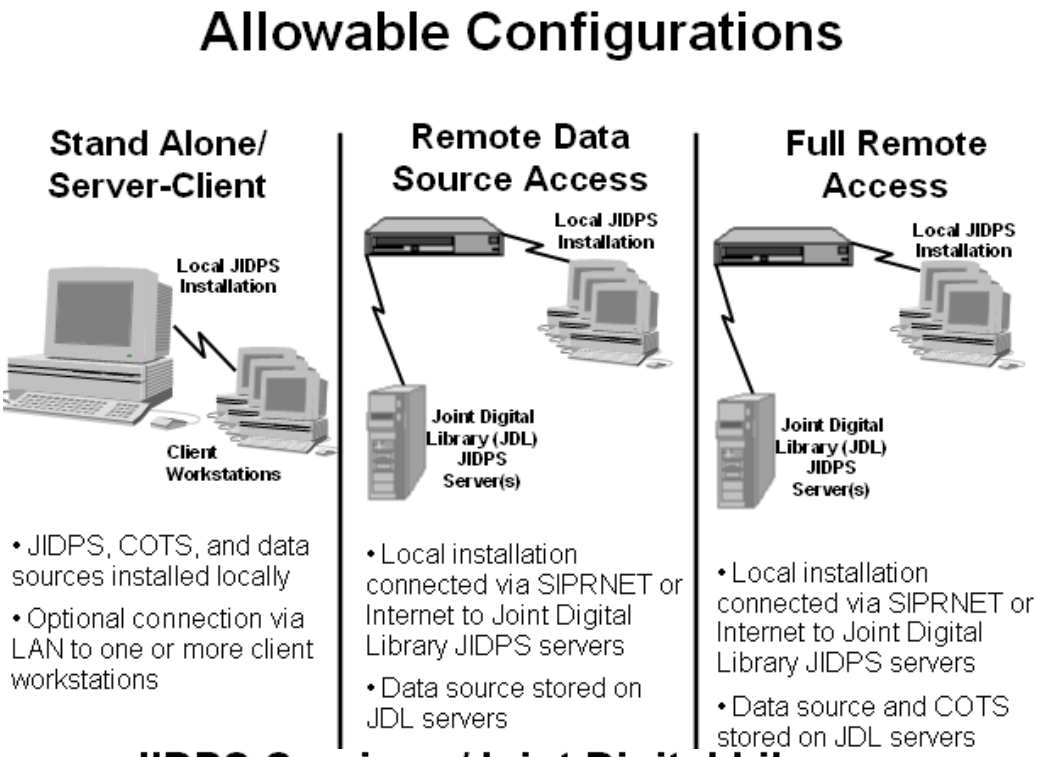
JIDPS Modules



JIDPS uses these basic constructs:

Construct	Description
Scenario	JIDPS term for the collection of all targets, units, equipment, aircraft, and personnel for a simulation event.
Faction	A collection of units and their associated targets, equipment, aircraft, and personnel that will operate as a cooperative association in the simulation event.
Target	Non-units entities that can be engaged by simulation units and weapons.
Unit	An organization or ship to be played in the simulation event.
Equipment	A unit's combat systems to be played in the simulation event.
Aircraft	Rotary and fixed-wing aircraft to be played in the simulation event.
Personnel	The people assigned to units to be played in the simulation events.

b) Large multi-station system, or based on individual PCs (if applicable)?



JIDPS Services /Joint Digital Library

- Delivered through four servers
- Allows remote access via
  - SIPRNET (Classified)
  - NIPRNET (Unclassified)
- Reduces local storage requirements
- Eliminates need to procure, load, and maintain
  - Data sources
  - Commercial Off-the-Shelf (COTS) software
    - ArcInfo/ArcGrid
    - Oracle
- Allows distributed database production

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
It requires other software to function. JIDPS Version 3.4 is delivered on compact disk. Users may request a 4mm tape or 8mm tape version. The JIDPS Version 3.4 release will include user and installation documentation and limited supporting COTS software. The user will be responsible for procurement and installation of remaining COTS software and the data sources required for the user-selected configuration. JIDPS uses the

following supporting data sources: Conventional Forces Database (CFDB), Modernized Integrated Database (MIDB), Unit Order Of Battle (UOB) Database, Modified Table of Organization and Equipment (MTOE) Database, Digital Aeronautical Flight Information File (DAFIF), National Imagery and Mapping Agency (NIMA) terrain data.

d) If simulation models are used, what is the basis of the data and/or distributions used? JIDPS supports simulations such as: Joint Theater Level Simulation (JTLS), Joint Conflict and Tactical Simulation (JCATS), Corps Battle Simulation (CBS), Exercise-use Modernized Integrated Database.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Requirements	Remote Access (TPS Only)	Full Remote Access	Remote Source Access	Stand-Alone Local Access System	Client-Server Local Access System	
					Server	Client
PC Installation						
OS	Windows 95, 98, NT or 2000	Windows 95, 98, NT or 2000				Windows 95, 98, NT or 2000
Memory	32 MB RAM	64 MB RAM				32 MB RAM
Sun Workstation						
Hardware	SPARC 5	SPARC 5	ULTRA 2	ULTRA 2	ULTRA 2	SPARC 5
OS	SOLARIS 8	SOLARIS 8	SOLARIS 8	SOLARIS 8	SOLARIS 8	SOLARIS 8
Memory	128 MB RAM	128 MB RAM	512 MB RAM	512 MB RAM	512 MB RAM	128 MB RAM
External Storage			CDROM, 8mm tape drive or 4mm tape drive	CDROM, 8mm tape drive or 4mm tape drive	CDROM, 8mm tape drive or 4mm tape drive	
Disk Storage		500 MB	4 GB	34 GB	34 GB	
Monitor	17” Color Monitor	17” Color Monitor	17” Color Monitor	17” Color Monitor	17” Color Monitor	17” Color Monitor
User Installed Software			ArcInfo 8.1 ARC Grid Oracle 8.0.5 or higher		ArcInfo 8.1 ARC Grid Oracle 8.0.5 or higher	

3. Describe the user interface characteristics:

Delivered to users via four JDL servers. It is hosted on unclassified JDL terrain server (Euclid) and it uses JWFC COTS and terrain library. It is login and password protected. JIDPS incorporates an operator interface consisting of a common Graphical User Interface shared by both the TPS and DPS modules. The GUI accesses, edits, and maintains scenario, terrain, and force data. The operator uses a keyboard and a mouse to enter information. The GUI is functional for TPS or DPS when the modules are installed separately.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
They currently have more than 60 users world-wide and can support unlimited simultaneous users.

b) Custom/proprietary hardware required? If so, identify:
See C)2.

5. Describe any user HELP features:
Self paced PowerPoint with step by step instructions for DPS and pop up help menus for TPS. The User's Manual shall be integrated with the JIDPS Version 3.4 Help System. Selecting the "Help" in the JIDPS Version 3.4 GUI, at any place in the application, links the user to the applicable portion of the User's Manual. The User's Manual is also delivered in printable electronic format and be included as portion of the JIDPS Version 3.4 release package. For JIDPS Version 3.4 the following technical documents are produced: User's Manual, Installation Manual, Software Version Description, System Requirement Specification, the System Design Document, the Interface Design Document, & the Algorithms Manual. Documentation will include any system-unique information required to operate, troubleshoot, and maintain JIDPS.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
Data sources are stored either locally or on the classified or unclassified TPS server of JWFC's Joint Digital Library (JDL).

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Operation and system administration training for JIDPS will be provided at the user's expense. Upon request, JWFC will provide a mobile training team and/or exportable training materials for JIDPS. Users will inform JWFC of any follow-on training requirements. Trainees shall have the basic computer skills and operational knowledge of the simulation/databases that JIDPS supports.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content.): None.

b) Exercise/scenario length/time(typical): N/A It depends on the simulation used in conjunction with the tool.

A JIDPS scenario is organized as follows:

- A ***scenari***o contains one or more factions
- A ***faction*** contains ***targets*** and ***units*** associated with the faction
- A ***unit*** contains its associated ***equipment***, ***personnel***, and ***aircraft***

Information for targets, units, equipment, aircraft, and personnel may be entered manually, or obtained from a data source query. A scenario may include an associated geographic ***playbox*** that may be used to produce associated terrain files or position units and targets in the simulation's playbox at run-time.

c) Is product directly applicable to counter-terrorism training/exercises for the civilian emergency response community or are modifications required? If modifications are required briefly describe them.

Can be used as is, depending on its purpose. See item below.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

The DOE currently uses the terrain preparation system for emergency response preparedness for nuclear weapons sites.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

N/A

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The user may select desired features in the terrain from any data source as appropriate. For example, with VMAP1, the user could select roads, vegetation, lakes, rivers, bays, oceans, building, etc. For DNC data the user could select piers, hydro areas, water depths, etc. The user may also use alternate terrain data sources such as shape files if the TPS development team has imported them. Due to the varied nature of Shape files and other GIS data, each set must be examined and may need to be manually imported. This process can take as long as a week per data source.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The UOB database is customized by the user as the user develops it. Terrains generated can be modified in the simulation terrain editor if need be.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The current time for generation of UOB databases is dependent upon the size of the database created and how many units the user wants to “play” in the simulation. Terrain generation times are generally under two hours for a 660km playbox with extensive data contained in that geographical region. Runtimes for terrains depend upon the user

selected resolution and if buildings are included. A large terrain run at low resolution will typically finish in a half hour or less

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
X	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	1	Multiple dynamic paths / probabilistic outcomes
	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	2	Scenario replay
	Group	1	Automated summary of data
	Small multi-user team (up to 25 persons)	3	SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied

2	Operational		Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
2	Health Care		FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
2	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Demo not observed, some items below were not rated.

Face Validity		**Current Applicability to ODP**
High	**1**	Very
Medium		Somewhat
Low		Limited
N/A		

Ease of Use
Easy
Relatively Easy
Difficult
Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

2 Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

There is no cost for DOD users and all others are determined on a case by case basis (they haven't charged anyone yet).

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:
Review form filled-in by Rolands & Associates.
Reviewed, edited, modified by TLI team.
JTLS was not observed.

A. Basic Product Information

Name of Product:

Joint Theater Level Simulation (JTLS)

Developer: ROLANDS & ASSOCIATES Corporation

Contact information: Dr. Ronald J. Roland
President
500 Sloat Avenue
Monterey, CA 93940
(831) 373-2025 – Voice
(831) 373-2841 – Fax
President@rolands.com

Technical Support Contact Information: Ellen F. Roland
Simulation Center
500 Sloat Avenue
Monterey, CA 93940
(831) 373-2025 – Voice
(831) 373-2841 – Fax

jtlsdev@jtlsn.nps.navy.mil

Website: www.rolands.com

COTS/GOTS: Both:
GOTS - Developed for DOD Joint Warfighting Center
COTS - This review. Developed by Rolands & Assoc.

Product status (version in use): JTLS 2.5 is the current released version
JTLS 2.5A – scheduled for 20 June 2003
This is a bug-fix only release
JTLS 2.6 – schedule for release 1 October 2003
This is an upgrade version with the ability to:
- Represent small island terrain hexes
- Represent Dual-capable land and water hexes
- Input of locations to tenths of seconds
- DMPI-Level Battle Damage Reports
- Represent Multiple Crossing Runways
- Periodic Reports by service not just side

- Automatic user terminal startup
- HLA Link with JQUAD model
- Orbiting Cruise Missile air missions

JTLS 3.0 – schedule for release 1 May 2004

This is a major upgrade with the ability to:

- Run JTLS completely using a web-browser interface
- Represent Air-Ground Weapon Time-per-Round
- Represent Area Weapon Weather / Night Degrade
- Define Units With Default targets
- Destroy Bridge From Either Side
- Multi-Hex Amphibious Landings

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describe key elements.
Include the following:

- Focus/specialty of product:

  Large multi-force wargaming system. The Joint Theater Level Simulation (JTLS) system is an interactive, multi-sided wargaming system that models a joint and coalition force air, land, and naval warfare environment.

  Its purpose is as a tool for use in the development and analysis of joint warfighting operation plans, including the following.

  - Combat planning analysis tool.
  - Support material for education.
  - Exercise support for training.

- Means to investigate the results of combat.

The JTLS system consists of six major programs and smaller support programs that work together to prepare and run the scenario, and analyze the results. Designed as a tool for use in the development and analysis of operation plans, the model is theater-independent and does not require knowledge of programming. The JTLS system operates on a single computer or on multiple computers, either at a single or at multiple distributed sites.

Model features include Lanchester attrition algorithms, detailed logistic modeling, and explicit air, ground, and naval force movement. In addition to the model itself, the JTLS system includes software designed to aid in scenario database preparation and verification; entering game orders; and obtaining scenario situational information from graphical map displays, messages, and status boards.

- Current Target audience:

  Joint Task Force Staff, Joint Staff College Training, Operational Plan Evaluation

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
2	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
3	Equipment	0	Does not provide feedback or AAR

		0	HLA Compliance (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

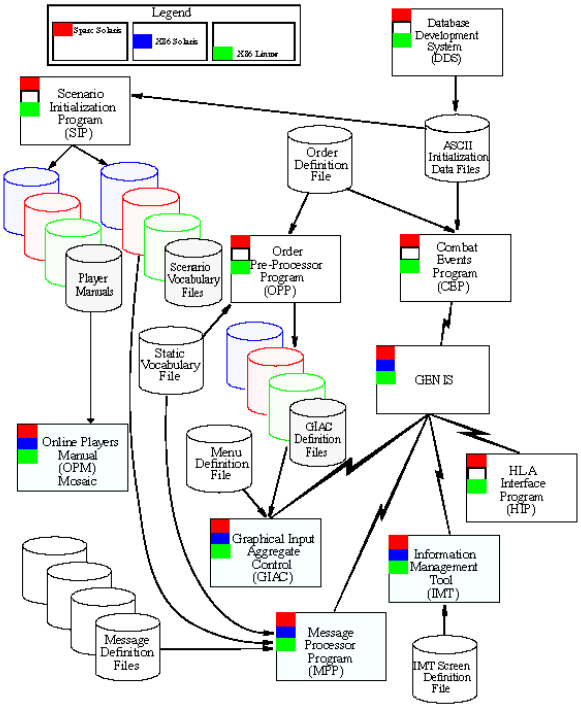
3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

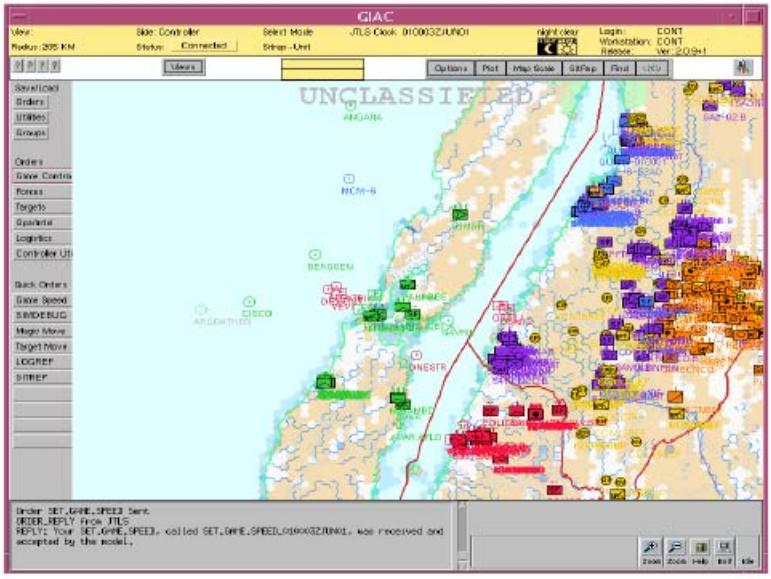
- The combat model is contained in a single program process called the Combat Events Program (CEP). This program accepts orders from one or more users on each side represented. The orders entered are sent to the simulated units and the units follow the order to the best of their ability given their strength, assets, and friendly, neutral, suspect, or enemy forces encountered while attempting to accomplish the task.

- External programs can obtain information concerning the status and progress of the forces from the JTLS data server called the genis. External programs obtain status information and display this information is a variety of ways.

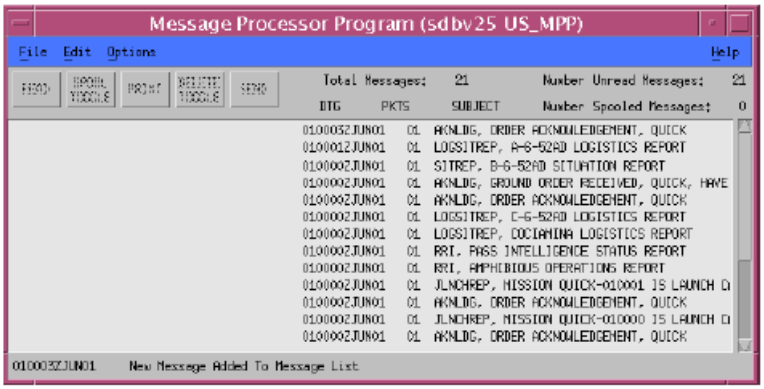
- JTLS workstation is comprise of four tools, giac, IMT, MPP, and OPM:
  - Graphical display of the status of the forces is provided by the giac
  - Information Management Terminal (IMT) provides a tabular summary of the status of all forces
  - Message Processor Program (MPP) provides written textual information that the forces generate and want to send to their superiors.
  - Online Player's Manual (OPM) provides an HTML-based browsing capability of the data contained in the database.



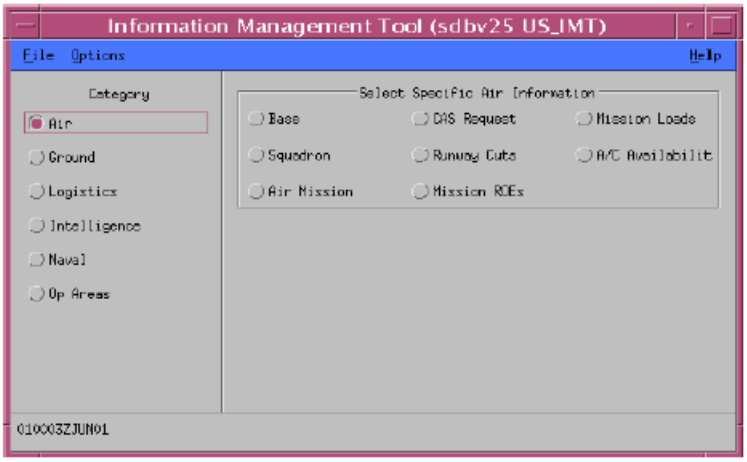
General JTLS Structure.



Example control display.



Example message processor program display.



Example information management tool display.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- All software required to run JTLS is included in the JTLS software suite except for:

k. Oracle Database Management System which is needed to develop a scenario and is needed when using the Post-Processor analysis capability.

l. Terrain Preparation System (TPS) – JTLS comes with an unclassified terrain database for a fictional land-mass in the North Atlantic Ocean. Obtaining a hexagon terrain database for real-world terrain must either be created by hand or obtained from the U.S. Government, Joint Warfighting Center. Tools for creating a terrain by hand are provided as part of JTLS, but this is a time consuming process. Terrain cannot be provided with JTLS because of NEMA restrictions on the raw data (DTED Data) that is used to generate JTLS terrain files. Once permission is obtained, the process of generating a 2000 NM by 2000 NM terrain database takes a few days and is fully automated.

c) Large multi-station system, or based on individual PCs?

- Large multi-station system, although (supposedly) it can be used on an individual PC.

- JTLS is a multi-sided game. There must be at least one workstation executing for each side represented in the scenario. A specific JTLS scenario can have from two to ten sides represented. For any specific side, the user may bring up as many workstations as desired and divide the command of the forces on that side in any manner desired. For example, it is not unusual to have fifteen workstations on the US side in a JTLS game. The following table shows a typical medium-size workstation setup for the US side.

Workstations	
Ground – 3	One commanding each U.S. Corps in theater
Air – 3	One used for offensive operations, one used for defensive operations, and one used for current operations
Naval – 3	Two commanding naval forces, and one used for naval air forces
Logistics – 2	One supporting ground logistics requirements, and one used to generate and compile reports needed by the exercise audience
Marine – 2	One supporting amphibious operations, and one used for marine air operations
Intel – 2	Two preparing intelligence reports for the exercise audience.

- This table is only an example. Each side, scenario and exercise is different. A side can be created representing Non-Government Aid Organization (NGO), and it can be run from a single workstation. You can have a small training scenario with two sides and get by with three workstations. In this configuration one workstation would be used by the Controller, one would be used by the Side 1 operator and the last workstation would be used by the Side 2 operator.

- A workstation can be a Sun/Solaris Workstation or an Intel Pentium IV-based PC running Redhat Linux. Within a single distributed site, each Workstation must be attached to an NFS-mounted disk.

- Games can be setup at multiple distributed sites. Each site must then have communication to the central JTLS site at which the CEP is executing.

d) If simulation models are used, what is the basis of the data and/or distributions used?

- Simulation models are used, and there is no basis for data or distributions used. The CEP is a 100% data driven model. The data is determined by the user creating a scenario database for a specific exercise. The model is based on regularly accepted algorithms used to assess combat damage, make detections, and compute movement speed. For example, the user building the database decides how fast a Motorized Rifle Regiment can travel through desert terrain, open terrain, forested terrain etc.

- JTLS is delivered with a "Standard Database" that has gone through extensive testing by the U.S. Government and has been determined to make represented forces operate in a realistic manner.

- Additional simulation-related characteristics:
  - Software tools for scenario database preparation and verification; entering game orders; and obtaining scenario situational information from graphical map displays, messages, and status boards.
  - Hex-based terrain aggregates regional terrain and environmental characteristics: trafficability, elevation, and chemical or nuclear contamination.
  - Attrition algorithms, detailed logistic modeling, and explicit air, ground, and naval force movement.

e) Web-based application, LAN, or a single computer/system-based application?

- JTLS 2.5, JTLS 2.5A, and JTLS 2.6 are WAN/LAN applications.
- JTLS 3.0 will be a Web-based application.

f) Describe any debriefing after-action reporting support tools:

- JTLS provides two basic types of replay capability:
  - Post-processor, a periodic summary report (usually generated every six hours)
  - Full message and order retrieval for post-game analysis.

- Detailed AAR evaluation is accomplished manually using the above information as the basis of the report.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Depends on the size of the exercise, space for workstations and the exercise audience is required. The space usually needed includes printers, overhead projectors, and an auditorium at which to conduct scenario briefings.

- Field operational hardware may be required for exercise conduct, depending on the exercise configuration being used. But, it can operate without such hardware.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

- Sun/Sparc systems running Solaris 7, 8, and 9 are currently supported.
- Pentium IV based PC running RedHat Linux 7.2.
- SIMSCRIPT II.5 development language.

b) Processor speed (in MHz):

- Sun/Sparc systems: Model System - 500 MHz, Workstations – 200 MHz.
- Pentium IV systems: Model System - 800 MHz, Workstations - 600 MHz.

c) Memory (SDR/DDR):

- Model System – 1 GByte to 2 Gbyte.
- Workstation System – 512 MByte to 1 Gbyte.

d) Free disk space:

- Large and long scenario: 100 Gbyte.

e) Internet connection speed (if any):

- N/A

f) Display adapter:

- N/A

g) CD-ROM speed:

- N/A

h) Optional accessory requirements[5]:

- N/A

5. Describe the user interface characteristics:

- The Graphical Input Aggregate Control (GIAC) provides a graphical display of the status of the forces.
- The Information Management Terminal (IMT) provides a tabular summary of the status of all forces.

- The Message Processor Program (MPP) provides written textual information that the forces generate and want to send to their superiors.

- The Online Player's Manual (OPM) provides an HTML-based browsing capability of the data contained in the database.

  These four tools, GIAC, IMT, MPP, and OPM comprise the JTLS workstation.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

- Minimum 1 to a maximum of several hundred.

b) Number persons usually trained simultaneously?

- In Joint Staff College Exercise – 50.

- In Joint Task Force Exercise – 250.

c) Custom/proprietary hardware required? If so, identify:

- None.

Note, in certain modes of operation, actual military field hardware is used during an exercise.

7. Describe any user HELP features:

- The Giac and IMT have on-line help.

- Each GIAC Order panel has a panel help button describing when and how to use each order. Each field on each order panel also has help explaining the consequences of entering various values in the field. This information is obtained by either clicking on a help button or clicking on the name of the order panel field. All other GIAC functions also have on-line help available, but after the first two hours of training this is seldom used.

- The IMT has help description for each column of each status display table. The user must simply keep the mouse over the title of each column and the help is automatically displayed. When the mouse is moved, the help display is automatically closed.

8. Data recording & storage features (e.g., Scenario events; student performance):

- Every order that is entered into the system is saved for purposes of replay and for detailed evaluation of unexplained game situations.

- Approximately every two-hours of execution time, users normally take a checkpoint or a save of the current game status.

- All messages sent to the players are saved for historical post-game evaluation and for detailed evaluation of unexplained game situations.

- No concept of student performance exists in JTLS.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- JTLS is sold with two weeks of user training. This training is mandatory.
  - The first week introduces the user to the basic model concepts and how to use the JTLS interface tools.
  - The second week introduces the user with how to start and stop of the model, how to run all of the support tools that come with JTLS (such as database development tools) and describe the JTLS directory structure and how to maintain the JTLS system.

- Additional training can be provided addressing the detailed model logic. The complete training requires 17 weeks.
  - Air – 4 Weeks
  - Ground – 2 Weeks
  - Navy – 1 Week
  - Amphibious – 1 Week
  - Intel – 1 Week
  - Logistics – 2 Weeks
  - Special Forces – 1 Week
  - Civilian – 1 Week
  - Database – 2 Weeks
  - Support Tools i.e. AAR, Postprocessor – 2 Weeks

  Usually a custom training plan is created (less than the 17 week complete course), based on needs and desires created each customer.

- All JTLS training is geared toward how to use the system. No training is provided for the exercise audience. That is the responsibility of the users who purchase JTLS.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	2	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		3	First Responders
	Mode of Delivery:	2	Commanders
2	Self-paced	2	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**

1	Intermediate	2	Awareness
1	Advanced	2	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	3	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	3	Pre-Training
2	EMS	3	Drills
2	EMA	2	TTX
0	Fire	1	FE
0	Govt. Administrator	2	FSE
1	Health Care	2	FSE Reinforcement
0	HazMat	1	Distributed Collaborative Exercise
0	Law Enforcement	1	National Training Exercise
1	Public Health		
0	Public Safety Communication		
0	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	2	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable) … for use/operation of JTLS, not forces training:

- Training approaches (from JTLS literature):
  - Seminar wargame or analytical design: Small cadre of gamers operate the model and report results to key decision-makers (trainees, who operate separate from the model).
  - Open support design: Trainee decision-makers and/or their representatives enter orders directly into the game and retrieve data from the model.
  - Hidden support design: Trainees develop operation orders, and ignore model constraints. A subordinate response cell processes these operational level orders into game-level directives. The response cell monitors model and monitors simulation outputs over organic command and control systems.
  - Distributed output design: Trainee decision-makers send orders and monitor results over their organic, wartime command, and control systems.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

- No specific knowledge based information in JTLS. The WMD model is extremely rudimentary and would need to be upgraded significantly if specific agents had to be modeled. JTLS is a 100% data driven model, there is no data or knowledge base in the code itself.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Training/exercise objectives must be at the high level with JTLS. EOC decision-making, ICS process, and team communication are possible training/exercise objectives.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Long.
- Normal operations.
- Simulation supported
- Unscripted or partially scripted.

e) Exercise/scenario length/time(typical):

- Seven to ten days.

f) Potential equipment and/or facilities product can address:

- Typically JTLS cannot compare one piece of equipment versus another, mainly because how the equipment operates is data. The comparison would be pre-determined by the data entered into the system.
- JTLS can provide insight into the number and placement of equipment.
- It can provide insight into mobility of systems and how to generally use existing or future planned equipment.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- JTLS is a combat model. Using it to represent civilian response to terrorist actions would probably require some code-level changes to make the most of the system.
- JTLS provides a framework for many of the concepts needed in a large-scale counter-terrorism capability. The biggest area that would need to be improved would be border operations. Looking for and interdicting contraband. Eesigns are available for

much of this, but they need to be implemented within JTLS, given its current usage as a combat model.

h) Are there any constraints on supported exercises or scenarios?

- There are no known restrictions. This assumes JTLS is used as intended, for very large-scale command-level decision-making exercises.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- JTLS is not an instructional tool. It is designed to create a realistic decision environment for an exercise audience. The training and evaluation of the exercise audience is not considered a responsibility of the model.

- See above D. Training Characteristics, 3. Product Content, a) Training content description, for additional information.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- Yes facilitators are needed. The exercise audience is located in a realistic location with the tools they would have during a real-world emergency. They are talking to lower command levels using their organic communication capability, whether that is e-mail, phone or direct eye-to-eye communication. The lower command level (non-exercise audience) is role playing and acting as model facilitators simultaneously. The exercise audience provides decision to the facilitators. The facilitators translate those decisions into JTLS orders. As the game progresses, the facilitators take the information generated by the model concerning the status of the situation and feed it back to the exercise audience using real-world communication capabilities.

- See also above C. Objective Category product Attributes, 3) Technical Attributes, d) If simulation models are used, for additional information.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- Some portions of JTLS automatically react to a situation and other parts of JTLS require user orders to alter the course of the game. Generally the decision concerning whether the model will automatically react to a situation or will wait for user orders is based on the timeliness of the necessary decision. For this reason, much of the air model and movement of aircraft is based on automatic reaction algorithms. Ground unit movement is based on both automatic reaction algorithms and user orders.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- This is not applicable to JTLS. This is considered to be the responsibility of the organization running the JTLS system.

e) Does a curriculum already exist? If so, briefly describe its form and content

- A training curriculum exists concerning how to run the model.

- There is no training curriculum for training government agencies how to prepare for a terrorist threat or attack.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Other than the previously mentioned exercise data recording, there is no other built in evaluation features.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- There are two play back capabilities. The first shows unit movement in a fast forward, movie capability. The second allows an evaluation team to re-start the model from any previously saved position and replay a portion of the scenario for an in-depth evaluation or to alter orders to determine the feasibility of an alternate scenario outcome.

- See also, above, C. Objective Category Product Attributes, 3) Technical Attributes, f) Describe any debriefing after-action.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- There is an exercise preparation handbook delivered with JTLS. This handbook addresses the issues of preparing for an exercise and how to use JTLS during an exercise.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- There is a Player's Guide and Controller's Guide delivered with JTLS. The purpose of these two manuals is to explain to users how to represent real-world military conflict situations through JTLS orders. For example, there is a section giving practical advice on how to best represent an amphibious assault and what steps the users should go through to successfully represent the execution of an amphibious assault using JTLS.

6. Customization

a) Can the product be customized? If so, how, and by whom?

- Customer configures the systems, i.e. numbers and types of workstations desired for an exercise.

- Customer creates the exercise scenario database that includes the numbers and types of forces and equipment that are to be represented. There are several decision alternatives that are also expressed in the exercise database, such as rules of engagement and standard operating procedure rules; therefore the system can be configured to operate differently based in the value to which these database parameters are set.

- The model is completely free-play which means the exercise can go in any direction desired by the customer.

- Modeling assumptions within the computer code cannot be changed by the customer.

b) What is the process and how much time does it take to develop a new exercise/scenario?

- JTLS is delivered with a "Standard Database" that has what are believed to be excellent data to represent the capabilities and limitations of many real-world combat systems being used by militaries of the world today. This database also includes a sample seven-side scenario on a fictional piece of terrain located in the north Atlantic Ocean.

- Given this background, there are three answers to the question:
  d. If the existing scenario provided with JTLS is used, it is ready to run almost immediately.
  e. If all of the engineering level data that comes with JTLS are used (i.e. definitions of combat system, definitions of aircraft types, definitions of sensors, definitions of supply categories to be tracked), but you want to create your own forces in your own area of the world, then you need to accomplish the following tasks:
     i. Obtain terrain: 2 – 4 weeks coordination time, 1 week to obtain terrain from JWFC
     ii. Create own force structure: 4 – 16 weeks depending on availability of data and number of forces that you desire to represent.
     iii. Test new database: Depending on the size of the database, suggest from 2 to 3 database tests, each 1 week long, to insure forces are properly represented.
  f. If the user wants to start completely from scratch and build a new JTLS database with their own data, then a one year development effort should be assumed.

c) What is the process and how much time does it take to modify an exercise/scenario?

- Depending on the number of desired changes, it can take as little as one day and as much as 4 weeks.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- Once a database has been created and tested to insure that the forces and command structure built into the database represent the desired situation, it takes 1 day to setup the workstation database.

- Once the workstation database is setup, it takes 15 minutes to fully bring up the model. The model can be started and stopped as often as desired. Each time it will take approximately 15 minutes to restart the model.

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- JTLS is delivered with an Oracle-based Post-Processing System (PPS). Few people use this system and it concentrates on the air-portion of the model. The process for collecting and viewing game data after the exercise is in place, but in all likelihood the desired data is probably not be saved. Arrangements would need to be made to improve the PPS to meet end user requirements.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High		Very
	Medium	**1**	Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
1	Requires trained support staff		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
2	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	

1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
2	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
2	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b)

2) Does the cost apply to: (choose one)
   a)
   b)
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b)
   c)

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

   - Note, these prices are for the COTS source of JTLS. The GOTS source may have different pricing.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)	$300,000			
Product License (Base System)				
Product License (Terminal)				
Product License (User)				

Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option	$30,000 / Year			
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	1 week free/year with Upgrade Option			
Daily Rate and/or Travel	Cost			
Instructor Fee **(Up to seven Trainees)**	$5,000 / Week			
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Company:

LifeLine Videos

Developer: various developers

Contact information:

Technical Support Contact Information:
same as contact information

LifeLine Videos
PO Box 66303
Seattle, WA 98166-0303
Toll Free: 800-571-6433
(Continental US Only)
Phone: 206-244-4615
Fax Orders: 206-244-4615
email: info@lifelinevideos.com

Website: www.lifelinevideos.com.

COTS/GOTS: COTS

Product status (version in use): various

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
1	Observed previews
	Played/Used product
	Attended Briefing
1	Reviewed CD-Rom or other software
1	Reviewed Website
1	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
1	CD-Rom
	Related Papers

	Material from Internet
1	Other: course catalogue and videos

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

LifeLine Videos is a company that provides training videos, slides, CDs, instructor manuals, and work books for first responders. LifeLine Videos is designed to be a one-stop shop providing many training choices. TLI watched video previews of the Overview of the Incident Command System, Implementing the ICS at HazMat incidents, and an EMS video concerning soft tissue and muscular-skeletal damage. TLI also previewed a CD-ROM that included power point presentations for equipment training (The Automated External Defibrillation Training (AED) Program)

LifeLine has more than 60 EMS/First Aid videos, more than 70 Fire videos, more than 35 HazMat videos, and 7 video trainings directed specifically at Terrorism.

Most of the videos are not designed to be stand-alone trainings. For example, an EMT trainer can show a video of an arterial bleeder rather than a picture or drawing which gives students a much better understanding of what an arterial bleeder is, looks like, and behaves. Some CD-ROMs are designed to be used by individuals in test preparation and are self-paced question and answer reviews. TLI did not preview any of these types of trainings. Most of the videos are targeted at specific training audiences and not necessarily for all first responders. The Terrorism series is designed for the entire first responder community and provides awareness trainings.

TLI reviewed a compilation preview tape of the 7 videos related to terrorism. All videos are designed to be used by trainers/facilitators and incorporated into pre-existing training programs for first responders. There are seven Terrorism videos: 1st Response, Biological Agents, Chemical Agents, Explosives (bomb threats), Medical Response, Anthrax, and a Roll Call edition reviewing the material in the other six videos. Each video comes with an instructor's manual and provides awareness level information on its particular topic. The website lists an additional training video in the terrorism series (Explosive & Incendiary Weapons) that was not on the preview tape.

There are videos dealing with additional chemical agents in the HazMat Video collection.

Their website states "We have the latest videos, CDs, slides, instructor manuals, and workbooks. With just one stop, you can locate the information that will prepare you for the most important call of your life."

The Terrorism series is created by:

Image courtesy of www.lifelinevideos.com

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

0	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
2	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	3	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
0	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	3	Automated summary of data
1	Non-specific	3	SME controls AAR
1	Equipment	3	Does not provide feedback or AAR
		3	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Some of the products are VCR tapes and some are CD-ROMs

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Need VCR and television to play the video tapes or individual PCs to show the CD-ROM presentations.

c) Large multi-station system, or based on individual PCs?

To show the CD-ROMs to a group it is best to project the presentation onto a screen for the entire classroom to see. This can be done with an individual standalone PC.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?
CD-ROMS could be used on a stand alone computer and are single system-based applications

f) Describe any debriefing after-action reporting support tools:
N/A

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Room with audio visual equipment

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 1995 and higher with PowerPoint and a CD-ROM drive. The trainings on the CDs are usually PowerPoint presentation documents.

b) Processor speed (in MHz): any should work as long as meets above requirements

c) Memory (SDR/DDR): N/A

d) Free disk space: N/A

e) Internet connection speed (if any): N/A

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements[5]: N/A

5. Describe the user interface characteristics:

Standard computer configurations for the CD-ROMs: usually MS PowerPoint presentations than can be manipulated with mouse or keyboard. Some CDs in the course catalogue are listed as interactive but none were reviewed by TLI. There is no indication of how they would look to the user:

A216 - Interactive First Responder CD-ROM: A Scenario Based Approach, Student Version
American Academy of Orthopedic Surgeons (AAOS) and National Safety Council (NSC)
This Interactive First Responder CD-ROM gives your students a chance to test their knowledge. This CD is designed to reflect the assessment based approach to patient care. The CD covers all of the key First Responder topics and allows for classroom presentation and/or individual student usage. $36.95 [17]

TLI did not review any CD ROM presentations that included questions for group discussion. However, some CDs in the LifeLine videos collection may include such items.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Only limited by number of seats in room, but realistically part of group training for about 10-30 participants.

b) Number persons usually trained simultaneously?

Only limited by number of seats in room, but realistically part of group training for about 10-30 participants.

c) Custom/proprietary hardware required? If so, identify:

[17] www.lifelinevideos.com.

None

7. Describe any user HELP features:

N/A. TLI did not have the opportunity to review any instructor's manuals. In the catalogue the manuals are not given any more description other than that hey are an instructors guide. There is an EMS CD that includes tests and answers in order to prepare students for certification exams.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): N/A

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

None, most videos come by themselves and trainers can purchase the instructor guide separately. Videos are standardized so they can fit into current training programs easily.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
0	Exercise	0	Applied
0	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	0	Commanders
1	Self-paced	0	Local Officials
1	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
0	Intermediate	1	Awareness
0	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	0	Planning & Mgmt. (incl. ICS)
1	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	1	Equipment Training
1	Explosion	1	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
1	EMS	0	Drills
1	EMA	0	TTX
1	Fire	0	FE

1	Govt. Administrator	0	FSE
1	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
1	Initial Acquisition		
0	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

The videos are awareness trainings for the most part and some review equipment use as well. The videos run the gamut of trainings for EMT, Fire and WMD awareness for all first responders. For example, an EMT trainer can show a video of an arterial bleeder rather than a picture or drawing which gives students a much better understanding of what an arterial bleeder is, looks like, and behaves. Some CD-ROMs are designed to be used by individuals in test preparation and are self-paced question and answer reviews.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

There are seven Terrorism videos: 1st Response, Biological Agents, Chemical Agents, Explosives, Medical Response, Anthrax, and a Roll Call edition reviewing the material in the other six videos. Each video comes with an instructor's manual. TLI did not have access to the instructor's manual or to the whole video series. The developer of this series will not distribute their videos for preview.

There are other videos dealing with additional chemical agents in the HazMat Video collection

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Instructor controlled, short duration videos usually shown during group trainings

d) Exercise/scenario length/time(typical):
Videos vary in length, but are 10 -20 minutes long typically

e) Potential equipment and/or facilities product can address:

The Automated External Defibrillation Training (AED) fire equipment (hose appliances), etc

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes. No, modifications are necessary.

g) Are there any constraints on supported exercises or scenarios?

No, other than a facilitator for the majority of the products that LifeLine sells.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Group trainings for the most part. There is some individual training, too.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

None

c) How is training managed (e.g., Testing, certification of completion, etc.)?

There are discussion questions provided with some of the videos and even pre and post tests. This varies depending on what products are purchased and by the trainer or facilitator

d) Does a curriculum already exist? If so, briefly describe its form and content

These videos and CDs are designed to augment a pre-existing curriculum. They are instructional tools

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

N/A possibly in instructor's manual

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

N/A other than a discussion format with facilitator or some Q&A, it varies by product.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

There are instructor handbooks and materials available; unfortunately TLI did not have access to them.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?
No

b) What is the process and how much time does it take to develop or modify a new exercise/scenario? N/A

c) Does the customer or the vendor modify or develop a new exercise/scenario? N/A

d) What is the process and how much time does it take to setup an exercise/scenario to run? N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
1	Easy		
0	Relatively Easy		
0	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
0	Decision-making

0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
0	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   It varies by tape:

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	79.95 and up per tape or instructors manual (separate)	300.00	79.95	2700 for 10 tape package
Module Purchase				

Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

MARPLOT: Mapping Application for Response, Planning, and Operational Tasks

Developer: NOAA OR&R (National Oceanographic and Atmospheric Administration, Office of Response and Restoration)
EPA CEPPO (Environmental Protection Agency, Chemical Emergency Preparedness and Prevention Office)

Contact information:
Email: orr.cameo@noaa.gov
Phone: 206-526-6317

And additional Contact information:
For additional information visit: http://response.restoration.noaa.gov/cameo/marplot.html

Website: Product status (version in use): version 3.3

MARPLOT can be downloaded from: http://www.epa.gov/ceppo/cameo/marplot.htm

Date of Evaluation: December 19, 2003

Source(s) of Evaluation: *check all that apply*

Most information contained in this report was obtained from the following web-site:
http://response.restoration.noaa.gov/cameo/marplot.html

- [ ] Observed Product in use during a training or exercise
- [ ] Observed Demo
- [x] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [ ] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in Possession:

Brochure/Prospectus
CD-Rom
Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  MARPLOT is a general-purpose mapping application, jointly developed by NOAA and EPA, that runs on both Macintosh computers and in Windows. It is designed to be easy to use and fast, and to consume as little disk and memory space as possible, so that you can create, view, and modify maps quickly and easily. It also allows you to link objects on your computer maps to data in other programs, including CAMEO.

- Current Target audience:

  N/A

- Potential equipment and/or facilities product can address:

  MARPLOT can be used to search for map objects by geographical criteria. MARPLOT has the ability to answer questions ranging from "What objects are at this point?" to "How many objects are within 2 miles of this threat zone?" When used in conjunction with CAMEO, MARPLOT can plot the location of facilities, hospitals, and other structures of interest to responders and planners. MARPLOT can also be used to examine the extents of real emergencies or planning scenarios.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  If used in conjunction with CAMEO and LandView, MARPLOT can be used to assess which structures are at risk for exposure during a hazardous chemical emergency. This information can assist responders and planners in preparing for chemical emergencies ahead of time and during an emergency more accurately predict its effect. CAMEO is a tool for planning and responding to chemical emergencies. LandView is a collection of data for EPA-regulated sites and demographic and economic information from the U.S. Bureau of the Census. Data from both these programs can be displayed on MARPLOT.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

MARPLOT can be downloaded for free off the internet and installed on any personal computer.

b) Large multi-station system, or based on individual PCs (if applicable)?

N/A

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

MARPLOT is a stand-alone product, but its greatest utility is found when used with CAMEO and LandView.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

N/A

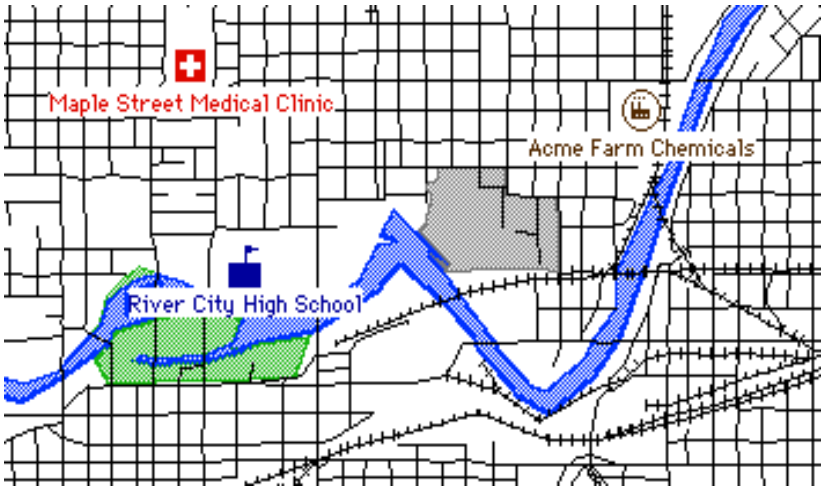
2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows 3.1 or later and Macintosh computers.
b) Processor speed (in MHz):
N/A
c) Memory (SDR/DDR):
1.5 MB
d) Free disk space:
0.5 MB- 20 MB
e) Internet connection speed (if any):
N/A
f) Display adapter:
N/A
g) CD-ROM speed:
N/A
h) Optional accessory requirements:
N/A

3. Describe the user interface characteristics:

MARPLOT is designed to be easy and fast, to consume as little disk space as possible, and so that the user is able to create and modify maps quickly. MARPLOT is made up of seven types of objects, which are arranged into map layers. These objects include points (symbols), rectangles, circles, polygons, polylines, text labels, and pictures. Each object can be created, examined, and modified. For instance, a

point object may be used to mark a structure, a circle used to mark a lake, and polylines used to mark a river or road. The MARPLOT maps are sub-divided into layers, with each layer containing one type of object (representing roads, rivers, hospitals, etc...). The following graphic is a map produced from MARPLOT.



4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

By default MARPLOT is installed in single user, but multi-user mode is optional if map files are to be shared among users of different computers with a network file server.

b) Custom/proprietary hardware required? If so, identify:

N/A

5. Describe any user HELP features:

N/A

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

N/A

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
The MARPLOT user manual can be downloaded for free at:
http://www.epa.gov/ceppo/cameo/marplot.htm

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
N/A

b) Exercise/scenario length/time(typical):
N/A

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
N/A

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?
N/A

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

MARPLOT's ability for inter-application communication allows it to share information with databases and other programs that may contain map objects. A database can be queried for certain records and then MARPLOT will show those selected records on the map. On the map objects can be selected and information stored in the database, relevant to the selected object is displayed. In this sense MARPLOT can be customized and paired with various databases and sources of information.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	3	Multiple dynamic paths / probabilistic outcomes
0	Commercially owned	3	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	3	Scenario replay
1	Group	3	Automated summary of data
2	Small multi-user team (up to 25 persons)	3	SME controls AAR
2	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
2	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
3	Non-specific		**Interconnectivity**
2	Equipment	1	Standalone
		3	LAN
	Environment	3	WAN
3	Generic	3	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training	3	Knowledge
2	Exercise	3	Applied
1	Operational	2	Hands-on
2	Analysis		
3	Entertainment		**Target Audience**
		3	First Responders
	Mode of Delivery:	3	Commanders
3	Self-paced	3	Local Officials
3	Instructor/Facilitator	3	State Officials
		3	Federal Officials
	Student Level – Relevant Domain		
3	Basic		**Potential Training Levels:**
3	Intermediate	3	Awareness
3	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	3	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	3	Equipment Training
2	Explosion	2	Awareness
		3	Part Task Training
	Functional Area Supported:	3	Pre-Training
2	EMS	3	Drills
1	EMA	3	TTX
2	Fire	3	FE
2	Govt. Administrator	3	FSE
2	Health Care	3	FSE Reinforcement
2	HazMat	3	Distributed Collaborative Exercise
2	Law Enforcement	3	National Training Exercise
2	Public Health		
2	Public Safety Communication		
1	Public Works		
1	Transportation		
2	Private Sector		
	Learning Supported:		
3	Initial Acquisition		
3	Improvement		
3	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
0	High
0	Medium
0	Low
1	N/A

	Current Applicability to ODP
0	Very
1	Somewhat
0	Limited

	Ease of Use
0	Easy
1	Relatively Easy
0	Difficult
0	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

3 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
3 Dissemination of best practices/expansion of learning benefits i.e. report generation
3 Tracking participant performance through multiple tries (automation)
3 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
3 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

2 Simulation Support

Selected FSE Observations: product allows for/can be used for:

3 Remote Observation
3 Enhanced Communication T&E/does it practice/train/exercise communications?
3 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

3 Distributed, collaborative, decision-making environment
3 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)

b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

MARPLOT can be downloaded for free.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

MMT&E (Mass Casualty Medical Training & Evaluation Services)

Developer: SAIC

Contact information: Technical Support Contact Information:

Mike Congleton, M.D., Ph.D.
Vice President, Enterprise and Health Solutions Sectors
Science Applications International Corporation
10260 Campus Point Drive, MS D5
San Diego, CA 92121
Ph: 858.826.7281
Cell: 760.207.9283
congletonm@saic.com

Website: http://www.saic.com/natsec/homeland-security/casualty-medical-evaluation.html

COTS/GOTS: COTS

Product status (version in use): N/A

Source(s) of Evaluation: *check all that apply*

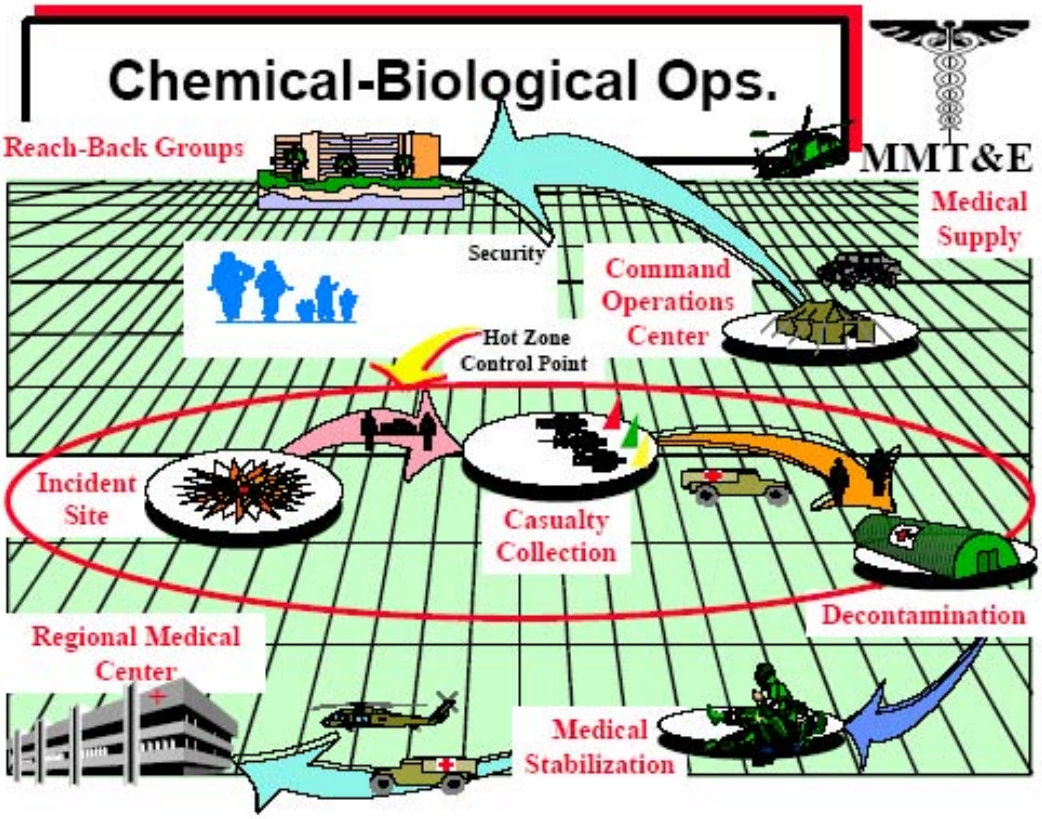
	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
X	Attended Briefing (via phone)
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

X	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
X	Other: Vendor Presentation (PPT)

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  In-the-field medical training (simulated crisis event) for exposure to chemical, radiological and biological hazards. Trainees practice treating simulated trauma victims (actors and mannequins) of weapons-of-mass-destruction including casualties exposed to biological or chemical agents. All training is done under typical time pressure constraints and performed on the equipment used in an actual crisis.



US Army Chem-Bio Ops. (Source: SAIC provided brochure)

- Current Target audience:
  Medical responders. Already in use by all branches of the military, this system is also available for civilian emergency responders.

The Approach

MMT&E consequence management methodologies were developed by both civilian and military healthcare professionals to:

- Evaluate against training requirements
- Identify critical deficiencies
- Provide immediate deficiency training
- Improve mission effectiveness
- Have a medical outcomes focus

MMT&E's *strategic objectives* for integrated readiness evaluations, training, and management of casualties include the following:

- Establishment of joint agency disaster assessment requirements
- Evaluation of medical readiness
- Team development and training
- Certification of minimum competency levels for unique specialty areas
- Structured development of multi-organizational medical training in joint exercises
- Integrated assessment of chemical and biological agent-specific preventive measures, recognition, and decontamination procedures
- Patient, resource, and supply management
- Medical process modeling for the full spectrum of NBC and disaster related medical treatment and evacuation planning
- Transition models into approved plans and operations

* Source: SAIC provided brochure

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
X	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**

	Individual	3	Multiple dynamic paths through the product and more than one out come possible
	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
2	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	1	SME controls AAR
1	Equipment		Does not provide feedback or AAR
		3	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
MMT&E consists of 4 basic components:
- The clinical case algorithm library,
- Observer/Controller hardware (pen and tablet computer) and evaluation tools (After Action Reports),
- Observer/Controller training, and Exercise Support.

The MMT&E algorithm library organizes clinical-case algorithms by situation type and clinical indication. The algorithm library encompasses:

- biological and chemical agents, or radiation exposure
- disease and non-trauma injuries
- environmentally caused conditions (flora, fauna, thermal)
- preventive and public healthcare treatments
- psychiatric care
- trauma response
- universal nursing care interventions
- obstetric, geriatric and pediatric treatment specialties

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand alone.

c) Large multi-station system, or based on individual PCs?
N/A (Not PC based).

d) If simulation models are used, what is the basis of the data and/or distributions used?

There are around 300 patient algorithms developed by both civilian and military health care professionals that addresses care beginning with the first responder, through stabilization, up to the patient's definitive care.

e) Web-based application, LAN, or a single computer/system-based application?
N/A (Not PC based).

f) Describe any debriefing after-action reporting support tools:
Two options: paper and pencil AAR and player observations or portable electronic pen based system (Fujitsu) for real-time event logging of time-stamped medical decisions and events, portable notebooks with metric-based readiness indicator status displays.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
Depends on the exercise. Exercises usually involve medical facilities.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

For the electronic pen bases system (not the actual exercise, as it is not an electronic or PC-based simulation; this is optional and it's only used by observer/controllers who are provided by the vendor)
The following requirements are for the electronic based AAR and software:

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows 2000 preferred; Windows XP acceptable

b) Processor speed (in MHz):
2.4 GHz or better (Pentium 4)

c) Memory (SDR/DDR):
512 Meg

d) Free disk space:
60 GB

e) Internet connection speed (if any):
Minimum 28.8kbs; Broadband (wireless) connection preferable

f) Display adapter: support for XGA resolution

g) CD-ROM speed: 24X minimum

h) Optional accessory requirements: support for WiFi – 802.11b/g wireless connectivity to network access point and router.

5. Describe the user interface characteristics:

User is presented with a scenario that contains an incident; incidents contain casualties/patients; algorithms represent patients. Users are expected to reacts as they normally would and are given cues by observer/controllers, based on the algorithms and observed treatment provided (e.g., observer/controllers provides blood pressure reading).

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Varies. 25 players is typical. This is dependent on the number of available observer/controllers (provided by vendor); each can handle about 25 patients per day.

b) Number persons usually trained simultaneously?
25

c) Custom/proprietary hardware required? If so, identify:
Fujitsu electronic pen based system (optional. Observer/controllers can also make paper/pencil notations).

7. Describe any user HELP features:
Live, Observer/Controller assistance.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): Done by observer/controllers in paper and pencil templates or via electronic pen based system.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Usually customer contacts vendor and they teleconference on desired exercise, vendor works out the scenario and both parties teleconference once more before the vendor arrives at customer facility. Generally there are 3 options: a TTX, 1day FSE and 2day FSE.

2. Attributes

	Application Environment:		**Content**
2	Training		Knowledge
1	Exercise	1	Applied
	Operational	1	Hands-on
	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	2	Commanders
	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		

1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
1	EMS		Drills
2	EMA	1	TTX
2	Fire		FE
	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement
2	HazMat		Distributed Collaborative Exercise
2	Law Enforcement		National Training Exercise
1	Public Health		
	Public Safety Communication		
	Public Works		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
Live exercise.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
N/A.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Simulation supported, training/exercise led by controllers/observers who control patient algorithms and provide user real time feedback on patient conditions based on observed treatment.

d) Exercise/scenario length/time(typical):
Varied, typical time is a day.

e) Potential equipment and/or facilities product can address: Equipment/facilities involved during real response (e.g., triage, transportation resources, control logistics' considerations, hospitals).

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

g) Are there any constraints on supported exercises or scenarios?

The number of available observer/controllers as this impacts the number of victims players can treat.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
Real time exercise; positive guidance (instructor provided cues) during practiced response.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario):
Scenarios, incidents, insertion sequences (casualties, injuries—algorithms), subject matter experts. Positive guidance in training environment and clinical library of victim algorithms guide exercise/training.
Levels of care included: initial care, surgical unit, flow through hospital, & definitive care.

c) How is training managed (e.g., Testing, certification of completion, etc.)?
Via observer/controllers observing responders.

d) Does a curriculum already exist? If so, briefly describe its form and content
Clinical library of biological, chemical, radiological, blunt and penetrating trauma, mass casualty, mass humanitarian injuries/diseases. Vendor has developed 3 scenarios that can be modified to fit user needs.

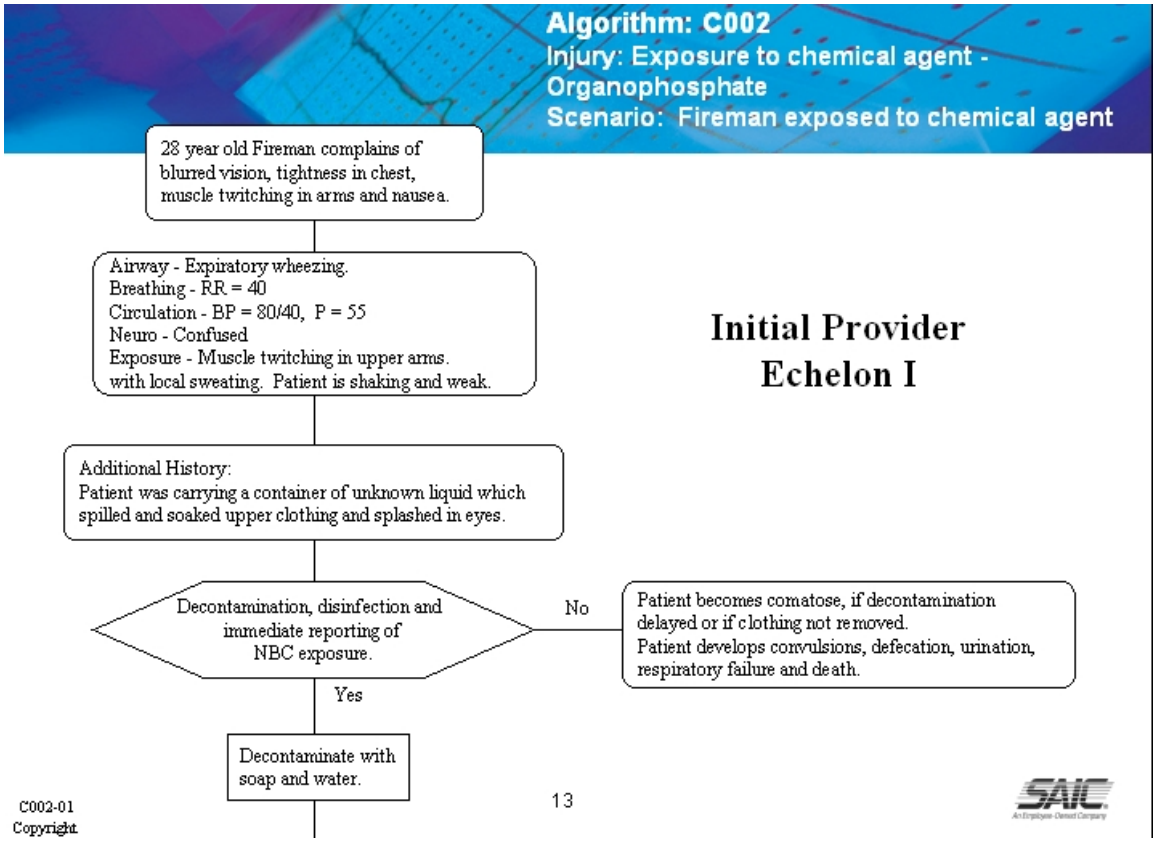
e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
Via observer/controller.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Immediate, controller-provided, feedback.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
Vendor controlled.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
Algorithms contain: injury type; scenario; starting conditions; observations; conditions; actions; resources and constraints; comments, orders and notes; resulting in trends and outcomes. Sample (partial) algorithm:



6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, by vendor.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
New algorithms require a few weeks (for design ad validation) depending on the desired injury/WMD type.

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Vendor.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
?

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Observer controller inputs in templates during exercise then generate an AAR.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
X	High	**X**	Very
	Medium		Somewhat
	Low		Limited

	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
X	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
X	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
X	Decision-making
	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
X	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
X	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) <u>Vendor Customized</u>
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

One time exercise all inclusive (e.g., contract, exercise development, delivery and AAR) cost options:

Option 1: $15K for TTX
Option 2: $30K for 1 day FSE
Option 3: $50K for 2 day FSE

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Information Source:
Review form filled-in by ABS Consulting
Reviewed, edited, modified by TLI team.
MIDAS-AT was not observed.

A. Basic Product Information

Name of Product:

MIDAS-AT (Meteorological Information and Dispersion Assessment System - Anti-Terrorism)

Developer: ABS Consulting

Contact information: Keith Woodard
Research Place
Suite 200A
Rockville, MD 20850

301-907-9100.
kwoodard@absconsulting.com

Technical Support Contact Information: ABS Consulting, Keith Woodard

Website: www.absconsulting.com COTS/GOTS: COTS

Product status (version in use): Version 1.7.09

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

x	Brochure/Prospectus
	CD-Rom
	Related Papers

x	Material from Internet
x	Other: please state Slides, spec sheet

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Real time incident response.

  MIDAS-AT models radiological, industrial chemical, chemical and biological agent releases to the atmosphere, inside buildings, and in urban terrain environments. It also has the capability to collect digital data from sensors and provide appropriate alarms and displays.

  MIDAS-AT contains:
  - All atmospheric releases.
  - 5 minute auto updates.
  - GUI.
  - Universal GIS (US and World).
  - Flat terrain, complex terrain and urban models.
  - Inside-building releases.

- Current Target audience:

  Military, Civil Defense Teams, Hazmat, Fire & Rescue, Command and Control, What Ifs, Training. See System Spec Sheet

- Roots of MIDAS-AT are in:
  - Nuclear MIDAS: commercial use in the nuclear power industry for calculating doses from accidental nuclear (radiological) releases.
  - Chem-MIDAS: computes exposures to toxic chemical releases and is used in the chemical and petroleum industries

- Has been used for:
  - Planning and assessment
  - Crisis management
  - Consequence management

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
0	Computer Based Training other than Simulation
	Game
0	Instructor/Facilitator Aid: Student Interfacing

0	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	2	Multiple dynamic paths through the product and more than one out come possible
1	Group	2	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
3	Equipment	0	Does not provide feedback or AAR
		0	HLA Compliance (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

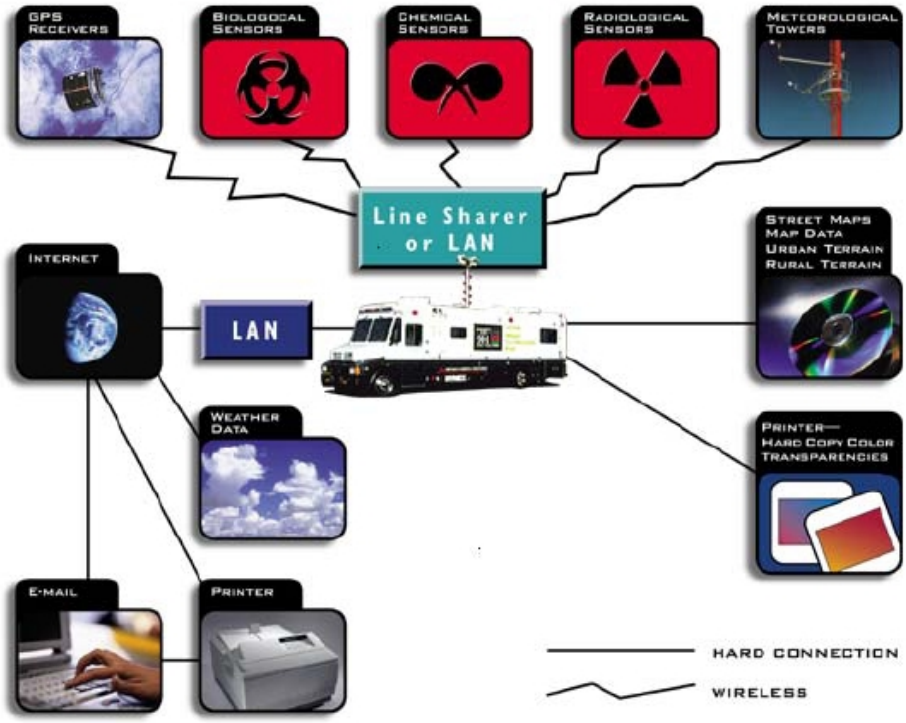
PC, VisualBasic, C++, FORTRAN, 2-D, 3-D, with topography and city buildings, plume models, HELP, mouse over commands.

MIDAS-AT hardware architecture is illustrated in the following figure:

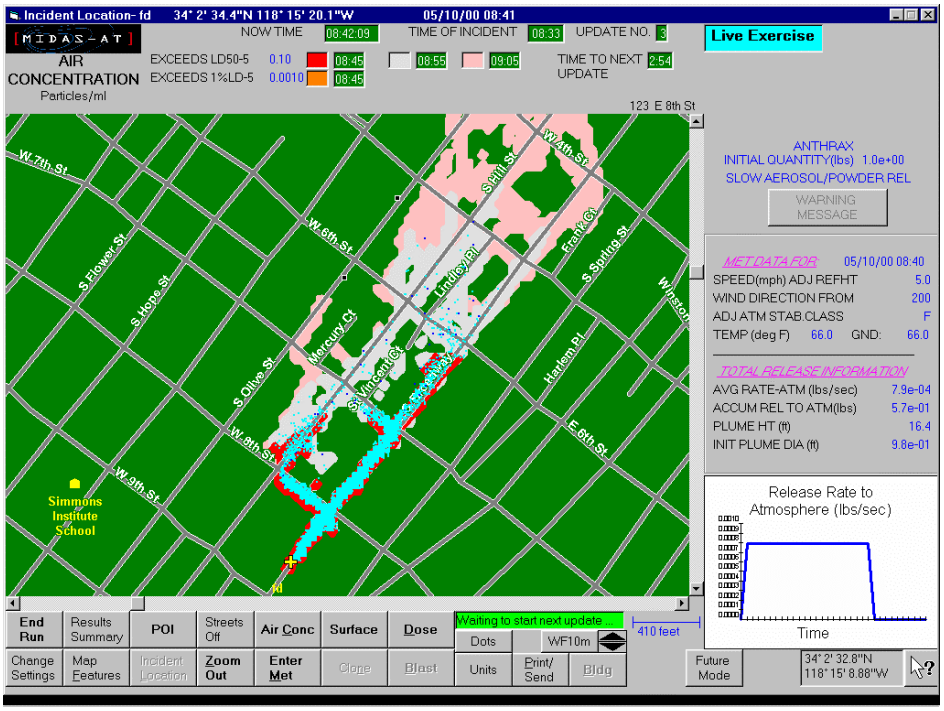
Capabilities:

- On-line weather collection (On-line Weather Tower, Sensor, GPS, and Digital Automation). Automatically collects, processes and stores instantaneous or average data from on-line sensors. Automatically collects meteorological data. Receives meteorological data from NOAA.
- Incorporates manual entry for drill development and exercises.
- Tracks location of GPS sensors.
- Provides real-time dynamic processing and results display.
- Includes detailed maps of area with full pan and zoom capabilities
- Overlays local features.
- City model. Canyon-like effects and hazard predictions in real-time.

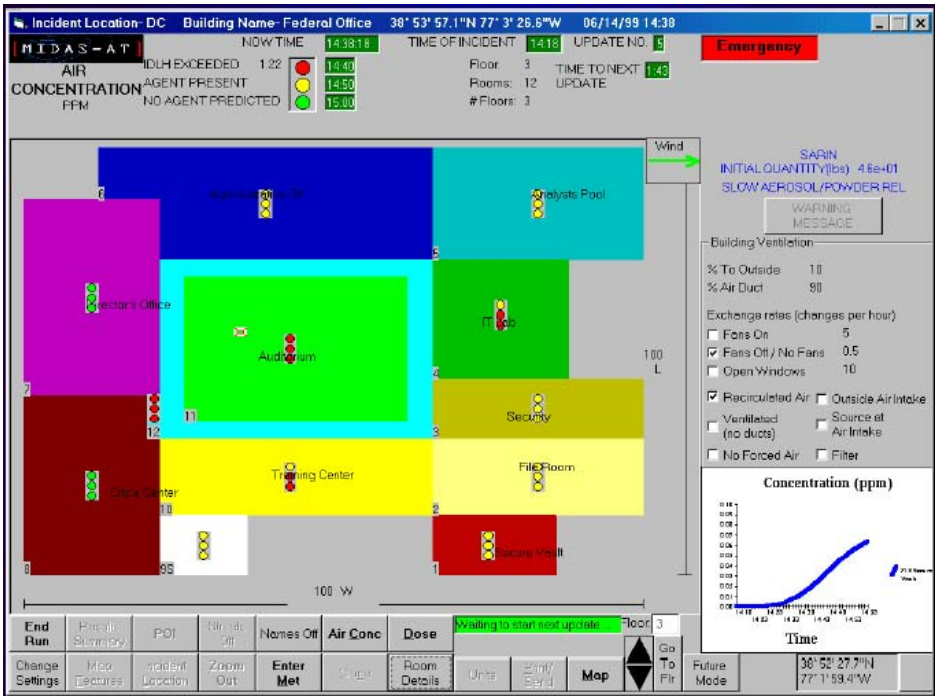
- Real-time Inside Building Model calculation and display; addresses dispersion inside/outside buildings. . Plume concentrations. Floor plan design in real-time. Room-to-room dispersion for releases made inside buildings as well as amount released to outside. Calculates leakage to the outside with atmospheric dispersion downwind.
- Real time & future time. Real-time dynamic processing and results updated every five minutes (ability to receive live meteorological tower and sensor data)
- Data summary displays.
- Has exercise mode for training.
- Results are displayed on a detailed local site map. Dose and concentration displays allow complete picture of evolving attack. Surface deposition shows contaminated ground.
- Internet connectivity with e-mail of graphic (screen capture) results.
- Explosion module ejects Industrial Chemical, Chemical Warfare Agent, Biological Warfare Agent, and Radiological Isotopes.
- Hazard prediction and mapping fidelity to 10 meters with Urban Terrain (City) Model; 3-D particle tracking.
- Re-cap a previous case and show the historical output in 5-minute increments or re-run a previous case with minor changes (uses playback of previous selections to be adjusted).
- Results are displayed on detailed local site map. Enhanced map features (e.g., indicate hot zone, barricade streets, etc.). Areas exceeding toxic limits are color-coded for the current time and for two projection time periods into the future. Separate displays indicate average concentration, ground level, deposition, and accumulated dosage.
- Five-minute updates for 24 hours based on one-minute releases.
- Dose (dosage) effects 6 hours into future at four projection times .
- Scenario parameters adjusted dynamically in the output screen to reflect a real-time change in nature of the incident (e.g., turn off air conditioning).



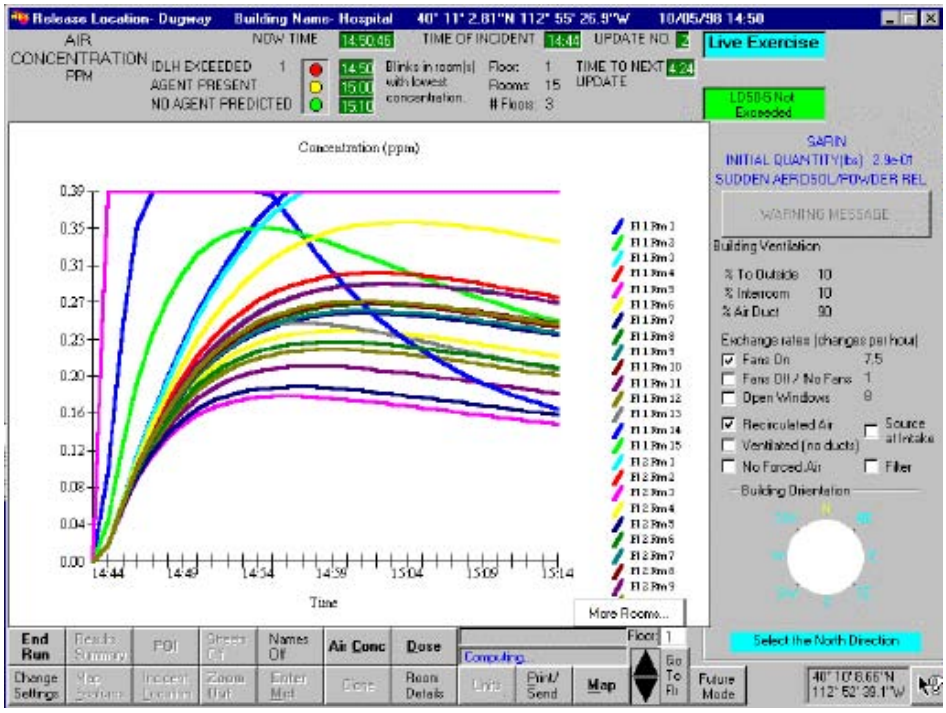
Notional MIDAS-AT hardware architecture.



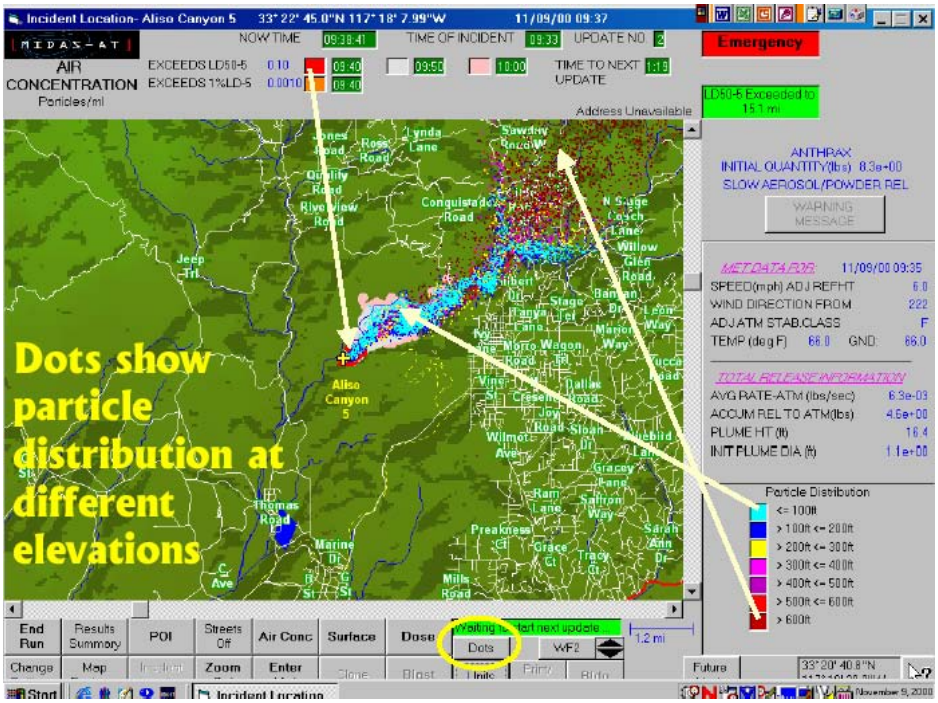
Example of Urban (Canyon) model spreading/dispersion.



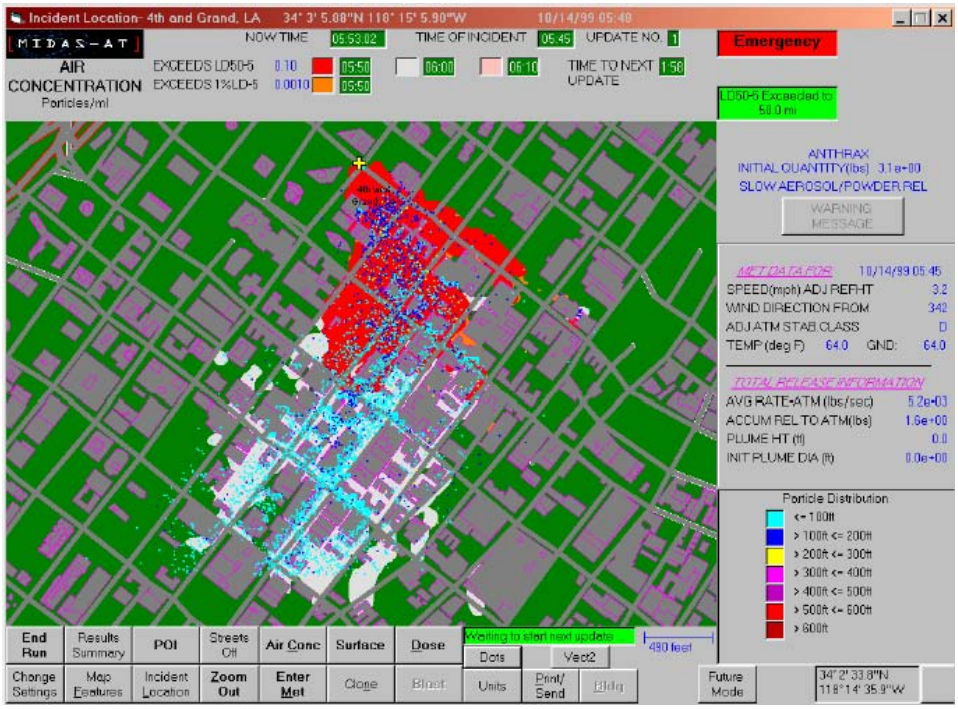
Example of inside-building model display.



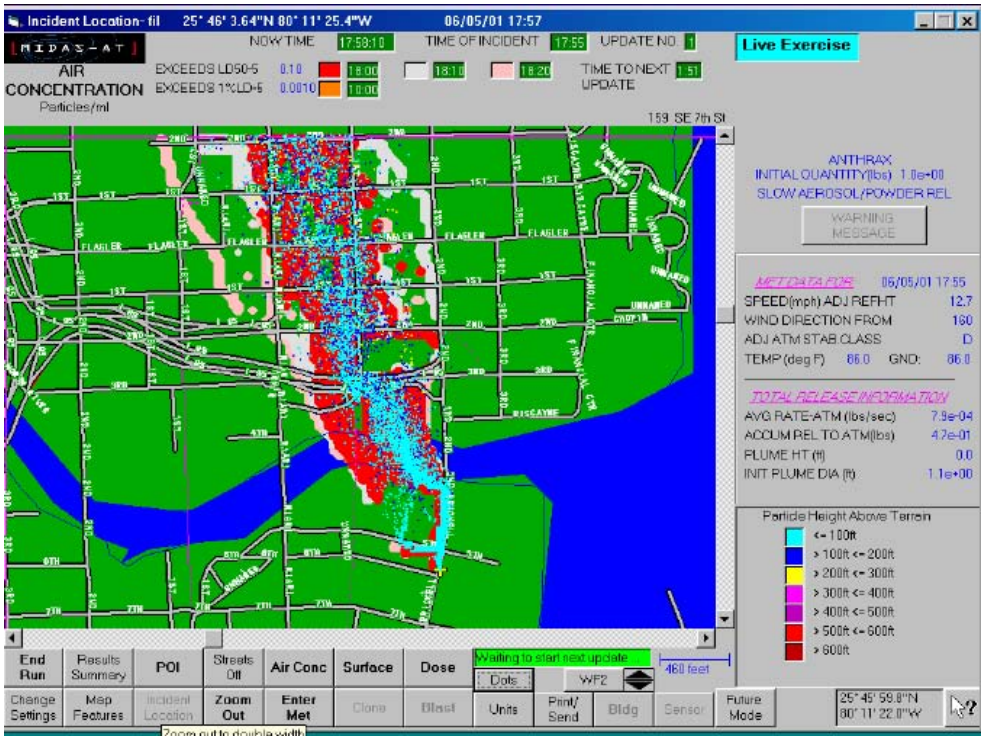
Example of inside-building, room by room results.



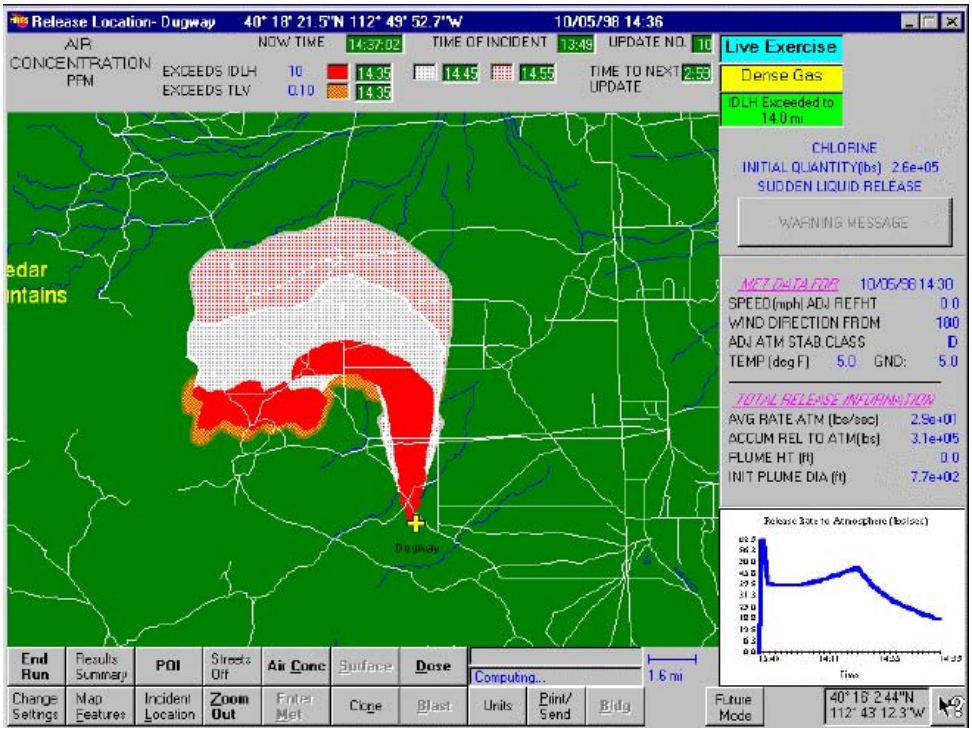
Example output display, showing results at ground level and at elevation.



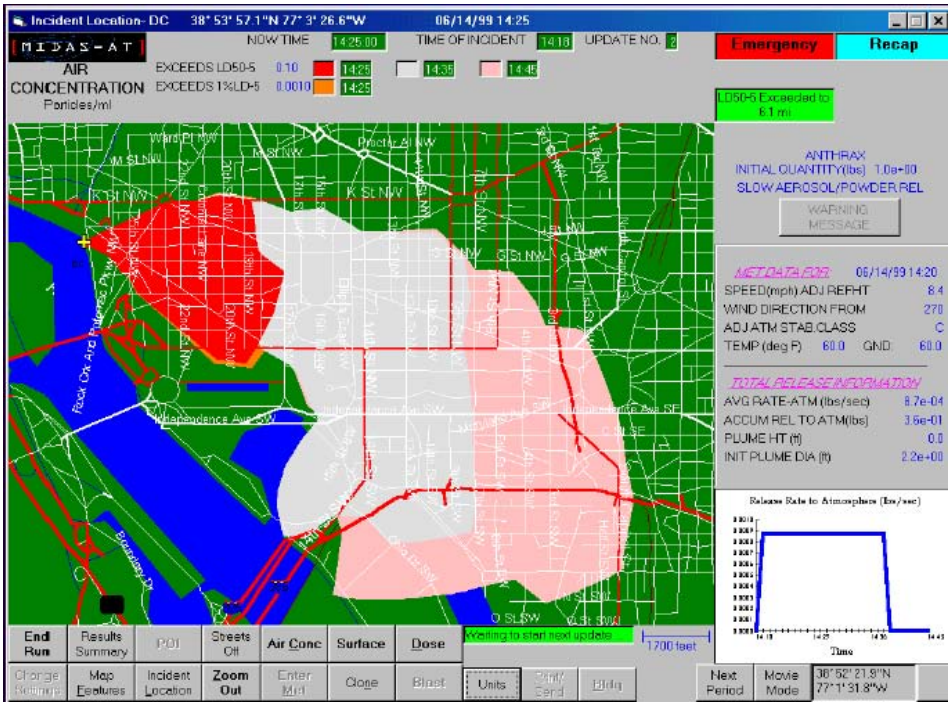
Example urban terrain model output.



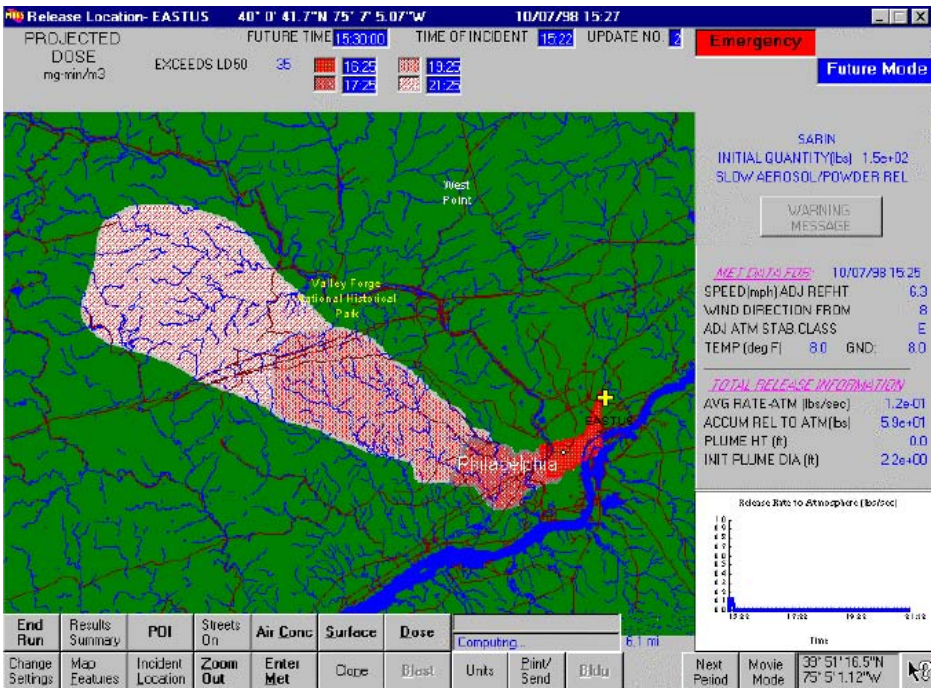
Example urban terrain model using building shapes.



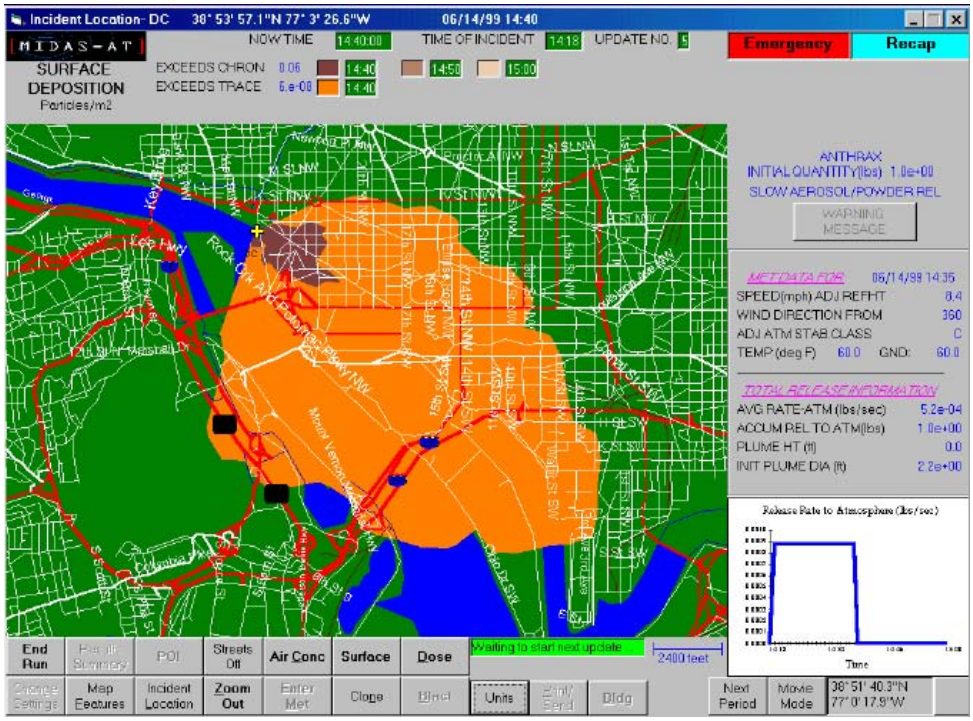
Example variable trajectory plume model.



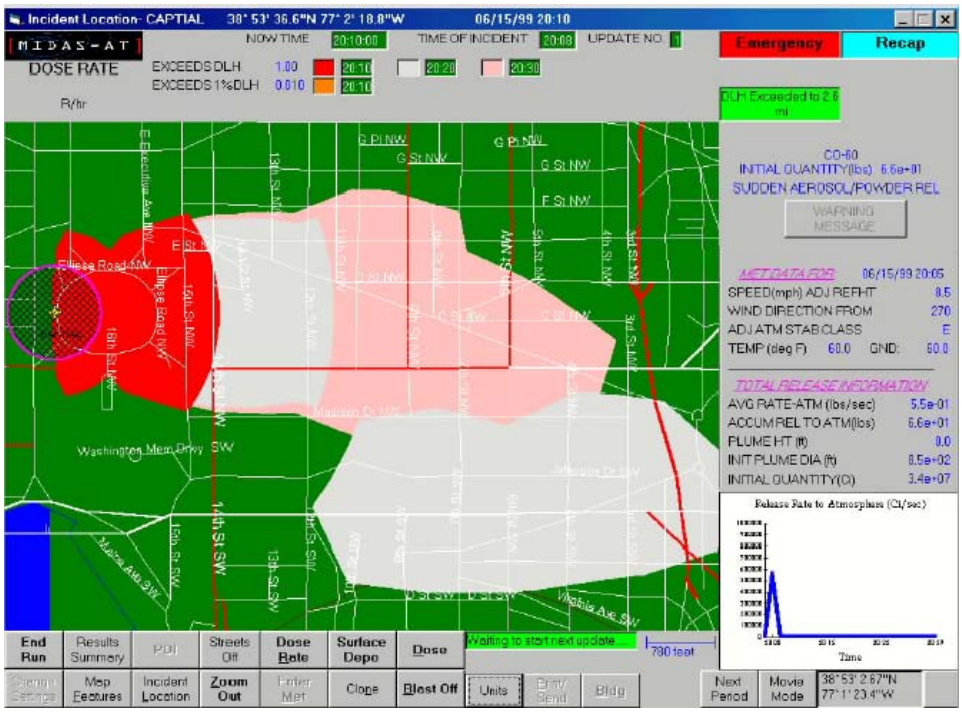
Example air concentration display.



Example projected dose display.



Example surface deposition display.



Example display that accounts for explosion effects on initial plume dispersion.

Categories of Releases in MIDAS-AT:

- Industrial Chemicals – Including the most hazardous chemicals commonly used and transported in the U.S.
- Chemical Agents – Extremely lethal group of chemicals that are considered to have military warfare application
- Biological Agents – In particle, spore, virus, bacteria, CFU (colony formation units), or chemical form that have extreme lethality and are part of a group of biological substances that are considered to have military warfare application
- Radiological – Isotopes in particulate and gaseous form that are produced in nuclear power plants, nuclear weapon production activities, medical facilities, and weapons
- Atmospheric dispersion using time-dependent, variable trajectory model (including heavy gas, elevated releases, and releases in the wakes of buildings)

Data Collection:

- Automatically collects, processes and stores instantaneous or average data from on-line sensors connected via serial port or LAN to the computer (sensors and communications hardware supplied by others)
- Automatically collects meteorological data and provides quality checks at five minute time intervals from digital output from local (portable) tower
- Receives meteorological data from nearest NOAA site via Internet connection (nearest site is computed automatically from the incident location)
- Incorporates manual entry of the above in predated full screen "spreadsheet" format for drill development and exercises
- Tracks location of GPS sensors
- Provides real-time dynamic processing and results display

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand alone PC or server, custom and MS Access data bases, simulation (Drill) Mode, recap, previous run start over.

c) Large multi-station system, or based on individual PCs?

Either way. Meaning, MIDAS-AT could support either. However, it is a single-device application; it does not require multiple stations to function.

d) If simulation models are used, what is the basis of the data and/or distributions used?

At least 5 models are used for dispersion, pool evaporation, heavy gas, damage level, multi-volume transport.

City dispersion is Lagrangian particle model.

e) Web-based application, LAN, or a single computer/system-based application?

Not browser based yet, runs on LAN or stand alone

f) Describe any debriefing after-action reporting support tools:

RECAP last 50 previous runs with 5 minute updates showing all results.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

VGA projector to show run progress to more than 2 or 3 viewers.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

All Microsoft operating systems since Windows 95.

b) Processor speed (in MHz):

500MHz for City Model; Normal model runs on just about any PC not more than 5 years old.

c) Memory (SDR/DDR):

64 MB for flat model; 512 MB for city model.

d) Free disk space:

2 GB.

e) Internet connection speed (if any):

Not used except to obtain NOAA weather.

f) Display adapter:

VGA+3-D Display Card (MS).

g) CD-ROM speed:

N/A.

h) Optional accessory requirements:

None.

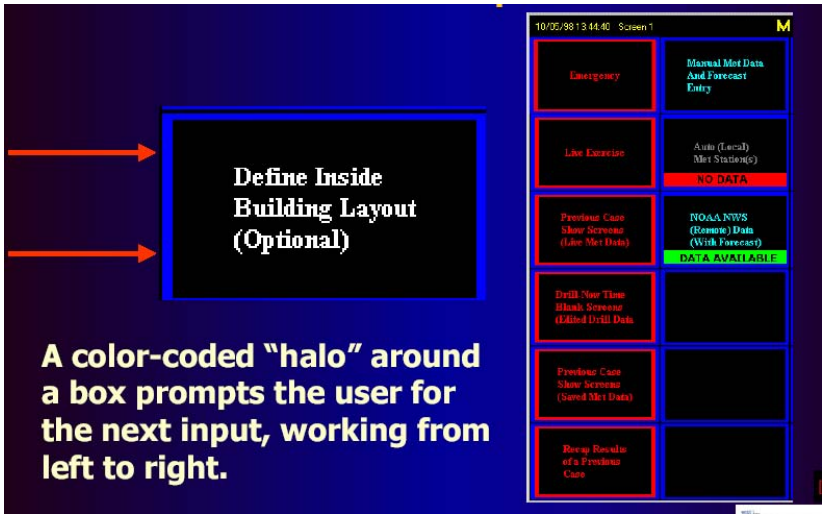
5. Describe the user interface characteristics:

Top Down Logic, Windows, Simple answers to most questions, Large information boxes, HELP.

Graphical User Interface

- Incorporates a modern Windows-based GUI to guide the user through the required minimal selections.
- Has user-friendly interface with color coded graphics to rapidly select scenarios using mouse (software prompts user for input when necessary).

- Includes detailed maps of area with full pan and zoom capabilities. Some users request maps (other than those provided with delivery).
- Overlays local features (e.g., roads, rivers, city building outlines, schools, churches, etc.) on map.
- Point and click on plume area displays local readings.
- Summarizes pertinent data, including plot of source term shown on the display screen.
- Supports exercise mode to facilitate training.
- Highlighting boxes prompt user inputs (see figure below).



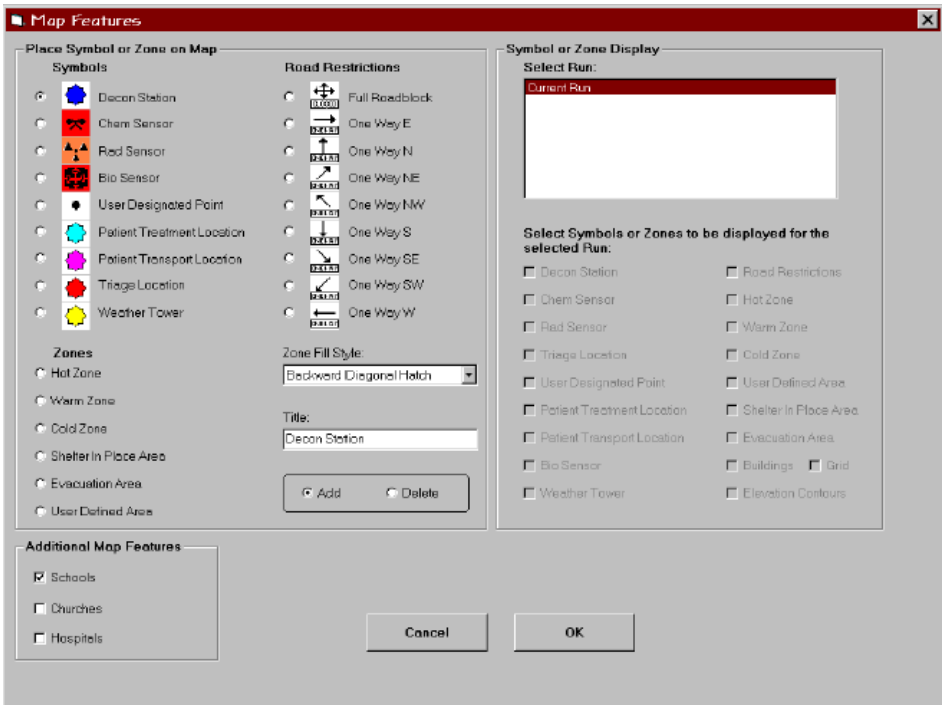
Progression Through Screens

- Top-down decision tree format screens out requests for unnecessary information
- Each screen can be customized to the specific application of the response organization
- Screen controls allow user to correct or change information during run definition.

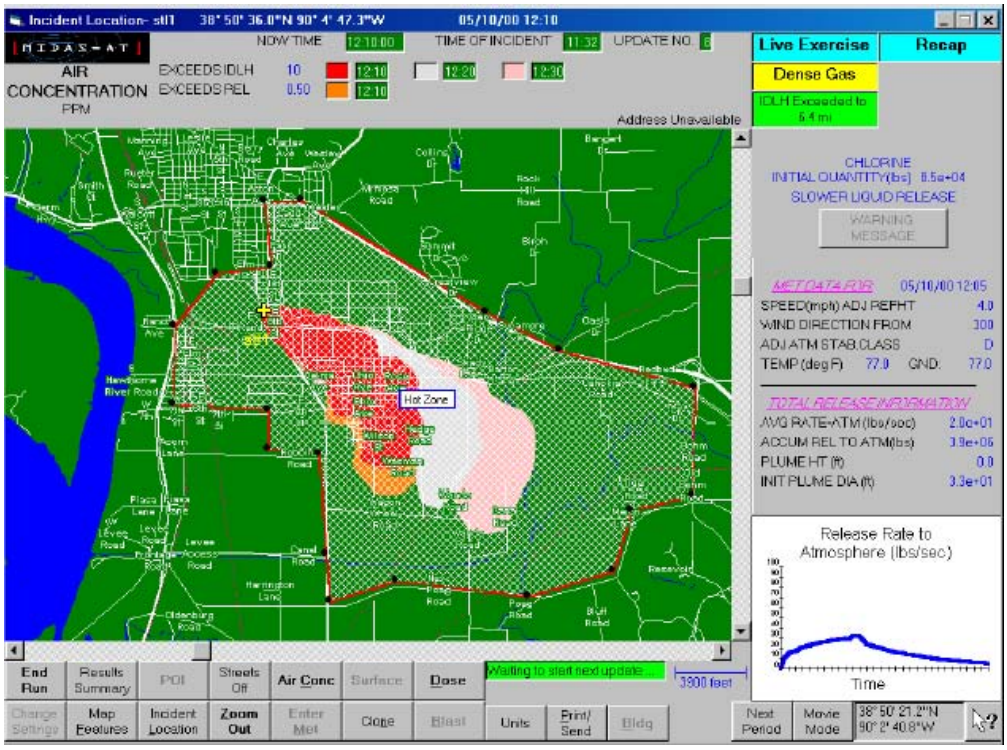
Capable of rapidly selecting toxic release scenario from GUI interface with "top-down" event tree approach to protect user from inappropriate entries. Inappropriate options are screened out based on previous user input.

Handles releases for aerosols, liquids and vapors:

- Explosions (including small bombs)
- Tank ruptures
- Pipe breaks
- Sprayers
- Vapor Jets (varying angles)
- Fires (buoyant)
- Ventilation system releases
- Ground or elevated releases
- Line source in cities
- Indoor building releases
- Weapons accidents (e.g., fires, nonnuclear disassembly)



Map features (options).



User-defined zones on map.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Any Number

b) Number persons usually trained simultaneously?

Varies up to 20; can be more.

c) Custom/proprietary hardware required? If so, identify:

None.

7. Describe any user HELP features:

Full set of help on output screen, has photos of containers to help determine source volume, commands have mouse over descriptions

8. Data recording & storage features (e.g., Scenario events; student performance):

Data stored for each run, met tower input, and WMD sensor data inputs. Canned met stored for drills. Physical parameters stored for most toxic industrial chemicals and WMD

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Usually give one day of power point training and one day of hands on. 3-days max.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	3	Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)

1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
1	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
2	Public Health		
1	Public Safety Communication		
2	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	2	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
2	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

No specific content

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Some—usually only basic toxic levels, has ability to list all CAMEO text files for substance descriptions under separate license.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications) :

Some of each category

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

All of the above but not specifically scripted. This would have to be done separately depending on course content.

Implication is that it could support all of these. Do not believe that curricula or specific capabilities currently exist to support these.

e) Exercise/scenario length/time(typical):

Runs in real or accelerated time.

f) Potential equipment and/or facilities product can address:

Any PC based facility. None of operational context, other than perhaps meteorological equipment inputs.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Specifically designed for counter-terrorism applications

h) Are there any constraints on supported exercises or scenarios?

None.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Could be integrated into classroom exercises.

No video available but can be multi page power point.

No web based capability.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

Instructor is needed.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Could be developed around MIDAS—nothing built in now.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

ATMET has a set of problems that are run; they provide completion certificates.

e) Does a curriculum already exist? If so, briefly describe its form and content.

There is a 225 slide power point presentation that is used to train.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

None at present.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

RECAP of any run made. Nothing formal or automatic.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

140 page color users manual. Can be used to design training scenarios. Can support fast breaking or slow scenarios.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Users see immediate results of selections during run, and plume effects on color maps and building rooms.

6. Customization

a) Can the product be customized? If so, how, and by whom?

ATMET does all customizing, and frequently make modifications for customers.

b) What is the process and how much time does it take to develop a new exercise/scenario?

A few minutes.

c) What is the process and how much time does it take to modify an exercise/scenario?

A few minutes.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

As little as 20 seconds.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

RECAP or replay with 5 minute stepwise updates.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
1	Relatively Easy		
	Difficult		
	Requires trained support staff		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
0	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
2	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

   YES

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

   Both

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized YES
   b) Vendor Customized YES
   c) Allows User Customization YES for scenarios and data (not code changes)

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

   * Possible that there is also a GOTS version, which may have different costs.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	37K	22K	8K (fewer modules)	60K INCLUDES MODS)
Module Purchase	VARIES			
Product License (unspecified)	99yr lease			
Product License (Site)	available			
Product License (Base System)	See above			
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option	Priced on module			
Warranty Upgrade Option (Base System)	3 mos			
Warranty Upgrade (Terminal)				

Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	17% of initial price			
Daily Rate and/or Travel				
Instructor Fee	1300/day			
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

MIND

Developer: Visuell Systemteknik i Linköping AB[18]

Contact information:

Dr Johan Jenvald, PhD
Visuell Systemteknik i Linköping AB
Storskiftesgatan 21
SE-583 34 Linköping, Sweeden
Phone: +46 13 378145
Fax: +46 13 369665
Mobile phone: +46 708 274445
Email: johan@vsl.se
Website: http://www.vsl.se

And additional Contact information:

Dr. Magnus Morin, Ph.D.
Principal Scientist
Captain (Res.)
SE-583 34 Linköping, Sweeden
Phone: +46 13 369664
Mobile phone: +46 708 274444
Email: magnus@vsl.se

Date of Evaluation: October 21, 2003 Product status (version in use): 3.5

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- Played/Used product
- Attended Briefing
- X Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC

[18] Under contract from the Swedish Defense Research Agency. All rights for the system belongs to Visuell Systemteknik i Linköping AB. However, the Swedish Defense Research Agency and the Swedish government has an in exclusive user right of the MIND system. All rights outside Sweden as well as all non-governmental use in Sweden belongs to Visuell Systemteknik i Linköping AB. A legal contract is signed between the Swedish Defense Research Agency and Visuell Systemteknik i Linköping AB which describe the agreement.

Interview(s) with Product Users (please paste into the end of this document)
X Product developer filled-in evaluation form
X TLI team modified evaluation form

Materials in Possession:

Brochure/Prospectus
X CD-Rom
X Related Papers
Material from Internet
X Other: Swedish Defense Research Establishment scientific reports and other related publications by Dr. Jenvald.

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Data capture and AAR presentation tool that includes displays from tactical maps, annotated pictures, radio communications and compiled statistics about unit performance.

  - Current Target audience: Exercise command and control personnel.

- Developer lists current users as Tactical development organizations (army, navy, Swedish Rescue Services Agency), research groups, military units (army and navy), military training centers, rescue services, rescue schools, development group for future helicopter systems, county cooperation committee (fire and rescue, paramedics, police and trauma medicine.

- Potential equipment and/or facilities product can address:

  Exercise communications. The system can be used to monitor and visualize activities from an individual group to large taskforces.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  It's a comprehensive AAR tool that quickly combines multiple sources of data (e.g., emergency vehicles are equipped with GPS receivers) and provides timely feedback on exercise performance. This tool produces a computer-based model of the course of events, which can be replayed and browsed to investigate and analyze a particular situation. Events of an exercise are simultaneously recorded in a database. After the exercise is completed the entire course of events can be replayed and also the exercise can be saved for analysis.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Portable receivers (GPS) for vehicles (and response members if desired), observer toolkits (digital camera & various paper report forms), audio recording software for PCs (to record radio or telephone traffic), casualty report cards (victim paper forms), video cameras, digital 2D maps or aerial photographs.

The main steps for mission history construction and visualization are:

1. *Scenario structure analysis*—identifying critical phases in the operation.
2. *Definition of the focus of attention*—what factors to prioritize
3. *Scenario modeling*—Defining the objects and events that make up the model of the scenario.
4. *Data collection*—Serves to register and store the events that represent the activities in the task force.
5. *Visualization*—means of making events, circumstances, and relationships visible to participants and trainers after the exercise.
6. *Documentation*—organizing and packaging models, data and procedures into comprehensible, easily accessible/distributable form.

b) Large multi-station system, or based on individual PCs? Based on individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Depending on the selected hardware (COTS, see a) above) it may be necessary to convert different file formats after the data collection and before the data compilation. Vendor includes such software for several hardware brands and can provide additional file converters on request of the customer.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Wireless or wired LAN is optional but convenient for data management. When conducting collective after-action reviews in large-scale training there is a need for a lecture hall that can hold all participants.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other): Windows XP, 2000*

b) Processor speed (in MHz): Performance as a standard PC of 2003

c) Memory (SDR/DDR): Performance as a standard PC of 2003

d) Free disk space: Performance as a standard PC of 2003

e) Internet connection speed (if any): No Internet access needed, however a wired or wireless LAN is convenient for data management

f) Display adapter: Video card that support multiple displays. Minimum 1 but 2-3 recommended.

g) CD-ROM speed: Performance as a standard PC of 2003

h) Optional accessory requirements: None specified.

3. Describe the user interface characteristics:

Observers/evaluators collect data in different formats: structured paper reports, via digital camera, etc (see item C)a) above).

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The exercises conducted in Sweden and abroad, have had up to 350 participants during the AAR. This puts requirements on the auditorium and the audiovisual equipment used. Typically they use multiple projectors to display the different views of the MIND visualization tool.

b) Custom/proprietary hardware required? If so, identify:

None.

5. Describe any user HELP features: Tech support (vendor must specify per customer).

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking): See item C)a) above.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Vendor must specify per customer.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Features displayed above:

1) The map tool displays the selected background map and the objects that are moving in the area of display (rectangles with different colors, digits and numbers). Also smoke can be indicated (the purple line). The map scale can be edited on request. With the map tool it is possible to measure distances and to check properties of objects by double-clicking on them.

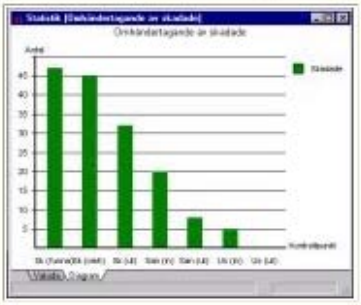
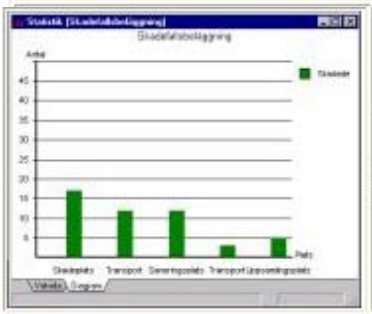
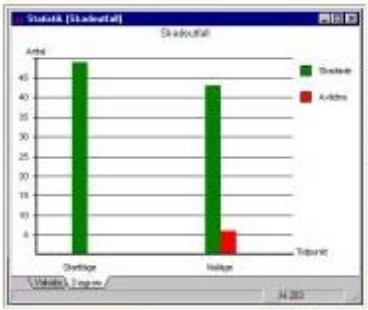
2) The Photo viewer displays commented and time stamped images from the exercise. By selecting a photo it appears on the large screen. The tool also has an automatic function that displays the photos chronologically when the exercise is replayed.

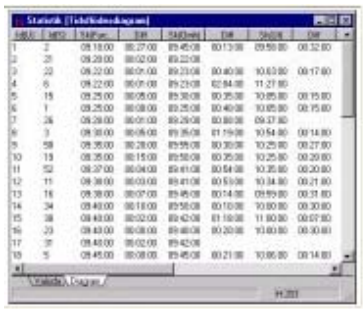
3) The sound player tool is a tool that replays recorded sound sequences which originate from radio, telephones or microphone, All sequences are time stamped and a comment text string can be added to them. The tool is operating automatically when normal speed play mode is selected, the replayed channel is then the selected. For listening to a previous sequence it is required to stop the replay and thereafter select the specific sound sequence. The tool is also capable of automatically replay the next sequence no matter what channel it was recorded on. When the exercise is replayed at normal speed the sounds from the selected channel are played automatically. At any point the user can stop the automatic replay process and select and replay an arbitrary sound.

4) The Object viewer displays the objects (vehicles, fire trucks etc.) available in the current exercise. By selecting a tag it is possible to view observation points, rescue units or chemical areas.

5) The text window displays comments and events not shown by any of the other windows / tools.

6) The Diagram view displays several diagrams with data from the field exercise. The statistics are updated throughout the replay of the exercise. The tool has nine different views, one is used to select diagrams, the other views display the statistics.

	Diagram selection view, shows an overview of the available diagrams divided into three categories: casualty treatment (overview), casualty status (details about each casualty) and casualty treatment station status (details about each treatment station).
	**Treatment of casualties** at different locations. The diagram summarizes the flow of casualties. It shows the number of casualties that has been processed at specific checkpoints.
	**The number of casualties** at different treatment stations and the number of casualties in transport between stations.
	**The outcome** of the casualty treatment process. The left bar shows the number of casualties at the beginning of the exercise and the right bar shows the number of casualties that are alive or deceased at a specific point of the exercise.
	Flow of casualties. This depicts the situation of each casualty in the treatment process. Every casualty is represented by a separate line. For each casualty the line grows to the right as he moves from the impact area to the decon station and so on. Colors are used to display the status of the casualty: green for alive and red for deceased.



Time stamped flow of casualties. In this view, the time stamps of each casualty are displayed for all checkpoints together with the period of time between two consecutive checkpoints. The casualties can by sorted with respect to any column, which helps when making a detailed analysis of time delays and their causes.

The casualty situation at the decon station. This view shows the current types of casualties at the decon station.

b) Exercise/scenario length/time(typical):

Up to the agency conducting the exercise.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable to WMD exercises. However, MIND is available in Swedish. To make it available to an English-speaking audience it would require a language adaptation of the software and the documentation.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

e) Orlando, FL conducted a full-scale emergency exercise in 2000. It involved a simulated hazardous chemical spill simulated by smoke generators and personnel acting as "casualties". Human Patient Simulators[19] were also used later by the medical personnel to administer simulated treatment.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Multimedia documentations from full-scale exercises in Sweden and the USA are available on CD-ROM together with descriptions of the method and how they conducted the exercises. The different requirements and preparations are described together with

[19] TLI had conducted an evaluation of the Human Patient Simulator. See Agrait, R., Evans, D., Grossman, L., Hammell, T.J., Loughran, J.J., and Stahl, M. (2003b). Review of Models, Simulations, and Games for Domestic Preparedness Training and Exercising. Volume I. Washington, DC: Office for Domestic Preparedness.

instructions for the visualization tool. The curriculum is available in Swedish and in English.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Emergency vehicles are equipped with GPS receivers. The position is recorded regularly and transmitted to the MIND system. All vehicles´ positions are displayed on a map of choice over the incident area. An additional merit of GPS is that it provides a globally available clock, which means that events from different locations in the exercise area can be ordered with respect of time.
- Detection is performed in two ways: using fixed detection plates along the approach routes to potential targets and using mobile and portable detection equipment. Results are entered into the MIND system.
- Every person acting as a casualty is equipped with a structured report. During the exercise the "casualty" fills out a form like the one above, noting the time when discovered, treated or transported et cetera. The information from the structured reports is transferred back to the MIND system as a basis for the statistics.
- The basic equipment of an observer is a set of structured report forms, pencil, paper, watch, map and compass. Also extra equipment can be added to increase the amount or quality of data registered. The following are examples of additional equipment: Digital camera for situation documentation, Portable GPS receiver for positioning of units, Pocket memory for audio recording of observation reports, Portable computer for computer aided structured reports, Cellular telephone or radio data modem for voice and data communication.

After the exercise is completed data is collected from emergency vehicles, detection points, casualties and observers. The information is put together in the MIND system as a support for the After Action Review where every participant is present. At the review the exercise is replayed on a big screen. On the screen vehicle positions and their routes, casualty statistics and digital photographs are displayed. The radio traffic is replayed synchronized with the other information. This way the participants are given the whole picture of the exercise to use as a basis for further discussions. The data is easily stored and can be replayed over again on request.

Weather data are obtained as structured reports from designated field observers. The reports are entered into the MIND system. To continuously monitor the changes of the local weather condition, automated weather stations are available for deployment by the rescue force at suitable locations. If detailed weather information is required, data from these stations could be registered in real time and entered into the system.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Description of the method and how to use the MIND system for different audiences are described in two PhD dissertations (in English[20]). The collected data from multiple full-scale exercises are available as models for the result of future exercises.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Support for data recording, replay in real-time, fast-time, time-jump, computer-supported analysis and display is included in the MIND visualization tool and support feedback to the trainees.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Visuell Systemteknik i Linköping AB can modify, develop and add new component to the MIND system depending on the customer's requirements. Users can develop new scenarios by themselves.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

This depends on the size of the exercise and the profession of the observers and controllers.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): See item 3)b (and others) above.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
X	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	GOTS (government. Owned)	1	Multiple dynamic paths through the product and

[20] TLI has copies of these.

			more than one out come possible
1	COTS (commercially owned)		Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
1	Multi- Agency Participation		
		1	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	2	WAN
1	Generic	2	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
2	Operational		Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
	Self-paced	1	Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills

1	EMA		TTX
1	Fire		FE
3	Govt. Administrator	1	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement		National Training Exercise
3	Public Health		
2	Public Safety Communication		
3	Public Works		
1	Transportation		
3	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

1 High
Medium
Low
N/A

Ease of Use

Easy
Relatively Easy
Difficult
1 Requires trained support staff

Current Applicability to ODP

1 Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
2 Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:
Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

The vendor has not sold the system alone before. They have had long-term contracts where they have supported customers with methodological and technical expertise. The different customers have also expressed different needs, which we have satisfied through the development of specialized components that work in the MIND framework together with the previously developed software components. The vendor feels that depending on the profile of the users, it may be advisable to add or remove components from the framework, in order to adapt the system to the specific user requirements. A training site or a school may have a professional training staff who require the flexibility of multiple components, while a county may have a number of standard exercises that they want to conduct as straight forward as possible.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Minerva

Developer:
Metropolitan Police Service
Centre for Applied Learning Technologies (CALT)

Contact information:

Dr. Jonathan Crego
Peel Centre
Aerodrome Road
Hendon
London NW9 5JE
United Kingdom

+44 (0)20 8358 1145
+44 (0)20 8358 1370/2

+44 (0)20 8358 1376 fax

Technical Support Contact Information:
same as contact information

Website: http://www.minerva-hydra.org.uk.

COTS/GOTS: COTS

Product status (version in use):

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
1	Reviewed Website
1	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
1	Related Papers
1	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Minerva is a real-time computer simulation system that runs across a network enabling the training of command teams developed in the United Kingdom. CALT refers to it as the Command Simulation System and it is designed primarily for incident command training for law enforcement. The staff likens it to a flight simulator. Minerva simulates large-scale, often critical, policing incidents allowing teams of commanders the opportunity to practice command skills such as scene assessment and management, co-ordination, communication and problem-solving. Minerva puts the student in a real life situation by simulating conditions via audio and video on large computer screens.

The computer screens show players the view they would normally see while policing. For example at a special event such as a street fair (the Notting Hill Carnival was used recently for the simulation); players will see video of an actual fair. Players will start the simulation at a school for example. The player sees videos and audio of views he would typically see if patrolling the school. If a player decides to move to a new location the simulation will show video sequences of him moving (actually walking or driving) and arriving at the new location. If a player arrests someone that will show on the video, as will players establishing a perimeter, or any other command decision. Players communicate by radio and sometimes phone using the same procedures and equipment they have while policing in real life.

Players typically work in teams in rooms or “pods” (as they are called at CALT) and see those incidents and events specific to their command position and location. Other command teams may be working elsewhere at the simulated event in another pod (and accordingly, elsewhere on the Minerva network). Each of these individual and specific incidents is part of the larger incident being simulated (i.e. the street fair). The incident and exercise as a whole is discussed during the after action review.

The simulation is made up of customized audio and video for each scenario. The idea is to allow police commanders to practice large scale critical incident command without risk to citizens. A key element of Minerva is the ability to identify and share best practices. Minerva shows consequences of particular decisions and can create a repository of best course of action/best practice information.

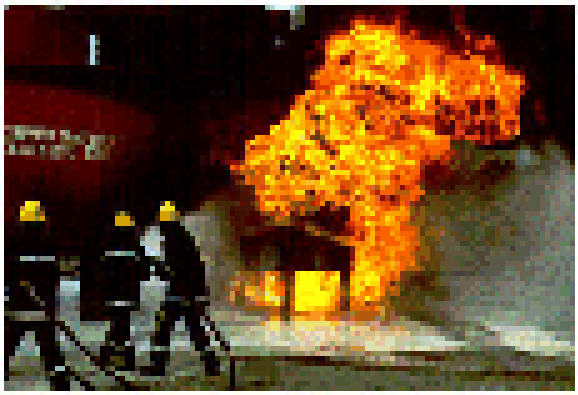
“The Minerva system uses video and audio to show the unfolding incident from particular locations at the scene. Because there will typically be several key locations at such an incident, each will be fully recreated in this way allowing the incident commander and other members of the command team to move around the incident, gathering information and

assessing the effects of their command decisions and actions" (Minerva's website). All communication and decisions are recorded and synchronized with the video playing at that time and available for re-play and analysis during the after action review. Minerva is run by controllers and not by the computer, in that sense it is like a full scale exercise where controllers enter injects and change the scenario as the event unfolds.

From Minerva's website: Critical incidents such as train derailments, plane crashes, riots, collapsed buildings, chemical spillages, explosions, armed sieges, etc, are complex, initially chaotic and challenging to command and manage. Simulation of such critical incidents must re-create this complexity, chaos and challenge by providing the students with an information rich environment that looks, sounds and feels like the real thing. Through the use of video, audio, photos, operational radio traffic, telephone, maps, intelligence, documentation, background noise, choice of problems and the sequencing and timing of simulation, we are able to recreate such incidents in a very vivid and realistic way.

Unlike most computer-based training that employs programmed steps and pre-assigned responses to student input, Minerva is controlled by people. At the heart of the simulator lies the control room where communication amongst command team members and command decisions are monitored. Ultimately, these decisions prompt control staff to develop the exercise in one of a number of possible ways, leading to outcomes driven by the participants themselves

Screenshots courtesy of CALT, scenes from Minerva



Minerva offers the following courses: Public Order, Surveillance, Incident Command training, Negotiation training, Multi-agency response to major incidents, Multi-agency response to HazMat incidents.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation

0	Game
0	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	0	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
0	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	1	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Multi-player collaboration, a software program and video/audio stream, facilitators and role players

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Minerva requires a system of networked computers with large monitors/screen and audio capability.

c) Large multi-station system, or based on individual PCs?

Large multi station system in at least 4 rooms (referred to as pods by CALT) and a control room

d) If simulation models are used, what is the basis of the data and/or distributions used?

Video and audio of elements of an incident. There is even video/audio showing movement if students decide to move to a different location.

e) Web-based application, LAN, or a single computer/system-based application?

N/A

f) Describe any debriefing after-action reporting support tools:
There is a computer designated as the debrief computer (a separate node on the network) which compiles the files/records of the radio and telephone traffic. It can be synchronized with the video footage that was being shown at the time. Full replay is available.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Minerva requires a dedicated training facility with several rooms and a lot of computer equipment.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Building a Minerva installation requires a dedicated training facility and a sophisticated computer set up. The following comes from the Minerva website:

Phase I Build (Entry level but fully functional Minerva Installation)

IT IS STRONGLY RECOMMENDED THAT A PHASE I BUILD SHOULD HAVE A MINIMUM OF 4 PODS (rooms)

Phase I Build Minerva Pod Computer (*You will need one of these for each Pod*)

- Multi-Media PC as 'Minerva Workstation' computer to the following spec:
  - Pentium III 1Ghz MMX processor (or higher)
  - 256Mb RAM (or greater)
  - Matrox G450 Dual Head AGP Graphics card
  - 40Gb Hard Disk Drive or larger – (ULTRA DMA66 or better)
  - DVD ROM Drive (12 Speed or better with CDRW read compliance)
  - 16Bit 'SoundBlaster' compatible sound card (or on board soundcard functionality to same spec)
  - Network Card 10/100 (or onboard NIC functionality - but not USB to Ethernet adapter)
  - 1.44Mb Floppy Drive
  - Win Compliant keyboard
  - Win Compliant Mouse

- 17" XGA Monitor or better. (Note: Flat screen TFT is fine but those panels with narrow viewing angles are not recommended)
- Stereo multi-media (i.e.: amplified) speakers with sub woofer
- **DUAL BOOT** into:Win95 operating system any release ***(but not Win98)*** and NT4 Workstation

Plus the following specific equipment installed

- 'Minerva Workstation' software (current version – one installation set per pod) TOP

Phase I Build Minerva Pod Equipment (*you will need one set of this equipment for each pod*):

- Kramer VP3 VGA splitter/booster (1 in 3 out) (www.kramerelectronics.com)
- 2 x Personal Radio (Motorola 'Handi-Pro 446') (www.motorola.co.uk) *or force radio*
- 2 x Personal radio fist microphone units (For Handi Pro 446) *or force radio*
- 2 x personal radio vox headset units (For Handi Pro 446) *or force radio*
- 1 x Boundary Microphone (Audio Tehcnica ATR97 or similar) (www.audiotechnica.com)
- 1 x Microphone Amp for boundary - MIC level to LINE level amplifier (Mains Powered MB7 MIC/LINE Amp – Composite Video or similar www.compositevideo.co.uk) *or phantom powered balanced line boundary microphone such as the Beyer MPC66VJ/VC*.

  NOTE: Main command pod will require a boundary microphone set-up that creates a two-zone boundary pick-up.

- Colour CCD Camera (Wall mounted Small CCTV Type – Composite Video MD38 or similar) (www.compositevideo.co.uk)
- Telephone (2 lines for each pod to local specification)
- Telephone line monitoring device (to enable each phone to be monitored at LINE level) TOP

Phase I Build Minerva Control Room Equipment

- 1 x Multi-Media PC to Minerva Workstation specification (see above) as control computer
- 'Minerva Control' Software
- 1 x Multi-Media PC to Minerva Workstation specification (see above) as server with NT4 Backoffice server (not dual boot)
- 16 Channel Audio Mixer/Switcher (Allen and Heath WZ16:2DX Mixer/Switcher or similar 16 channel mixer/ switcher)

(www.compositevideo.co.uk) – *you may already have this mixer from the original procurement*
- 2 x Self Powered Speakers (Yamaha MS101 Mk2 or similar)
- 5 x 15" XGA Color CRT or 15" TFT Monitors (1 per pod and 1 for monitoring break out room computer)
- 12 x Color 10" CCTV Loop-Through Monitors (CCTV Model TM-10444-05M www.cctveurope.com or similar)
- 6 x Personal Radios ('Motorola Handi-Pro 446') *or force radio*
- 3 x Telephones (each as a separate line)
- Equipment racking (suggest floor standing full height rack with lockable safety door)
- 8 x 8 RGB matrix with RS232 control (Kramer VP-88 or similar www.kramerelectronics.com)
- Tyas Model 116 Video-to VGA up-converter (line doubler) – 1 x TYAS Model 116 up-converter per composite line for purpose of up-converting composite video to VGA for feeding into 8 x 8 RGB matrix above. TOP

Phase I Build Break-out Room Equipment

- 1 x Multi-Media PC to Minerva Workstation specification (see above) for presentations and briefings but with cordless mouse
- 10 x self powered speakers to replay audio feeds from pods and control room (Yamaha MS101 Mk2 or similar)
- XGA data projector (Sony VPL-CX10 or similar – www.sony.com) or XGA AV Monitor (NEC XP2990 or similar – www.nec.com) – (*Note: This is a phase I Minerva specification and as such is the minimum requirement. We would suggest at least 2 such devices for the break-out room as a workable solution – see details of Minerva phase II & III 'Break-out Room equipment' below for this*)
- Projection screen (front or rear projected) if using projector (1 per device)
- Color CCD Camera (Wall mounted Small Color CCTV – Composite Video MD38 or similar - www.compositevideo.co.uk) TOP

Phase I Build Digitising and Archiving Equipment

- Matrox RT2500 Digital editing computer – Pentium III 1Ghz, 512MbRAM, Matrox G450 Dual Head AGP graphics display card, Matrox RT2500 MPEG2/DV editing/ igitizing card, Adaptec SCSI 160 Host Adaptor, 40GB Ultra DMA100 EIDE Boot Disk, 2 x 40Gb SCSI160 hard discs, 10/100NIC, SoundBlaster 16 compatible sound card functionality on board or on card, 1.44 FDD, Win98 Keyboard, Win98 Mouse, Microsoft Win98 SE, Adobe Premiere 6 (Comes with Matrox RT2500 Card), DVDROM drive, CDR/RW drive – both internal devices. (www.matrox.com)
- Lacie external DVDRAM Drive (www.lacie.com) TOP

Phase I Build Network Equipment

- CAT5 Network cabling
- CAT5 Network points to:
  - Pods (x2)
  - Control room (x8)
  - Break-out room (x2)
  - Development office (x6)
- 100Mbit switched Network hub with 24 ports sited in control room racking (3COM Super stack II Baseline Hub)

Some of this structured cabling may already exist in your environment

Phase II Build (Intermediate Minerva Installation – includes embedded radio functionality)

Phase II Build Minerva Pod Equipment

- Upgrade existing monitors with larger monitor (19" or 21" XGA CRT Monitor or 17" TFT)
- DECT Cordless telephone system complete with 6 handsets
- 2 x 'Tie Clip-Radio' Microphone systems for 'key' students. (Trantec Diversity Tie Clip System – Composite Video or similar)

Phase II Build Minerva Control Room Equipment

- Additional PC to Phase I Build 'Minerva Workstation' spec for use as 'Minerva Decision/Script Support' computer
- Adobe Acrobat Exchange (Version 4 or better)
- Additional PC to Phase I Build 'Minerva Workstation spec' for use as 'Minerva Sound Sever 'computer
- 'Minerva Sound-Server' software
- Sennheiser RF Headphone system (www.sennheiser.com)
- 3x Sennheiser RF additional headphones
- Sennheiser RF Headphone system battery charger
- 4x Sennheiser RF Headphone system batteries
- Composite Video headphone junction box (www.compositevideo.co.uk)

TOP

Phase II Build Break-Out Room

- Additional 28" (or larger) XGA AV monitor (NEC XP2990) or XGA data projector (Sony VPL-CX10) with screen (www.nec.com & www.sony.com)

TOP

Phase III Build (Advanced Minerva Installation also represents Hydra Stage I)

Phase III Build Minerva Pod Equipment

- Additional Monitor (to match existing *unless adopting Gas Plasma option below*)
- Replace main CRT or TFT monitor with 16:9 XGA gas plasma 42" (or better) wall mounted display *Optional*
- HP LaserJet 1100 laser printer (www.hp.com)
- Hydra Workstation software

- Additional PC (to Minerva Workstation specification) but running NT4 Workstation and with Datapath Horizon 4 x mutli screen graphics card in place of Matrox G450 – this machine will be Hydra Communicator server (www.datapath.co.uk)
- 2 x additional monitors for Hydra Communicator server to match existing
- HP LaserJet 1100 laser printer
- Add additional 10" colour CCTV loop through monitors for monitoring of any additional cameras (e.g.: press briefing area)
- Hydra Control software
- Hydra Syndicate Response software
- SVHS VCR for recording composite video

- Increase number of display devices as either XGA AV monitor (28" or better – NEC XP2990) or XGA data projector (Sony VPL-CX10) and screen
- Impact 12 stereo mixer
- 4 x AudioTechnica ATR97 Boundary microphones or similar (wall or ceiling mounted) TOP

Phase III Development

- HP SureStore 24E DAT 24GB External DAT Drive (*optional*)
- Veritas Back-up Exec Server for Windows NT4 Server (*optional*) (www.veritas.com)
- Canon XL1 Digital video camera (*optional*) (www.canon.com)
- Canon wide-angle zoom lens for XL1 camera (*optional*)
- Canon XM1 Digital video camera (*optional*)
- Panasonic DV2000 Digital VCR (*optional*) (www.panasonic.com)
- 2 x Sony PVM-14M4E AV monitors (*optional*)
- Nikon 4ED Coolscan slide scanner (*optional*) (www.nikon.com)
- Hewlett Packard HP 6390C Flat bed scanner (*optional*)
- Adobe Photoshop V6 (*optional*) (www.adobe.com)
- Epson Stylus 1290 Colour photo printer A3 (*optional*) (www.epsom.com)

5. Describe the user interface characteristics:

Each individual player sees a portion of the incident on his/her large plasma computer screen. The players than communicates with other commanders via radio and

telephone (traditional communication methods) and discuss the events being portrayed in the video. When decisions are made the video reflects the actions ordered by the players (i.e. movement to a new location, taking people into custody)

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Five to fifteen per room or pod and there are 3 to five rooms typically, so 15 to 75 people. Primarily, players have been police commanders

b) Number persons usually trained simultaneously?

Fifteen

c) Custom/proprietary hardware required? If so, identify:

Networked computers configured in a particular way, see system requirements.

7. Describe any user HELP features:

N/A. The simulation is run almost like a FSE but the actions are simulated. There are controllers running/changing things depending on student actions/performance.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Scenario events and communications and decisions are recorded and can be played back for discussion during an after action review.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
A training site/facility needs to be created to run Minerva. This is an extensive undertaking.

2. Attributes

	Application Environment:		**Content**
0	Training	0	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	0	Local Officials

1	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		1	Part Task Training
	Functional Area Supported:	0	Pre-Training
1	EMS	1	Drills
0	EMA	0	TTX
1	Fire	1	FE
0	Govt. Administrator	0	FSE
0	Health Care	1	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
0	Public Health		
1	Public Safety Communication		
0	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Training takes place in the form of response to scenarios/simulations. Minerva has the following courses: Public Order, Surveillance, Incident Command training, Negotiation training, Multi-agency response to major incidents, Multi-agency response to HazMat incidents

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

None. Controllers make injects into the program and have any knowledge base in the control room

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercises are instructor controlled immersive simulations and can last for an hour to all day.

d) Exercise/scenario length/time(typical):

Anywhere from one hour to all day with Minerva.

e) Potential equipment and/or facilities product can address: Minerva is primarily an incident command trainer and focuses on command responses/decisions to critical incidents and not equipment.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes.

g) Are there any constraints on supported exercises or scenarios?

No.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Minerva provides a real-time team-based exercise environment with an audio/video scenario and can be used to train distributed collaborative decision making. It requires controllers in the control room

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

Minerva is a reactive scenario controlled by people working in a control room who put in different video/audio clips while the simulation in running and thus the changes do not occur automatically.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

Students respond to the simulation the same way they would in any exercise or real life situation and their decisions/communications are recorded and discussed later in an after action review or de-brief. If police decide to set up a perimeter than it is shown on the video.

d) Does a curriculum already exist? If so, briefly describe its form and content:

Yes, there are existing curricula, for example in London police commanders often train for possible incidents at the Notting Hill Carnival which they are responsible for

patrolling. Using Minerva requires technical personnel to run it and controllers/facilitators to develop the scenarios used in the simulation

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Minerva records all student communications, discussions, and decisions and relates it to the video that was showing at the time of said communications, discussions, and decisions.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Each simulated event is followed by a de-briefing. Students look back on the problems they faced and the decisions they made. The system allows for instant replay of any part of the simulation, the group is able to review the quality of decision-making point-by-point.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

There are events scripted or planned for in the simulation that can be employed by controllers based on the decisions of the students. Minerva offers the following courses: Public Order, Surveillance, Incident Command training, Negotiation training, Multi-agency response to major incidents, Multi-agency response to HazMat incidents. ODP could use it for ICS training, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Minerva is a real-time simulator that records all decisions and communications allowing after action feedback to occur. Students have the same resources during a simulated incident as they would have available in an operational environment: telephones, radios, documentation, maps etc, When they make decisions it is reflected in the change in video which is controlled by controllers/facilitators in the control room.

6. Customization

a) Can the product be customized? If so, how, and by whom?

Yes, this requires a staff of six to run/create exercises. Exercises delivered on Minerva are designed, developed, and built by simulation staff at their own site in response to the training needs of their organization.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

c) Does the customer or the vendor modify or develop a new exercise/scenario?

Customer hires staff to create scenarios with video/audio

d) What is the process and how much time does it take to setup an exercise/scenario to run? It is fairly labor intensive and would take at least 6 months to create a new scenario

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

There is a computer designated as the debrief computer (a separate node on the network) which compiles the files/records of the radio and telephone traffic. It can be synchronized with the video footage that was being shown at the time. Full replay of the audio and video is available.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
0	Easy		
0	Relatively Easy		
0	Difficult		
1	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	

0	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase			$20,000 for computer equipment and facility. Will need a staff of 6 so min will be higher once they are included	
Module Purchase				
Product License (unspecified)	$75.00			
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				

Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

MLADS – Multi Layer Decision Making Simulation: School Violence

Product is hardware, software, or both? Neither. Board game

Large multi-user system, small multi-user product, or individual-user product? Designed to be used by 5-6 people – small team.

Focus/specialty of product:
Incident response operational tool/system:
Domestic, military, other users?

Incident response training/exercise tool/system: Training and exercise tool
Domestic, military, other users? Intended training audience: Police & fire. Police: field supervisors and field staff, typically a Lt and several sergeants. Fire: Capt. Level.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each): Roger Mason, Crisis Intervention Resources, 8640Oakdale Ave, Winnetka CA 91306. 818-886-3088

Contact info ref. technical questions (Person, title, organization, telephone, email):
Roger Mason, Crisis Intervention Resources, 8640 Oakdale Ave, Winnetka CA 91306. 818-886-3088

Contact info ref. buying the product (Person, title, organization, telephone, email):
Roger Mason, Crisis Intervention Resources, 8640 Oakdale Ave, Winnetka CA 91306. 818-886-3088

COTS/GOTS (circle one). COTS

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them. Would need modifications, which include possibly developing alternative 3-D map and definitely would need a new collection of events.

Product status (Production version in use; prototype in use; under development)? Production version in use

If in use, identify users, types of use: The game has been used by Burbank CA, police and fire. They've tested it 25-30 times. New Brunswick NJ PD has also used it (Larry Evans, now retired)

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):
This is a board game used to teach/exercise decision-making in the context of a school violence scenario (which means an active shooter in the school). There must be an instructor, plus a training audience of 5-6 people typically. Everyone will be collocated in the same classroom or conference room.

The game consists of a 3-D representation of a school and its immediate neighborhood, for about 2-3 blocks in all directions. To date, CIR has developed versions for Burbank and New Brunswick NJ that use an actual school and the actual streets & houses in the surrounding neighborhood.

The training audience is ideally a mix of police & fire, but can also be police only. It's designed for 2 levels of decision-makers. For police, that's a Lt and several sergeants. For fire, it's one or more people at the Captain level. The police Lt is the on-scene incident commander and learns how to manage the many aspects of the incident; sergeants are learning what they're expected to do and also learning the Lt's job. The police, and to some extent the fire guys, have to balance several competing tasks: seek and destroy the gunman, rescue & evacuate students and staff, control traffic, deal with distraught parents flocking to the scene…

Police and fire are also learning to work together via ICS.

One teaching goal is emphasize how sensitive this situation is to initial conditions, so decisions made early on will generate large effects later. (Roger Mason is very interested in chaos theory and one of its characteristics is extreme sensitivity to initial conditions.) Thus the scenario focuses on the initial 1-2 hours at the scene.

The scenario is described by the instructor, who provides new events as the situation unfolds and can redirect the scenario as needed, based on player actions. One iteration of the scenario starts

with Fire called to the school to respond to a fire near the entrance. After they arrive, they find this was a diversion created by a shooter and they call police. Police arrive and try to set up, but typically will find that their path is blocked by the fire vehicles that preceded them to the scene. So there's instantly an obstacle to their optimal performance.

The facilitator determines how events will proceed, based on a general list of scenario events. This involves identifying in advance some key skill sets: evacuate school, look for gunman, and control scene. Training has been provided prior to the use of MLADS to participants on those key skill sets. New events are introduced about every 20 min. When Roger Mason has facilitated, he has made decisions in a pretty free-form way: what & when to introduce something and whether it was successful or not, based on his knowledge of the participants. Success means that you had a plan for dealing with the event: e.g., if you have an evacuation plan (training was probably provided on that and other stuff prior to ex) and if you follow those steps, you you're successful, otherwise you're not and you get another troublesome event piled on.

Beyond searching for the gunman/men and helping injured students, other events in the school include a possible suspect on the roof (turns out to be a janitor repairing the AC).

At the instructor's discretion, additional confounding events can be added, including reports of looting nearby – now the police have to decide whether to pursue that simultaneously, and a traffic accident in which a high-ranking police officer driving to the scene accidentally hits a pedestrian.

The exercise typically lasts for about 2.5 hours. It ends when the student has had the opportunity to confront and respond to the events. This may mean ending before the gunman is actually found but it may also conclude with the gunman giving up (historically they either give themselves up or kill themselves, often within 10 min or so – based on Secret Service report looking at school gunman issues).

Intended for operations, training/exercises, or both? Both.

If training/exercises, is it an instructor/controller/evaluator tool, or training media? Training media.

Intended for individual, group or team use[1]? Team training.

If multiple users, identify the range of persons it can simultaneously support (min-max)?
In this current version, focused on school violence, using 2 levels of decision-makers with one facilitator, the min is 5 and the max is unknown.
Number persons usually trained simultaneously? 5-6

Large multi-station system, or based on individual PC's? n/a

Custom/proprietary hardware required? n/a

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
- Software:
- Simulation:

The game consists of a 3-D representation (this is a physical model) of a school and its surrounding neighborhoods, plus small models for various kinds of emergency vehicles.

If simulation models are used, identify their qualitative validity level (if possible):

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment): Stand-alone

If other hardware and/or software required, or typically used, identify it/them.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
Conference room or class room

Web-based application, LAN, or a single computer/system-based application? n/a

Can the training be administered over a wide area network or a local area network?

Is an instructor or facilitator needed? Yes.

If not, how is training conducted (e.g., Individual self-paced)?

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Describe unique user interface characteristics:

Other important product characteristics: Decision-making tool – emphasizes decision-making within a domain (e.g., school violence).

Product Operating Requirements & Cost

Purchase or license product, both, or optional? One-time fee

Initial acquisition cost (purchase; licensing fees):
$400

Product itself:

Other necessary support, software, equipment: None required.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)? No. Either someone can receive the instructions and scenario events in their current version and run it, or CIR can customize the game instructions and events.

Number of staff required to setup, and operate product: 1

Staff training required to use product (identify briefly ... type, time): Right now, training would involve familiarization with events, but facilitator is assumed to already have familiarity with school violence and the key teaching points.

Cost for staff training on product (Cost to purchase training): N/A. Probably takes a small amount of time for the instructor to learn the scenario events to the point where they're comfortable switching them around, but there's no cost for training.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required): N/A

Expected costs?

Product maintenance requirements/recommendations (identify briefly): N/A

Maintenance costs (Expected or required software, hardware maintenance):

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other): N/A

Can product be customized? How? Cost? Yes. CIR would update the underlying map and models and events. Cost unknown – based on requirements and would cover Roger Mason's time, so this would probably end up in the thousands of dollars, max, and would probably not reach $10,000.

Product modifications required to support counter-terrorism training/exercises:

Modifications: new 3D map and models, new scenario events. This would require additional research by CIR to develop the appropriate events

Range of potential costs for modification: See above ref. customization

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).

Processor speed (in MHz):

Memory:(SDR/DDR)

Free disk space:

Internet connection speed (if any)

Display adapter[4,5]:

CD-ROM speed:

Optional accessory requirements[5]:

Training/Exercise Characteristics

Product may support training, exercises, or both? Both

Potential type of WMD event product can support: Potentially could support any, but would need changes BEFORE that could happen. Right now, it doesn't support any of these.

Chemical –
Biological –
Radiological –
Nuclear –
Explosive –

Constraints on supported exercises or scenarios?

Potential disciplines product can support: Right now, it's a two-layer game focused at: Fire, Law enforcement, and public safety communication. One can increase the # of layers of decision-makers, but that requires some changes to the scenario events, and could theoretically involve these other organizations (which is what happened during Burbank's exercise in LA County Operation Critical Response)

Emergency medical services
Emergency management agency
Fire
Governmental administration
Health care
HazMat
Law enforcement
Public health
Public safety communication
Public works
Global ... or other (Pelfrey)

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K): All 3 kinds.
Initial/acquisition
Improvement
Maintenance/refresher

Target audience: Right now, target audience would be incident commander for police and fire.
First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel

Potential responder training level(s)/categories product can support:
Awareness –
Performance [Operations]
Technician [Specialist]

Primary purpose: Planning & Management [Incident Command]
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -

Potential equipment and/or facilities product can address: No equipment; can be customized to address different facilities

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
This is primarily ICS and UC (would have to add another layer to add EOC). It also is designed to help police at one level (sgt) figure out what the next higher level (lt) does, so they can start to prepare themselves for that.

Training content description (what trained), in addition to preceding item (Brief):
Response to school violence incidents involving shooter in school.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):
No. If you are a police lt or sgt, you don't need any add'l training to start using this. Similarly for fire captains (or any other decision-makers) – your job has given you whatever preparation is needed.

Potential training/exercise types product can support:
Classroom -
Individual self-paced -
Seminar/workshop -
Drill -
Individual and small-team exercises - X
Simulation-supported -
Gaming – X
Collaborative -
Tabletop - X
Functional - X

FSE -
Other
I think this would be small-team exercises, collaborative, and also a table top exercise.

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
It is a collaborative group/team product, focused on decision-making, not real-time. It's experiential and interactive.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Short, scripted with instructor control

Exercise/scenario length/time (typical):
2.5 hours

Process and time to:

Develop new exercise/scenario: 90 days

Modify an exercise/scenario: 45 days

Setup an exercise/scenario to run: 30 min.

Does a curriculum already exist? Not in a formal sense, though there is an instructor handbook.

If so, briefly describe its form and content:

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):
Starts with scripted scenario but exercise controller/instructor can deviate from that.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
None

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Totally dependent on instructor

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):
None so far.

HELP features (Briefly identify):
None

Instructor/controller/evaluator tools:

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)): There is an instructor handbook.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): Unfolds in something close to real time (may be slightly slower to allow for discussions).

AAR support tools (May overlap with "Student/participant/team feedback features", above): None

Data recording & storage features (e.g., Scenario events; student performance):
None

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
None

Training/exercise fidelity:

Environment (including situation/scenario): Not Sure

Hardware: Low

Information (including interaction with other persons): High

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: Boeing-Autometric has done preliminary work in porting the code from the current operational National Security Network system to prepare a more generalized exercise inject management and communications system that could be used for emergency management exercises. To date, however, the Emergency Management Network (EMN) is a prototype. For this reason, the following survey addresses an existing system with similar functionality to the EMN envisioned by the vendor.

A. Basic Product Information

Name of Product:

National Security Network (NSN)

Developer: Boeing-Autometric

Contact information:

Marcy Lewis
Boeing-Autometric
7702 Boston Rd.
Springfield, VA 22153
Tel.: 703-270-6687

Email: marcia.a.lewis@boeing.com

Technical Support Contact Information:

Steven Prada
Boeing-Autometric
7702 Boston Rd.
Springfield, VA 22153
Tel.: 703-270-6693

Email: steven.prada@boeing.com

Website: http://www.autometric.com

COTS/GOTS: COTS

Product status (version in use): No version number.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in TLI Possession:

	Brochure/Prospectus
	CD-Rom

	Related Papers
	Material from Internet
X	Other: please state - *Crisis Decision Exercise Operators Manual*

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  The NSN is an exercise tool that combines a content management system and a master scenario event list scheduler (MSEL). It is a Web-based stimulation system that drives a constructive simulation via a scenario injects. The NSN is currently used to support an annual simulation exercise at the National Defense University regarding policy decision-making in national/international security matters. The software application is accessed through a standard web browser (MS Explorer), providing an integrated gateway for instructors, staff and students to the MSEL and all associated software applications for data retrieval, editing, email, and other functions.

- Current Target audience:

  The customer for this application is the National Defense University, which holds a Crisis Decision Exercise annually in which students participate in a week-long national security policy-making simulation as part of the curriculum.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
1	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one outcome possible
2	Group	0	Static configuration: fixed path, only one right way to use the product

1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	1	SME controls AAR
0	Equipment	1	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The National Security Network is software that consists of a set of frames-based Web pages that provides combined access to the software applications, templates and data needed to conduct a particular type of exercise. The NSN is hosted on a local area network using email and web servers to host the main applications.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

A client-server local area network is needed to host the NSN and related applications. The system used at NDU is maintained by the National Strategic Gaming Center (NSGC). Optional video playback and display equipment may be needed to utilize video injects.

c) Large multi-station system, or based on individual PCs?

As currently configured and supported at NDU, the NSN is a large, multi-PC system. The software, however, can support an arbitrary number of PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Simulation models are not incorporated into the NSN.

e) Web-based application, LAN, or a single computer/system-based application?

Web-based application.

f) Describe any debriefing after-action reporting support tools:

Debriefing occurs as part of the exercise curriculum carried out by professors, and is not directly supported by the software. Tracking of inject times and email traffic is supported.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Facilities requirements depend upon the scope of installation. At NDU, nine sets of systems are used in multiple rooms connected by a local area network.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

The local area network is a client-server architecture. Client machines can be industry standard PCs with Microsoft Office 2000 or Office XP, Internet Explorer 5.5 or later, MS Outlook mail client, and 100Mbps network card installed.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Server: *Windows 2000 Server or later*
Microsoft IIS v5.0 or later
Microsoft SQL Server v7.0 or later
Microsoft Exchange Server 5.5 or later
Servlet Server (New Atlanta ServletExec v4.2)

Client: *Windows 2000 Pro or Windows XP Pro and latest service packs*
Internet Explorer 5.5 or later
Microsoft Office Pro 2000 or Office XP Pro
Microsoft Outlook mail clients

b) Processor speed (in MHz):

Server: *Intel Dual Xeon Department-class server (e.g. Dell PowerEdge™ 4600)*
Client: *Pentium III 800 MHz or better*

c) Memory (SDR/DDR):

Server: 1GB system memory
Client: 512 MB

d) Free disk space:

Server: 120 GB RAID Level 5 disk sub-system
Client: 1 GB

e) Internet connection speed (if any): DSL or T1

f) Display adapter: NVidia-based graphics card with OpenGL support, 32MB memory min.

g) CD-ROM speed: 40X minimum

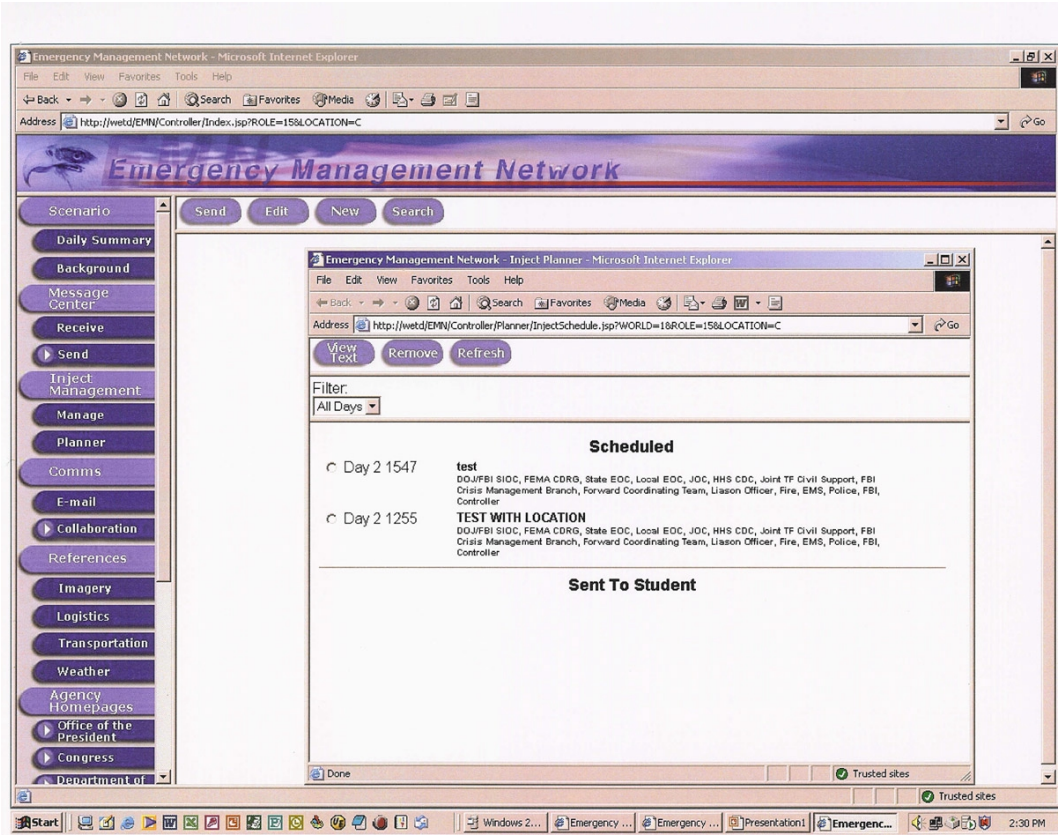
h) Optional accessory requirements[5]:

Redundant and/or uninterruptible power supply, tape backup.

Boeing-Autometric BattleScape/EDO 3-D/2-D modeling and simulation application with appropriate add-ons for visualization support.

5. Describe the user interface characteristics:

The GUI is presented as a Web page with function buttons arranged horizontally at the top, and menu buttons vertically on the left side of the screen (see screen shot below of EMN mockup). The function buttons allow for basic actions, depending upon the nature of the menu item, such as *View*, *Edit*, *Copy*, *New*, *Search*, *Send*, *Schedule* etc. There are two basic versions of the GUI: the Instructor version, which allows access to scenario inject development and scheduling (*Scenario Injects* menu), and the Student version which has similar functionality minus the inject planning functions (a *Scenario Updates* menu, instead). The Menus provide access to the following areas: Scenario, Message Center, Communications (Comms), Scenario Injects (or Updates in student version), References, Tools, and Administration (Admin).



The Scenario menu provides access to introductory information about the general exercise scenario, developed, written and edited by the faculty. The Message Center initiates Microsoft Outlook, and the Comms button provides options for either email, video links (via MS Media Player), or whiteboard capabilities (via MS NetMeeting). Scenario Injects/Updates is the MSEL function (displayed above), which provides the simulated events that drive the exercise. A References feature allows for multiple links to other related Web sites for either scenario development information or for student reference material for use in the exercise (actual government sites, commercial sites, or faculty developed material). The Tools menu provides access to Microsoft Word and PowerPoint applications for participants

to use in preparing the output of their team activities (briefings, position papers and presentations). The Admin menu includes a calendar, participant roster, tech support and survey functions.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The number of users that the NSN can support is not constrained by software, but by hardware. Past exercises have supported six hundred simultaneous users.

b) Number persons usually trained simultaneously?

Initial, hands-on training of NSN users is usually done in groups of fifteen.

c) Custom/proprietary hardware required? If so, identify:

None.

7. Describe any user HELP features:

The NSN includes Help as a set of Web pages that can be accessed in either the Faculty or Student versions. Along with built-in help, there is a user's manual for the Critical Decision Exercise that includes a training guide, faculty function descriptions, software configuration requirements etc.

8. Data recording & storage features (e.g., Scenario events; student performance):

There are no recording or storage features implemented in the NSN software itself apart from the MSEL feature. Network administration tools, however, capture and store email traffic, which can be reviewed if necessary.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The vendor introduces exercise participants to the NSN tool by means of hands-on demonstration of the Web interface, explanation of the functionality, and reference to user manuals. Groups of about fifteen students are typically trained per half-hour session.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders

	Mode of Delivery:	2	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
2	Explosion	1	Awareness
		0	Part Task Training
	Functional Area Supported:	2	Pre-Training
0	EMS	0	Drills
0	EMA	1	TTX
0	Fire	0	FE
1	Govt. Administrator	0	FSE
0	Health Care	2	FSE Reinforcement
0	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
0	Public Health		
1	Public Safety Communication		**Incident Stage Supported**
0	Public Works	1	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

The training content for the Critical Decision Exercise is developed by the faculties of the involved schools at the National Defense University. The faculties develop the scenarios, the injects, and prepare much of the reference materials.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Knowledge contained in the NSN is the intellectual property of the NDU. Users of any similar system would need to create their own knowledge base.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

The CDE is a high-level exercise that seeks to prepare government administrators and military leaders for making national-level policy decisions. The basic utility of the software, however, can be adapted to a wide range of exercise curricula.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

As implemented at the NDU in the form of the Critical Decision Exercise, the NSN supports a four and one half day (approximately 36 hours) distributed tabletop type exercise. The scenario and subsequent injects are scripted, and can be modified on the fly as necessary. The simulation clock can be set for different rates, which allows the CDE to cover about six months of simulated time over the course of the 36-hour exercise.

e) Exercise/scenario length/time(typical):

36 hours is the typical length of the NDU exercise. The software can support shorter or longer periods.

f) Potential equipment and/or facilities product can address:

Although the NDU implementation does not directly address equipment or facilities due to the focus on policy-making, there are no major system constraints that would prevent the NSN or an EMN variant to address such issues.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The functionality of the NSN system can support distributed collaborative counter-terrorism training and exercising, but would require the development and HTML coding of appropriate content. Depending on the nature of the exercise and level of integration with operational agency or interagency systems, there may be additional system development needed to provide communications security and distinguish game-play from real operations.

h) Are there any constraints on supported exercises or scenarios?

As currently conceived and used, there are no significant constraints on exercises and scenarios. Adaptation of the NSN system to the EMN, however, may potentially have constraints that cannot be predicted at the present time without details of the intended application.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The instructional strategy involves groups of students who behave as a cells (representing Congress, State Department, DoD/Joint Staff, and the National Security Council) that respond to simulated events delivered via a Web-based MSEL. The methodology uses the Web as a stimulation mechanism and learning resource base, but the students are collocated, make collective decisions, and present briefings or policy papers at the end of each day to faculty and their peers. They receive feedback from the faculty.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

As currently implemented at the NDU, instructors are needed to provide the performance assessment to fulfill learning objectives. Facilitators are needed to provide simulation and system support during the exercise.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

The national security scenario is pre-scripted by NDU faculty, written as the introductory scenario, and scheduled as a set of events over time in the master scenario event list. The MSEL can be edited by faculty to add or remove injects before the game clock time to adjust the instructional benefit of the simulation according to game flow.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

The CDE is offered as a course required for completion of the curricula at the National War College (NWC) and the Industrial College of the Armed Forces (ICAF). See: http://www.ndu.edu/icaf/curriculum_core/endofyear.htm.

e) Does a curriculum already exist? If so, briefly describe its form and content.

Yes. It is beyond the scope of this document to treat the curricula of the NWC and the ICAF. Please refer to the corresponding Web sites from which the following quotes are sourced:

"The National War College curriculum is composed of a core program, elective courses, and regional studies. A common core program is required of all students. It provides grounding in national security strategy and policy, and military strategy and operations. The core curriculum focuses on the domestic and international contexts in which national security policy is developed, national security organizations and decision making processes, and the formulation and implementation of military strategy."[21]

"The ICAF curriculum provides a broad education in national security strategy and national military strategy with the major emphasis on resources management. The ICAF's academic program is specifically designed for a student body already highly experienced and successful in military and civilian professions devoted to the design and resourcing the different facets of national security."[22]

[21] http://www.ndu.edu/nwc/handbook/studenthandbook/Part3.html#CoreProgram
[22] http://www.ndu.edu/icaf/curriculum_core/main.htm

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Student teams are evaluated by NWC and ICAF faculty members. There are no data recording or performance measurement features, per se, incorporated into the NSN software.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Same as above.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Development of exercise scenarios is facilitated by the MSEL scheduler tool, HTML templates, and an Operators Notebook manual.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The MSEL refresh rate can be changed, and un-posted injects can be modified or removed from the event list. Injects can be color coded according to a pre-determined logic (e.g., by geographic region, by cell type, by escalation/de-escalation phase), and can be searched and filtered by date, title, region and other attributes. New injects posted to student cells are represented by a flashing icon to indicate arrival.

6. Customization

e) Can the product be customized? If so, how, and by whom?

The content of the NSN can be customized by instructors with password-protected access to the system. New templates, research documents, Web links, and scenarios can be created or modified using an HTML editor. Any changes to the system functionality would need to be performed by the vendor.

f) What is the process and how much time does it take to develop or modify a new exercise/scenario?

As currently implemented at NDU, the NWC and ICAF faculties coordinate in producing a new scenario each year. The entire process takes upwards of six months, primarily due to the content development process and not the data input process itself. The time it would take another customer to develop a new scenario would depend upon the complexity and the resources available for the project.

g) Does the customer or the vendor modify or develop a new exercise/scenario?

The customer develops a new scenario. The vendor would perform technical support.

h) What is the process and how much time does it take to setup an exercise/scenario to run? Once the scenario and supporting material have been developed and entered into the database and network functionality has been established, the exercise begins by initiating the master scenario event list scheduler.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The NSN system incorporates a Boeing-Autometric modeling and simulation technology called BattleScape/EDO that provides a virtual visualization environment for earth, sea, and airborne assets (see: http://www.autometric.com/products/index.cfm?content=bs). It is a tool that can be used to simulate battles, for instance, to allow participants to analyze potential courses of action and the effects of decisions.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium		Somewhat
	Low	**X**	Limited
X	N/A *(material is developed by user)*		
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
3	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
3	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?

0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

      No. Vendor to quote price for system according to user requirements.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

      Allows User Customization.

4) What are the prices (in $USD) according to type: (fill in all applicable)

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS
March 4, 2003

Basic Product Information

Name of Product: [23]

Nuclear Biological Chemical Casualty Training System (NBC CTS)

Product is hardware, software, or both?

- Both.
  Hardware: Off-the-shelf PC's.
  Software: Proprietary commercial software. MS Windows.[24]

NBC CTS was originally designed and used to train Army medical personnel in treatment of victims of NBC events. It s original manufacturer was Logicon. The US Army Medical Department, Battle Simulation Center has had the tool for about a year and a half and has made numerous modifications to include application to civilians. NBC CTS has never been used outside of the military but its new version will be released by the end of the year 2003 for commercial and non-military use, as it is customizable to reflect participating organizations.

Large multi-user system, small multi-user product, or individual-user product?

- PC-based system via local network, dial-up connections, or the Internet.
- Multi-user and individual-user product (though not designed for single use).
  Currently used by the Army as stand alone exercises.

Focus/specialty of product:

- Medical treatment management tool.
  Has capabilities to replace/augment table top and full scale exercises.
- Multi-purpose tool:
  Training and exercise development and control system.
  Response plan and strategies development and evaluation system.
  Decision support tool for command and control personnel (e.g., EOC personnel).
  NBC reporting
  Setting guidelines (based on needs identified via simulation)
  Allocating assets and supplies

[23] Name is subject to change in the near future. Vendor feels that it does not accurately represent all the current training capabilities (e.g., just focusing on NBC) when medical personnel could use the tool to plan and train for other medical management topics/treatment.
[24] Vendor envisions use of the tool with other operating systems in the near future.

Patient diagnosis and treatment
Personnel scheduling

Incident response operational tool/system:

Domestic, military, other users?

- Supports incident response (medical management and command and control), training, exercises, and planning.
- Domestic:
  - Federal & state governments.
  - Foreign governments (may include military).
  - Commercial organizations (US and foreign).

Incident response training/exercise tool/system:

Domestic, military, other users?

- Currently marketed for military & domestic medical response personnel and command and control users.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Military.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Military.

Functional-area identification of product (Broad range, or specific):

- Medical treatment and/or coordination personnel, commanders.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

1) Developed by Logicon (a Northrop Grumman Company) U.S. and now owned by the Army Medical Department Center & School, Battle Simulation Center.

Contact info ref. technical questions (Person, title, organization, telephone, email):

1) William J. McCormick [25]
   Training Systems Analyst/Webmaster, DAC
   AMEDDC&S Battle Simulation Center
   Fort Sam Houston, Texas 78234
   Office 210.221.0944

[25] Ret. Army Medic. Who manages the product development (revisions, code writing, software updates, training, etc.) and who provided demo of tool.

Mobile 210.559.6395
http://www.cs.amedd.army.mil/simcenter
http://www.cs.amedd.army.mil/simcenter/NBC%20CTS.htm (for demo)

Contact info ref. buying the product (Person, title, organization, telephone, email):

- Same as above.

COTS/GOTS (circle one).

- COTS
- The previous version by Logicon, Mass Casualty Operational Trainer, was GOTS but is no longer available.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- System has basic capabilities for exercise development and conduct, as currently available. Its current content-specific characteristics are focused on military users. It is being expanded to address civilian users.
- Some modifications being made[26] include:
  - AAR being will be modified (not by the time of the end of the year version release) to display more meaningful performance measures and to include more reporting options (e.g., show individual treatment tasks) (See sample AAR below).
  - Roles available for play will not only be Army personnel but will reflect the player's capabilities (i.e., level of customization will include real population/community numbers, available supplies and personnel, etc.).
  - Community maps will be imported (i.e., geo-specificity).
  - Some drag and drop options will be modified to reflect real time actions. For example, it takes a lot more time to send a victim to the morgue (e.g., notify ME, etc.) than it does to drag the victim there.
  - Sounds are currently only functional on MS Windows '95 or '98. This "bug" is being worked on and should be fixed by the end of the year 2003.
  - Mission types will not only be defensive but offensive.
  - Users will be able to log on at any time and call the vendor who will set up a game to be played remotely (or the user may join an existing game if one is in progress). No software installation required.
  - Newer versions will take real costs of operations into account during the simulation. That is, there will be a running log of real costs (salaries, supplies) based on real information input into the system.

  * See Appendix D for a complete listing and status of planned modifications/software updates (as of 3/7/03).

Product status (Production version in use; prototype in use; under development)?

- NBC CTS currently in use for training by the Army; MC2M2[27] is under development (available December 2003).

[26] This review addresses the current version of NBC CTS. Additional capabilities are projected for release by 12/03 at which time the product may be named Medical Command & Control and Medical Management Training System (MC2M2).
[27] Proposed name for the new version but subject to change.

If in use, identify users, types of use:

- Army Medical Department student training as stand alone game.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- NBC CTS is a role- and task-based simulation which (in it's current version) supports training of Army medical personnel in the diagnosis, treatment and management of mass casualties generated from the use of nuclear, biological and/or chemical weapons as well as other disasters/injuries. It models battlefield casualties and individuals. Players take on the roles for various Army medical personnel who would have casualty case responsibilities in the event of such an attack, and manage large numbers of NBC casualties under battlefield conditions. It is task oriented in that the simulation projects updated data (e.g., reduction in personnel) and it takes into consideration amount of time it takes to complete a task.
- PC, Windows based system.
  - Intended as stand alone game.
  - Can also support full-scale, team and table-top exercises, combining simulated and actual-deployed assets.
  - Intended to support incident response command staff in the following areas:
    - Communications - send and receive messages through the internal communications package that connects all users without the aid of additional phone, fax or email services.
    - Management of routes - create routes between player organizations.
    - Management of vehicles - assign casualty evacuation, mortuary, supply, or radiological, biological, chemical area reconnaissance missions to vehicles.
    - Management of supplies - distribute supplies to requesting organizations via assigned/available vehicles.
    - Situational Awareness - track events and operational information on a map of the training area. Create "overlays" to the map image, using standard Windows drawing tools.
- Includes support for:
  - Several workstations—PC—has been played with up to 30 players, depending on client server limitations; not so much a concern if played over vendor server).
  - 1 controller workstation (pre-exercise and real-time control inputs include selecting/modifying scenarios, monitoring, managing communications, controlling exercise speed, simulation models).
  - 1 simulation server (this could be combined with the controller workstation)
  - Automatic data collection with pre-game setting of levels (individual player actions per chosen unit of time, AAR).
- Exercise allows for plan development and evaluation (by customizing scenarios to include real assets, supplies, personnel and community data and evaluating performance after game).
- Capable of web-based collaborative operation—players can play remotely by logging in to an existing game. This can be done with or without contractor support (i.e., whether the tool is purchased or whether a single exercise session is purchased).

- NBC CTS uses "objects" to represent the "real-world" entities players use to perform their jobs (e.g., telephones, vehicles, medical supplies, etc. This view is shared by all players who can observe vehicles move in the map (The movement of vehicles across the map, regarding time, is initially set in the database. Each vehicle has a maximum speed that it will travel at. However, the Exercise Controller can degrade transportation, by a percentage value, which affects all transportation. This can be used to simulate the effects of weather on transportation.). Every other view (e.g., number of casualties assigned by the model to each treatment station and the treatment progress/outcome) is only available to each individual player and to the controller.
    - This could potentially be an IC/UC workstation to oversee operations but the system does not allow allocation of additional personnel based on observed scenario consequences (except for decontamination augmentees—see below). That is once the game begins each player (in a treatment role, thus excluding command) is assigned a number of casualties based on proximity to event and capabilities (e.g., number of beds, supplies, etc.) and they will only have view of (except for the controller) their victims and personnel. Also, these casualties cannot be re-assigned to another location/player. They can, however make requests for assets across players (described further below).
    - Those playing non-medical roles, command, can plan (routes, etc.) on maps, but the system does not have capabilities for a shared view of these changes (described in more detail below).
- It models the characteristics of casualties as their vital signs and symptoms degrade over time and improve with the appropriate treatment[28]. Treatment can be customized during runtime, by anyone who has treatment capability. This is another area they plan on expanding on for the future version of the tool, specifically in the area of "cures".

Intended for operations, training/exercises, or both?

- Both.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

- Training media.

Intended for individual, group or team use?

- Team, primarily.
- Future versions will have capability to for individual play with the computer taking on other roles.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- The minimum number of players is 2 (only because you need someone to evacuate your casualties to).
- Has been used with up to 30 users. Depends on server limitations.

Number persons usually trained simultaneously?

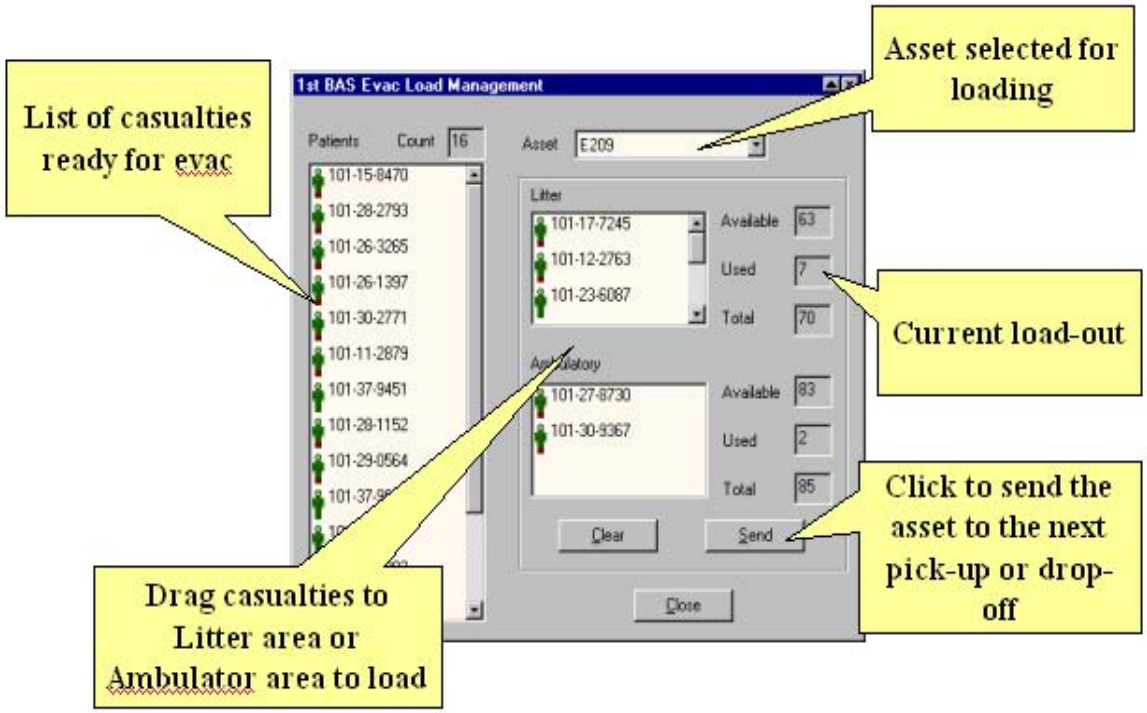
- Varied. The class size averages about 28 students when the game is played on-site. When it is played across the Internet, the number is significantly lower, partly due to finding people to participate remotely.

Large multi-station system, or based on individual PC's?

- Based on individual PCs. Can be played remotely over the Internet, or in a centralized location.
- Login ID and password provided by the exercise controller.

[28] Casualty information is obtained from the Joint Readiness Clinical Advisory Board's Treatment Briefs and Patient Category Codes

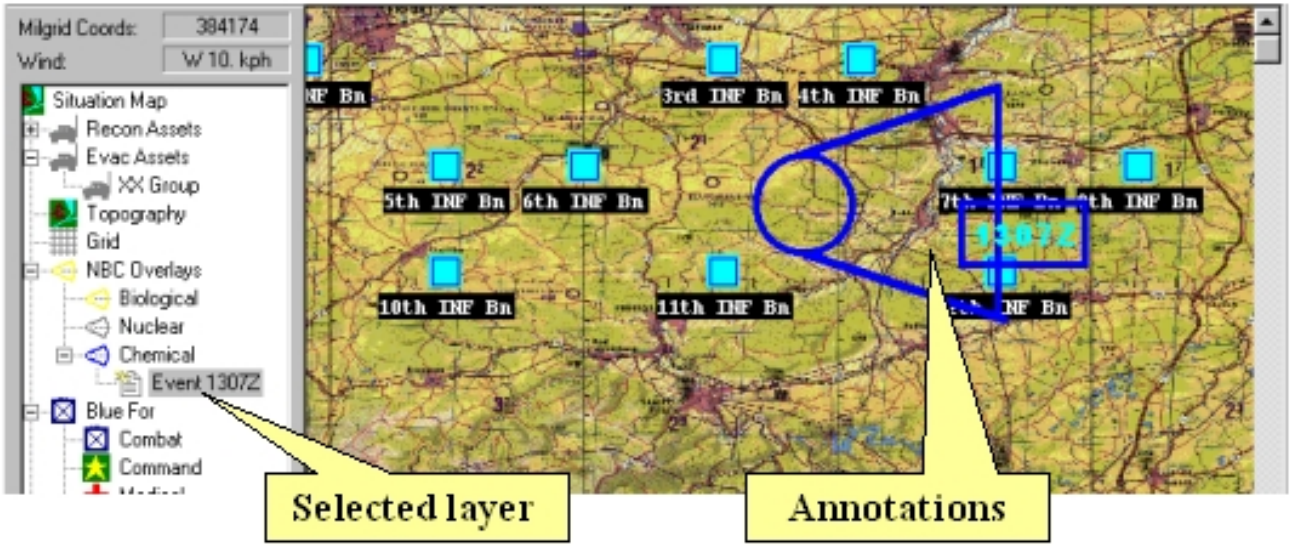
- Typical game activities:
  - Start-up, determine tactical situation for role, request supplies, request augmentees (Augmentees are used for the sole purpose of decontaminating casualties. The number of augmentees can only be added to if you request them. They come from the geographical area and will arrive at varying times. Once their mission is completed they can be dismissed to return to their "unit"), review any intelligence regarding incident, augmentee arrival (based on real-time estimate of deployment), assign to decontamination tasks, casualty arrival, triage/treatment (select task from menu) /decontaminate (drag victim to decontamination window/evacuation cycle (including delays due to vehicles and other factors), flow-down, assess situation in preparation for additional events.
- Additional typical game activities for command roles:
  - Evacuation asset management as shown on screen below.



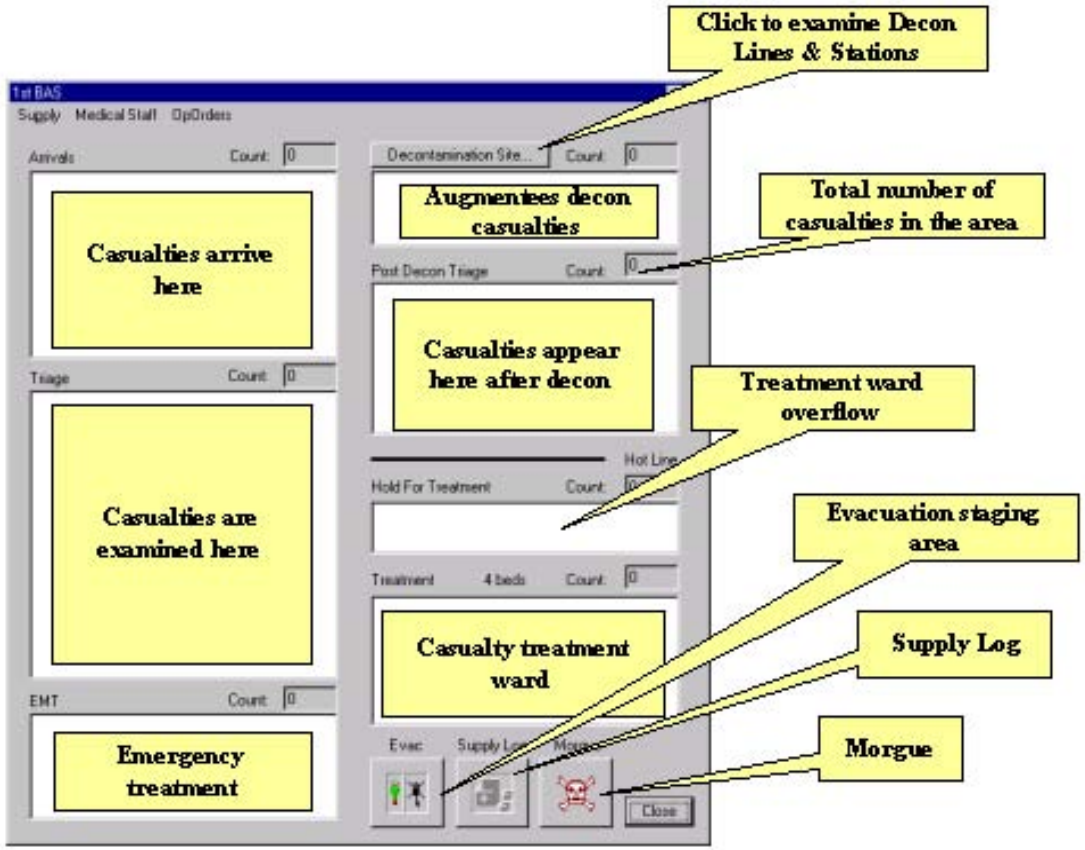
  - Evacuation routing: This replaces the paper maps (e.g., at the EOC) but the view is only available to that particular player (i.e., changes made to each screen are only viewed by that person and by the controller). Note: maps are customizable to reflect communities/areas, etc., depending on the level of detail desired. Casualties are assigned to the closest “treatment areas” (e.g., hospitals, ambulatory care facilities, doctor’s offices) based on the population, number of victims, percentage of community affected, agent/other event (e.g., fire). These numbers are automatically computed in the scenarios but can be easily customized before start of game or during the exercise (E.g., Nuclear, Biological, Chemical, Conventional, and Disease Non-Battle Injuries may generated at any time during the game and as often as the exercise controller desires).

Version 3: October 8, 2003

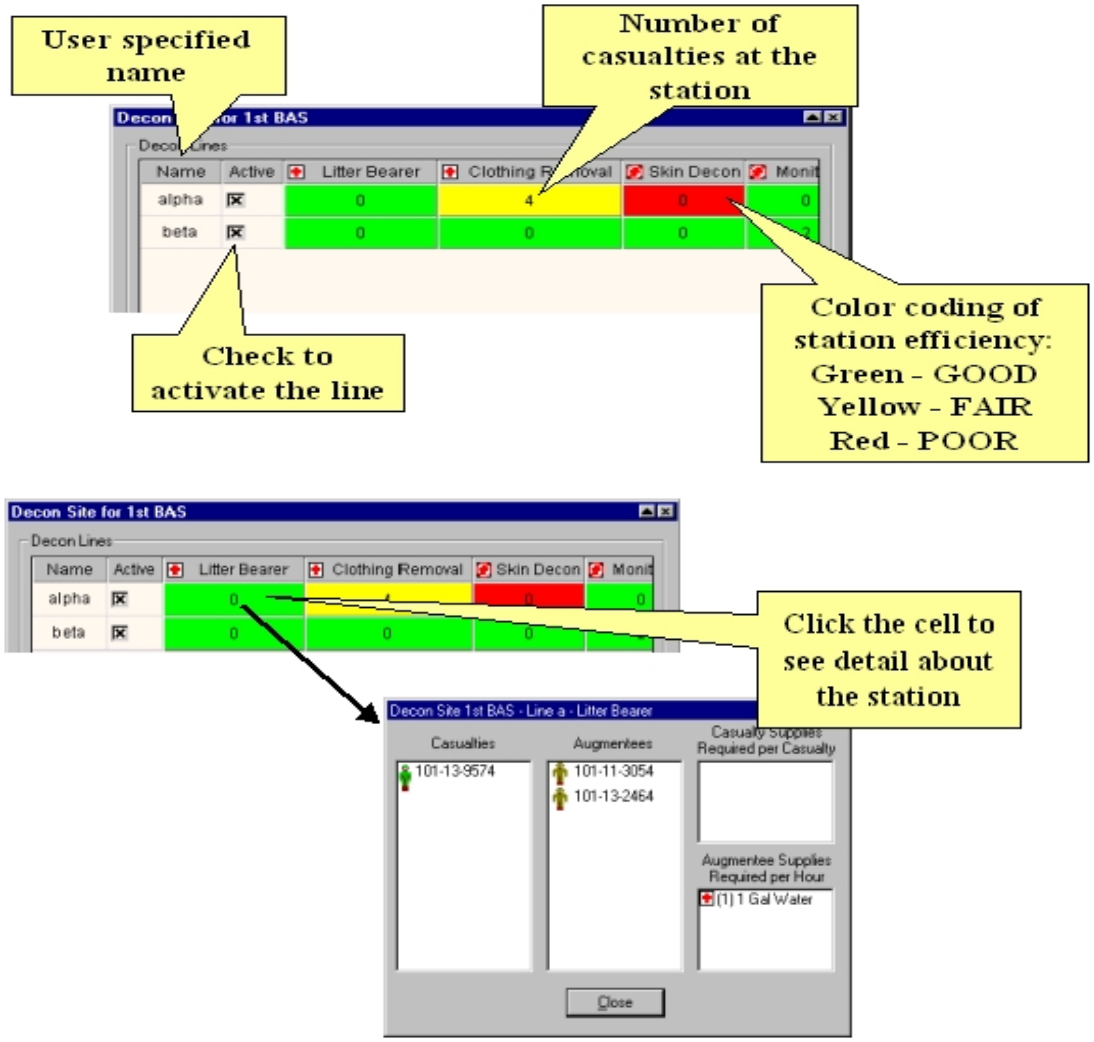
- Map overlays: where drawings & annotations will take place on selected layer.



- This is an example of the casualty management screen (only for medical treatment players, not command). The ’03 v. released at the end of the year will allow for customization to reflect treatment capabilities (e.g., there can be a box per department in a hospital that would be playing).



- The following screens show decontamination windows. Note the color-coding (utilized by the Army) will be customizable to reflect civilian contamination classifications. Players choose who will conduct decontamination (from their available personnel) based on their qualifications (skill level 1-6). Skill levels increase the longer he/she performs the task. The time it takes a casualty to process through a casualty decontamination station is initially set in the database. However, this is also dependent upon the skill level (1<6) of the augmentees working in that station. The lower the skill level the longer the process will take. Additionally, the longer an augmentee works in an area the less efficient they will become, due to fatigue.



Custom/proprietary hardware required?

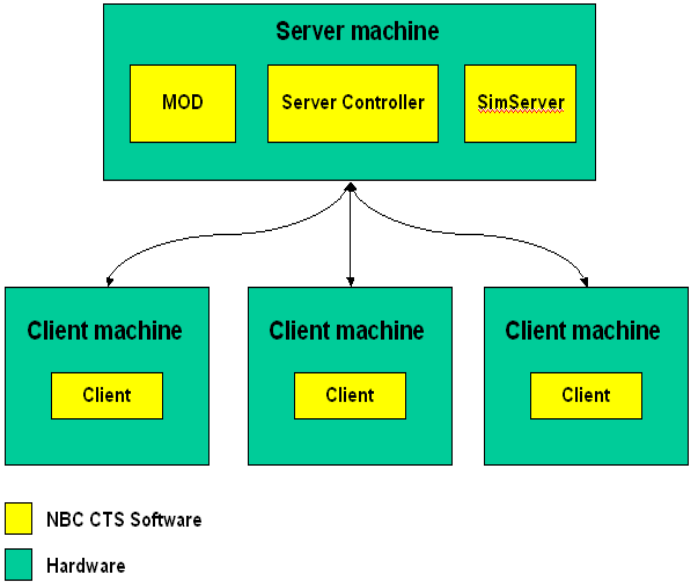
- No.

Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware (generic off the shelf hardware):
- Software:

- COTS
- MS Windows based
  1) Human computer interface.
     Store, convert & present information.
     Windows, graphics, text.
     Data recording (hard data); logging of player actions.
     Information presentation during exercise & with AAR: graphical (vehicle progression on map) and textual (e.g., messages between players, patient medical condition progression) displays.
  2) Simulation Module
     Agent effect on victim progression.
  3) Database.
     Environment.
     Exercise parameters.
     Key events.
     Geographic area.
  4) Debriefing (AAR) (see below).

- Simulation:
  - Embedded simulation capabilities (scripted and adjustable), for example:
    Percentage of victims in the population/community affected, time delay to conduct decontamination and transport victims, etc.
    Response performance (victim treatment) time, effectiveness/efficiency.
    Equipment status (available, requested, etc).
    Personnel exhaustion
    Emergency routes (modified before exercise begins)
    Use of supplies and resources
  - Contamination.
    Victim symptom progression (Personnel assigned to units controlled by a participant cannot become contaminated, injured or die. This is another area the manufacturer plans to modify).
    There are no plume modeling capabilities. However, weather conditions are used in determined the immediate and delayed hazard areas following an event.
- NBC CTS is comprised of four separate applications or executable programs. The four applications are the Master Object Directory (MOD), the Server, the Server Controller and the Client. The typical NBC CTS equipment arrangement is shown below:



- The MOD contains a list of all objects in the system. The MOD will always reside on the same machine as the Server, and it always must be brought up before the Server.
- Databases are customizable and there are 2:
  - The Parameter Database contains information regarding different types of nuclear, biological, and chemical hazard areas, casualty generation, casualty maintenance, and chemical monitoring data.
  - The Scenario Database contains information about the scenario played, such as combat, medical and command unit information, evacuation asset information, evacuation plans, assigned roles, and supply data. It also contains data logged during simulation play.
  - After Action Report (AAR): The system will automatically prompt the Exercise Controller to generate AAR when the clock is stopped (i.e., game time has elapsed or game is stopped). The controller also has the option to compress the AAR into a single file in Zip file format and saved in the Desktop directory by default for future use. See AAR description below and sample in Appendix B.

If simulation models are used, identify their qualitative validity level (if possible):

- Simulation currently reflects military organizations. Validity of model for civilians not yet known (not released yet).

Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Basic stand-alone system.
- For city/community customization will require data base input. This is contracted on a face-to-face meeting (preferred by vendor, but not mandatory) where objectives are discussed, potential players are identified, task organizations are established, community information is obtained (e.g., area population, map) and integrated into system, as part of the system package.

If other hardware and/or software required, or typically used, identify it/them.

- Simulation models and database are part of the system when purchased/leased. System updates are free of charge and sent to users by manufacturer.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Minimum requirement for a single player is a PC computer with Internet access.

Web-based application, LAN, or a single computer/system-based application?

- Single computer/system-based application.

Can the training be administered over a wide area network or a local area network?

- LAN: Yes.
- Web: Yes.
  - The game can be played across a LAN or the Internet (if the machine running the Server is capable of allowing outside users entry).

Is an instructor or facilitator needed?

- No.
- Preferably a controller will monitor and modify (optional) simulation pace and alter conditions (e.g., disable communications for a period of time) to reflect real life conditions.

If not, how is training conducted (e.g., Individual self-paced)? Exercise is started by controller (or vendor if played over the Internet) and players follow simulation events.

If not, how is training managed (e.g., Testing, certification of completion, etc.)? Simulation progresses until previously specified time elapses. AAR is automatically created at the end of the exercise and available over the web (or via zipped file if the controller chooses to do so).

Describe unique user interface characteristics:

- Standard PC interface, MS Windows (all versions).

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- No cost.

  Can choose to obtain software and receive free software updates.
  Can choose to play a game session over the Internet or have vendor set it up in your facility.

Initial acquisition cost (purchase; licensing fees):

Product itself:

- At this time the only cost that may be incurred would be travel expenses if the customer requested on-site training.

Other necessary support, software, equipment:

- Customization costs: The only additional cost would be for development (software), if the customer requested a feature that is not currently in the training system. This cost would be established on a case-by-case basis, as length of development time and staffing would be affected at varying levels. There is no purchase, license, technical support, maintenance, or upgrade cost. The software development timeline to produce new features is restricted by the number of staff available[29].

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- None.

Number of staff required to setup, and operate product:

- 1 exercise controller manages the exercise (it can be done without a controller also).

Staff training required to use product (identify briefly ... type, time):

- Minimal (a few hours, depending on the user's comfort level with Windows). Includes: set up, system description and requirements, scenario alteration tutorial, exercise control and customization, AAR customization.
- Can train individually with training manual (and request support as needed).

Cost for staff training on product (Cost to purchase training):

- The only cost incurred will be if the training is to be conducted at the user's location. The cost of training will be that of travel and per diem for 1 or 2 personnel.
    - A basic user course includes course manuals and other necessary materials.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Tabletop exercise: A PC per player.
- Large scale exercise: A PC per player.

Expected costs?

- Depends on customizations desired (see above).

Product maintenance requirements/recommendations (identify briefly):

- Free software upgrades.
- Tech support cost: None

29 Currently they have two software engineers working to deliver these features. This timeline can only be accelerated with an augmentation of additional software engineers. Their current budget does not allow them to increase staff.

- Their staff is available via phone and email, during normal business hours, to provide immediate answers/solutions to problems that may arise. Additionally, their staff will be available throughout the duration of an exercise for any assistance.

Maintenance costs (Expected or required software, hardware maintenance):

- None, unless user requests additional customizations (e.g., different map and/or community information).

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- MS Windows (any version).

Can product be customized? How? Cost?

- Yes.
- Via database and software modification.
  E.g., Area-specific features (geographic maps, facilities, etc.).
- Cost depends on level of customization desired (TBD).

Product modifications required to support counter-terrorism training/exercises:

Modifications:

- Currently support WMD exercises.

Personal Computer Requirements (this may change as modifications are made to the application):

- Software: MS Windows (any version).

Processor speed (in MHz):

- Pentium 133 MHz

Memory:(SDR/DDR)

- 32 MB RAM.

Free disk space:

- 800 MB hard drive.

Internet connection speed:(if any)

- Any.

Display adapter:

- Any.

CD-ROM speed:

- CD-ROM, and network card.

Recommended system requirements (this may change as modifications are made to the application):

Processor speed (in MHz):

- Pentium III 500 MHz

Memory:(SDR/DDR)

- 256 MB RAM.

Free disk space:

- 4 GB hard drive.

Optional accessory requirement:

- N/A.

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Both.

Potential type of WMD event product can support:

Chemical – Yes
Biological – Yes
Radiological – Yes
Nuclear – Yes
Explosive – Yes

Constraints on supported exercises or scenarios?

- Currently reflects military operations.
- New version's projected availability 12/03 and will reflect civilian organizations/operations.

Potential disciplines product can support:

Emergency medical services
Emergency management agency
Fire (limited capabilities, e.g., decontamination)[30]
Health care
HazMat
Public health
Public safety communication (limited capabilities, e.g., can feed press updates to other players).[31]

Provide additional sub-discipline description if possible.

Mainly personnel who treat victims in any fashion (e.g., includes ophthalmic treatment).

Potential types of learning product can support (S&K):

Initial/acquisition

[30] F.D. (and other roles such as P.D.) could be added to the system later by vendor.
[31] Vendor may include capability to send files (e.g., audio/video) to other players in future versions.

- Not meant for initial training. Requires medical treatment knowledge and asset management experience.

Improvement

- Yes. Examination of plans and available resources.

Maintenance/refresher

- Yes.

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel

- Primary target audience:
  Medical treatment and resource management personnel
  Command teams.

Potential responder training level(s)/categories product can support:

Awareness –
Performance [Operations]
Technician [Specialist]
Planning & Management [Incident Command]
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -

- Performance, technician levels, Planning and Management, and Integrated-multi jurisdictional systems (different cities/states can play over the Internet).

Potential equipment and/or facilities product can address:

- EOC
- Command Post
- Scene
- Treatment facilities
- JIC/JOC
- Support organizations (e.g., Red Cross can coordinate and distribute supplies).
- Mental health treatment (including patient tracking)

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Casualty management
- ICS process (e.g., hazard are marking)
- EOC decision-making
- Team communications & coordination of resources

Training content description (what trained), in addition to preceding item (Brief):

- Mainly system operations and controls.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

- WMD awareness level.
- Basic individual proficiency in requisite tasks.
- Basic understanding of ICS.
- Basic knowledge of organization's plans/policies.
- Basic medical treatment knowledge.

Potential training/exercise types product can support:

Classroom – Yes. Simulation could be used as a demonstration.
Individual self-paced – No.
Seminar/workshop – No.
Drill – Yes.
Individual and small-team exercises - Yes
Simulation-supported - Yes
Gaming – Yes.
Collaborative – Yes.
Tabletop - Yes
Functional - Yes
FSE - Yes

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time, simulation-supported exercise. Fast-time option available (see controller tools mentioned above).
- Team context.
- Web based, collaborative game involving many players and regions.
- Immediate feedback (e.g., controller can "kill" casualties if not given appropriate treatment) and delayed feedback capabilities (e.g., controller can progressively worsen casualty symptoms).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Variable scenario length.
- Normal operation; injected failures/problems (manually and automatically, by simulation).
- Simulation supported.
- Scripted and/or controller led.

Exercise/scenario length/time(typical):

- Hours to days—varies greatly depending on incident (multiple incidents v single), number of casualties, agent, etc.
- Longest game to date has been 2 days. This allows for gaming over different shifts and personnel/station relief.

Process and time to:

Develop new exercise/scenario:

- Varies greatly. (RA: gets the sense that a few—2—months depending).

Modify an exercise/scenario:

- Small scenario variations can be done within a matter of minutes by controller without contractor/vendor support (e.g., pick number of casualties, add treatment options).
- Larger customizations (data base additions/modifications) need to be contracted with the vendor (can take weeks, months, etc).

Setup an exercise/scenario to run:

- Time to connect computers (if more than one player playing on site and if not done over the Internet) (depends on user's proficiency with hardware set up) can be as little as minutes (It took the vendor 20 minutes to network 5 computers and start game).
- If computers are already set up it would only take minutes to start game (after choosing options or starting a simulation as is).

Does a curriculum already exist?

- Yes.

If so, briefly describe its form and content:

- Current WMD scenarios available:
  - Medical support of two Light Infantry Battalions operating on Camp Bullis (Texas) terrain; the enemy is known to have chemical weapons.
  - Medical support of two Mechanized Infantry Battalions operating on National Training Center (NTC) (California) terrain; the enemy is known to have chemical weapons.
- Scenarios under development
  - A scenario is currently being developed for Homeland defense, which will be set in San Antonio with support from civilian, military and governmental agencies.

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario):

- Scripted scenario.
- Scripted vehicles (time to travel based on emergency routes, loading casualties, etc.).
- Controller chat options with individual players (e.g., for troubleshooting).

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Automatic exercise data recording (by units of time) includes communications and victim status (see Appendix B for sample AAR).
- Communications log (e.g., keep copy of "fax" sent to another player).
- Equipment /supplies, personnel, and casualty status information updated and displayed constantly, as simulation progresses and/or as controller makes changes.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Current casualty and supply status information is available at any time during the exercise as well as a common view of the map and simulated vehicle (and other asset) location.
  Textual displays showing status information (see casualty management and decontamination windows, for example).
- AAR/debriefing capability.
  (No playback capabilities on current version)
  Displays exercise time and simulation time.
  Total number of casualties and their distribution (graphic) to locations in play (individual players controlling each of those locations) with links (if web based) to more information on that unit's play activity.
  Phone, fax, controller chat and Intel logs.

Performance measures, with tailored displays
Graphics and textual/tabular displays (e.g., dead casualties, casualties decontaminated, augmentees requested, etc.).

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

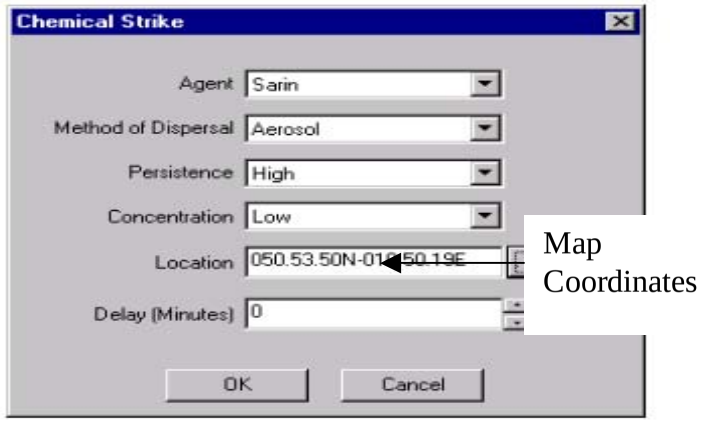
- Specific treatment for WMD agents.
- Command tasks.

HELP features (Briefly identify):

- Currently minimal help available.
- Future versions will have a "hint" option where user can click and see treatment options. AAR will display the number of times a players consults this feature.
- HELP will also display screens and instructions on how to perform an action (e.g., sent casualties to the morgue section).

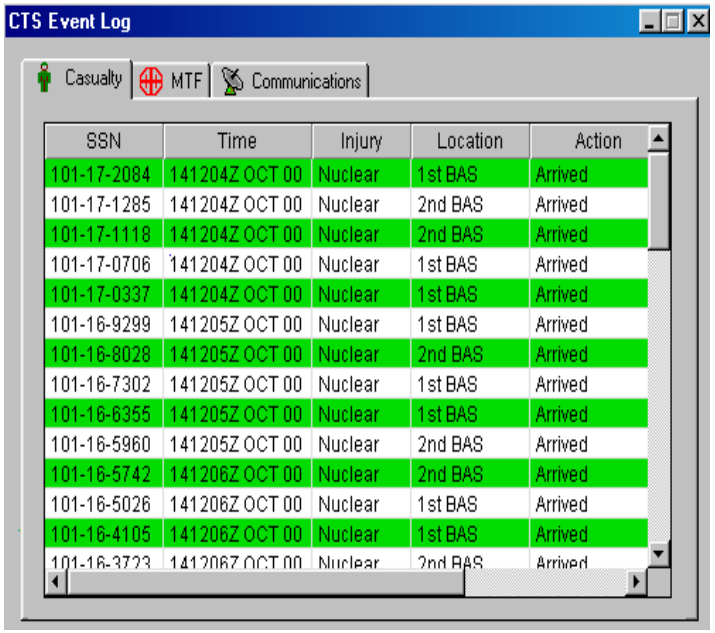
Instructor/controller/evaluator tools:

- Exercise Controller
  - The exercise controller determines scenarios, NBC events, conventional, and DNBI (Disease Non Battle Injury) events, as well as start and stop times of the simulation. For example, the following screen depicts the Scenario Generation Tool Wizard:



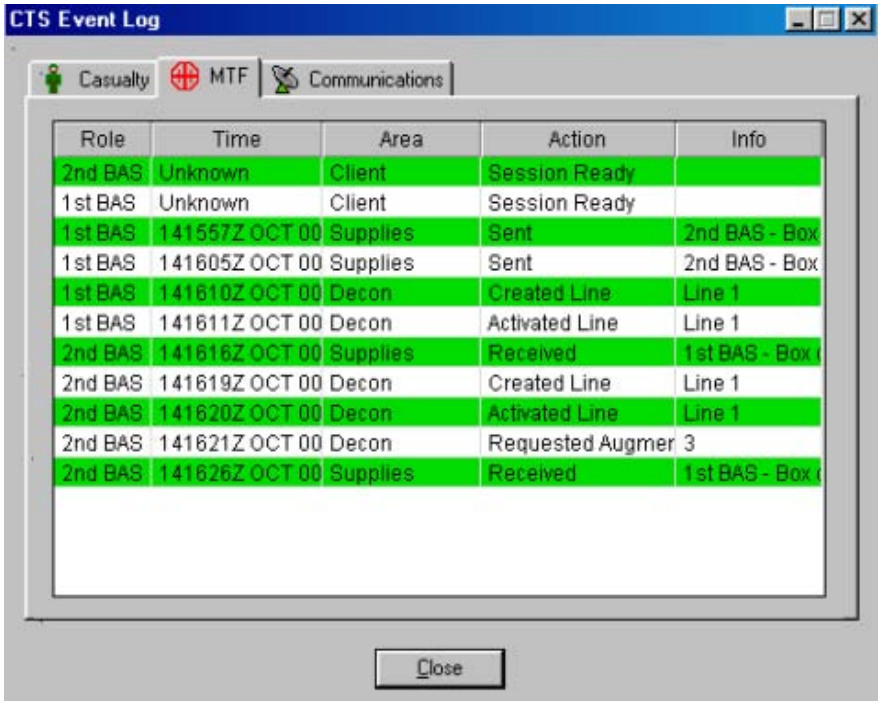
- The controller can communicate with the players participating in the exercise (either party can initiate conversations) in a chat environment.
- Speed: the controller can control of how quickly simulation time elapses any time during the game. If the speed is set to Real, simulation time will occur at real time (i.e., 1 minute of simulation time will equal one minute of real time). Fast speed causes simulation time to pass twice as quickly as real time. Warp speed causes the simulation clock to tick as fast as it can run while still performing necessary functions.
- Log: events or actions happening in the players. There are 3 main views:

The Casualties window shows information about casualties (e.g., type of injury, arrived time, and location where the casualty arrives).



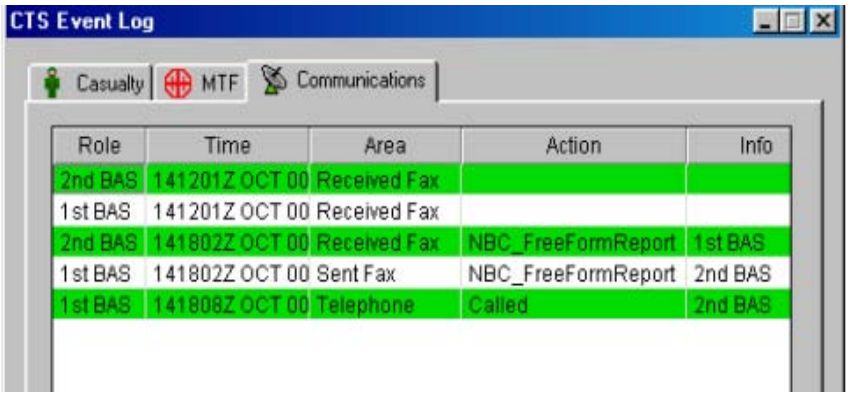
SSN	Time	Injury	Location	Action
101-17-2084	141204Z OCT 00	Nuclear	1st BAS	Arrived
101-17-1285	141204Z OCT 00	Nuclear	2nd BAS	Arrived
101-17-1118	141204Z OCT 00	Nuclear	2nd BAS	Arrived
101-17-0706	141204Z OCT 00	Nuclear	1st BAS	Arrived
101-17-0337	141204Z OCT 00	Nuclear	1st BAS	Arrived
101-16-9299	141205Z OCT 00	Nuclear	1st BAS	Arrived
101-16-8028	141205Z OCT 00	Nuclear	2nd BAS	Arrived
101-16-7302	141205Z OCT 00	Nuclear	1st BAS	Arrived
101-16-6355	141205Z OCT 00	Nuclear	1st BAS	Arrived
101-16-5960	141205Z OCT 00	Nuclear	2nd BAS	Arrived
101-16-5742	141206Z OCT 00	Nuclear	2nd BAS	Arrived
101-16-5026	141206Z OCT 00	Nuclear	1st BAS	Arrived
101-16-4105	141206Z OCT 00	Nuclear	1st BAS	Arrived
101-16-3723	141206Z OCT 00	Nuclear	2nd BAS	Arrived

The MTF window shows events (e.g., sending and receiving supplies, activating decon lines).



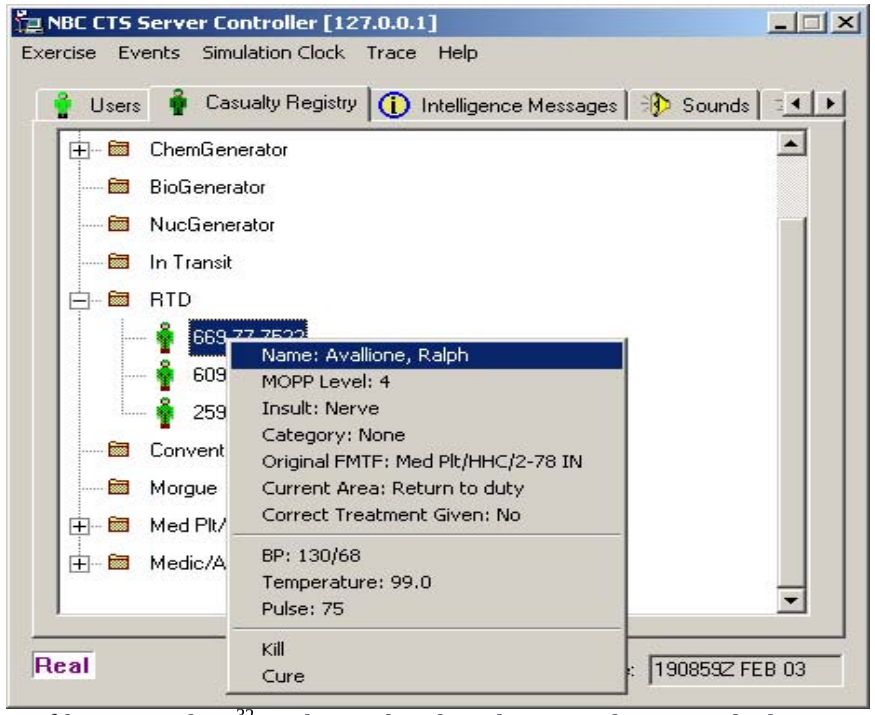
Role	Time	Area	Action	Info
2nd BAS	Unknown	Client	Session Ready	
1st BAS	Unknown	Client	Session Ready	
1st BAS	141557Z OCT 00	Supplies	Sent	2nd BAS - Box
1st BAS	141605Z OCT 00	Supplies	Sent	2nd BAS - Box
1st BAS	141610Z OCT 00	Decon	Created Line	Line 1
1st BAS	141611Z OCT 00	Decon	Activated Line	Line 1
2nd BAS	141616Z OCT 00	Supplies	Received	1st BAS - Box
2nd BAS	141619Z OCT 00	Decon	Created Line	Line 1
2nd BAS	141620Z OCT 00	Decon	Activated Line	Line 1
2nd BAS	141621Z OCT 00	Decon	Requested Augmer	3
2nd BAS	141626Z OCT 00	Supplies	Received	1st BAS - Box

The Communications window shows all communication events happening among players (e.g., types of communication, time that events occurred, and who participated in the event).



Role	Time	Area	Action	Info
2nd BAS	141201Z OCT 00	Received Fax		
1st BAS	141201Z OCT 00	Received Fax		
2nd BAS	141802Z OCT 00	Received Fax	NBC_FreeFormReport	1st BAS
1st BAS	141802Z OCT 00	Sent Fax	NBC_FreeFormReport	2nd BAS
1st BAS	141808Z OCT 00	Telephone	Called	2nd BAS

Casualty Registry Page: shows where the casualties are in the NBC CTS system (i.e., what casualties are being generated, which casualties are in transit, which units the casualty may be in, and those casualties missing in action).



This tree control gives an overall view of how casualties[32] are being distributed among players, and what casualties they can expect in the next few minutes. By right-clicking on each casualty, user can obtain more information about that casualty such as: name of the casualty, MOPP level, type of insult, which Field Medical Treatment Facility (FMTF) the casualty first arrived, where he is now, and his medical status (temperature, pulse, BP, and whether or not he has received the correct treatment yet). The controller can also kill or cure the casualty. The casualties do not appear in the Arrivals box immediately after an NBC event; it takes some time for them to get to the FMTF, based on how far their combat unit is from the medical unit. Casualties that die en route will be removed from the system, and will not appear in the Arrivals box. Once casualties begin to arrive, they will arrive over a period of time as their various modes of transportation drop them off.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Scenarios already developed and can be modified before game commencement.
- Controller handbook available (included in cost).

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- See controller capabilities above.

[32] Casualties are denoted by a randomly assigned, fictitious social security number. No age or gender distinction is made.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

- See above under AAR.

Data recording & storage features (e.g., Scenario events; student performance):

- Automatic exercise data recording.
- Capability to automatically generate performance measures (e.g., was treatment successful).

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- See above.

Training/exercise fidelity:

Environment (including situation/scenario):

- Likely to be high fidelity once customized to reflect civilian organizations because it takes into account "real data" and "real time" requirements.
    - E.g., hazards decrease as one moves away from the hazard area, agent wind speed and direction are take into account for biological and chemical agents, treatment includes choosing appropriate/qualified medical staff (from those available to the player) to treat victims.

Hardware:

- N/A.

Information (including interaction with other persons):

- Same as for the environment.

Appendix A: Listing of available evaluation support materials (provided by William J. McCormick):

- NBC CTS 2000 CD (from Logicon) containing NBC CTS
  - Version for installation
  - User manuals (Word, HTML)
  - Tutorials (Word, HTML)
  - Database manuals (Word, HTML)
  - Training slides (Power Point)
  - Medical Operations Book (Power Point), demo, and screen saver.

- NBC CTS User's manual (hard copy).

Appendix B: Sample AAR

NBC CTS After Action Report

Generated on: December 10, 2002 3:01 pm

Exercise Time: 0 days, 5 hours, 36 minutes

Simulation Time: 0 days, 7 hours, 17 minutes

Total Casualties in Exercise: 27

Phone Log Controller Chat

Intel Log Fax Log

Units:

ATLANTIC

BALTIC

508 MEDEVACBN

ALASKA

CASPIAN

Med Plt/3-66 AR

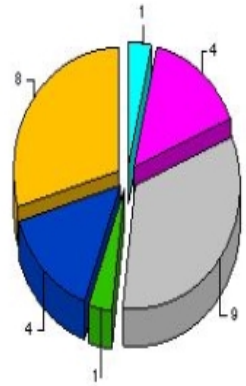
75 CSH

C/4 FSB

147 MEDLOGBN

Casualty Distribution

147 MEDLOGBN	0
5 MEDGRP	0
508 MEDEVACBN	0
75 CSH	0
ALASKA	1
ATLANTIC	4
BALTIC	9
C/4 FSB	1
CASPIAN	4
Med Plt/3-66 AR	8
Total:	27



NBC CTS After Action Report

Phone Log

Generated on: December 10, 2002 3:01 pm

Caller	Med Plt/3-66 AR	**Receiver**	C/4 FSB	**Status**	Couldn't get through
Begin Time		**End Time**	121511Z AUG 02		

Caller	Med Plt/3-66 AR	**Receiver**	508 MEDEVACBN	**Status**	Couldn't get through
Begin Time	121512Z AUG 02	**End Time**	121512Z AUG 02		

Caller	508 MEDEVACBN	**Receiver**	75 CSH	**Status**	Connected
Begin Time	121510Z AUG 02	**End Time**	121512Z AUG 02		
Content	75csh: request evac of 7 litter | 3 ambulatory casualties 508evacbn:requested evac asset is enroute; ETA 13 min 75csh: roger 508evacbn: partial fill of previous supply request is on enroute evac asset E138				

Caller	Med Plt/3-66 AR	**Receiver**	75 CSH	**Status**	Couldn't get through
Begin Time	121512Z AUG 02	**End Time**	121512Z AUG 02		

NBC CTS After Action Report

Intel Log

Generated on: December 10, 2002 3:01 pm

Receiver(s)	Med Plt/3-66 AR
Message ID	NBC Intel Msg 1 - 120920Z AUG 02
Content	Copy No ____ of ____ copies 3rd Bn, 66th In, 1st Bde 4th In Div (M) ISB, Goldstone Lake Area 050800AUG2002 OPERATIONS ORDER BLUE TEMPEST References: a) Map: Series V795S, California; Sheets 2654 III and IV (Fort Irwin Military Installation Map North and South); Edition 3-NIMA; Scale 1:50,000 b) 3-66 AR TACSOP c) 1 BDE OPLAN, BLUE TEMPEST d) 1 BDE TACSOP Time Zone Used Throughout the Order: Local Task Organization: A Co 1/FIST/HHB/3-16 FA 1/1/B/299 EN

NBC CTS After Action Report

Fax Log

Generated on: December 10, 2002 3:01 pm

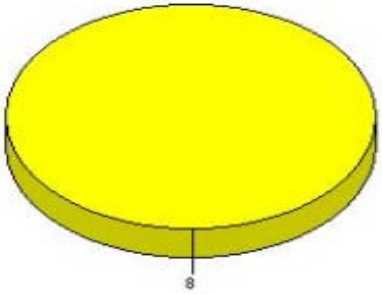
Sender	Med Plt/3-66 AR	**Receiver**	C/4 FSB
Time	121425Z AUG 02	**DocumentType**	Supply Request
Content	Supply - Amount ********** AMPICILLIN SOD&SULB - 1 DEPRESSOR TONGUE - 1 SELENIUM 2.5% - 6		

Sender	508 MEDEVACBN	**Receiver**	147 MEDLOGBN, 5 MEDGRP, 75 CSH, ALASKA, AT
Time	121506Z AUG 02	**DocumentType**	Free Form
Content	Hello out there		

Sender	75 CSH	**Receiver**	508 MEDEVACBN

Unit Report: Med Plt/3-66 AR
Generated on: December 10, 2002 3:01 pm

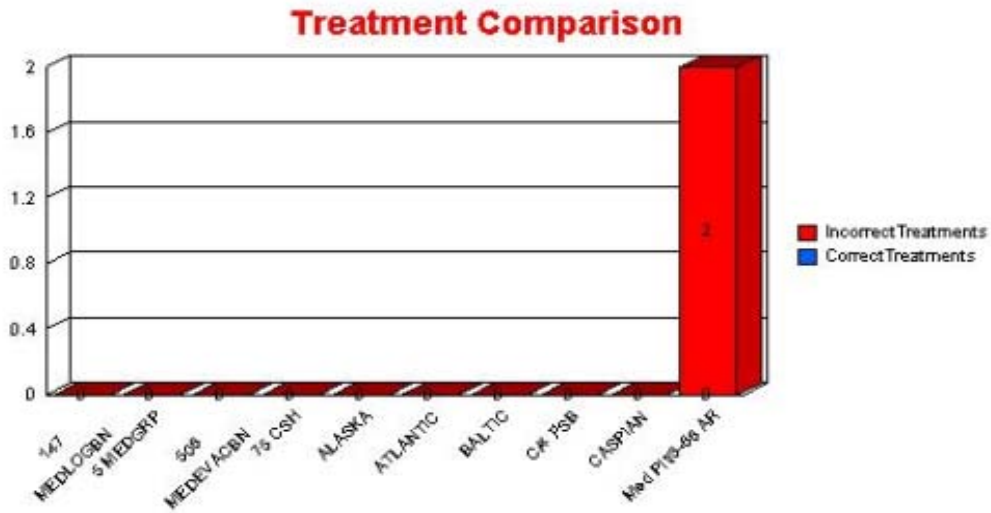
Casualty by Injury



DNBI	8
Total	8

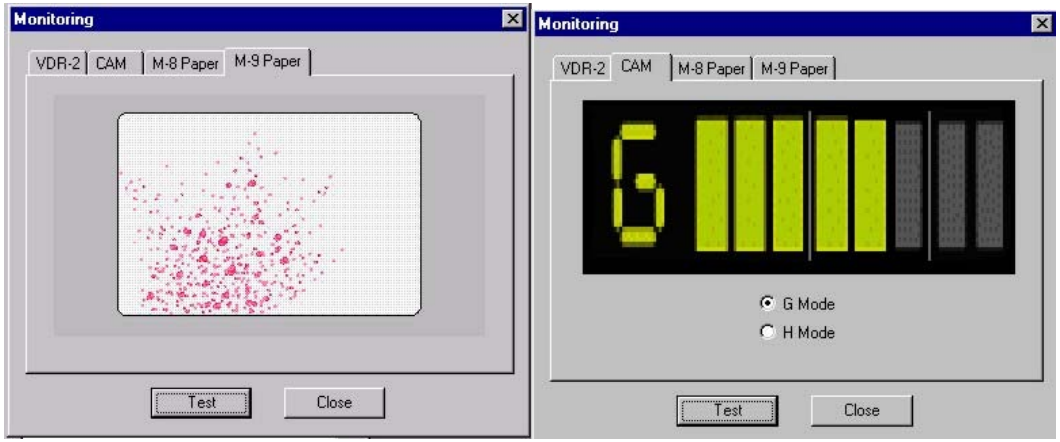
Dead Casualties:	2	**Decon Lines Created:**	1
Casualties treated to Health:	0	**Casualties Deconed:**	0
Casualties Evaced:	0	**Augmentees Requested:**	8
Casualties Returned To Duty:	0		

Generated on: December 10, 2002 3:01 pm

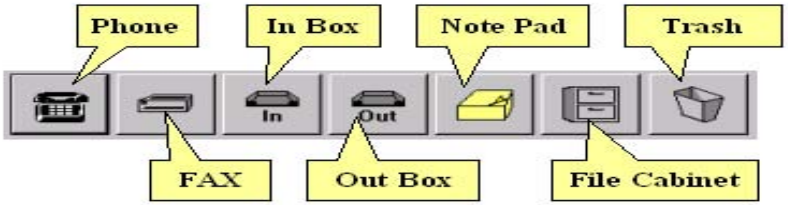


Failed treatments due to lack of Supplies:	0
Failed treatments due to lack of Medical Staff:	0
Hints Taken	4

- Contamination monitoring window examples:

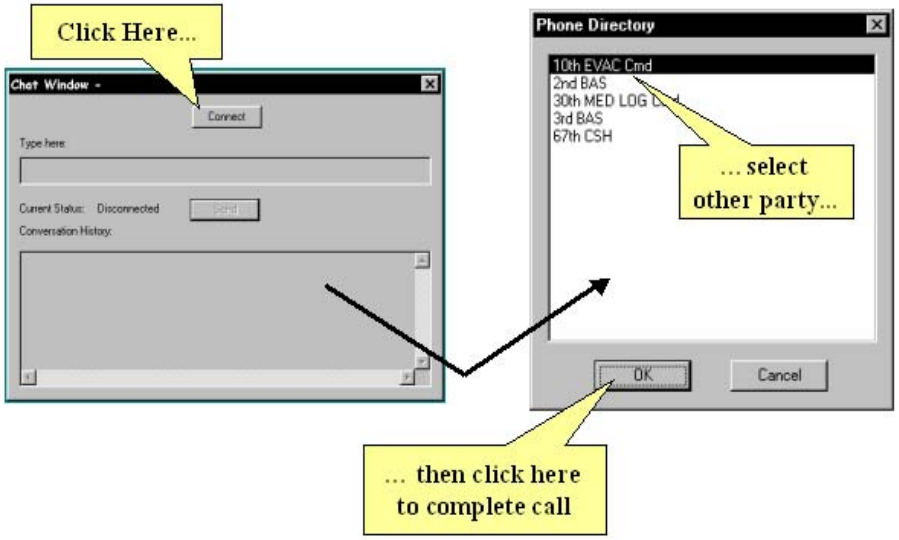


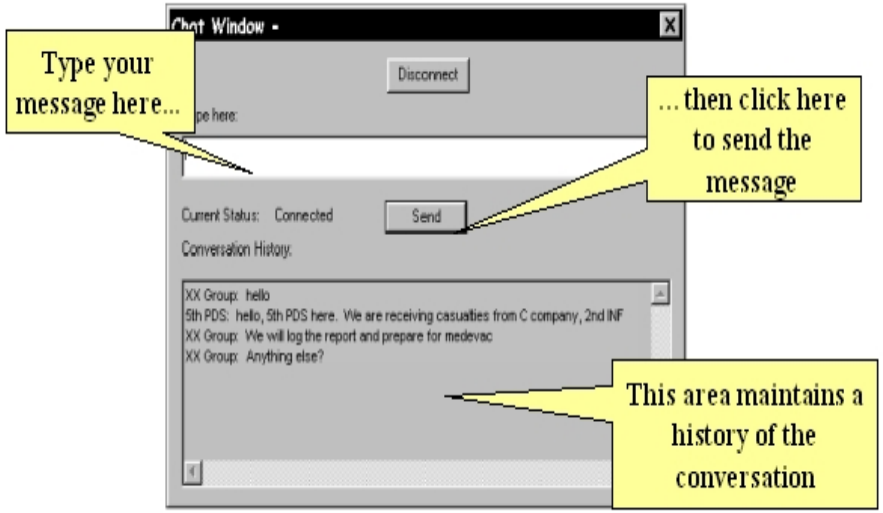
- This toolbar is used to manage documents and player communications. File cabinet: upper drawer contains icons for blank report forms, lower drawer can be used to file documents for later reference. Faxes: Incoming faxes are automatically placed into the In Box. The FAX button will animate on send or receive[33]. The controller has the option to disable and enable these at any time during the game (to simulate communications breakdowns). However, they cannot choose single players, it must be done to all or no players.



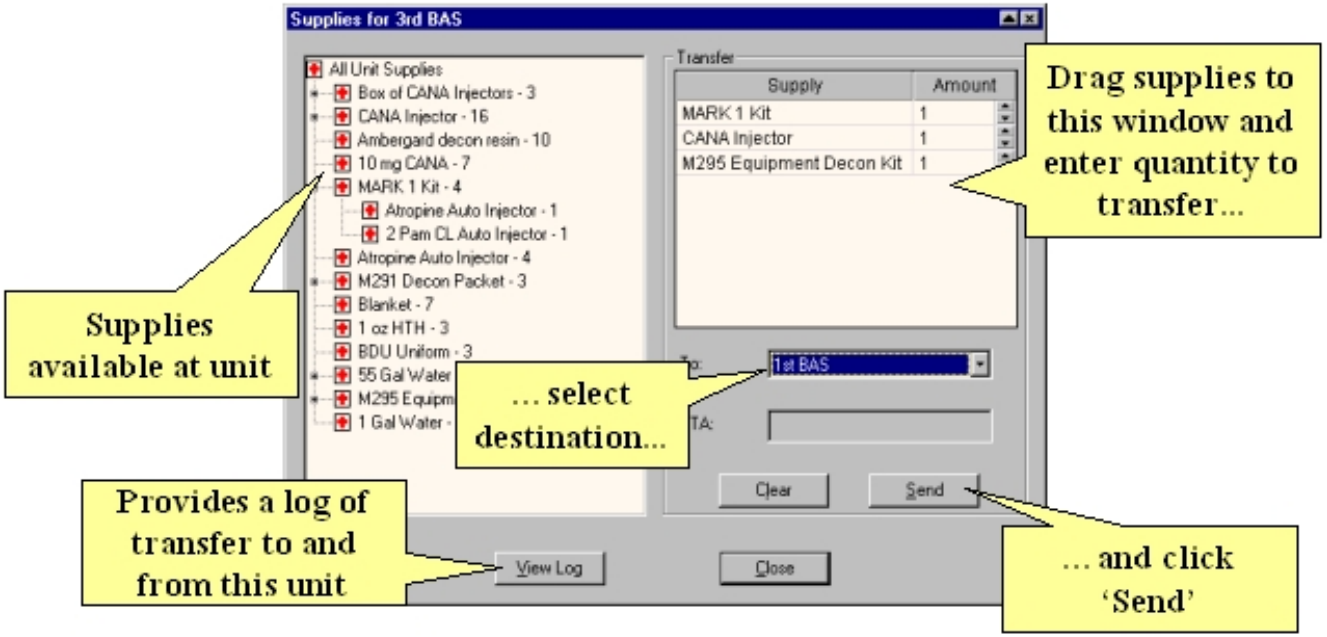
[33] On Microsoft Windows v. 95 & 98 there is a sound alert. They are working on updating this feature on later versions of Windows.

- An example of a phone call is shown below, where phone numbers are simulated by choosing players to communicate with.





- The following is an example of a supply management screen. The tool allows for customization of actual client/user available supplies. Supply requests can be made to other players who can choose to fill request completely, partially, or not (based on their availability and assessment). Currently the tool does not allow for personnel sharing (e.g., assigning more personnel and or casualties to the players once the game has commenced).


Supplies for 3rd BAS
All Unit Supplies
Box of CANA Injectors - 3
CANA Injector - 16
Ambergard decon resin - 10
10 mg CANA - 7
MARK 1 Kit - 4
Atropine Auto Injector - 1
2 Pam CL Auto Injector - 1
Atropine Auto Injector - 4
M291 Decon Packet - 3
Blanket - 7
1 oz HTH - 3
BDU Uniform - 3
55 Gal Water
M295 Equipm
1 Gal Water -
Transfer
Supply
Amount
MARK 1 Kit
1
CANA Injector
1
M295 Equipment Decon Kit
1
1st BAS
Clear
Send
View Log
Close
Supplies available at unit
Drag supplies to this window and enter quantity to transfer...
... select destination...
Provides a log of transfer to and from this unit
... and click 'Send'

Version 3: October 8, 2003

Appendix D: Client features and Exercise Controller features requests and status.

Client Features

PRIORITY	CATEGORY	TASKS
In Process	Asset Management	Combine evac asset management and evacuation/supply load windows into one with tabs for evacuation, movement, and supply shipment.
In Process	Personnel	Add window to "Medical Staff Management" window to assign (drag-n-drop) personnel to evac assets.
In Process	Situation Map	"Mouse-over" units/assets in tree control will highlight same unit/asset on situation map.
In Process	Situation Map	Able to horizontally resize tree control window.
In Process	Situation Map	Double-click on a unit or vehicle in the tree control window will center the map on that element.
	After Action Report	Include in After Action Report, comparison of Client assessment of unit status and system calculations.
	Asset Management	Make changes "on-the-fly" (i.e. change movement order for vehicle, etc.)
	Asset Management	Add fuel limits to equipment requiring fuel consumption (vehicles, generators); dismounted individuals have a load capacity and "fuel" limit as well.
	Asset Management	Empty litters are automatically unloaded when ambulance returns.
	Casualty	Each casualty has a defined treatment requirement.
	Casualty	Casualty information is divided into personal information (SSN, Name, Assigned/Attached Unit, MOPP level, Time of Wound), Physical Assessment (Pulse, Blood Pressure, Resp, Temp), Neurological Assessment (LOC, Neurological Deficits), and Signs and Symptoms
	Casualty	Casualties are further defined by history, behavior, x-ray images and laboratory values (later two may be retrieved by "units" with appropriate equipment).
	Casualty	Casualties requiring a litter must be "placed" on a litter (msg box casualty cannot walk), this will degrade the unit supply of litters.
	Casualty	New Class of casualty called _____, whose behavioral characteristics are altered, requiring restraint instead of medical aid. These individuals will have a behavioral rating ranging from passive (1) to aggressive (6). Restraint tasks could be applied on individuals or groups. Tasks may cause individuals to behave more passively or aggressively. This could tie in with combat stress management plan as well as Military Police and civilian law enforcement roles.
	Casualty Transfer	Casualties are transferred by section personnel; one per ambulatory casualty; two per litter casualty
	Casualty Transfer	A "Transfer Casualty" drop-down menu is added; this will initiate a search for the appropriate number of personnel that are of skill level one (1); if insufficient personnel are available a dialog box appears with a corresponding message; once the appropriate number of personnel are available the casualty is transferred
	Casualty Transfer	Add field to Treatment Elements for "Transferability" (Y/N); some treatment elements allow for casualty transfer, while others do not
	Casualty/Supplies	Number of litter casualties is limited by the number of litters available.
	Communication	Add file attachment capability to internal communications.
	Detectors	Add M256 Chemical Agent Detection Kit functionality to unit/section; unit must have appropriate supply item
	Detectors	Add M8 Chemical Agent Alarm functionality to unit/section; audio indicator and message appear if contamination enters field; unit must have appropriate supply item

	Forms	Add other medical forms (i.e. SF 600)
	Forms	Add Reports MEDEVACREQST - MEDICAL - MEDSITREP - MEDSTAT - EVACUATION, which will pull current information from database on unit.
	Movement	Move assets to a location as well as a unit
	Movement	Msg box identifying remaining missions when Client chooses to abort mission(s) and change orders.
	Movement	Add "Flight Corridor" for aircraft to travel along instead of following road routes.
	Movement	Movement routes defined by SGT, Server Controller, and command role function. Not defined as between units, but as a road network.
	Movement	Movement is executed by selecting a asset and route (route name or direct route - *direct route is for distances less than 500 meters*)
	Movement	Client can modify only those routes that they create - able to extend, shorten, bend and delete.
	Personnel	Load unit personnel on vehicles
	Protection Level	Primary Client of unit has the ability to change the MOPP/Protection level of personnel
	Protection Level	Add protective levels to include fixed and protected facilities (levels 5 and 6)
	Situation Map	Drawing Toolbar has problems (you can group map symbols and align them in different directions and you cannot add points to a line). Suggest we try to create a drawing toolbar with tools that are customized for this system.
	Situation Map	Move "Evac Routes" branch of tree control under "Overlay" branch
	Situation Map	Windows 98 does not display tree control icon correctly.
	Situation Map	Windows 98 does not display "non-square" icon correctly on the situation map.
	Situation Map	Able to display different types of coordinate values (i.e., Lat/Lon and MilGrid) on Client
	Situation Map	Able to minimize/exit tree control window ("slide" open effect from closed position).
	Situation Map	Move coordinate information and wind speed/direction information to blank area below map.
	Situation Map	Organize unit symbols in tree control according to parent unit. This may be accomplished as part of the modulization of units.
	Situation Map	Toggle unit symbols view on/off (location, speed, additional information, etc.) or select what will be displayed (template for all symbols) at tree control and situation map.
	Situation Map	Use different maps with coordinates defined in database (SGT)
	Situation Map	Dynamic mapping able to scale down to 1:12,000 and out to 1:500,000
	Supplies	Command function can identify "CTIL" (Commanders Tracked Items List) items, which will determine the effectiveness color (GARB) of the unit.
	Supplies	Add Class I (food, rations) supply items to inventory…used as a command tool…personnel consume rations=degrade supply=request resupply.
	Supplies	Number of decon lines is limited to quantity of supplies.

	Supplies	New Class of casualty called Equipment Deficiency, whose function characteristics are degraded, requiring maintenance instead of medical aid. These equipment deficiencies will have a list or description of the reported problem. Appropriate tasks must be applied to bring the equipment into an operational state. These tasks will require a specific skill level of personnel, time, and supplies. A new Event would be created that allows the Exercise Controller to select a unit, view their list of equipment and then select an item to degrade. The Client would receive a message stating that the piece of equipment is no longer operating properly. The Client will then be responsible for determining what must be done (send to maintenance for repairs, much like the evacuation of casualties).
	Supplies/Treatment	Equipment (pulse ox, vent, etc.) and supplies (bandages, IVs, etc.) can be applied as part of treatment.
	Unit	Units built on a modular level (soldiers, teams, squads, sections, platoons, etc. all consist of personnel, equipment and supplies)
	Unit	All units (other than those for casualty generation) have personnel, equipment, and supplies.
	Unit	Combine Command and Medical roles and apply functions/category to the sections.
	Unit	Unit window contains the following common information: Unit ID•Parent ID•Location•Overall Effectiveness status•Speed Unit information tabs are:•Personnel•Equipment•Supplies•Casualties Menu Bar contains:•Load Personnel•Movement Orders•Change Personnel Protective Level
	Unit	Casualty tab of unit window has properties similar to personnel (SSN, Name, Rank, MOS, Unit Assigned/Attached, Litter/Ambulatory, Triage Level)
	Unit	Move units/section/teams from point to point (must load all personnel, supplies and casualties on an available asset to accomplish)
	Unit	When building a "unit" able to choose type (military, civilian organization, civilian population); civilian populations will have an option to set the demographics of the population
	Unit	Able to quarantine an area, which will prevent the spread of contamination.
	Unit	New type of casualty generation unit that represents a civilian population, called _____. This will require demographic data on the population, such as age, ethnicity, and percentage of people indoors and outdoors at different times of the day (this will indicate the level of protection that an individual will have). When a casualty generating event is created casualties from the combat unit will be displayed as they are currently, while casualties from a population center will contain information concerning their demographic data.
	Unit/Situation Map	Take unit information off of situation map; right click on unit symbol to display a pop-up window of unit information/status.

Controller Tasks

PRIORITY	CATEGORY	TASKS
	After Action Report	Include in After Action Report, comparison of Client assessment of unit status and system calculations.
	Asset Management	Make changes "on-the-fly" (i.e. change movement order for vehicle, etc.)
	Environment	Adjust environment table to allow for scripted variances in wind speed and direction.
	Exercise Controller	Save exercise at point

	Exercise Controller	Start exercise at saved point
	Exercise Controller	Server Controller has window similar to Client and can choose an event location by clicking on an area of the map.
	Exercise Controller	Combat units have the ability to move through a "Client" window operated by a Server Controller.
	Exercise Controller	Movement can be pre-planned in the database based on DTG and destination.
	Exercise Controller	Casualty generation units have a "preplanned" movement script.
	Exercise Controller	Server Controller has the ability to select a single route or multiple routes and degrade or disable transportation along the selected route(s).
	Exercise Controller	Server Controller Log has a sort and search function.
	Movement	Move assets to a location as well as a unit
	Movement	Add "Flight Corridor" for aircraft to travel along instead of following road routes.
	Movement	Movement routes defined by SGT, Server Controller, and command role function. Not defined as between units, but as a road network.
	Movement	Movement is executed by selecting a asset and route (route name or direct route - *direct route is for distances less than 500 meters*)
	Movement	Movement can be degraded by creating "hot spots" to map using drawing toolbar with fill properties indicating terrain and associated degradation %
	Movement	Movement along route can be degraded by obstacles (could include personnel). Obstacle must be breached to continue along route at normal speed.
	SGT	Drag-n-Drop units in SGT and have the coordinates updated in the database automatically
	Supplies	New Class of casualty called Equipment Deficiency, whose function characteristics are degraded, requiring maintenance instead of medical aid. These equipment deficiencies will have a list or description of the reported problem. Appropriate tasks must be applied to bring the equipment into an operational state. These tasks will require a specific skill level of personnel, time, and supplies. A new Event would be created that allows the Exercise Controller to select a unit, view their list of equipment and then select an item to degrade. The Client would receive a message stating that the piece of equipment is no longer operating properly. The Client will then be responsible for determining what must be done (send to maintenance for repairs, much like the evacuation of casualties).
	Unit	When building a "unit" able to choose type (military, civilian organization, civilian population); civilian populations will have an option to set the demographics of the population
	Unit	New type of casualty generation unit that represents a civilian population, called _____. This will require demographic data on the population, such as age, ethnicity, and percentage of people indoors and outdoors at different times of the day (this will indicate the level of protection that an individual will have). When a casualty generating event is created casualties from the combat unit will be displayed as they are currently, while casualties from a population center will contain information concerning their demographic data.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

A. Basic Product Information

Name of Product:

Ops Center

Developer: Alert Technologies Corporation

Contact information:
Joseph Santamaria
Vice President Business Development
Alert Technologies Corporation
7709 Wexford Way
Port St Lucie, FL 34986
772-595-9266
772-834-9480 cell
joseph.santamariajr@aterttech.com

Technical Support Contact Information: 925-461-5934 ext 20

Website: http://www.alerttech.com/products_main.htm COTS/GOTS: COTS

Product status (version in use): Version 2.3 with Service Pack 1.

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

OpsCenter is a Real-Time Internet-Based Incident Management System designed for use during an actual emergency. It organizes essential response details electronically and is designed to help manage response more effectively by replacing chalkboards; grease boards, flip charts, and paper updates with an Internet Based Incident Management System. It can be used from any location with Internet access. Users assume as many roles as they normally would during an incident (up to 30 roles available; e.g., Incident Commander) and tasks under those roles can be managed via chronologically arranged checklists that users must check for completion. It allows: real-time information sharing via the Internet, consolidation and update of contact information, assurance that the correct procedures are followed, event notification, postmortem analysis, review of chronology of events, assignment of tasks to response team members, summary of the latest status via the internet and it supports ICS Reports.

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other): Incident response information management, operational & exercise tool.

- Current Target audience: Primary: EOC, command & management personnel. Also: any level of response with log in permission can view incident information, assigned tasks and make inputs; read-only access also.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
X	Instructor/Facilitator Aid: Student Interfacing
X	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

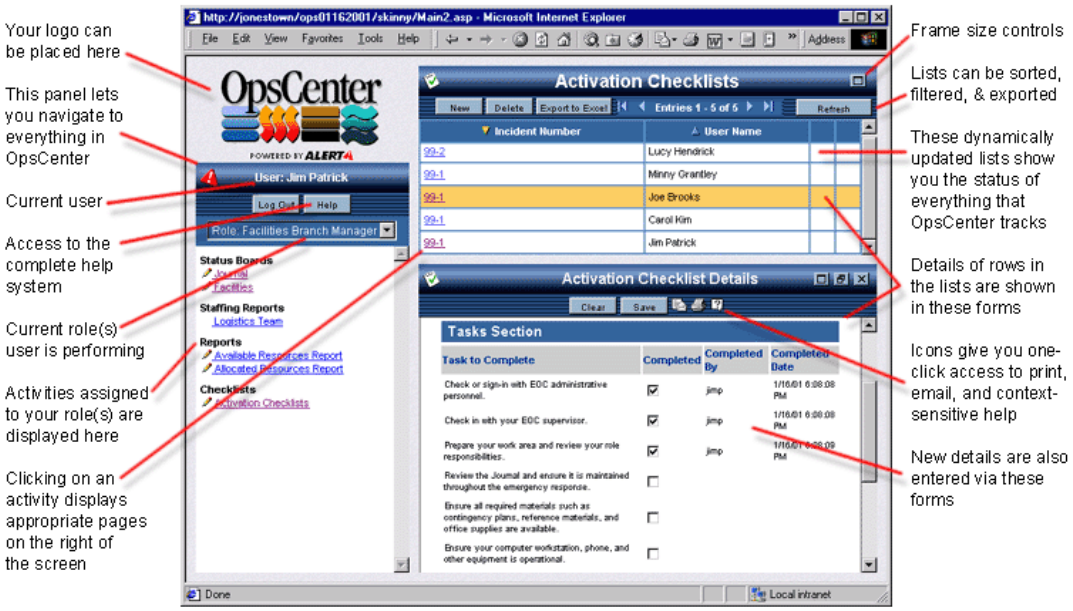
2. Product Capabilities (please put an X in the appropriate boxes):

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	3	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team		
1	Large multi-user team		**AAR Capability**
			Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
	Equipment		Does not provide feedback or AAR

3. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP): Software.

User Interface



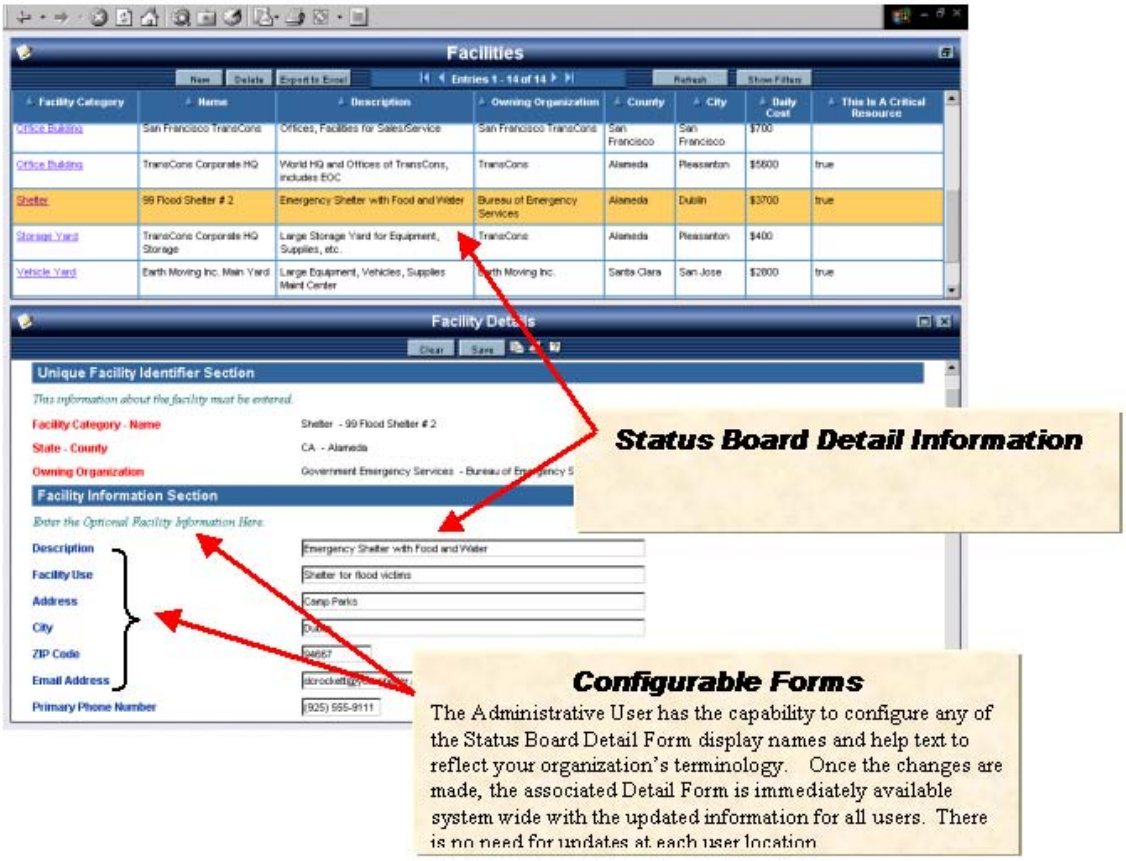
Resource Management System

Resource Management System reads the bar codes from the vehicles and personnel by hand held computers/bar code readers. The information is then fed to the IMS software via a 802.11b Cisco wireless 2.4 GHz LAN. The Incident Commander may then know things such as, what equipment and personnel are available and what level of professional training they have (such as Hazmat trained). As personnel arrive they log in, and their role for the Incident along with a "check list" of what they must perform automatically pops up. As items are checked off after being performed the Incident Commander has a feel for the situational awareness of the incident which can improve collaborative communications among departments.

Personnel are also able to perform field triage. Pre-printed bar codes are attached to the casualties, then with a hand held computer/bar code reader personnel can note the gender, approximate age and injuries of the victims and then scan which ambulance they went in and what hospital the ambulance is going to. The casualty count and related information is fed via the wireless LAN into the IMS software, so the Incident Commander has real-time information.

Status Boards

There are status boards (with automatic updates every 15-minutes) for resources, actions, reports, and procedures. This allows for tracking of incidents, requests (can be telephoned into a message center & preplanned requests can be put into the system in advance), road closures, resources, contacts, supplies, actions, equipment, personnel, weather, field reports, facilities (e.g., maps), procurements, etc. Any list of records displayed on status boards can be exported to Excel, to email and printers.



Task Completion

The Procedures and Checklists screens allow verification that certain actions have been taken and done in a certain order. Administrators input steps to be followed in chosen situations (e.g., HazMat operations) and users, with log-ins, can access the system and verify task completion. This can also serve to ensure standardization of response and as an electronic, easily accessible job aid, for not frequently encountered situations.

Notification systems

Notification systems can be set up so that specific users (e.g., Incident Commander) can be notified, via email, pager, screen pop ups, etc., when task time has elapsed if the task has not been checked as completed or according to chosen rules.

User Tracking

Every time a user logs in they enter where they are currently located and their current contact information allowing others users to contact him/her, via a staffing report. It tells who is currently on the system, what role(s) they are performing, what role(s) they are authorized to perform, and how to contact them. Users have different permissions based on the roles they are allowed to perform and these roles have different tasks and reports associated with them (completely customizable).

Links

Custom links can be added including news, weather, bulletins, glossaries, guidelines, contact lists, scene shots, camera feeds, etc.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment): Stand-alone product. Optional equipment includes projectors and projection screens and the above-mentioned bar code system.

c) Large multi-station system, or based on individual PC's? Individual PC's

d) If simulation models are used how realistic do they seem: N/A.

e) Web-based application, LAN, or a single computer/system-based application? Web-based.

f) Describe the AAR support tools: Automatically captures and journals relevant events, changes, status reports, and decisions made and actions taken during the course of responding to a situation with time and user stamps.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Any PIII server, any system that will run IE5.0

a) Software Operating System (Windows XP, 2000, etc.; MAC OS; UNIX; other): Windows, 98 - XP

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any):

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements[5]:

5. Describe unique interface characteristics:

6. If multiple users:

   a) Identify the range of persons it can simultaneously support (min-max)? Min 1; Currently have systems with over 100. There is no practical max (vendor currently working with a client with 1000 users).

   b) Number persons usually trained simultaneously? Small counties 10; Large counties 25 – 50.

   c) Custom/proprietary hardware required? If so, identify: None.

7. Please describe the HELP features: No help features in product itself; tech support available 24/7 (cost listed below).

8. Data recording & storage features (e.g., Scenario events; student performance): Via journaling,
   See 3f.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product): Training/set up costs are $200/hr at an average of $8,000. It includes product set up, administrator training (average 2 days) and user training (2-3 hours).

2. Attributes:

	Application Environment:		**Content**
	Training		Knowledge
2	Exercise	1	Applied
1	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
2	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**

1	Nuclear		Equipment Training
1	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
1	EMS	2	Drills
1	EMA	2	TTX
1	Fire	2	FE
1	Govt. Administrator	2	FSE
1	Health Care	2	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
	Initial Acquisition		
2	Improvement		
	Maintenance/Refresher	0	**HLA Compliance** (does product support HLA?)

3. Content:

a) Training content description (what trained, brief): Event information management.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]): None. Users can add URLs and attachments as desired.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications): EOC decision-making & team communications.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): Normal operation.

e) Exercise/scenario length/time(typical): 4-8 hours.

f) Potential equipment and/or facilities product can address: EOC communications systems.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them. Directly applicable.

h) Are there any constraints on supported exercises or scenarios? Not aware of any.

4. Instructional Attributes:

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): Real-time exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?* No.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario. Once checklists are added participants can act according to assigned tasks—per role. This tool contains no simulations or exercise scenarios. There are 2 font colors, red and green, to distinguish exercise and real operations environments.

d) How is training managed (e.g., Testing, certification of completion, etc.)? Up to the user, through task specifications.

e) Does a curriculum already exist? If so, briefly describe its form and content. No.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): Through checklists, task completion can be verified (checked by users once completed).

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Journaling capabilities described above track all system inputs. Only raw data is available, requiring SME/facilitator input for evaluations.

5. Customization:

a) Can the product be customized? Screens and permissions are highly customizable.

b) What is the process and how much time does it take to develop a new exercise/scenario? Up to the user. Once plans/scenarios are developed input into the system can be done minutes.

c) What is the process and how much time does it take to modify an exercise/scenario? Same as 4b.

d) What is the process and how much time does it take to setup an exercise/scenario to run? Minutes.

6. Instructor/controller/evaluator tools:

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support): Administrators can customize reports ands screens.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis &

display; displays & controls to support immediate feedback to participants): Student-action cues are provided through checklists and via status boards, requests and reports.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): Journaling (mentioned above).

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Costs

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)
2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle
3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization
4) What are the costs (in $USD) according to type: (fill in all applicable)

	COST			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)	2250.			
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	200/hr	8,000		
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

PEGEM (Post-Engagement Ground Effects Model)

Developer: BAE Systems Inc.

Contact information:
Dr. Charles A. Lind
Missile Defense Agency
7100 Defense Pentagon
Washington, D.C. 20301-7100
Charles.lind@mda.osd.mil

Technical Support Contact Information:
William Moore
Program Manager
1525 Perimeter Parkway
Huntsville, AL 35806
256.890.8071
william.k.moore@baesystems.com

Website: http://www.mevatec.com/pegem/main.htm

COTS/GOTS: GOTS

Product status (version in use): 5.0

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

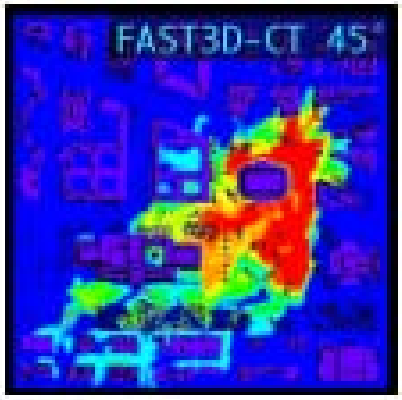
X	Brochure/Prospectus
	CD-Rom
	Related Papers
X	Other: *Application of Post-Engagement M&S Capabilities to Homeland Security* vendor brief. (Power Point file).

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  Estimates hazard effects (3D models) of chemical, biological and high explosive effects[34]. It incorporates digital terrain and weather data. Applications include missiles, battlefield weapons and weapons storage facilities. It has been used by the military since 1996.

"Flat Terrain"

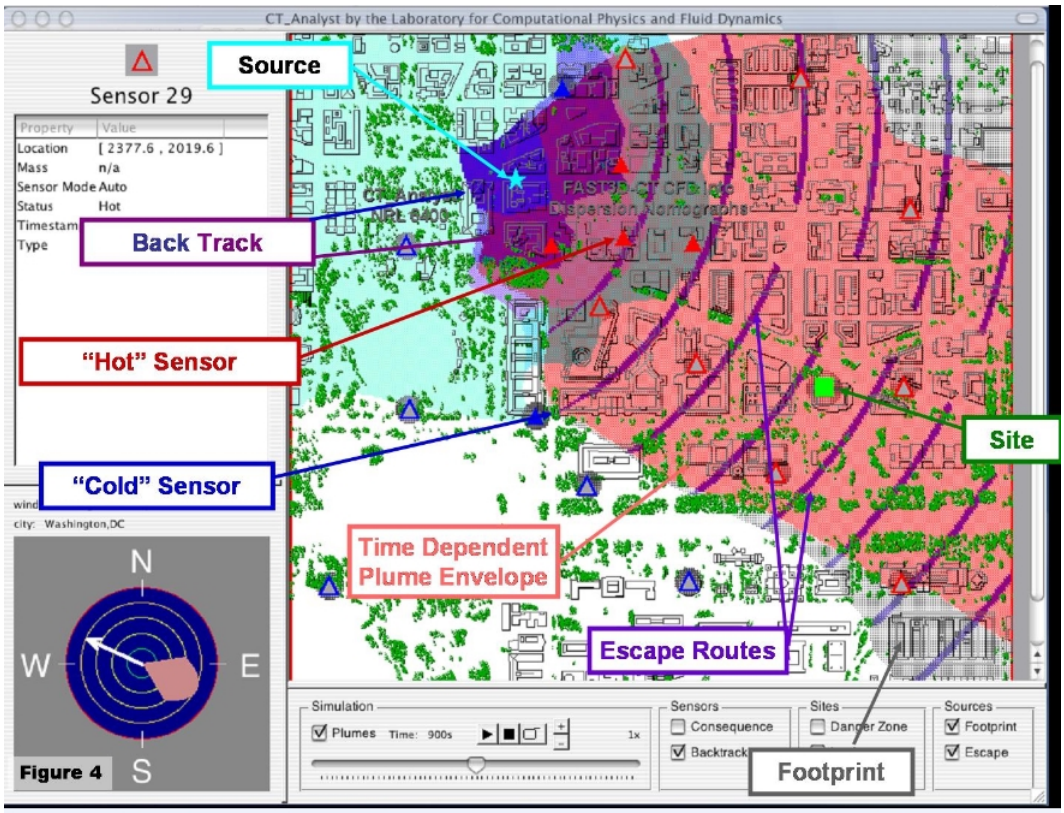


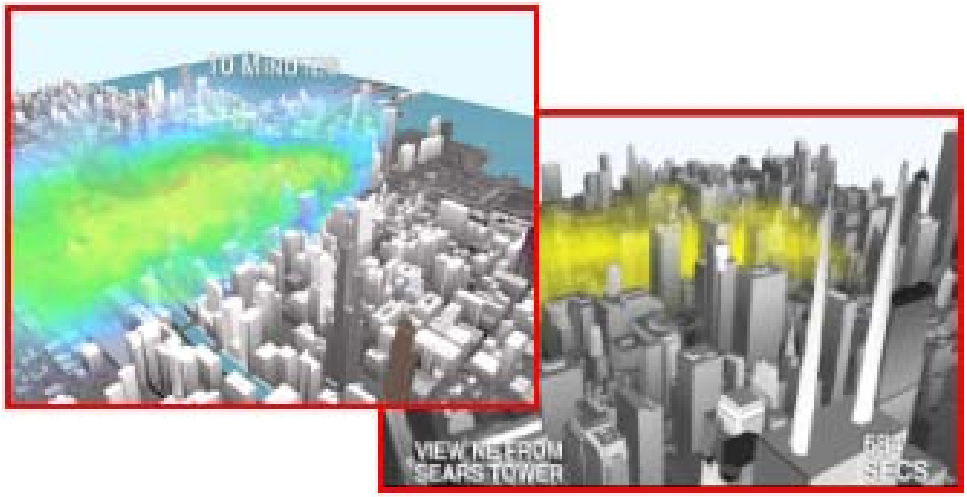
"Complex Terrain"

(All photos provided by BAE Systems)

CT-Analyst is being combined with PEGEM Its current capabilities include instantaneous 3D predictions of chemical, biological, and radiological agent transport in urban settings, contamination footprint, evacuation routes, and backtrack of sensor readings to two or more separate unknown event locations. Current urban environments modeled: Washington D.C., Chicago, Baghdad and Blathysburg (generic USA city).

[34] Vendor working on adding radiological and nuclear effects modeling.





Both tools utilize a neutrally ebullient? gas for modeling, representing a worse case scenario agent.

- Current Target audience: Planers, responders, & decision-makers to understand, predict and train in contaminate properties.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
	COTS	1	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
	Equipment		Does not provide feedback or AAR
		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
Software.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand-alone product; can also be used in distributed environment where several users can train/exercise (e.g., networked fire stations can connect to real time weather data as well as share digital information feeds).

c) Large multi-station system, or based on individual PCs?
Based on individual PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?
Plume models: HPAC & VLS Track

e) Web-based application, LAN, or a single computer/system-based application?
Web-based application, or a single computer/system-based.

f) Describe any debriefing after-action reporting support tools:
Output reports (e.g. casualty information) require SME interpretation.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None (e.g., can be used on PDAs).

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows XP/'00/NT

b) Processor speed (in MHz): 500Mhz.

c) Memory (SDR/DDR): 56K

d) Free disk space: None.

e) Internet connection speed (if any): None.

f) Display adapter: None.

g) CD-ROM speed: None.

h) Optional accessory requirements[5]: None.

5. Describe the user interface characteristics:
Simple point and click, windows driven commands.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
As many as user's computer capabilities support.

b) Number persons usually trained simultaneously?
Depends on the user.

c) Custom/proprietary hardware required? If so, identify:
None.

7. Describe any user HELP features:
There are sample files included in the tool that contain parameters that drive the simulation (e.g., location, weather data, etc.) but no user help is included in the tool. Several manuals are available including a technical manual and a users quick start guide manual.

8. Data recording & storage features (e.g., Scenario events; student performance):
Scenario parameters can be stored as files.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
3-day workshops at vendor site (Alabama) available free of charge for government users. On location for about $600 per user. Includes quick start manual.

2. Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
1	Operational		Hands-on
1	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
0	Govt. Administrator	1	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
	Learning Supported:		
1	Initial Acquisition		

1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

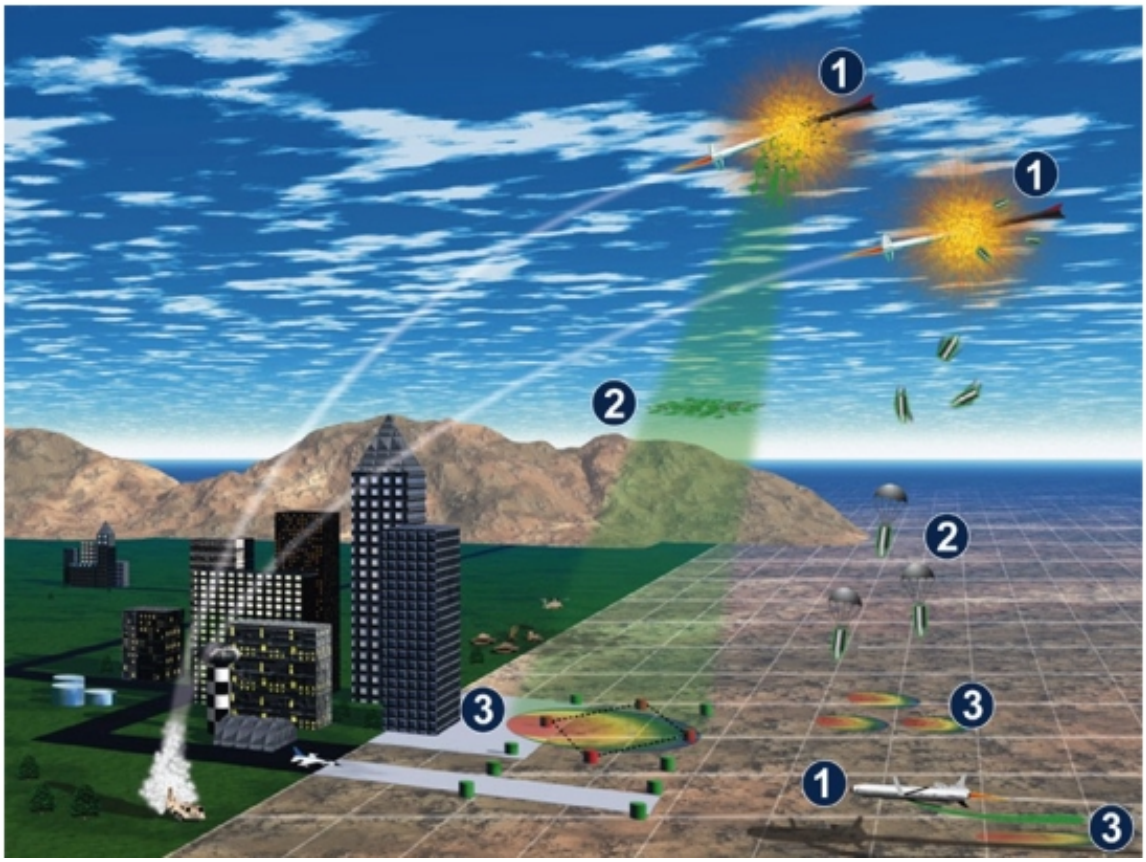
a) Training content description (if applicable):
User workshop and training manuals available. Marketed for training Emergency Responders, Response Implications, Preparedness, and Training, Providing Evacuation Routes, CB Prediction, Hardware Design, Sensor Placement, Population Protection Risk Mitigation, & "What If" Scenarios.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
Some agent information including characteristics, physical properties, & population dose levels. Self-Contained Databases And Models Include, Weapons Characteristics, Agent Toxicity, Map Features, Population Models And Climatic Conditions.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
High level: decision-making; mid-level: resource estimation; lower level: early warnings. Including: hazard estimates, ground hazards to cities, command posts and critical infrastructure, population protection studies, agent plume direction and lethality levels, duration/persistence/decontamination estimates, agent toxicity locations and levels over time, statistical casualty calculations, to assess the importance of droplet statistics, I.e. dense mist vs. large, sparse droplets.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Models day/night and all winds speeds (real weather data or manual input for PEGEM; manual input for CT-Analyst).

Sample “working environment”:
1) Threat Payload Release: Assess Multiple Threat Scenarios, Calculates Initial Cloud Formation Or Ejection Velocity Vectors
2) Threat Propagation: Uses Current And Historical Meteorological Data And Forecasts To Predict Hazard Dispersion
3) Ground Effects Assessment: Calculation Of Causalities Based On Ground Disposition, Dosage, Concentration And Deposited Energy Grids



e) Exercise/scenario length/time(typical): minutes to days depending on region/area information available.

f) Potential equipment and/or facilities product can address:
Any outdoor facilities.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Yes.

h) Are there any constraints on supported exercises or scenarios?
No indoor modeling, radiological/nuclear models not yet developed (scheduled to be done by 2004). Currently PEGEM contains capabilities to model geographical space areas. The incorporation of CT Analyst has allowed for urban modeling. However, cities must provide data or contract for its addition to the tool.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
Classroom training, real-time exercise with real weather data (or manual input of chosen parameters), web-based collaborative.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*
Yes.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.
Automatic modeling based on chosen parameters.

d) How is training managed (e.g., Testing, certification of completion, etc.)?
Up to the user.

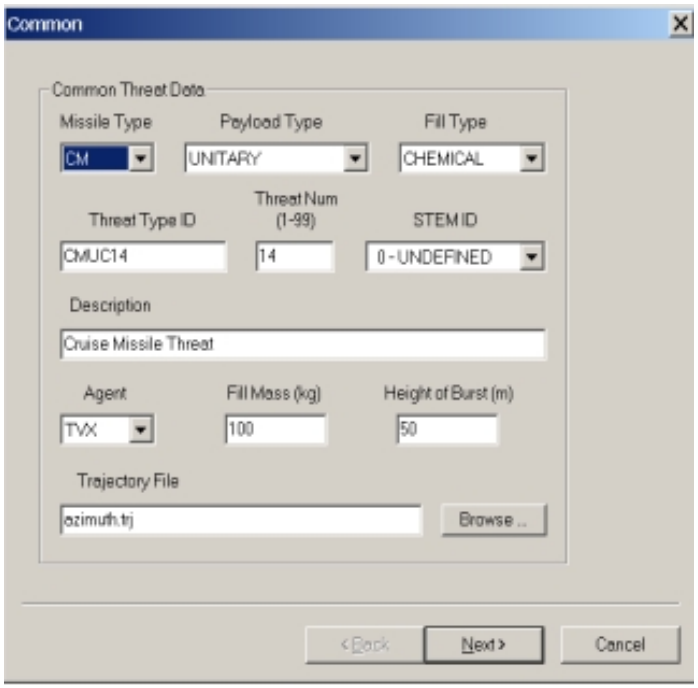
e) Does a curriculum already exist? If so, briefly describe its form and content
Tool comes with some files (user opens and "plays out" simulation).

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
Scenario/exercise data recording.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Tool models consequences of chemical, explosive and biological attacks including plume dispersion and affected assets. However, users do not make inputs that change the simulation based on their actions (only parameters chosen—which can be altered at will during a simulation, e.g., speed up simulation time—are modeled). That is to say, for example, a user can view the most appropriate evacuation route modeled but does not carry out evacuation in the simulation.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
Point & click, windows based specification of parameters from menus.



b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): Scenario/exercise conduct controls; real-time/fast-time/time-jump; support immediate feedback to participants.

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes. By vendor (adding geospecific city data).

b) What is the process and how much time does it take to develop a new exercise/scenario?
Simple windows menu driven that can be accomplished in seconds/minutes.

c) What is the process and how much time does it take to modify an exercise/scenario?
Same as 6 b.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
Same as 6 b.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Data playback capabilities and reports can be generated. They require SME interpretation.

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development

	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

Tool is free for military & government users (e.g., DOD, DHS, DOE).

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				

Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance		$600/user*	0	
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

*Free of cost if at vendor site.

H. Current Users Interviewed

None.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS
February 24, 2003

Basic Product Information

Name of Product: 1) **PISCES** (Pollution Incident Simulation, Control and Evaluation System).

Original name, when initially developed for USCG (U.S. Coast Guard).

2) PISCES **(Potential Incident Simulation, Control and Evaluation System)**

Revised name, but same system as above.
Commercially marketed by Transas Marine, system developer.
Currently in operation.
USCG is using this later variant today. Also being used for commercial incident response training and exercising.

3) **PISCES2** (Potential Incident Simulation, Control and Evaluation System).

Commercially marketed by Transas Marine, system developer.
Upgrade of PISCES to support wider range of incident types.
This variant will be available in June/July 2003.

* This review addresses both the original PISCES and the currently-marketed commercial version of PISCES2. The difference is that 1) the original version was developed for the USCG, intended to support the development and conduct of large-scale oil spill response exercises; and 2) the currently-marketed commercial version is intended to address a wider range of incidents, and a wider range of training and exercising contexts.

* This document contains information provided by PISCES' vendors, and information determined by the reviewer from discussions and documents.

Product is hardware, software, or both?

- Both.

  Hardware: Off-the-shelf PC's, projectors, printer and GPS tracking and interface hardware.

  Software: Proprietary commercial software (primary parts)
  Government-owned parts
  MS Windows NT 4.0 and Windows 2000.
- PISCES is a complex simulation-based system originally designed to develop and control large-scale multi-agency response-preparedness exercises, for the U.S. Coast Guard. Its initial application was for oil spill incidents; it is being expanded to address other types of incidents (PISCES2). It includes a variety of exercise development, control, simulation, data collection and AAR capabilities. This document provides only an overview/summary of PISCES.

Large multi-user system, small multi-user product, or individual-user product?

- Small PC-based system.
- Multi-user and individual-user product.

  Originally developed as a multi-user exercise support product.

Currently used commercially to support table-top, small-team, and full-scale exercises and training.
Currently used by USCG to support full-scale exercises.

Focus/specialty of product:

- Exercise support tool … original development purpose.
  Developed to support USCG full-scale incident response exercises in ports around the U.S.
  Development and conduct of full-scale exercises.
  Development and conduct of table-top and small-team exercises.
- Multi-purpose tool (as currently marketed by Transas):
  Training and exercise development and control system.
  Response plan and strategies evaluation system.
  Decision support tool for incident response management.
- Current capabilities appear to focus primarily on port security and incidents … oil and hazardous chemicals (water and air pollution). The PISCES2 version will have expanded capabilities to support non-marine types of incidents (e.g., chemical, explosion).

Incident response operational tool/system:

Domestic, military, other users?

- Commercial version currently marketed to support incident response, as well as training, etc.
- Domestic (primarily)… response & management (decision support):
  Federal & state governments.
  Foreign governments (may include military).
  Commercial organizations (US and foreign).

Incident response training/exercise tool/system:

Domestic, military, other users?

- Primary use of PISCES (as originally developed for USCG).
- Developed to support USCG full-scale incident response exercises.
- Currently marketed for all incident response users … military & domestic.

Other operational tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Same as above for Incident response operational and training.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

- Same as above for Incident response operational and training.

Functional-area identification of product (Broad range, or specific):

- Primary today (PISCES: Marine incidents; ports.
  Oil, chemical release.
- PISCES2: Expanded applications to wider range of incident types (e.g., fire, terrorism).
- May require modifications (e.g., modeling, data bases).
- Exercise development and conduct system.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

1) PISCES: U.S. Coast Guard
   - Contracted for PISCES development (developed, under contract to the USCG, by Transas Marine).
   - Owns part of the software.
   - Pays leasing fee for PISCES system (part of the software is commercial/proprietary).

2) PISCES & PISCES2: Transas Marine
   - Owns and markets PISCES & PISCES2.
   - Owns the proprietary software.

Contact info ref. technical questions (Person, title, organization, telephone, email):

1) PISCES, USCG: Mr. James Gynther
   USCG R&D Center
   Avery Point
   Groton, CT 06340

2) PISCES & PISCES2, Commercial: Transas

   The following organizations, although independent, have a joint business relationship with regard to the design/development, use and marketing of the PISCES COTS. Either of the two individuals would be appropriate to contact regarding PISCES2.

   a) Transas (USA) Inc.
      USA main office: 19105 36th Ave. W.
      Suite #101
      Lynnwood, WA 98036

      425-778-4546 (Phone)
      425-771-4370 (Fax)
      dnieri@transasusa.com (email)
      http://www.transas.com (website)

   b) Virtual Planet Services
      David S. Nieri
      8 Harwood Drive West
      Glen Cove, NY 11542-1831

      516-674-3626 (Phone)
      928-222-2816 (Fax)
      vplanet2000@yahoo.com

   c) Precision Planning & Simulations, Inc.
      Thomas D. Marquette
      487 A Meadstown Road
      Elizabeth City, NC 27909

      252-330-4254
      tmarquette@ppscorp.com

Contact info ref. buying the product (Person, title, organization, telephone, email):

- Same as above.

COTS/GOTS (circle one).

- Both
- GOTS: Partial ownership
  Government leasing arrangement

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

- System has basic capabilities for exercise development and conduct, as currently available. It's current content-specific characteristics are focused on port incidents (oil and hazmat). It is being expanded to address other types of incidents.
- Potential modifications necessary:
  - Exercises and scenarios (specific).
  - Simulation models, which are currently available, may require modification. Additional models may need to be developed.
  - Performance measures, and supporting displays, may need to be developed or tailored to provide enhanced training and exercising, and appropriate AAR support for other types of incidents.

Product status (Production version in use; prototype in use; under development)?

- PISCES is currently in use; PISCES2 is under development (available June/July 2003).

  If in use, identify users, types of use:
  - USCG uses several PISCES units in support of full-scale exercises around the country.
  - Use in support of table-top, small-team and full-scale exercises by commercial organizations (e.g., Precision Planning & Simulations, Inc. conducts exercises for commercial clients; Shell Oil, United Kingdom; California Maritime Academy).

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- PC-based system.
  - Intended to support full-scale, small-team and table-top exercises, combining simulated and actual-deployed assets.
  - Intended to support incident response command staff.
- Includes support for:
  - 2 workstations (control, monitoring, AAR).
  - 2 large screen projectors (Geoplot and status displays).
  - GPS monitoring link to real on-scene assets.
  - Simulation models; scripts; real-time control inputs.
  - Data collection, performance measurement, AAR.
- Computer-based tools to support development of full-scale exercises.
- Computer-based tools to support conduct of full-scale training and exercising; response plan evaluation, and response strategies development.
- Not currently capable of web-based collaborative operation; but, they are discussing this as an eventual development.

- PISCES was originally developed for the Coast Guard to support the development and conduct of oil and HazMat spill incident exercises. It has been, and is being, modified to support both operations and training/exercising related to a wide range of incidents, including counter-terrorism.

Intended for operations, training/exercises, or both?

- Both.
- Originally developed to support full-scale exercises (see preceding item).

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

- Instructor/controller/evaluator tool.
- Can provide some (limited) training media at the current time.
  E.g., geoplot of assets, text/tabular listing of resources, organization, communications

Intended for individual, group or team use[1]?

- Team, primarily.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- Full incident response team … the number of persons engaged in the full-scale response.

Number persons usually trained simultaneously?

- 100+ (by USCG).
- Has been used to train/exercise much smaller teams (commercially).

Large multi-station system, or based on individual PC's?

- Based on individual PC's.
  Typically 2 networked PC's.
  2 large screen displays
  GPS tracking capability for actual deployed assets.

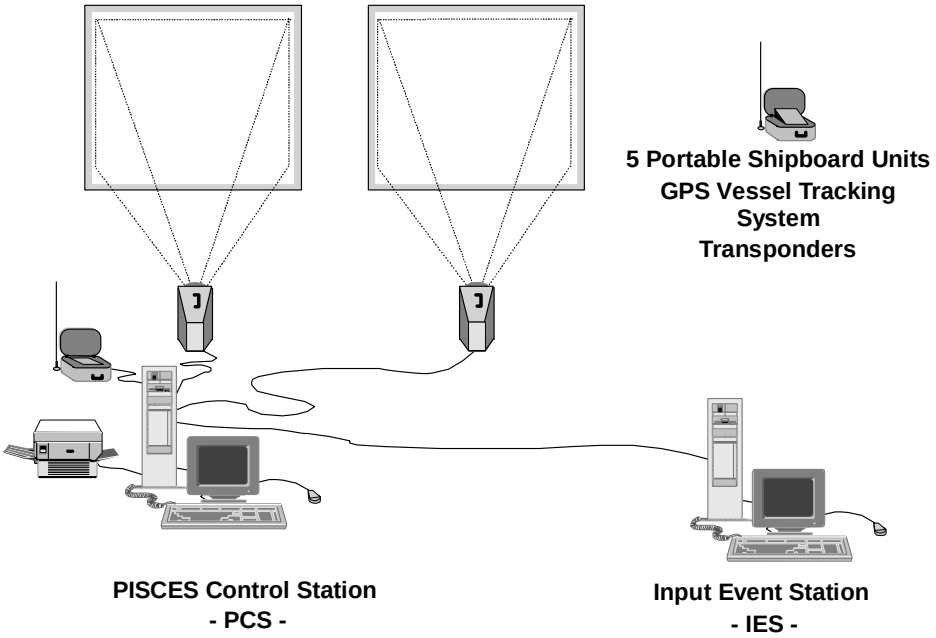
Custom/proprietary hardware required?

- No.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware (generic off the shelf hardware):
  PC workstations (typically 2 workstations: Control station and Input Event station).
  2 projectors and large screen displays (single screen or multi screen operation).
  Automated GPS-based tracking of actual real-world assets (e.g., boats), via wireless connection/interface.
  Printer.

- The typical PISCES equipment arrangement is shown below:



- Software (PISCES):
  - COTS (proprietary): Based on Transas products, including advanced radar plotting aids (commercial radar hardware), electronic charting, and similar operational products for the commercial maritime industry.
  - GOTS software components were developed for:
    Exercise-specific characteristics.
    Environment/data-base characteristics … e.g., chart extensions.
    Instructor and training/exercise assistance tools … exercise development, exercise setup/preparation, exercise conduct, data collection, debriefing/feedback/AAR, etc.
  - COTS (other) operating system: Windows NT 4.0, or Windows 2000.

  - Major software components:
    1) PISCES application
    Human computer interface.
    Store, convert & present information.
    Windows, graphics, text.
    Data recording (hard data, instructor/observer comments); logging.
    Information presentation during exercise and during debriefing (AAR) … graphical (geoplot) and textual (e.g., key events, warnings/alerts, status) displays.
    Report generation (provides snapshot summaries of displayed information).
    Large screen displays
    2) Electronic Chart System
    Exercise graphic charts and overlays, including locations of resources, etc.
    3) Simulation Module

System's kernel … Manual and automatic/semi-automatic control of resources and other time-dependent scenario actions/events.
Synchronization of modeled processes, combination & interaction.
Resource models.
Vessel tracks, skimmers, booms.
Expect other models in PISCES2.
Assessment information.
Oil spill parameters.
Environment.
Facilities … booms, skimmers, vessels…
Expect some other assessment information in PISCES2.

4) PSICES Database.
Environment.
Exercise parameters.
Key events.
Geographic area.

5) Oil Spill Model.
Actual observations … manual inputs/control.
Model (simulation) … spreading track model … trajectory mode.
Hydrodynamic interaction model … water column.

6) Communication module: This module communicates with other applications running simultaneously on the same computer, such as the NOAA Aloha gas plume model.

7) Vessel tracking module: This is a GPS monitoring and control application.
Connects to on-line GPS tracking system, to monitor positions of actual real-world vehicles.
Integrates actual assets (e.g., vehicles) with simulated assets, into the actual/simulated playing field.

8) Debriefing (AAR)
Playback exercise record.
Evaluate efficiency/effectiveness of actions (currently, oil spill response performance).
Tools to develop slides for briefings.

9) Expect other models and capabilities in PISCES2, relevant to other (non-maritime/port) incident types.

- Simulation (PISCES):
  - Embedded simulation capabilities (scripted and adjustable), for example:
    Routing of vehicles, using time legs and waypoints;
    Time/delay to activate unit (e.g., response vessel) and initial request.
    Time/delay to arrive on-scene.
    Response performance on-scene (time, effectiveness/efficiency).
    Equipment status (available, unavailable, standby, ordered, inactive, departed, enroute, arrive awaiting orders, busy, turnaround, delayed, in transit).
  - Oil spill models.
    Oil characteristics, spreading.
    Hydrodynamic (water column) spreading.
  - Interface with other-vendor models, in particular the NOAA gas plume model (ALOHA)
  - Weather conditions
    Wind, currents, sea state, etc.

- See, also, above simulation-related information under "Software, 3) Simulation Module".
- Transas states that they have/will have the capability to use external models, as necessary, to support training and exercising requirements (i.e., integrate the use of external models with PISCES). That is, they intend to rely on available external models, rather than develop in-house models (e.g., gas plume model, explosion model). They have used external models in the past (e.g., NOAA's Aloha gas plume model). This is similar to the position of other large-system vendors.

If simulation models are used, identify their qualitative validity level (if possible):

- Basic models are embedded in the system.
  Validity of models is not known.
  Assume (reasonable) that vehicle motion models are sufficiently valid.
  ALOHA gas plume model is an accepted standard (and is available from NOAA).
- External simulation models can be used. Note, the models would be obtained from other vendors (COTS, GOTS) and integrated into the system. Also, see above item.

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

- Basic stand-alone system.
- May require external simulation models and data bases, depending on use. Presumably, these would be obtained by Transas, and integrated into system, as part of the system package. Depending on requirements, models and data bases could be independently obtained and integrated into the system. For example, Transas will provide the capability to integrate certain map formats (e.g., geotiff); others would require assistance of Transas.
- May require external data (data base) to support specific areas of application (e.g., city geographic area). This would likely be required of any high-fidelity simulation system.

  If other hardware and/or software required, or typically used, identify it/them.
  - Simulation models and data bases (as described above). Note, these would probably be part of the system when purchased. But, a system modification may be necessary to accommodate additional/later requirements.
  - Field response equipment, if field personnel are to be trained.
  - Incident-specific performance measures, displays, and other tools.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- General facilities to house and conduct the exercise. PISCES provides the medium for controlling and tracking the simulated and real-world assets, collecting scenario and instructor/observer data, manipulating those data to generate performance-related parameters and displays, and support the conduct of post-exercise debriefing (AAR).

Web-based application, LAN, or a single computer/system-based application?

- Single computer/system-based application.

  Can the training be administered over a wide area network or a local area network?
  - LAN: Not today, but it will be implemented in the near future for operational support. It may be implemented for training/exercising at a later time.
  - Web: They have discussed this possibility, and expect to implement it eventually.

Is an instructor or facilitator needed?

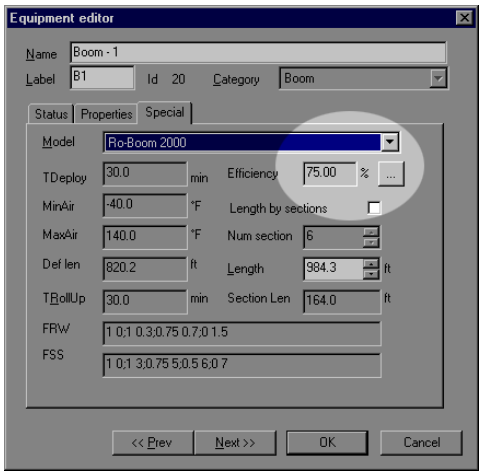
- Yes.
  - Multiple instructors/facilitators are likely needed to support full-scale exercises.
  - One instructor/facilitator can operate the system for a table-top exercise.

  If not, how is training conducted (e.g., Individual self-paced)?

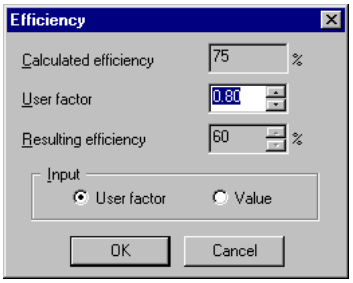
  If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Describe unique user interface characteristics:

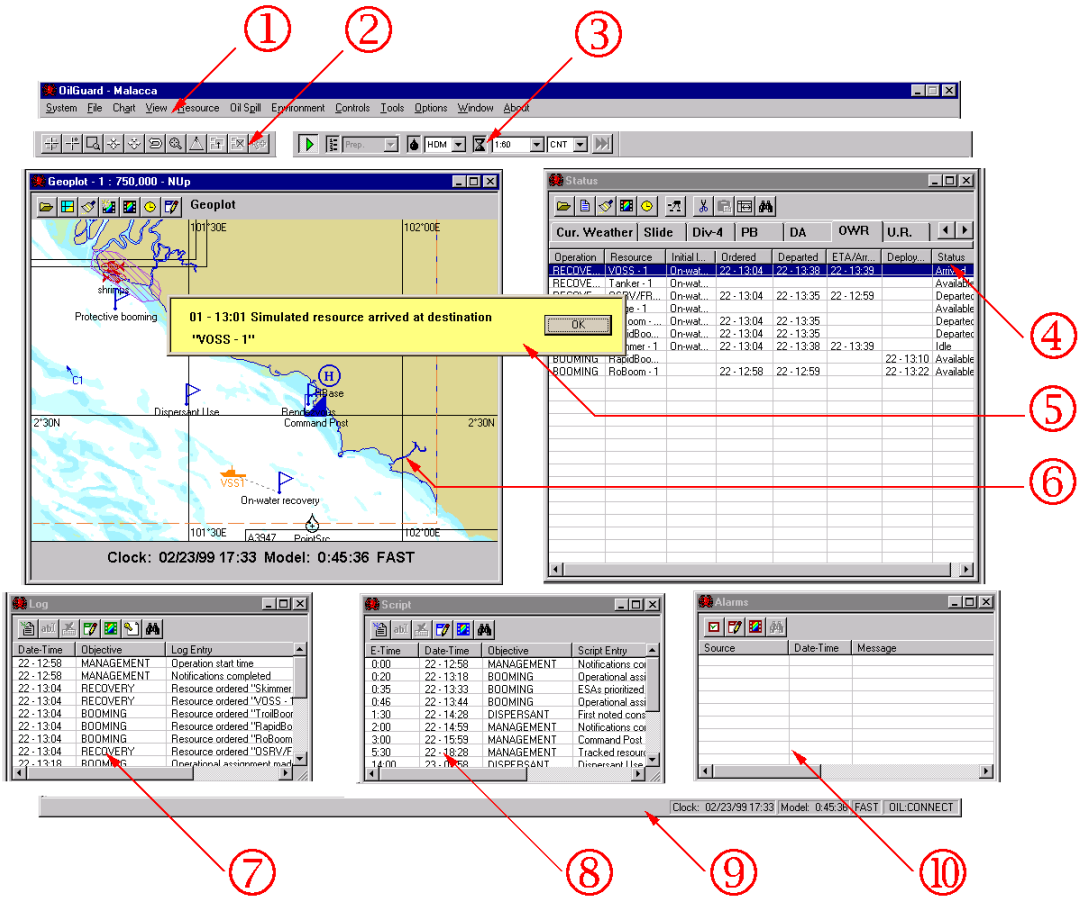
- Standard PC interface, under Windows NT or Windows 2000 (keyboard, mouse, display).
- Proprietary user application interface, containing multiple displays (textual, tabular and graphical).
- Large screen displays, projecting computer-display images (typically, Geoplot and Status displays).
- An example of a data-entry/equipment-editing display window is shown below.



- An example of an Efficiency data-entry display is shown below. The instructor/controller can manipulate the efficiency of response resources by entering appropriate values.

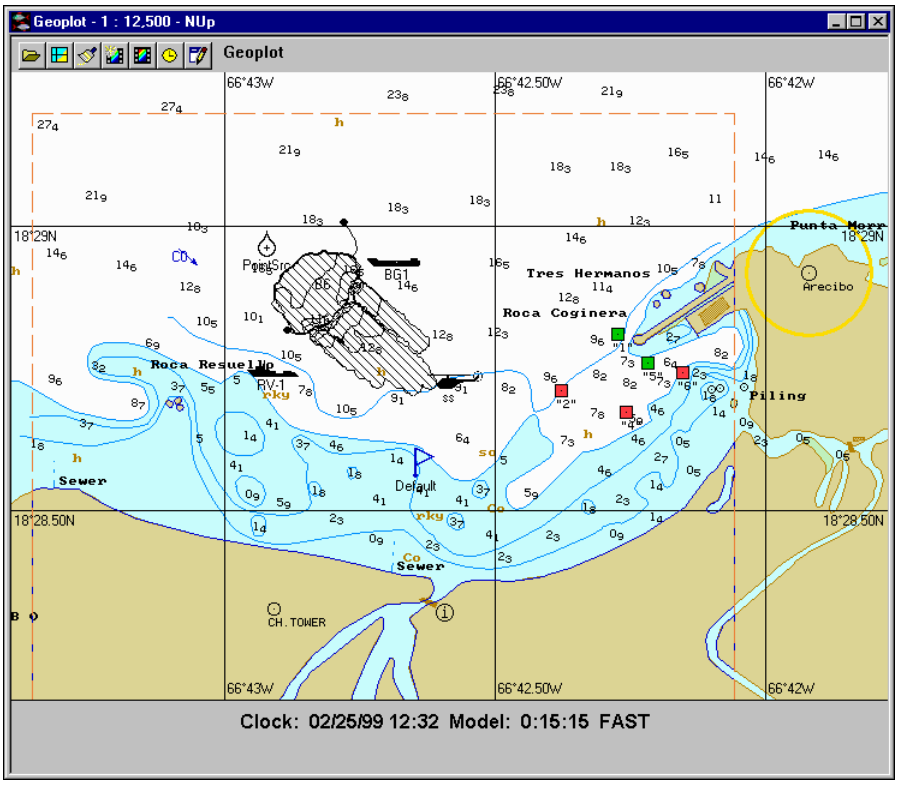


- The general layout of the PISCES operator display is shown below.

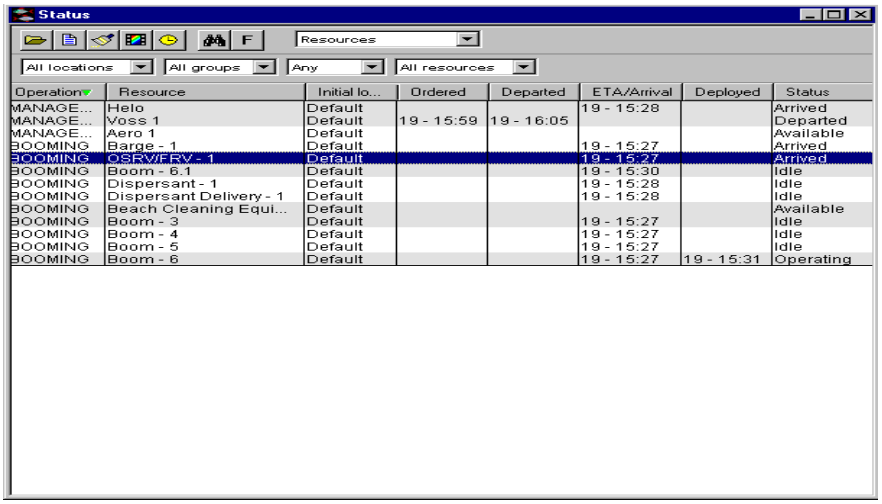


1	Main menu	6	Geoplot
2	Chart operations toolbar	7	Log window
3	Common operations toolbar	8	Script window
4	Status window	9	Status bar
5	Alert message window (“Yellow box” type)	10	Alert window

- An example geoplot/chart-window display is shown below.



- An example of a textual/tabular display is shown below.



Status

Resources

All locations | All groups | Any | All resources

Operation	Resource	Initial lo...	Ordered	Departed	ETA/Arrival	Deployed	Status
MANAGE...	Helo	Default			19 - 15:28		Arrived
MANAGE...	Voss 1	Default	19 - 15:59	19 - 16:05			Departed
MANAGE...	Aero 1	Default					Available
BOOMING	Barge - 1	Default			19 - 15:27		Arrived
BOOMING	OSRV/FRV - 1	Default			19 - 15:27		Arrived
BOOMING	Boom - 6.1	Default			19 - 15:30		Idle
BOOMING	Dispersant - 1	Default			19 - 15:28		Idle
BOOMING	Dispersant Delivery - 1	Default			19 - 15:28		Idle
BOOMING	Beach Cleaning Equi...	Default					Available
BOOMING	Boom - 3	Default			19 - 15:27		Idle
BOOMING	Boom - 4	Default			19 - 15:27		Idle
BOOMING	Boom - 5	Default			19 - 15:27		Idle
BOOMING	Boom - 6	Default			19 - 15:27	19 - 15:31	Operating

Other important product characteristics:

- Can track actual real-world vehicles (e.g., ships, trucks), using GPS receivers and wireless transmission.
- Can integrate real-world vehicles with simulated vehicles and other elements into scenario (geoplot, data, performance measures, etc.).

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- Purchase software, essentially
  The purchase includes a license and a software key.
- License is forever.

Initial acquisition cost (purchase; licensing fees):

Product itself:

- Single license: $25,000
  Includes the basic system
  A single station (including the Transas oil spill model).
- $2,000 for each additional seat (license).
- $30,000-35,000 for a complete system.
  Includes an instructor station with several student stations.
- Plus COTS hardware (see estimated costs below).

Other necessary support, software, equipment:

- Models from other vendors
  E.g., Aloha gas plume model
  Price: Free (GOTS)
  Aloha interface: $1,000 (guess)
- Chart package, intended especially for maritime/port use, is extra.
  - Reasonable to assume that a basic set of geoplot/map data bases would be included with the PISCES2 system. The number of map venues would likely be limited, requiring purchase of additional maps. Also, some software translators will be provided for selected widely-used data base file formats (e.g., geotiff?).
  - Example of current pricing for nautical charts:
    U.S. set of charts: $7,000 per license.
    World set of charts: $11,000 per license.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

- No. Contractor is not required to run PISCES.

Number of staff required to setup, and operate product:

- 1-person can operate PISCES for a small exercise, such as a small tabletop exercise.
- 3-persons (minimum) are required to operate PISCES in support of a large exercise, such as an FSE.
  The 3 functions (minimum) would be: Display manipulation
  Collecting data (observation, collection, entry)
  Logs & report maintenance

Staff training required to use product (identify briefly ... type, time):

- Necessary amount of training depends on features to be used.
- The 2 vendors spoken with provided somewhat conflicting information.
  The basic operator course was stated as 2 - 5 days in length. It would include:
  Software installation
  Simulation development
  System functionality and capabilities

System setup
Basic model

- Amount of training and training costs may depend on which vendor is involved.

Cost for staff training on product (Cost to purchase training):

- A basic operator course (2-5 day course, not sure) is included in the purchase/license price.
  Includes course manuals and other necessary materials.
  See above item for course content.
- Additional courses:
  -It likely depends on the negotiated deal at time of purchase. A reasonable estimate of additional training price is:

  $3,500 plus travel, for a 5-day course.
  Basic operator course, or an advanced course.
  Includes course manuals and other necessary materials.
  Up to 10 students.

  - An advanced 2-day course would include:

  System functionality and capabilities
  Training applications
  Contingency planning applications
  Work around features
  Exercise applications
  Matching other models
  Scenario development

- Amount of training (i.e., course length, content) and training costs may depend on which vendor is involved.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- Tabletop exercise: Single PC.
- Large scale exercise: Typically, 2 networked PC's.
  2 large screen displays
  GPS tracking capability if actual assets are deployed.

Expected costs?

- Standard PC and projectors
  TJH estimated costs: $1,500 per PC
  $4,000 per projector
  $250-$2,000 for color printer
  GPS equipment (each vehicle) … $5,000 several years ago; less today. Includes GPS receiver/transmitter on vehicle, and receiver/computer interface in exercise control.

Product maintenance requirements/recommendations (identify briefly):

- 2-year warrantee with initial purchase/license.

Pertains to software.
Hardware (PC's and projectors) would carry manufacturer's warrantee

- Extended warrantee is available at additional cost:
  1 year
  25 hours telephone or email service.
  $4,000 for one license.
  $500 for each additional license (seat).
- Chart updating service can be purchased for additional cost. Pertains to charts only.

Maintenance costs (Expected or required software, hardware maintenance):

- No maintenance is expected, other than as noted in preceding item.
- No service contract is available at this time. But, see warrantee information in above item.
- Technician support is available (e.g., for exercise development, conduct, etc.). Example pricing is:

In office support or development:	$800 per day
On site support or development:	$1200 per day + travel

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Windows NT 4.0, or Windows 2000

Can product be customized? How? Cost?

- Yes.
- Primarily via software modification.
  E.g., Area-specific features (geographic maps, facilities, etc.).
  Models (vehicles, incident, weather, etc.)
  Management and training/exercise conduct features
- Cost not known … will depend on customized features. Some cost information is provided above regarding technical support (gives idea of labor rates).

Product modifications required to support counter-terrorism training/exercises:

Modifications:

- PISCES2 developments.
- Would probably require incident-specific modifications.
  E.g., models.
- May be desirable to have training and exercising specific features (TBD).

Range of potential costs:

- Estimate (based on technical support rate) for modifications:
  - Minimum additional modification (minor) would be 2-day's labor, $2,000.
  - A major modification would require substantially more labor, at least 25 days labor ($25,000).
  - Modifications could go well beyond 25 days, depending on requirements.

<u>Personal Computer Requirements</u> *(if appropriate)*
(Most software will offer minimum and recommended configurations).

- Software: Windows NT 4.0, or Windows 2000.

Processor speed (in MHz):

- PC with Intel Pentium 200 MHz (Dual Pentium 333 MHz)
- Hardware dongle, connected to the PC's parallel port (provided with purchase/license).

Memory:(SDR/DDR)

- 64 MB RAM

Free disk space:

- Hard disk: 1.2GB

Internet connection speed:(if any)

- Not required

Display adapter[4,5]:

- 15" (17") monitor
- 2-channel with 1600x600 desktop; 4-channel with 2048x1536 desktop
- 65536 colors

CD-ROM speed:

- Nominal (assume 24x minimum)

Optional accessory requirements[5]:

- Projector requirements (may have two, one, or no projectors).
  LCD projector with resolution of 1024x768
- A4 color printer required for printing hardcopy.

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Both

Potential type of WMD event product can support:

Chemical – Yes (PISCES2)
Biological – Yes (PISCES2)
Radiological – Yes (PISCES2)
Nuclear – Yes (PISCES2)
Explosive – Yes (PISCES2)

Constraints on supported exercises or scenarios?

- PISCES is currently oriented to maritime incidents, primarily oil spill.
- PISCES2, not yet available, will be oriented to variety of incidents. Will be available June/July 2003.
- But, effective use of PISCES2 would likely require add-ons (e.g., models, data bases)

Potential disciplines product can support:

Emergency medical services
Emergency management agency
Fir
Governmental administration

Health care
HazMat
Law enforcement
Public health
Public safety communication
Public works
Global ... or other (Pelfrey)

- Can potentially support all disciplines during FSE training and exercising. But, likely to require additional capabilities to do so (e.g., models, data bases).
- Depends on training and exercising objectives and context (e.g., scenario).

Provide additional sub-discipline description if possible.

Potential types of learning product can support (S&K):

Initial/acquisition

- Yes, primarily team-related skills & knowledge. Could support individual learning, but probably not an efficient means of doing so.
- Would require an instructor.

Improvement

- Yes, primarily team-related skills & knowledge (e.g., ICS, unified command, communications, coordination).

Maintenance/refresher

- Yes, primarily team-related skills & knowledge (e.g., ICS, unified command, communications, coordination)

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel

- Primary target audience: Crisis managers, Incident command team
- Can support field training of first responders including actual resources and simulated resources.

Potential responder training level(s)/categories product can support:

Awareness –
Performance [Operations]
Technician [Specialist]
Planning & Management [Incident Command]
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -

- Primarily oriented to (TJH assessment): Planning & Management
  Integrated Systems
- Performance and technician levels can be supported.

Potential equipment and/or facilities product can address:

- EOC
- Command Post

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- ICS process
- EOC decision-making
- Team communications & coordination
- Overall preparedness/readiness assessment

Training content description (what trained), in addition to preceding item (Brief):

- Training and exercising content is determined by user, and developed by user.
- Transas vendors can provide contracted training.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

- Awareness level should be considered minimal.
- Basic individual proficiency in requisite tasks should be considered as the minimum.
- Basic understanding of ICS (e.g., 100 level) should be considered as a minimum.

Potential training/exercise types product can support:

Classroom - Yes, if simulation is desired, and under instructor control.
Individual self-paced - No, not in its current configuration.
Seminar/workshop - Yes
Drill - Yes
Individual and small-team exercises - Yes
Simulation-supported - Yes
Gaming - Yes, but no specific gaming features; only simulation features (e.g., displays, models, data collection, etc. Instructor would have to provide game structure.
Collaborative - Yes, but no specific collaboration features; only simulation features (e.g., displays, models, data collection, etc. Transas may modify PISCES in future to specifically support web-based collaboration.
Tabletop - Yes
Functional - Yes
FSE - Yes
Other

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Real-time exercise, simulation-supported. Fast-time and jump-ahead functions are also possible.
- Team context. Also, tabletop context.
- Instructor support is required.
- Has capabilities to support immediate feedback, delayed feedback, positive guidance and demonstration.
- Can be used to support classroom, case studies, and real-time VTC training (but, no specific features tailored to these types of training strategies).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- Flexible scenario length … short > long.
- Normal operation; injected failures/problems (manually injected).
- Simulation supported.
- Scripted and/or instructor/facilitator-controlled.

Exercise/scenario length/time(typical):

- 1 ½ days (typical) when used by Coast Guard during large-scale PREP exercise.
- 3 hours would be considered a somewhat-short exercise in a small group setting.

Process and time to:

Develop new exercise/scenario:

- Depends heavily on complexity of exercise and training audience.
  - Large-scale exercise, similar to a FSE, would be in planning months in advance of exercise date.
  - Small tabletop exercise may take several hours (or less) to plan.
  - If scenarios are re-used, or only modified, setup may be brief (minutes) or several hours. If new data bases require development, etc., setup can be much longer (days).
  - Examples:
    - Setting up models can be fast (minutes to hours), if only a few model parameters; or longer if many parameters involved.
    - Building a detailed response resource data base may require 2 days of data entry. This is considered the largest data base.
    - Building a detailed environmental data base over the term of a long exercise (e.g., 2 day exercise) may require 2 days of setup (data entry).
    - Vehicle scripts (e.g., movement and actions) may require 15 minutes to several hours, depending on complexity of actions.

Modify an exercise/scenario:

- Would require from less than an hour, to several hours, to several days, depending on the extent of modification. Could require much more time if very extensive modifications are required.

Setup an exercise/scenario to run:

- Time to hook up, activate and test equipment (2 PC's, projectors, printer, GPS) … assume one to several hours in a large exercise setting. This assumes all data bases, scripts, etc. have already been setup in software and tested.
- Approximately 1-hour to set up for a single-PC small exercise (tabletop).
- If system is in a permanent location, only several minutes would be necessary for turn-on and system-check time (assuming scenario was previously developed, and all data were previously entered).

Does a curriculum already exist?

- No. However, vendor-supplied curriculums for certain incident types (primarily oil spill) do exist.

If so, briefly describe its form and content:

Instructional Assistance Features

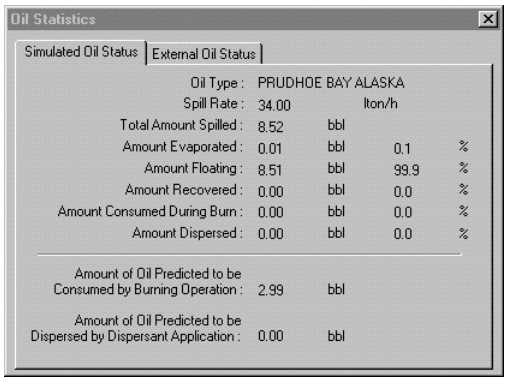
- Note, PISCES instructionally-related features, including example figures, are presented throughout this document. Please reference these as appropriate.

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

- Scripted scenario, and instructor/controller manual control of resources (e.g., vehicles, teams).
- Scripted vehicles (some) … transits, delays; on-scene actions
  Resource models are hard-coded, but can be adjusted via set of parameters (specific for each type).
  - Equipment efficiency can be adjusted.
  - User factor is another efficiency parameter that can be adjusted.
- Additional information relevant to this item is contained in preceding items.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- Automatic exercise data recording. Can save entire set of model data for a specific moment in time.
- Capability to automatically generate performance measures. But, the existing specific measures are not likely relevant to counter-terrorism.
- Instructor/controller/facilitator can enter observations/comments during exercise (up to 50 entries, approximately).
- Exercise playback/reconstruction at any point in time.
- Report generation capability. Basically, this capability generates a picture of the geoplot or other displays at selected points in time.
- Equipment status information is available for display (status information includes: available, unavailable, standby, ordered, inactive, departed, enroute, arrive awaiting orders, busy, turnaround, delayed, in transit).
- An example of a performance summary display window is shown below. It presents status information pertaining to an oil spill incident.



Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- Current scenario status information is available at any time during the exercise.
  - Geoplot display, showing all resources (simulated and actual).
  - Textual displays showing status information (see equipment status information above).
- AAR/debriefing capability.
  - Forward/reverse playback.
  - Fast time playback.
  - Instructor/observer/facilitator observations.
  - Performance measures, with tailored displays (these are oriented to oil spill incidents in the original PISCES).

Graphics and textual/tabular displays.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- None specific to WMD threats at this time. PISCES2 may have some; but, I don't think so in the initial version.

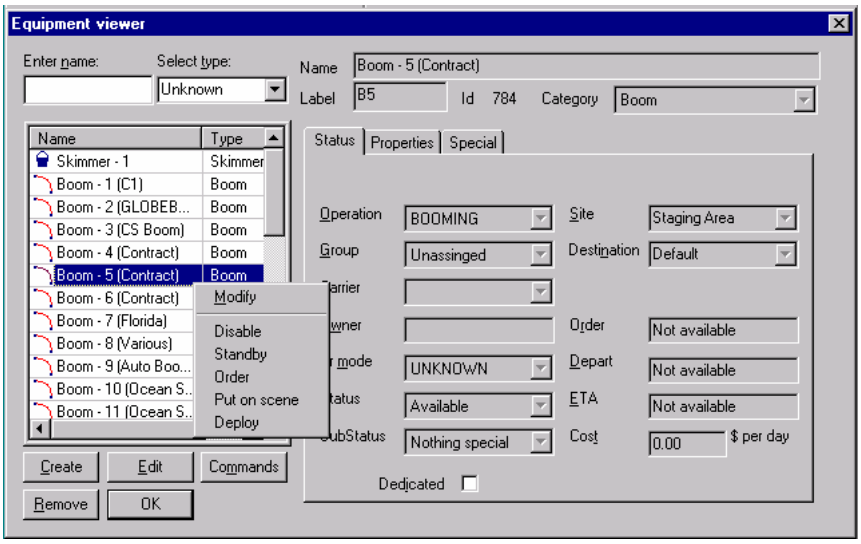
HELP features (Briefly identify):

- No specific HELP features.

Instructor/controller/evaluator tools:

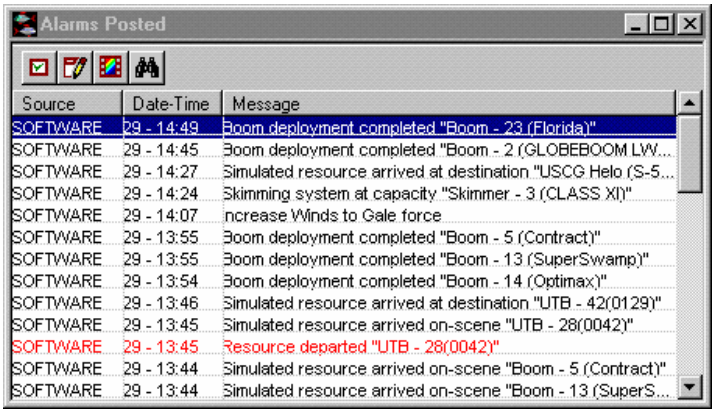
Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- Scenario scripting, including resources.
- An example of an equipment viewer window is presented below. This window contains the conditions and actions (e.g., script or manual control) for equipment resources.



Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- Scenario/exercise conduct controls (e.g., manual entry/control of resources). Note, resources can also be automatically controlled, if models are available.
- Instructor cues, alerts and warning … scripted and/or contingency-dependent events.
- An example of an alarm summary window is presented below.



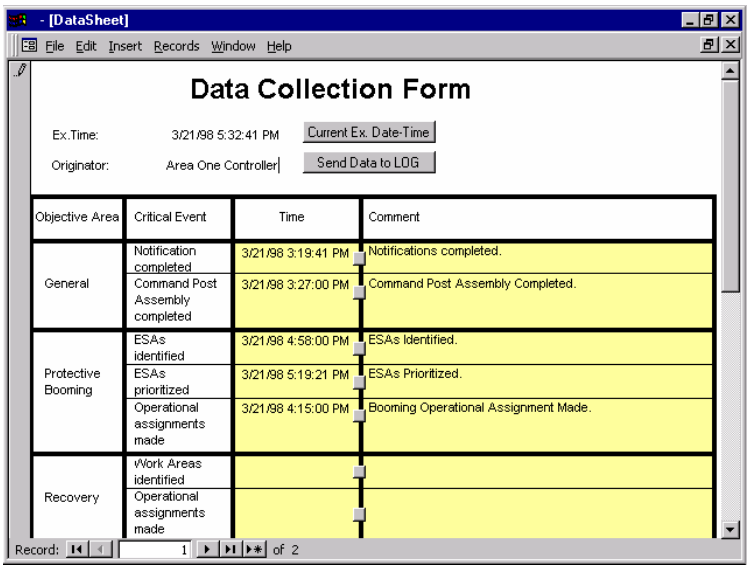
- Other scenario/exercise conduct tools are identified throughout this document.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

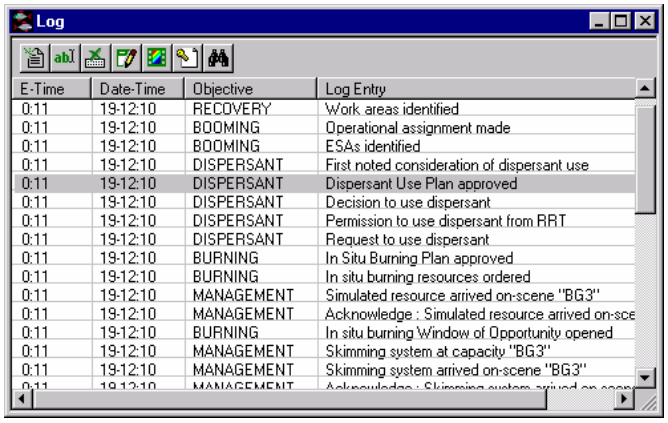
- Scenario playback.
- Data collection … automated and instructor/observer entered.
- Performance measurement.
- Information displays.
- Report/slide generation.
- Other details are provided elsewhere in this document.

Data recording & storage features (e.g., Scenario events; student performance):

- Automatic exercise data recording. Can save entire set of model data for a specific moment in time.
- Capability to automatically generate performance measures. But, the specific measures are not likely relevant to counter-terrorism.
- Instructor/controller/facilitator can enter observations/comments during exercise (up to 50 log entries, approximately).
- An example of a form/window for collecting instructor/controller/facilitator/observer observations is presented below.



- An example of a data log display window is presented below.



Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- See above item.
- Tailored feedback displays are available for use during the AAR. These are, however, tailored for use during oil spill incidents. Modifications (e.g., inserting performance measures appropriate to the incident) would be necessary to use these capabilities in support of WMD incidents.

Training/exercise fidelity:

Environment (including situation/scenario):

- Reasonably good fidelity is estimated (TJH).

Hardware:

- Reasonably good fidelity is estimated for external resources (TJH, based on discussions with Coast Guard). Note, these pertain to oil spill response resources. PISCES2 resource fidelity is not known.

Information (including interaction with other persons):

- Reasonably good fidelity is estimated (TJH, based on discussions with Coast Guard). Note, information pertains to information generated during oil spill incident.

Version 3: October 8, 2003

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Post-Incident Review For Emergency Command Training (PIRFECT™)
reviewed as the **Incident Command Simulator**

Developer: FAAC Incorporated

Contact information:
James W. Naatz
FAAC Inc.
1229 Oak Valley Drive
Ann Arbor, MI 48108
Tel. (800) 506-9365
James.naatz@faac.com

Technical Support Contact Information:
Richard D. Snyder
FAAC Inc.
1229 Oak Valley Drive
Ann Arbor, MI 48108
Tel. (734) 761-5836
rdsnyder@faac.com

Website: www.faac.com

COTS/GOTS: COTS

Product status (version in use): The Incident Command Simulator is a Prototype. The production version will be referred to as PIRFECT™.

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- Played/Used product
- X Attended Briefing
- X Reviewed CD-Rom or other software
- Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- X CD-Rom
- Related Papers
- Material from Internet
- Other: please state

B. Summary Product Description:

1. What is the focus/specialty of the product?

The Incident Command Simulator is designed to augment classroom training and actual experiences by enabling the training of proper decision making to potentially dangerous conditions. The simulator provides situational awareness training, resource management training, and judgment training. The training scenarios contained in the prototype version focus on aircraft and structural fires. The design of the simulator can support the development of a wide variety of scenarios, including hostage situations, and weapons of mass destruction.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	0	Static configuration: fixed path, only one right way to use the product How?
1	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	2	Automated summary of data
1	Non-specific	1	SME controls AAR
2	Equipment (Part Task trainers, e.g. snozzle)		Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Instructor Operator Station (IOS) (Hardware included)
Windows XP based PC
Allows the instructor to control the operation of the simulator

- *Selects training scenarios*
- *Allows for role playing within the scenario including control of assets*
- *Replays portions of the session to highlight good or bad decision making*
- *Perform record keeping of individual training sessions and system utilization*

Student Training Stations (STS)

- *QNX real-time PC for simulation (QNX OS included with system)*
- *Windows XP based PC image generator for each channel of 3D graphics (normal configuration has one channel of graphics for each student) (Image generator comprised of COTS PC, Windows XP embedded, nVidia based gamers graphics card, hard drive, memory, etc.)*
- *Provides a simulated radio enabling the student to command assets in the scenario (Radio is an integrated part of the IC simulator)*
- *Controls the out-the-window visual scene and sounds in relation to the student's actions*
- *Interfaces in real time with the instructor operator station.*

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand-alone product. Although the software can be purchased separately, the typical configuration includes all specified hardware and software described in section 3a.

c) Large multi-station system, or based on individual PCs?

The IOS requires a single computer; each QNX real-time simulation PC supports 4 students and each student needs one additional PC used an image generator/scene display.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Simulation models are data file driven allowing customers to customize the behavior of items like fire and agent effectiveness. Simulation behavior is deterministic - the customer has the capability to create scenarios using FAAC's scenario authoring tool called Scenario ToolBox™.

e) Web-based application, LAN, or a single computer/system-based application?

LAN based application supporting multiple students at a single site. Application also supports a combination of LAN and web-based players. Entities in the scenario can be flagged as remote controlled. Remote controlled entities are controlled by real human

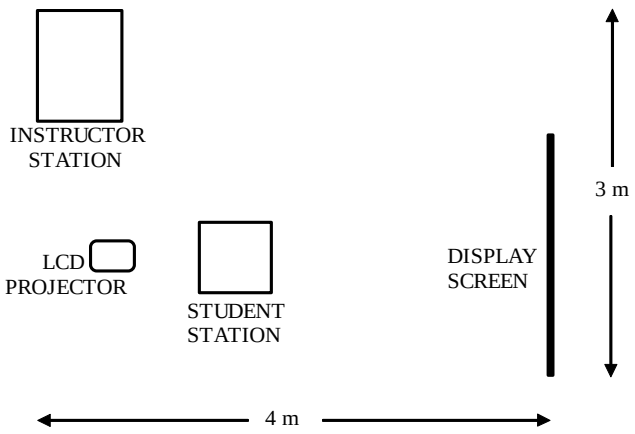
participants and are currently limited to driving vehicles and controlling vehicle based fire-fighting apparatus like Snozzles and roof or bumper turrets. Control over people in the scenario is planned but not currently supported. Communication over the internet is conducted using UDP data grams with a ack/nak protocol.

f) Describe any debriefing after-action reporting support tools:

Student database parsing utility supports Crystal Reports functionality. The incident command IOS does not currently support the capture and saving of time-stamped events.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

A typical system configuration with an instructor and student requires a 4 x 3 meter area.



4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows XP (IOS and student displays)
QNX 4.25 (real-time simulation computer)

b) Processor speed (in MHz):

2.4 GHz or greater Pentium 4 (for each system)

c) Memory (SDR/DDR):

512MB DDR ram (for each system)

d) Free disk space:

1GB free space (for each system)

e) Internet connection speed (if any): Not applicable
f) Display adapter:

nVidia GeForce 3 or greater display adapter (IOS and student displays)

g) CD-ROM speed:

h) Optional accessory requirements[5]: Panasonic PT-L720U LCD projector, or equivalent LCD projector capable of 1024x768 output.

5. Describe the user interface characteristics:

Students are presented with a computer-generated slewable scene on a large screen display or monitor. Students command available assets over a simulated radio in response to situations presented as part of the training scenario. The student station includes a joystick used for the following purposes, 1) change the student's view of the incident (student can either be allowed to rotate the view from his current location or "magic carpet mode" allowing him to change his location and rotate the view) 2) the student can also control fire-fighting equipment if the scenario places him in a vehicle with a Snozzle, or water cannon/turret.

Instructors role-play with students over the radio and perform drag-drop actions on the IOS. The drag-drop actions performed by the instructor implement the commands students have given assets over the radio. The instructor can also command assets as he sees fit to facilitate training goals.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Minimum one student and one instructor.
Maximum configuration is a function of the student and instructor ratio and scenario. Normally one instructor is able to facilitate 5 students.

b) Number persons usually trained simultaneously?

One

c) Custom/proprietary hardware required? If so, identify:

None

7. Describe any user HELP features:

Owner's manual provided with simulator includes simulator description, operating procedures, maintenance, and troubleshooting. Online help for the IOS is planned.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

At the end of each training session, the IOS provides the instructor an opportunity to enter (type in) narrative commentary regarding his/her evaluation of the student's qualitative performance. At least 500 ASCII characters per student per training session can be stored.

IOS does not record time-stamped events, but this feature is planned product upgrade.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

On-site installation of simulation system in customer facility. 2-Day on-site user orientation. Phone support during normal business hours.

2. Attributes

	Application Environment:		**Content**
1	Training	0	Knowledge
1	Exercise	1	Applied
0	Operational	2	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
0	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
2	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	2	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training see snozzle example
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	2	TTX
1	Fire	1	FE
2	Government Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
2	Public Safety Communication		**Incident Stage Supported**
2	Public Works	0	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	0	Recovery

1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Scenarios exist for aircraft on runways, taxiways and at airport gates. Scenarios also exist for a structural fire incident in a light industrial area of a city.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Not applicable.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Scripted scenarios designed to reproduce in real-time the required decision-making processes experienced in actual emergency response incidents.

d) Exercise/scenario length/time (typical):

Exercise length can vary widely with depending on training objectives. Typical length ranges from fifteen to thirty minutes.

e) Potential equipment and/or facilities product can address:

The product was designed to address many training needs. The primary training need the simulation was designed for was proper incident command decision-making and asset utilization in potentially hazardous situations. With the inclusion of additional networked simulators, the system can also be used in a distance-learning environment. Ground vehicle simulators can be networked in to allow students to train proper vehicle positioning, driver safety, apparatus positioning, and agent/foam application, for example..

The incident command simulation can address scenarios in an outdoor or indoor setting. Scenarios exist for aircraft on runways, taxiways and at airport gates. Scenarios also exist for a structural fire incident in a light industrial area of a city. Other potential scenarios include inside an airport terminal or a convention center.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The current prototype system addresses ICS training, which has application to counter-terrorism T&E. However, the product would require development of WMD threat scenarios based on subject matter expertise in order to be applicable to WMD.

g) Are there any constraints on supported exercises or scenarios?

The simulation is suited to training proper incident command asset utilization. Although the system supports other types of training, including part task trainers, these additional simulators would need to be purchased or built to meet the specific training needs identified.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Demonstrated interagency incident command and part task training in a classroom environment. Conducted live exercise for Michigan State Police: Emergency Management Division involving multiple networked participants over the Internet, and local agency response teams.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

Scripted scenario, with audio-visual cues.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

A trained instructor coordinates the situational awareness, resource management and judgment training objectives.

d) Does a curriculum already exist? If so, briefly describe its form and content

A suite of interactive training scenarios exists for aircraft related incidents including engine fires, brake fires, galley fires, lavatory fires, and spill fires at the gate. Scenarios are in development for a range of WMD incident types, including radiological and biological agents. The IC Simulator is not currently part of an ongoing training program.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Our learning management system supports trainee login, scenario selection, performance monitoring, evaluation, and assessment. Currently, the instructor must input narrative text on the student's performance.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Using freeze/replay training modes, the instructor can freeze the exercise and select from three types of replay function: entire exercise, critical decision point events and instructor determined jump back feature.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario Toolbox™ - authoring software allows users to create geo-specific scenarios supporting exercise customization, reconstruction, and after-action debriefing. The Scenario Toolbox™ is sold a separate product purchase that has been specifically designed to create scenarios for FAAC's simulators.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Real-time performance monitoring and scoring capabilities. See 4e.

6. Customization

a) Can the product be customized? If so, how, and by whom?

The IC Simulator can be customized using an authoring application sold separately. The Scenario Toolbox™ authoring tool allows users full customization over user generated scenarios and those obtained from other incident response agencies.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Using drag-and-drop functionality Scenario Toolbox™ enables users to create complex scenarios "within a few minutes", according to FAAC.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

Customer has full modification and development capabilities.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

The Incident Command Simulator imports the necessary scenario data files, produced by Scenario Toolbox™. These scenarios are then uploaded in real-time to other participants.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The system supports trainee login, scenario selection, performance monitoring, evaluation, and assessment. Currently, the instructor must input narrative text on the students performance. FAAC is currently working with SME's to identify and record relevant scenario-based events automatically .

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned	0	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
0	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
0	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
0	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
2	Equipment	0	Standalone
		1	LAN
	Environment	0	WAN
1	Generic	0	Internet
2	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
- High
- **X** Medium
- Low
- N/A

Ease of Use
- Easy
- **X** Relatively Easy
- Difficult
- Requires trained support staff

Current Applicability to ODP
- **X** Very
- Somewhat
- Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
0 Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
1 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
2 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

1 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

0 Distributed, collaborative, decision-making environment
0 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

E. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)

2) Does the cost apply to: (choose one)
   Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$50,000	$50,000	$50,000	$250,000
Module Purchase				
Product License (unspecified)				

Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

PowerSTRIPES

Developer: *AcuSoft, Inc.*

Contact information:

Bruce Leistikow
Project Manager
brucel@acusoft.com
407-658-9888 x 103
13501 Ingenuity Drive, Suite 200
Orlando, FL 32828

And additional Contact information: None.

Website: http://www.acusoft.com/products/powerstripes/

Product status (version in use): 2.5

Date of Evaluation: October 29, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- Played/Used product
- X Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- CD-Rom
- Related Papers
- Material from Internet
- X Other: user's manual & presentation (ppt)

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Provides 3D visualization of simulation exercises & Automated After Action Reviews. Tool for observing, recording, reviewing and analyzing simulated military exercises. Note: this is an AAR tool with no training & exercise content per se. It captures information from a simulation (not part of the tool).

- Current Target audience:

  Military exercise controller, evaluators, trainers, and AAR Analysts.

- Potential equipment and/or facilities product can address:

  Enables an observer to integrate a 2D map view display and 3D stealth view of an exercise with the exercise database that is recorded during execution of the exercise. Following the exercise, PowerSTRIPES enables the user to replay simulated events as they occurred, to include synchronization of the 2D map and 3D stealth views executed during the exercise. PowerSTRIPES also provides the ability to generate AAR briefings comprised of map views, predefined database reports, task organization views of the exercise forces, movement/snail trails, animated playbacks, and boiler plate presentation slides.

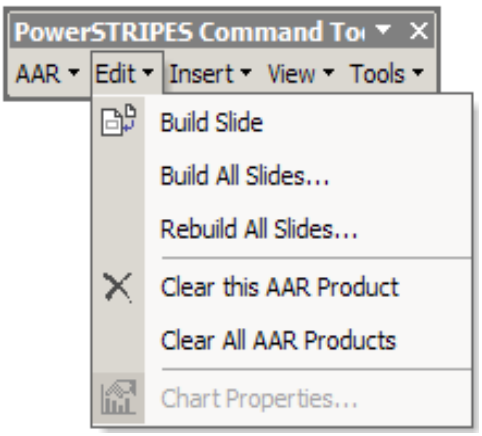
- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  This product is a flexible AAR tool that collects information on simulation training and exercises. It allows users to collect exercise data (e.g., casualty statistics) real time and quickly populate templates (that can be customized and also modified real time) for AAR presentation.

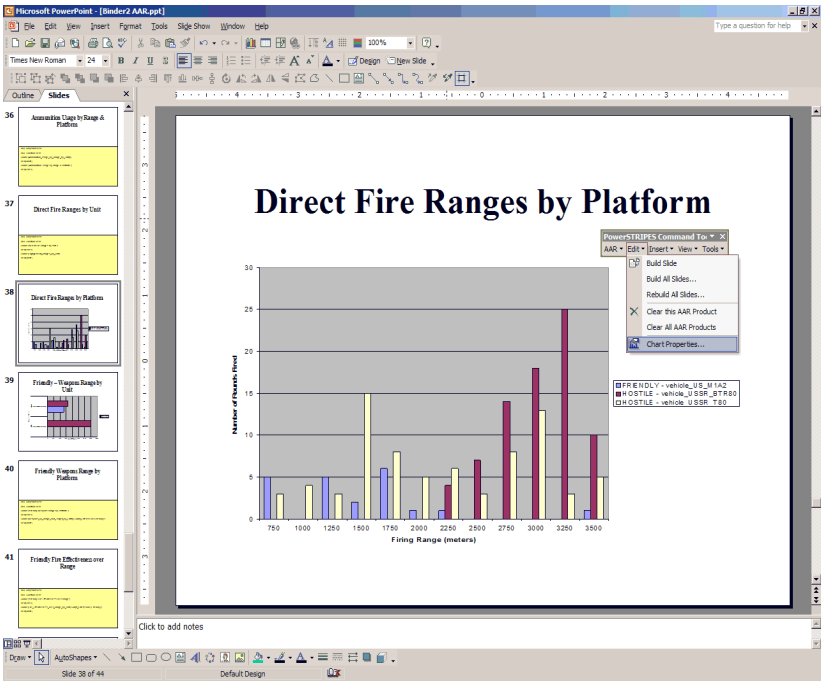
C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

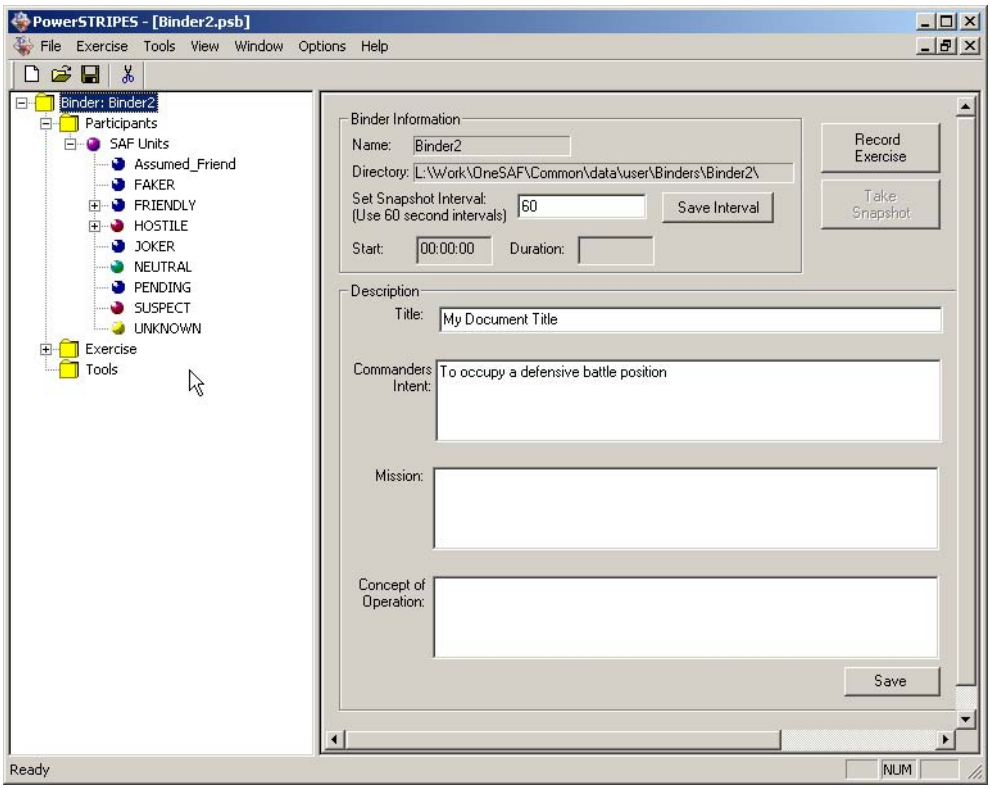
   - AAR Wizard – Transforms the Template into the PowerPoint® AAR Presentation using data collected from the exercise.



- Map view displays for monitoring and reviewing OTB simulated exercises.
- Simulation database in Microsoft Access®, summarizing all simulated platform level interactions and changes in state.
- Integrated with Microsoft Office® to include Excel® worksheets, charts, data queries, and PowerPoint® Presentations all built utilizing the Simulation Database.
- Automatically build PowerPoint® Slides with products based data retrieved from the execution of an exercise. (Products include PVD, Maps, Charts, Graphs, Timelines, Excel Worksheets, Data Queries, etc.)



- View AAR output during exercise execution, after the exercise, and as a standalone Take-home Package in PowerPoint® format.
- Manipulate the Products using standard Microsoft Office® capabilities.
- PowerSTRIPES™ uses a binder (implemented as a folder) to store PowerPoint®

- 

  - Slides, Log Data, Excel Charts, etc. from an exercise.
  - Template Files – Preplanned Information for the AAR.

b) Large multi-station system, or based on individual PCs (if applicable)?

Can be used in either a multi-station PCs or individual PC configurations.
.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Requires external software (simulation model) to function.

d) If simulation models are used, what is the basis of the data and/or distributions used? Any ModSAF or OneSAF Testbed simulation models.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Requires use of a LAN.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other)*: Windows 2000 or Windows XP running on an Intel Pentium II/III/IV platform, Microsoft Office 2000

b) Processor speed (in MHz): 333 MHz suggested.

c) Memory (SDR/DDR): 256 MB Ram suggested.

d) Free disk space: 1 GB suggested.

e) Internet connection speed (if any): Minimum 10 MBit ethernet

f) Display adapter: GeForce 4 only if using integrated AcuScene for AAR replay

g) CD-ROM speed: N/A

h) Optional accessory requirements: N/A

3. Describe the user interface characteristics:

Designed to operate in the Microsoft Windows & manipulation is done via Microsoft Office. Two views: Exercise View – Playback from selected time or event & Participant View – Playback from events associated with the select Unit, Vehicle, or Soldier. User "records" simulation data from a menu and stops when desired. User sets up time intervals of data recording that can be modified. Data is stored in an access database and automatically converted into graphical form that is automatically populated into PowerPoint charts.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

If this question is addressing the system nodes supported, then PowerSTRIPES ™ has no maximum. If this question is addressing whether PowerSTRIPES ™ acts in a client/server fashion, then the max is 1. In both cases, the min is 1.

b) Custom/proprietary hardware required? If so, identify:

None.

5. Describe any user HELP features:

Context sensitive help is available to the user as well as a User's Manual and the Data Interest Collection Expression (DICE) syntax manual.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

See C) a above.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Normally, a introductory training class is provided in conjunction with an MSDE & OTB training class. Together these training classes consume an entire week. However, of that week, PowerSTRIPES ™ only consumes between ½ day. An alternative, expert class has been

conducted that requires a 3 day period for in-depth examination of the various 'programmable' features of PowerSTRIPES ™.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

None.

b) Exercise/scenario length/time (typical):

Depends on the simulation. It can support data recording theoretically of any length (vendor mentioned longest exercise recorded has been up to a week).

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable (provided an external simulation is used).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Vendor says "N/A".

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

N/A (because it's not a stand alone training/exercise tool)

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Immediate AAR.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
N/A (because it's not a stand alone training/exercise tool).

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Real time data recording & automated information displays.

6. Customization

c) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Yes. As it pertains to data collection vendors[35] can modify templates (e.g., unit size information graphically presented can be modified from platoon to individual units, etc).

d) What is the process and how much time does it take to setup an exercise/scenario to run?

This applies to data recording (not the scenario itself since the product does not contain a simulation or model) from a few minutes to an hour.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Mentioned throughout the evaluation. This is a real-time analysis tool.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
X	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
	Group	1	Automated summary of data
	Small multi-user team (up to 25 persons)	1	SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR

[35] Next version (projected for release on FY06) will have a wizard for template changes. Currently users who understand (or are trained in code manipulation can modify templates themselves. All codes are exposed and can be modified relatively quickly).

	Multi- Agency Participation[36]		
		3	**HLA Compliance** (does product support HLA?) [37]
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment		WAN
1	Generic		Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
	Operational		Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear		Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	1	Drills
2	EMA		TTX
2	Fire		FE
2	Govt. Administrator	2	FSE

[36] This tool can collect data from any multi-agency participants in a supported simulation. However, it was given a rating of "2" in the sense that it only collects data from one simulation at a time.

[37] Currently, PowerSTRIPES only supports DIS.

2	Health Care	1	FSE Reinforcement
2	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
2	Private Sector		
	Learning Supported:		
	Initial Acquisition		
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
1 Medium
Low
N/A

Ease of Use
Easy
1 Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP
1 Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1 Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

Decision-making
2 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
Enhanced Communication T&E/does it practice/train/exercise communications?

Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? **A**
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: **C**
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: **C**
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

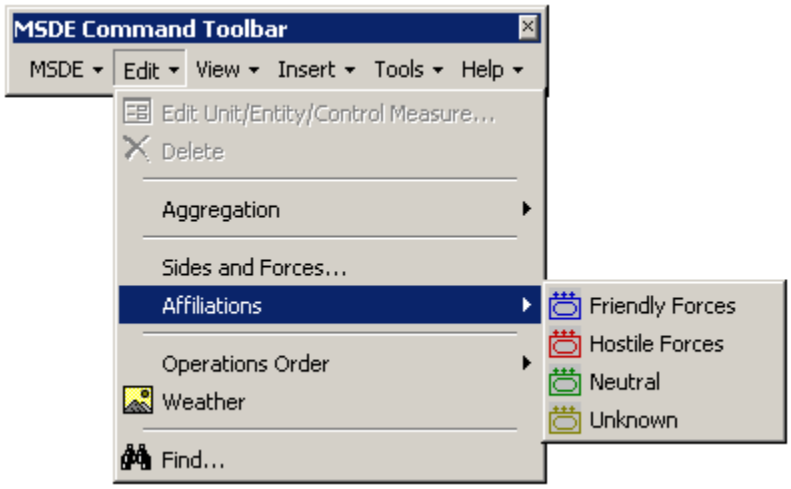
	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)	$15K*	$0*	*	*
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				

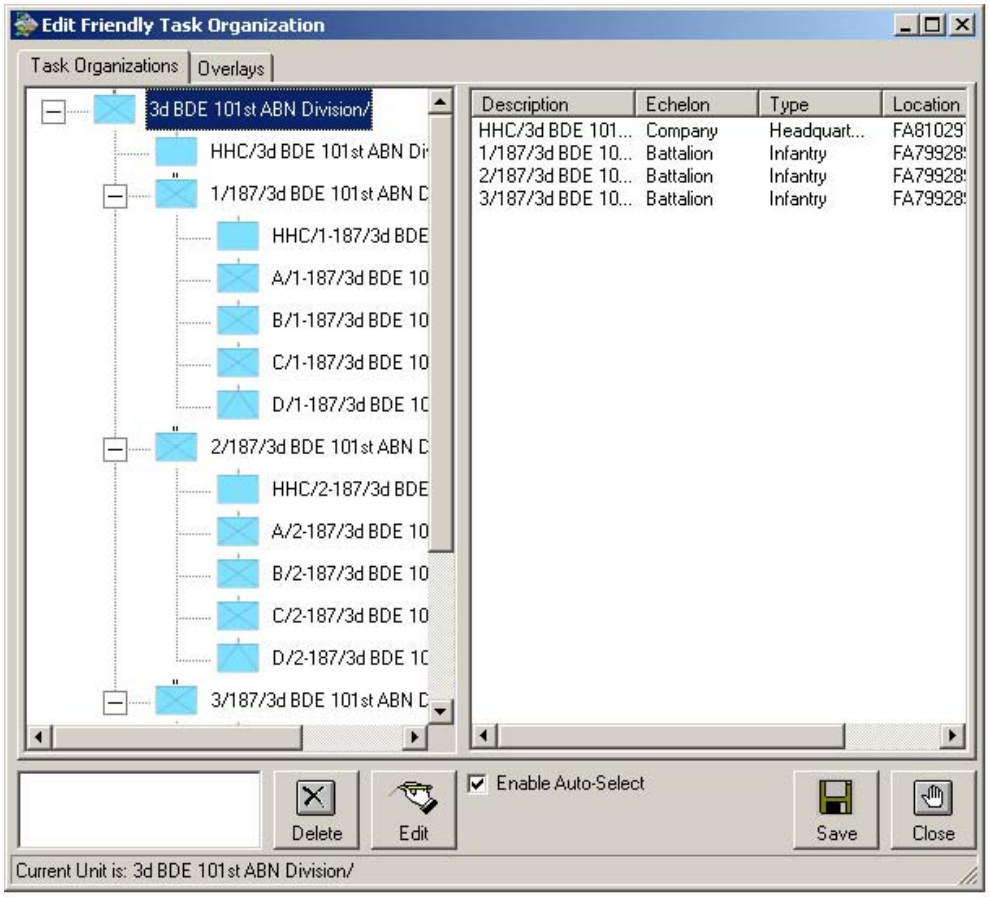
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance	$85/hr average	$85/hr average	½ day	3 days
Daily Rate and/or Travel	Gov. Per Diem	Gov. Per Diem	Gov. Per Diem	Gov. Per Diem
Instructor Fee				
Trainee Fee				

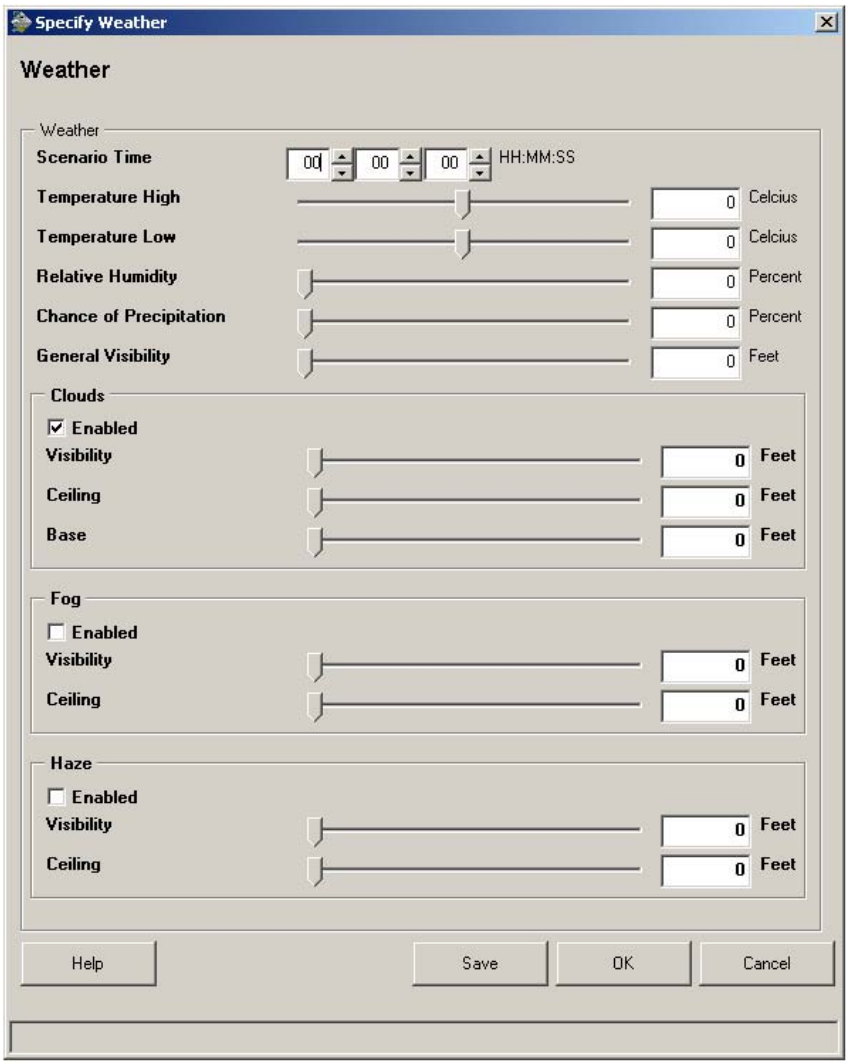
* PowerSTRIPES is typically available at no-cost through the PM-OneSAF OTB 2.0 Distribution Agreement. Traditionally, the main customer of PowerSTRIPES has been various U.S. DOD government agencies, and the software normally requires modifications to be integrated with each of these government agencies' chosen software. In these latter cases, the catalog price for a PowerSTRIPES license is $15K, but AcuSoft normally waives the license fee in consideration of the service portion of the contract to improve the product based on the new user requirements.

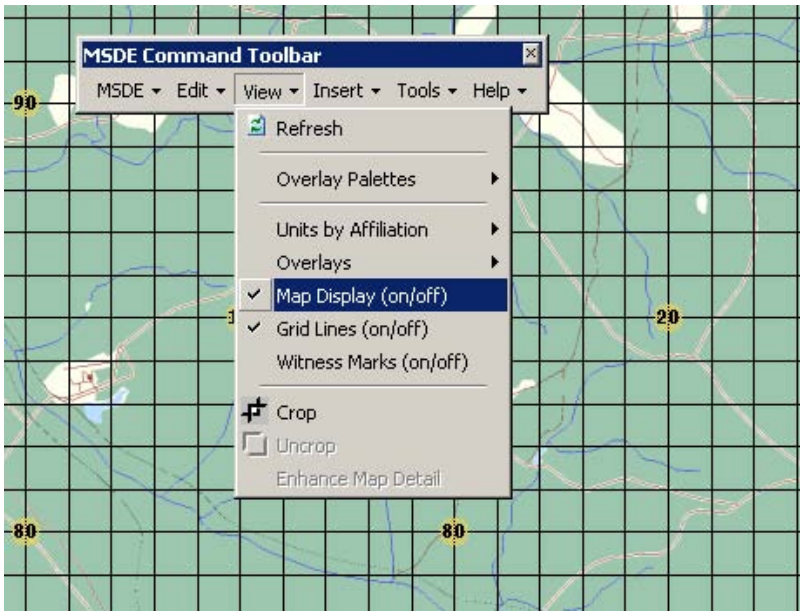
APPENDIX

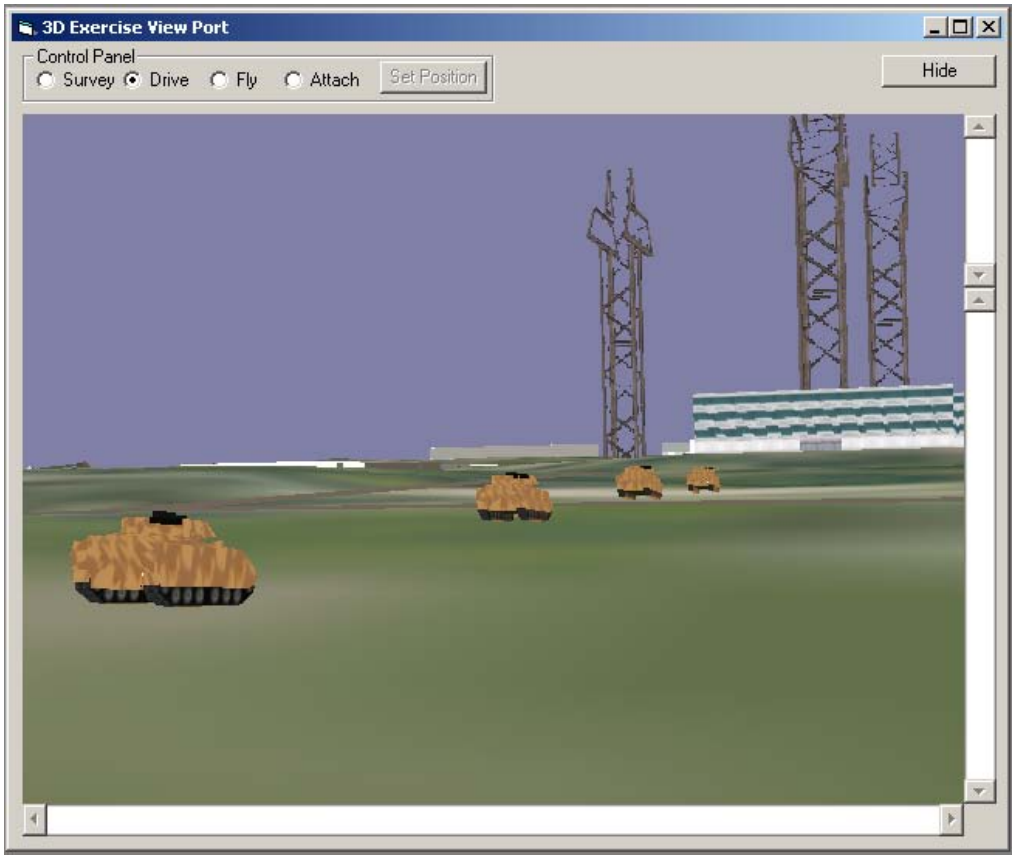
Vendor demonstrated another of its tools, the Military Scenario Development Environment (MMSDE), that can be used to design and develop simulation exercises. It is designed to allow scenario development in a laptop or PC and later transfer the data into the simulation. Like PowerSTRIPES it uses Microsoft Office Products. Some of its capabilities are illustrated by the screen shots below:

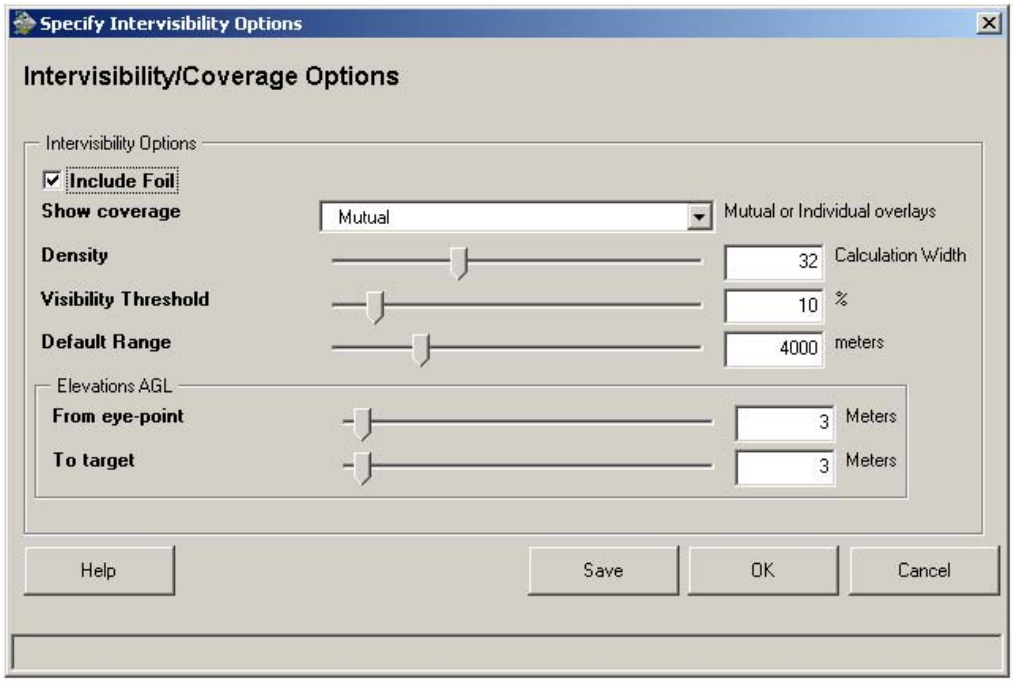


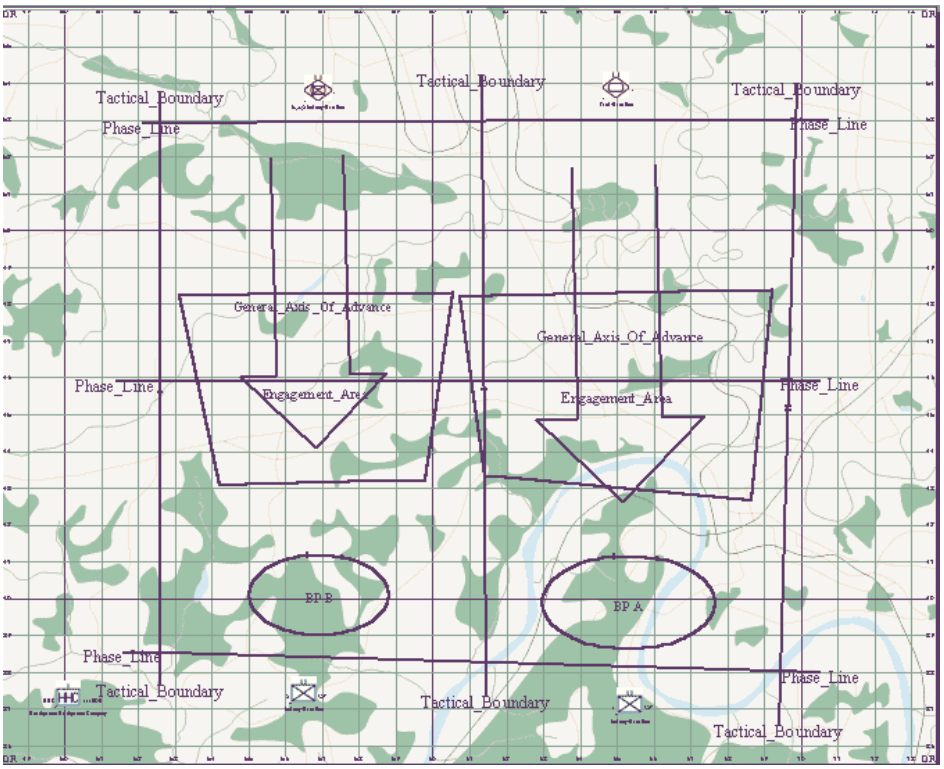

Edit Friendly Task Organization
Task Organizations
Overlays
3d BDE 101st ABN Division/
HHC/3d BDE 101st ABN Di
1/187/3d BDE 101st ABN D
HHC/1-187/3d BDE
A/1-187/3d BDE 10
B/1-187/3d BDE 10
C/1-187/3d BDE 10
D/1-187/3d BDE 10
2/187/3d BDE 101st ABN D
HHC/2-187/3d BDE
A/2-187/3d BDE 10
B/2-187/3d BDE 10
C/2-187/3d BDE 10
D/2-187/3d BDE 10
3/187/3d BDE 101st ABN D
Description
Echelon
Type
Location
HHC/3d BDE 101...
Company
Headquart...
FA81029
1/187/3d BDE 10...
Battalion
Infantry
FA79928
2/187/3d BDE 10...
Battalion
Infantry
FA79928
3/187/3d BDE 10...
Battalion
Infantry
FA79928
Delete
Edit
Enable Auto-Select
Save
Close
Current Unit is: 3d BDE 101st ABN Division/


Specify Weather
Weather
Weather
Scenario Time
00
00
00
HH:MM:SS
Temperature High
0
Celcius
Temperature Low
0
Celcius
Relative Humidity
0
Percent
Chance of Precipitation
0
Percent
General Visibility
0
Feet
Clouds
Enabled
Visibility
0
Feet
Ceiling
0
Feet
Base
0
Feet
Fog
Enabled
Visibility
0
Feet
Ceiling
0
Feet
Haze
Enabled
Visibility
0
Feet
Ceiling
0
Feet
Help
Save
OK
Cancel


MSDE Command Toolbar
MSDE
Edit
View
Insert
Tools
Help
Refresh
Overlay Palettes
Units by Affiliation
Overlays
Map Display (on/off)
Grid Lines (on/off)
Witness Marks (on/off)
Crop
Uncrop
Enhance Map Detail
90
20
80
80


3D Exercise View Port
Control Panel
Survey
Drive
Fly
Attach
Set Position
Hide


Specify Intervisibility Options
Intervisibility/Coverage Options
Intervisibility Options
Include Foil
Show coverage
Mutual
Mutual or Individual overlays
Density
32
Calculation Width
Visibility Threshold
10
%
Default Range
4000
meters
Elevations AGL
From eye-point
3
Meters
To target
3
Meters
Help
Save
OK
Cancel


Tactical_Boundary
Tactical_Boundary
Tactical_Boundary
Phase_Line
Phase_Line
General_Axis_Of_Advance
General_Axis_Of_Advance
Phase_Line
Engagement_Area
Engagement_Area
Phase_Line
BP B
BP A
Phase_Line
Phase_Line
Tactical_Boundary
Tactical_Boundary
Tactical_Boundary

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Red font: Information categories added to product review form.

Information Source:

Review form filled-in by Los Alamos National Laboratory.
Reviewed, edited, modified by TLI team.
QUIC was not observed.

A. Basic Product Information

Name of Product:

QUIC (Quick Urban & Industrial Complex) Dispersion Modeling System

Developer: Los Alamos National Laboratory (LANL)

Contact information: Michael Brown
Group D-4
Mail Stop F604
Los Alamos National Laboratory
Los Alamos, NM 87545

505-667-1788

Technical Support Contact Information: Same as above.

Website: http://www.lanl.gov/source/orgs/d/d4/atmosphere/chbio.html

COTS/GOTS: GOTS
QUIC development was funded by the Department of Energy.

Product status (version in use): Version 2.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Incident response planning, assessment and operational decision making aid.

  QUIC is an urban fast-response transport and dispersion modeling system (i.e., plume model) that computes the three-dimensional wind patterns and dispersion of airborne contaminants around clusters of buildings. The system is composed of the following:

  - Graphical user interface (QUIC-GUI);
  - Wind model (QUIC-URB);
  - Dispersion model (QUIC-PLUME).

  The system runs quickly (generally in real-time) on a laptop computer. This type of model can support real-time applications, such as analysis, classroom instructor's aid, and training/exercising scenarios.

  QUIC is intended for use in planning, assessment, and emergency response scenarios. Examples include developing scenarios for table top exercises, planning strategies for coping with emergencies at special events, and developing vulnerability analyses and mitigation strategies for specific sites. QUIC is also used in the QUIC Sensor Siting tool, a tool to help determine the optimal placement of CB agent sensors in cities.

- Current Target audience:

  Planners and decision makers.

- The QUIC system is in a state of continual development at this time.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

Version 3: October 15, 2003

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
2*	COTS	2	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	3	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		
2	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
3	Equipment	2	Does not provide feedback or AAR
		0	HLA Compliance (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* LANL is currently developing policies for potential commercial licensing of their technologies. Currently, LANL products are made available to the public and government as if they are GOTS (no/nominal cost), with the stipulation that they cannot be commercialized or distributed to others.

3. Technical Attributes

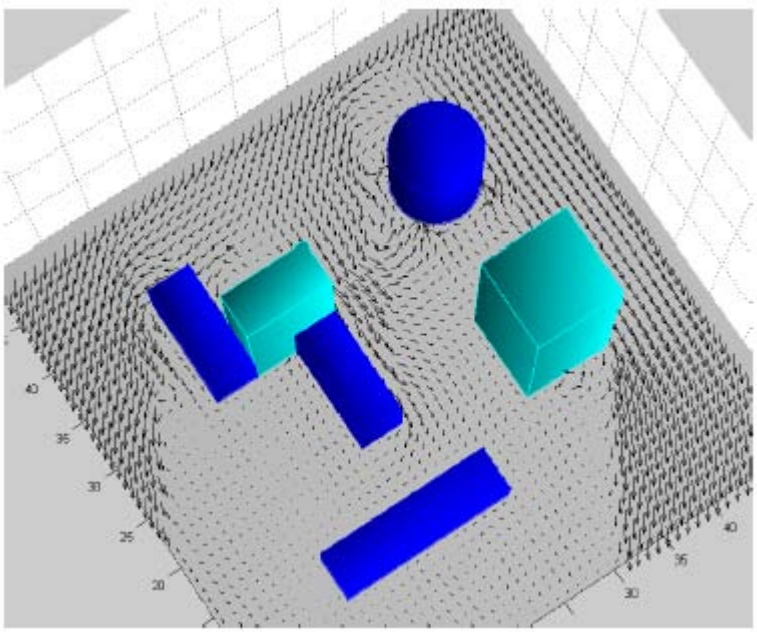
a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

- Single user modeling system, consisting of wind and plume models for urban environments (explicitly accounts for buildings). It is a fast-time model that can support real-time exercises and other training strategies, as well as planning and analysis functions. QUIC performs a fast-time calculation of the dispersion of particles for a particular point in time, as a function of the environment (e.g., weather, landscape, source concentration, source location). As currently configured, QUIC calculates plume data for a single point in time; the system could be modified to calculate plume data for a time series (i.e., in support of a real-time training/exercising scenario).

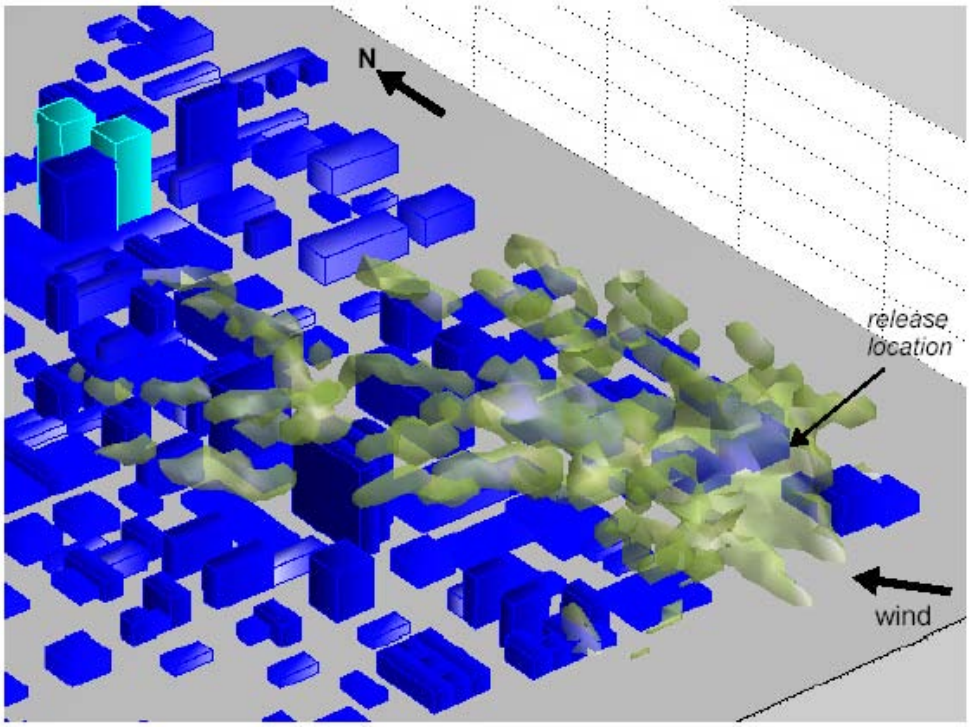
Note, for very complex situations the model may require up to 10 minutes to run. This very high level of resolution, however, would not be expected to be necessary to support training or exercising.

- QUIC outputs include:
  - Project file containing all initial/setup parameters, and all generated quantities (e.g., windfield, plume dimensions, dosages, lethal concentration thresholds).
  - 2-dimensional output information, for presentation on plots and plan views (i.e., birds-eye view of a chemical plume overlaying an urban area).
  - 3-dimensional presentation of wind fields/vectors, plume envelopes and concentrations (e.g., multi-color semi-transparent plume surface). The 3-D image enables movement through, and rotation of, the scene/eye-point in 3 dimensions (including buildings).

- Input/setup parameters include:
  - Terrain data base. Note, they typically develop the urban terrain data bases (e.g., hand-draw buildings, to assure accuracy and sufficient detail), although some are available commercially. Hand-drawing may take from a few minutes for a small city area (e.g., 20 buildings in a 10 x 10 block area) to several hours for a large city area (e.g., 200 buildings in downtown Salt Lake City). LANL plans to automate this process in the future, probably working with ArcView.
  - Weather conditions (e.g., wind speed, wind direction) are manually entered by the operator.



A QUIC-URB computer simulation of the air flow around a group of buildings. Note the channeling, reverse flow, and pockets of calm air that develop downwind of the buildings.



QUIC-PLUME simulation of CB agent transport and dispersion in downtown Salt Lake City. The agent cloud is quickly lofted into the air due to the presence of tall buildings. The inflow wind is from the southeast.

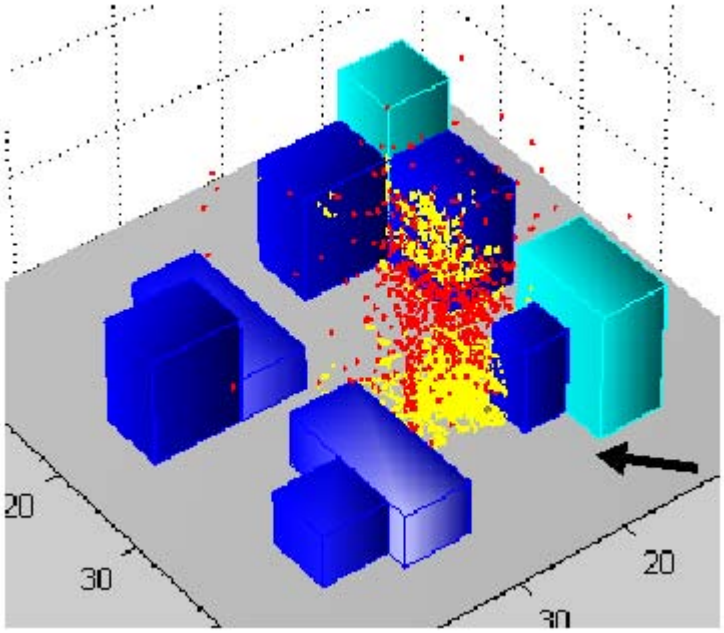


Illustration of QUIC-computed bio agent dispersion (red particles - airborne) and deposition on the ground and walls (yellow particles).

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- The models (i.e., wind and dispersions models) are stand-alone products.
- The GUI requires MATLAB software to function (commercial software with which the GUI was developed).

c) Large multi-station system, or based on individual PCs?

Individual PC.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Physics and empirically based models yield wind and concentration fields.

e) Web-based application, LAN, or a single computer/system-based application?

Single computer.

f) Describe any debriefing after-action reporting support tools:

Has purpose-built GUI visualization tools to look at data in 2D and 3D:
- 2-dimensional output information, for presentation on plots and plan views (i.e., birds-eye view of a chemical plume overlaying an urban area).
- 3-dimensional presentation of wind fields/vectors, plume envelopes and concentrations (e.g., multi-color semi-transparent plume surface). The 3-D image enables movement through, and rotation of, the scene/eye-point in 3 dimensions (including buildings).
- The viewer can manipulate the image in various ways (e.g., can view plume cross sections by slicing the plume in the x-y plane, or the x-z plane, or the y-z plane using slider buttons).

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

No.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System (Windows XP, 2000, etc.; MAC OS; UNIX; other):

Windows XP and 2000. QUIC has been tested under these operating systems.

b) Processor speed (in MHz):

700 MHz or better.

c) Memory (SDR/DDR):

256 MB or better

d) Free disk space:

500 MB (for large-scale problems)

e) Internet connection speed (if any):

QUIC does not currently function over the Internet. To do so would require modification (e.g., development of a Web interface).

f) Display adapter:

No special requirements.

g) CD-ROM speed:

QUIC is not intended to be run from a CD ROM; rather, the software would be loaded into memory before running.

h) Optional accessory requirements[5]:

None.

5. Describe the user interface characteristics:

o. The user interface is generally point-and-click (e.g., selection of the chemical agent from a pull-down menu), with typed data entry (e.g., amount of agent released, such as 1 gram or 15 grams). The user interface facilitates the set up of problem parameters (drawing the city or building complex; entering meteorology quantities; CB agent type), and visualizing the results (graphical plume dispersion, wind fields, etc.). See C.3.f for additional information on the GUI.

A graphical user interface has been developed for setting up the problem, running the codes, and visualizing the results.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

As currently employed, QUIC is used by one person, the QUIC operator. It could, however be used to support training and/or exercising of a group or team of persons.

b) Number persons usually trained simultaneously?

Not usually used for training.
Several people can look at the screen.

c) Custom/proprietary hardware required? If so, identify:

No.

7. Describe any user HELP features:

- QUIC Quick Start Guide. This document addresses how to setup the model code, how to run the system, and how to access and manipulate the generated data, using the GUI.

- QUIC Theory Manuals. This document addresses the model theory, such as explaining each of the setup codes, and addressing the QUIC models (i.e., QUIC-URB and QUIC-PLUME).

8. Data recording & storage features (e.g., Scenario events; student performance):

- Stores project files containing relevant information from simulation, for example:

  - Input parameters (setup files), such as:
    Building locations;
    Building dimensions;
    Wind speed and direction;
    Chemical agent type, concentration and location.
  - Files produced by the QUIC models, such as output parameters relating to windfield vectors, and agent geographical concentrations.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

LANL does not currently provide training for use of QUIC.

2. Attributes

	Application Environment:		**Content**
2	Training	1	Knowledge
2	Exercise	1	Applied
1	Operational	0	Hands-on … equipment
1	Analysis		

3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
1	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
2	Intermediate	2	Awareness
1	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
2	Radiological		**Training Type Supported**
3	Nuclear	3	Equipment Training
3	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
2	Health Care	2	FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	2	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
0	Initial Acquisition	2	Recovery
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

It has not been used for training to date, and does not currently have playbooks or scenarios built in.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Has a built-in library of CB agent properties.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

QUIC could be used in support of classroom training (e.g., to assist in explaining certain principles and issues, such as demonstrating conditions under which a chemical plume may stay alongside a building for an extended period of time);

QUIC could be used as a dispersion model supporting real-time exercises, of various types. For example:

- It could be used in table top exercises to give real-time feedback. E.g., how long does a CB agent remain in the street, what happens if the wind shifts, etc.
- It could be used to provide the simulated chemical plume during a real-time functional exercise.

QUIC could also be used for planning and assessment exercises. E.g., how much agent would it take to impact a particular building, what is the efficacy of different remediation strategies, if an attack occurs, how much agent will deposit to surfaces). In this manner it could be used to assist prevention and preparedness training and/or exercising.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

QUIC has not been used to support training to date. A knowledgeable user could build scenarios and have scripts, and provide real-time feedback on plume dispersion.

e) Exercise/scenario length/time(typical):

Typical system runs are for one hour or less, with 5 minute updates.

Typical model running times are seconds for many situations, and up to about 10 minutes for very complex high-resolution situations.

f) Potential equipment and/or facilities product can address:

Could be used at military bases, in downtown areas of cities, etc.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The GUI would likely require adaptation for particular training and exercising applications.

Other modifications may be necessary, depending on the application (e.g., development of a time-series scripting capability).

h) Are there any constraints on supported exercises or scenarios?

Yes. Example current constraints are:
- Approximately flat terrain.
- Prediction of future plume states would require a weather prediction model to provide input data for QUIC.
- Does not adequately address trees and forests, which will affect dispersion flow; only buildings are addressed at this time.
- Supports point and line contaminant agent sources; does not support moving line source (e.g., truck or airplane spraying).
- Supports a limited range of contaminant agents at this time.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Case study, real-time feedback, self-paced, real-time exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

Yes.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Currently, will provide output on plume dispersion based on input given by end user. Scripts could be added to provide more input information, to guide the end user and deliver lessons.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

N/A.

e) Does a curriculum already exist? If so, briefly describe its form and content

No.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

None. Not currently used for training.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Graphical information on plume dispersion (2D and 3D). See C.3.f above.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Currently no instructor tools, except for the fast response modeling system itself.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Real-time feedback on plume dispersion given user input (meteorological conditions, source characteristics, building layout).

6. Customization

a) Can the product be customized? If so, how, and by whom?

Yes. By LANL.

b) What is the process and how much time does it take to develop a new exercise/scenario?

Depends on complexity of situation, such as the number of buildings to be modeled. The time span can be minutes to hours. Note, this assumes the ready availability of the needed information (e.g., building dimensions, wind data).

c) What is the process and how much time does it take to modify an exercise/scenario?

Through the GUI, a project can be changed in a few minutes (e.g., 2-10 minutes, typically).

d) What is the process and how much time does it take to setup an exercise/scenario to run?

A few minutes (2-10 minutes, typically).

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

2D and 3D graphical representation of plume dispersion (concentration, dosage, and Lethal Concentration Threshold fields) and other related data. See C.3.f above.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium	**1**	Somewhat
	Low		Limited
1	N/A		
	Ease of Use		
	Easy		

	Relatively Easy		
	Difficult		
1	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
2	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
0	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Part-task training
2	Pre-training
3	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)

a) Yes (*proceed to Q2*)
b) **No,** Vendor must quote a system based on user requirements (*end here*)

No. LANL products are generally available for free, similar to GOTS. Restrictions, however, prevent their commercialization (e.g., distribution to others).

LANL is in the process of developing new licensing policies, which may address commercialization of their products.

If specific LANL support is required, a price must be quoted with regard to the specific user requirements.

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

   See G.1 above.

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

   Standardized and vendor customized.

4. What are the prices (in $USD) according to type: (fill in all applicable)

   As stated above (G.1) LANL products are generally available for free, similar to GOTS. Restrictions, however, prevent their commercialization (e.g., distribution to others). LANL is in the process of developing new licensing policies, which may address commercialization of their products. Hence, prices can only be provided to meet specific user requirements.

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				

Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Rainbow Six Review

Rainbow Six is a computer action game based on a Tom Clancy Novel and designed for entertainment purposes. It can be purchased commercially from software retailers such as Best Busy, Circuit City, Amazon.com, etc. The Rainbow Six game places you in tactical command of a team of counter-terrorist operatives, much like a military combat unit or a SWAT team. The operatives attack a structure, shooting terrorists along the way to reach a variety of objectives. There are 16 missions, each has objectives that are explained in a briefing, which is presented in both text and audio formats to the user. After listening to the briefing and completing a planning stage, the action finally begins. The user is part of the attack and sweeps through a structure shooting terrorists along the way. The challenge is to kill the terrorists without being killed yourself and to learn how to do things such as open doors, disable bombs and security systems, and use all the commands available in the game.

Basic Product Information

Name of Product:

Rainbow Six (Tom Clancy's**)**

Product is hardware, software, or both?

- *Software:*

Off-the-shelf PC's (workstations)
MS Windows 95, 98, ME, XP, 2000

Rainbow Six is a computer game designed to be used with a PC platform. It is loaded from a CD-ROM that installs the game on the PC.

- *Reference Materials:*

- The Gold Pack Edition includes both an instructional booklet and a strategy guide
- The game is based on a Tom Clancy novel, Rainbow Six

Large multi-user system, small multi-user product, or individual-user product?

- Rainbow Six can be used both as an individual-user product and a small multi-user product
    - Rainbow Six played as an individual-user product requires a stand-alone computer station. The game is played in the classic video game manner: player vs. computer
    - Rainbow Six played as a small multi-user product requires a connected (Internet, LAN, MPlayer) computer. The game can be played in the classic video game manner: players vs. computer, or player vs. player.
        - A player in a remote location can challenge other players in remote locations and then play in real time.
        - Real-time voice feature, so you can verbally communicate with opponents and teammates
        - There are regular tournaments on MPlayer
        - If you want to host your own game you must know the IP address of the remote server that you wish to play on.

There are two basic modes of multiplayer for Rainbow Six: cooperative and adversarial.

Cooperative:

- Up to eight people can join together to play any single player mission in multiplayer mode
- A user selects the character and equipment they want from the roster
- There are three ways to play in this mode:
    - No back up: All human players
    - Partner: Can be used with four or less human players; each player is assigned a computer Controlled partner to back him up
    - Full Team: Computer players are assigned to fill any open slots after all human players have logged in brining the team to its full strength of eight players

Adversarial:

- These are team-on-team training exercises
- You cannot take the side of the terrorists
- There are five ways to play in this mode:
    - Stronghold: One team defends a base, the other attacks
    - Double Stronghold: Both sides must defend their base and capture the enemy base
    - Survival: The last man standing wins
    - Team survival: The first team to eliminate the other side completely wins
    - Double Bluff: Each side begins with one hostage. The object is to capture the other team's hostage and extricate him to your base while precluding the enemy from doing the same to yours. If any team member kills a hostage the team loses.

Focus/specialty of product:

- The primary focus of this game is tactical
- Possible use as an awareness training
    - Players plan the attack, distribute resources (personnel, materiel, and weapons), create redundancies, and try to get the teams to work together
    - There are bio-hazards that can kill your player if he does not have PPE

- Possible use as a communications/coordination training tool when used in multi-player mode
- The utility of this game as a training tool is limited. The players use an entirely different set of skills to move through the game than they would while responding to an actual incident. Therefore there is no experiential relationship between being a Special Forces operative or on the SWAT team and using the game. In other words, there is little in common between an operative's movements and using the keyboard and mouse to control your player and shoot weapons.

Incident response operational tool/system:
Domestic, military, other users?

- Rainbow Six cannot be used operationally. It is a fictional computer game.

Incident response training/exercise tool/system:
Domestic, military, other users?

- Rainbow Six has little utility as a training tool for a WMD incident; the gaming environment is similar to a SWAT-team mission.
- Rainbow Six involves a small-scale military or law enforcement response to an act of aggression.
- It does not involve a large scale response requiring the inclusion of fire, medical, and local authorities.
- It cannot be used during an exercise.

Other operational tool/system (Identify):
Typical users (e.g., Military, consumer)?

- None

Other training/exercise tool/system (Identify):
Typical users (e.g., Military, consumer)?

- There is some utility in using Rainbow Six to train first responders in that there is a significant planning component to the game. The planning involves allocation of manpower and equipment as well as deployment.
- This product could be used as on-demand or scheduled training for individuals or groups.

Functional-area identification of product (Broad range, or specific; see Julia's Product table):

- Specific range: Special Ops team trying to take out terrorist operations, rescue hostages, and diffuse weapons.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

Rainbow Six was developed and is sold by Red Storm Entertainment, a wholly owned subsidiary of Ubi Soft Entertainment, a multinational corporation.

Red Storm Entertainment
3200 Gateway Ctr. Blvd.
Suite 100
Morrisville, NC 27560
Phone: (919) 460-1776
Fax: (919) 468-3305
Mon-Fri 8:30am to 5:30pm EST

Contact info ref. technical questions (Person, title, organization, telephone, email):

- Technical support for the US can be reached at http://support.ubi.com/
- There are links to that site at www.redstorm.com too
- There are phone numbers for international technical support
- Technical support line: 919-460-9778

Contact info ref. buying the product (Person, title, organization, telephone, email):

- Rainbow Six can be purchased at computer software retail stores such as Best Buy, Microcenter, and Circuit City. However, when I called the stores near my home none of them had a copy of the game.
- Rainbow Six turns out to be readily available on line. It can be purchased from amazon.com, redstorm.com, retrosoftware.com, etc.

  For U.S. sales & distribution contact: (415) 547-4000

COTS/GOTS (circle one). COTS

Is product directly applicable to counter-terrorism training/exercises, or are modifications required? If modifications are required, briefly describe them.

Rainbow Six is not directly applicable to counter-terrorism training. The game would need significant content modifications in order to be used as counter-terrorism training for first responders. Some modifications could include:

- Changing players from special forces operatives to first responders; police, fire, HazMat, EMT, local authorities
- There could be an incident commander
- Teams could be comprised functionally, i.e. a team of two EMTs
- Missions could begin with a 911 call, involve a WMD agent
- There could be more victims or even hostages to deal with

- The number of terrorist would be lower

Product status (Production version in use; prototype in use; under development)?

- Rainbow Six has three versions; Rainbow Six, Rainbow Six: Rogue Spear, and Rainbow Six: Raven Shield (date of release March 18, 2003)
- You can also order extra missions of Rainbow Six on the Rainbow Six: Eagle Watch CD-ROM
- I purchased the Gold Pack edition containing Rainbow Six and Rainbow Six: Eagle Watch. Rainbow Six has 16 missions and five training missions. Eagle watch provides an additional five missions and two new training missions.
- I also downloaded the demo version of the single player Raven Shield game.

Raven Shield is described on the Red Storm website as follows:

- User friendly mission planning: We've simplified the planning in a way that anyone would be able to plan out there missions, and have fun doing it.
- Simple "Heads-Up Display" displays all in-game information: The HUD has been completely revamped.
- "Quick Order Interface" button, quick ordering system to issue real time orders to your team: By pressing spacebar you will be able to give order to your team in real time.
- Prone character postures: The prone has been added, in order to be less of a target, but of course your mobility is lessened as well.
- Intelligent teammate, enemy, and hostage AI: The AI, which is the main part of the game, has been improved for the Rainbow team, Terrorists and hostages. Now you really feel like you are part of the Elite team that is Rainbow. But the terrorists as well have a whole new attitude, so you will have to be extra careful.
- Fluid Peek & Crouch feature allowing the player to position his body in almost any position: While holding the CTRL button and moving your mouse, you will be able to peek in the tiniest cracks and holes to keep an eye on your target and neutralize him.
- Realistic death animations generated by Karma's physic system making every death animation unique: No death animations are used in the game. All of them are controlled by Karma.
- Arsenal of 57 real world weapons including pistols, sub machineguns, assault rifles, shotguns, sniper rifles, and light machineguns.
- First and third person representations of all weapons.
- Weapon attachments including 3.5x mini-scopes, thermal scope (sniper only), sound suppressor, and high capacity magazines. Terrorists have access to grenades.
- Other useful equipment such as thermal sensors, CS "Tear Gas" grenades, smoke grenades, and 3-D heart beat sensors.

If in use, identify users, types of use:

- Currently Rainbow Six is used by computer gamers exclusively for entertainment purposes
- The following is an excerpt from a review by Alastair Harper at www.intelligamer.com:

Many *Rainbow Six* players found multiplayer a lot of fun, and *Eagle Watch* expands on that substantially. To begin with you can use all of the new single player maps in multiplayer. Imagine gun fights on the floor of the Senate or in the House of Commons! You can also play any of the single player missions with others, which is nice.

Perhaps more significantly, there are also several new multiplayer modes that add variety to the game play. These include scatter where your team members start out scattered at random on the map, assassination where the first team to kill the other sides "leader" wins, save the base where you must disarm a bomb in the other teams base before they do it in yours, and terrorist hunt where the winning team is the first to kill half of the AI controlled bad guys on the map. You can also play these in combinations by adding scatter to assassin or terrorist hunt. All of this is pretty nice, I thought the new modes all worked well and added welcome variation

Combat damage is realistically modeled, unlike most first person action games. Should you be hit in the leg it will slow you down, but taking a shot to the chest will likely result in your laying flat on your back, incapacitated. Though you're unlikely to get up for that level, you may be rescued and healed to fight another day. Even so, a shot to the head and it's sayonara baby, as you flop to the ground without knowing what hit you. When you die you are transported to another man in your team to continue the fight.

If you find the missions too daunting at first, there is also a set of training levels where you can practice room clearing, shooting accuracy, disarming bombs, hostage rescue, etc. The training for shooting consists of an array of target whereas in room clearing you can select how many rooms and floors you wish to include and then face off against your fellow commandos.

Above all, however, the emphasis of this game is on tactical work and realism with the tension coming through these rather than splashy graphics or fast paced action

“It is first person shooter, yes, but one with the emphasis on tactical strategy and teamwork.”

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

- Individual CBT
- Web-based collaborative game (multiplayer)
- Team training tool

Rainbow Six places you in tactical command of a team of counter-terrorist operatives, much like a military combat unit or a SWAT team. Each of the 16 missions on Rainbow Six and Eagle Watch is dived into four steps: 1) Briefing and Intel, 2) Selection of team and equipment, 3) Planning of attack, 4) Execution of attack (playing the game)

- Briefing and Intel

Each mission objective is explained in a briefing, which is presented in both text and audio formats. For example, you may have to eliminate terrorists, rescue hostages, and disable security systems and bombs, or a combination of these objectives. The geographic location and physical structure that you are going to attack is given, for example, an oil drilling platform in the North Sea.

Intel regarding how each subsequent mission follows from the last is offered in text form. These facts are of no utility to playing the game, and are purely for entertainment.

- Selection of team and equipment

The player can select the members of his team from an international roster of counter-terrorism characters. The player can assign the characters to different colored squads (blue, red, green, and gold). The player can have as little as one squad with one character, or as many as eight total characters on four squads. No squad can have more than four characters.

The player selects a uniform, main weapon, sidearm, and accessories for each character, depending on the type of mission. For example, for a night-time assault in jungle, each team member would wear a camouflage uniform, carry an assault rifle and a pistol both equipped with a silencer, and could carry a heartbeat sensor (to locate terrorists or hostages) or grenades as accessories. An assault on a hanger with possible biological weapons would require HazMat suits for all team members.

- Planning of attack

Next the player plans the operation by reviewing blueprints of the structure to be assaulted, assess all known intelligence about terrorist strength, armament, and locations, as well as hostage locations (where known), and develops a scheme of maneuver for your team.

- The wrong personnel and equipment will make it difficult or impossible to complete the assigned mission.
- You can dress your men in a selection of outfits and choose which camouflage, weapons and other equipment you want to bring along
- Next you can divide your men into teams, electing a team leader.
- Finally you see a map of the level and you may chose which route each team will take
- You can put in waypoints and stop points where all the teams stop until you give the go command

- Execution of attack (playing the game)

After the plan is complete, the player attempts to execute the mission. During the action phase the player controls the actions of the team leader. All other operatives will follow the plan precisely. If the leader is killed, the player will immediately assume control of the second in command, and so forth. You can switch teams during the mission as well. The mission continues until either all of the objectives are accomplished or the team has been killed or incapacitated. If you fail to complete a mission, or manually quit before the objectives are accomplished, you automatically return to the planning phase to attempt it again. Each group of mission objectives must be accomplished before you can continue to the next assignment.

Intended for operations, training/exercises, or both?

Rainbow Six was created for entertainment use, not operational, training or exercise use. It is designed to appeal to gamers.

From the Rainbow Six booklet:

The game is developed in honor of the men and women who work in counter-terrorism units. As WMD become increasingly available to smaller groups of determined individuals, political instability increases. Consequently the reality of this gaming environment is not as far removed from our own as some might hope

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

N/A

Intended for individual, group or team use[1]?

- Can be used in all of the following capacities:
  - Individual
  - Team-interactive
  - Groups in a computer lab

If multiple users, identify the range of persons it can simultaneously support (min-max)?

- One person can play in multiplayer mode on the Internet
- The server can support 16 players right now. With the release of Rainbow Six: Raven Shield this number is expected to go up to 32

Number persons usually trained simultaneously?

- Since this game is not currently used for training purposes this is a hard question to answer. However, gaming reviews indicate that multi-player functions are very popular. And many people are using the game simultaneously in the internet

Large multi-station system, or based on individual PC's?

- Individual PCs are all that is required

Custom/proprietary hardware required?

- None

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:
  - Stand alone computer terminals
  - Networked PC's can be used up to 16 on the LAN
  - Large screen display would be nice but not necessary
  - For the latest version of Rainbow Six (Raven Shield) a faster processor is needed as it can crash the computer easily, even at the minimum recommended by Red Storm

- Advanced graphics cards are also helpful

- Software:
  - Proprietary Rainbow Six game (COTS)

- Simulation:
  - Basic embedded simulation capabilities (e.g., routing of players by waypoints)

If simulation models are used, identify their qualitative validity level (if possible):
N/A

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

- This is a stand alone product
- Internet access is essential for multi-player functions and team training

If other hardware and/or software required, or typically used, identify it/them.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- Home or office computer stations
- LAN if desired

Web-based application, LAN, or a single computer/system-based application?

Rainbow Six is flexible is can be used as:

- Networked PCs (LAN)
- Web-based
- Single computer terminal use

Can the training be administered over a wide area network or a local area network?

- Yes, it can do both. Games can be played with a LAN or on the interned (wide-area)

Is an instructor or facilitator needed?

No

If not, how is training conducted (e.g., Individual self-paced)?

- Individual self-paced, using manual, guide, and trial-and-error usage
- There is a training mode that allows you to practice before the missions. It looks like a real training environment with targets to shoot, etc
- In the demo of the latest version, Rainbow Six: Raven Shield, you can bring up a menu of the commands used to control players. In the gold pack edition this was on hardcopy only. So this is an improvement

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Describe unique user interface characteristics:

- Standard PC interface using Windows (keyboard, mouse, display)

Other important product characteristics:

Product Operating Requirements & Cost

Purchase or license product, both, or optional?

- Purchase

Initial acquisition cost (purchase; licensing fees):

- $50.00 for the latest version of Rainbow Six: Raven Shield (release date: March 18, 2003)
- $20.00 for older versions of Rainbow Six

Product itself:

Same as above

Other necessary support, software, equipment:

- None that I could find
-

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?

Number of staff required to setup, and operate product:

- Only one person is required to install the game on a PC

Staff training required to use product (identify briefly ... type, time):

- IT staff is not need for installation as the game self installs
- For multi-player on a LAN, an IT professional or advanced computer user will be needed to create the game.

Cost for staff training on product (Cost to purchase training):

- No training is required and no costs associated with it
- Training modes exist within the game itself
- Setting up a LAN is another issue, presumable there will be IT professionals at hand already. Or players can just play people they do not know online

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

- It is not necessary to install the game on more than one computer in any location, but this limits play to one person at a time
- More likely, it will be installed on many PCs which drives up the cost.
- There are no installation or operating costs per se

Expected costs?
Unsure

Product maintenance requirements/recommendations (identify briefly):
None that apply

Maintenance costs (Expected or required software, hardware maintenance):

None that apply

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

- Available on MS Windows 95, 98, ME, XP, 2000
- The latest version may be available for Macs and other systems, but the only additional one I have seen so far is for Nintendo 64.

Can product be customized? How? Cost?
- None available from the designers of the game
- There are patches available online which modify the game (see John Austin's review). I do not think they are significant. They are thinks like cheats or allowing you to see through a wall.

Product modifications required to support counter-terrorism training/exercises:
Modifications:

- Development of a more helpful performance measures tool. (The current tool lists kiss to shot ratio and how many men killed.
- Development of an actual AAR with discussion of strengths and weaknesses
- Changing players from special forces operatives to first responders; police, fire, HazMat, EMT
- There could be an incident commander
- Teams could be comprised functionally, i.e. a team of two EMTs
- Missions could begin with a 911 call, involve a WMD agent
- There could be more victims or even hostages to deal with
- The number of terrorist would be smaller
- The police may not want to go in guns blazing with so many innocent lives at stake

Range of potential costs:

Personal Computer Requirements *(if appropriate)*
(Most software will offer minimum and recommended configurations).

Minimum System Requirements (older versions of the game):

- Hard Drive, CD-ROM drive, keyboard, mouse
- Processor speed (in MHz): 166 MHz Pentium minimum, without hardware acceleration: 200 MHz Pentium MMX required
- Windows 95, 98, Me, XP

- 138 MB free disk space needed on hard drive
- RAM: 16 MB min; 32 MB preferred
- 2D video: 16-bit SVGA or better
- 3D Video: direct 3D compatible hardware acceleration recommended. 3DFX Voodoo and Voodoo II, NVIDIA RIVA, Matrox G200 and other direct 3D compatible hardware supported.
- Audio: SoundBlaster 16 compatible or better
- CD-ROM: Quad (4x) speed or faster
- Display: 640 x 480 x 16 or better
- Network Play: Properly configures TCP/IP connection at 28.8 kbps or faster

Minimum System Requirements for Raven Shield version:
(fww.raven-shield.com/demp.php)

- Computer: 600 MHz CPU
- Memory: 128 MB RAM
- OS: Windows 98/ME/2000/XP
- Video Card: 32 MB hard drive space
- Sound Card: DirectX 8.0 compatible sound card
- High speed internet connection

Recommended:

- Computer: 800 MHz
- Memory 256 MB RAM
- Video Card: 3D accelerated 64 MB or equivalent

Training/Exercise Characteristics

Product may support training, exercises, or both?

- Rainbow Six cannot be used as an exercise program, but may have some value as a training tool

Potential type of WMD event product can support:

Chemical – No
Biological – No
Radiological – No
Nuclear – No
Explosive – No

- Some Rainbow Six missions involve defusing explosive devises and other missions require the use of HazMat suits; however, there is no training analogy to be made, except for the basic idea of proceeding cautiously and properly equipping personnel.
- In a WMD incident for which OPD is preparing, the response would involve the entire emergency response community. Rainbow Six does not include even one of these disciplines.

Constraints on supported exercises or scenarios?
N/A

Potential disciplines product can support:

- Law enforcement

Provide additional sub-discipline description if possible.

- SWAT teams may find this interesting.

Potential types of learning product can support (S&K):

Initial/acquisition

- Rainbow Six could be used to introduce very basic topics, such as the proper allocation of scarce resources/manpower, properly equipping personnel, proper planning and communication. These are topics that have most likely been addressed numerous times during introductory professional development trainings.

Improvement

- Rainbow Six contains no training beyond the basics mentioned above.

Maintenance/refresher

- Rainbow Six could be used to reinforce the basics mentioned above.

Target audience:

- The concepts introduced in Rainbow Six would be new only to the most novice first responders.

Potential responder training level(s)/categories product can support:

Awareness – Yes
Performance [Operations] - No
Technician [Specialist] - No
Planning & Management [Incident Command] - No
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) - No

Potential equipment and/or facilities product can address:
No

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Rainbow Six could be used to introduce very basic topics, such as the proper allocation of scarce resources/manpower, properly equipping personnel, proper planning and communication.

Training content description (what trained), in addition to preceding item (Brief):

- None

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required):

- Any one with any exposure to video games can easily pick up the concepts of the game
- Basic proficiency with computers is all that is required

Potential training/exercise types product can support:

Classroom - No
Individual self-paced - Yes
Seminar/workshop - No
Drill - NO
Individual and small-team exercises - Yes
Simulation-supported -
Gaming - Yes
Collaborative - Yes
Tabletop - No
Functional - NO
FSE -No
Other-NO

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- Self-paced individual CBT
- Web-based collaborative (real time, too)
  - Students must choose multi-player modes and play in an online or LAN environment

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- The game missions can be played over and over again
- Learning occurs when missions are failed and need to be repeated, the user will learn not to make the same mistakes again in order to get past that particular mission
- Learning is self-paced and some may learn the tricks of the game faster than others

Exercise/scenario length/time (typical):

- You can run a mission in approximately 30 minutes.
- The more successful players will complete missions more quickly
- Players can spend hundreds of hours playing and replaying the game

Process and time to:

Develop new exercise/scenario: N/A

Modify an exercise/scenario:

- If you are unsuccessful at your mission, you can replay or re-plan and then replay the mission

Setup an exercise/scenario to run:

- Each mission requires about 10 minutes to plan prior to playing

Does a curriculum already exist?

- Rainbow Six does not have a curriculum and is for entertainment purposes

If so, briefly describe its form and content:

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario):

- The missions scenarios are pre-scripted
- Guidance is given before you play during the briefing and planning stages

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- After a mission is completed the game gives you statistics on how long it took you to complete the mission, how many terrorists you killed, and how many of your team was killed or injured.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- No AAR
- Text/graphic information displays with immediate feedback describe time; kill ratio, and health as listed above.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- Some Rainbow Six missions involve defusing explosive devises and other missions require the use of HazMat suits; however, there is no training analogy to be made, except for the basic idea of proceeding cautiously and properly equipping personnel.

HELP features (Briefly identify):

- No HELP features that I could find

Instructor/controller/evaluator tools:

Rainbow Six is not designed as a training or exercise tool and therefore does not contain any instructor, controller, or evaluator functions. The questions in this section do not apply to Rainbow Six

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

AAR support tools (May overlap with "Student/participant/team feedback features", above):

Data recording & storage features (e.g., Scenario events; student performance):

- Results of your performance on individual missions are stored under player names
- Online there is a ladder listing rankings of players (www.redstorm.com)

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- None

Training/exercise fidelity:

- Unfortunately, there is not much training fidelity in Rainbow Six. The game is not a realistic representation of a WMD incident.
- It does not seem to be a realistic representation of even an incident requiring the SWAT team
- This game could not augment the way SWAT teams are trained since the use of the computer is so different from the use of actual weaponry

Environment (including situation/scenario):

Hardware:

Information (including interaction with other persons):

---

[1] Group training occurs when all participants receive the same instruction, such as in a classroom or a computer-based training lab. Team training occurs when participants have unique roles, and the instruction provided reflects those distinct roles, such as real-time SWAT team exercises or a submarine combat system trainer. Team training would be interactive.

[2] Example hardware components: computer terminal, large screen display, equipment or mockups, white board, manuals. Example simulation components: gas plume model, emergency vehicle response model (time & route); equipment; communications; people & other responders. Example functional components: organizations, equipment, environment; scenarios/exercises; communications; development and run-time tools; performance measurement and diagnostic tools.

[3] Other necessary hardware/software may include, for example, simulation models, other people/stations, actual equipment, LAN, high-speed (broad-band) internet connection.

[4] If the software is graphics or resolution intensive the minimum graphics requirements may be critical. Most software will advise the consumer of this. Many computers have onboard graphics, which can be accessed in the BIOS menu. The renderings by these onboard adapters are limited. Further, the distinction must be made between generic graphics cards, and 3-d graphics accelerators, and how much dedicated memory is available on the card. Some models and Sims are rendered in high polygon 3-d environments which means that the maximum amount of polygons were used in constructing the environment giving it a higher resolution and a more realistic appearance. Also video, and streaming video components in software counts as high resolution graphics. If these are present in the software, display adapter capability is an important criterion.

[5] If the software has high resolution graphics it is important to know what other secondary drivers or programs are available to aid in the 3-d renderings. Direct X, or other Graphic User Interfaces (GUI) are integral for glide and mip-mapping capabilities. Failure to consider these in a high polygon 3-d environment can cause repeated desktop crashes even when the system meets the *recommended* requirements.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

RAMSAFE

Developer: RAMSAFE Technologies

Contact information:
3225 Shallowford Rd., Ste. 700
Marietta, GA 30062

866-477-8778
770-977-7233
770-579-5955 fax

Technical Support Contact Information:
Ron Sternberg

866-477-8778
770-977-7233
770-579-5955 fax

info@ramsafe.com.

Website: www.ramsafe.com .

COTS/GOTS: COTS (created with government partners…)

Product status (version in use):

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
X	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

X	Brochure/Prospectus
X	CD-Rom
	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

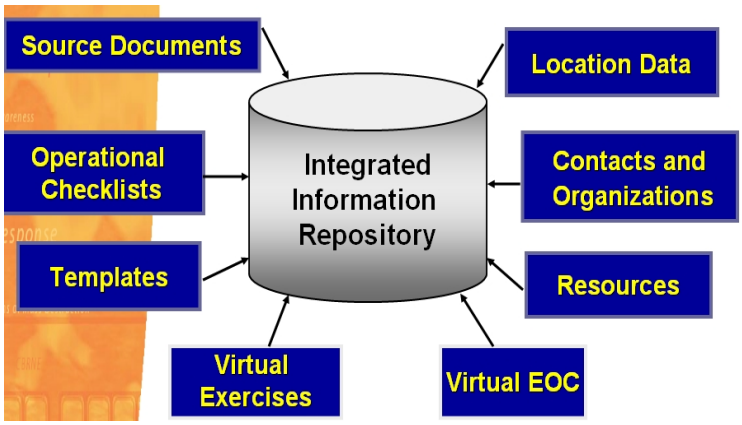
RAMSAFE is a real-time software database management tool that can be used at all phases of an incident: pre-incident planning and preparation, incident response, and recovery. RAMSAFE acts as a framework and repository of information which is populated by the customer. The product is used for decision making during planning, an incident, and an exercise. It was not designed for T&E specifically, however, it has been can be used for exercise.

RAMSAFE allows many agencies to communicate and coordinate via the internet making it a collaboration and data sharing tool. RAMSAFE manages resources during an operation by reporting on their usage and availability on a real-time basis. It allows users to exchange information and requests as well as provides on-demand reporting during an incident. Users can create one or multiple web portals and secure access to specific people. RAMSAFE provides live updates which can be accessed via the web portal. Users can use the portals to build mutual aid agreements, request resources and run queries.

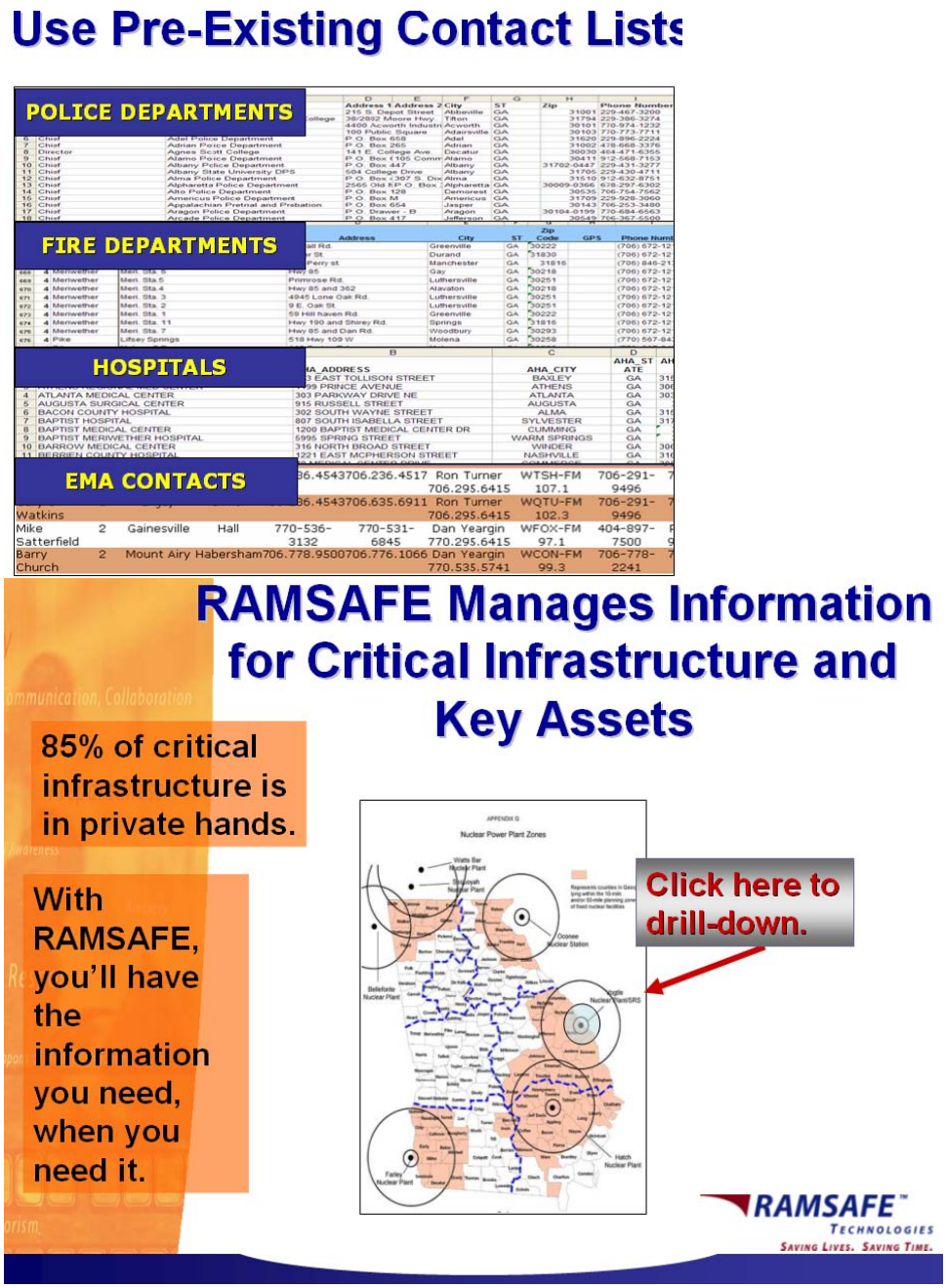
Emergency managers can populate RAMSAFE with critical location information such as maps, aerial, and satellite photographs, plume projections, and response planes. RAMSAFE can retrieve pictures of buildings and display them on a screen. It allows users to draw on the images as if they were on a whiteboard. RAMSAFE features iPIX 360 x 360 degree photos for virtual situational awareness when navigating floor plans, and maps. RAMSAFE allows users to organize documents, locations, resources, and tasks so that they can run scenarios to see what would happen under a certain set of circumstances. It is organized into an integrated set of five core modules that support decision making through all critical phases of emergency management and response -- planning, exercises, training, operations, and recovery. The software has been used in exercises to test and instruct for its interoperability feature.

The Utah Olympic Public Safety Command (UOPSC) used RAMSAFE to integrate state, local, and federal agency information for rapid briefings and deployment during the 2002 Salt Lake City Olympics. The U.S. Army Medical Command (MEDCOM) used RAMSAFE and the bioterrorism template in particular to predict the impact of a bioterrorism incident and to help create operational procedures, requirements, and tasks associated with response to a bioterrorism incident. "MEDCOM planned to simulate multiple bioterrorism events and the appropriate response at local, state and federal levels."[38]

[38] RAMSAFE Technologies Promotional Material "U.S. Army Medical Command (MEDCOM) Selects RAMSAFE for Bioterrorism Field Exercise; A Case Study"



Courtesy of RAMSAFE's promotional PowerPoint Presentation



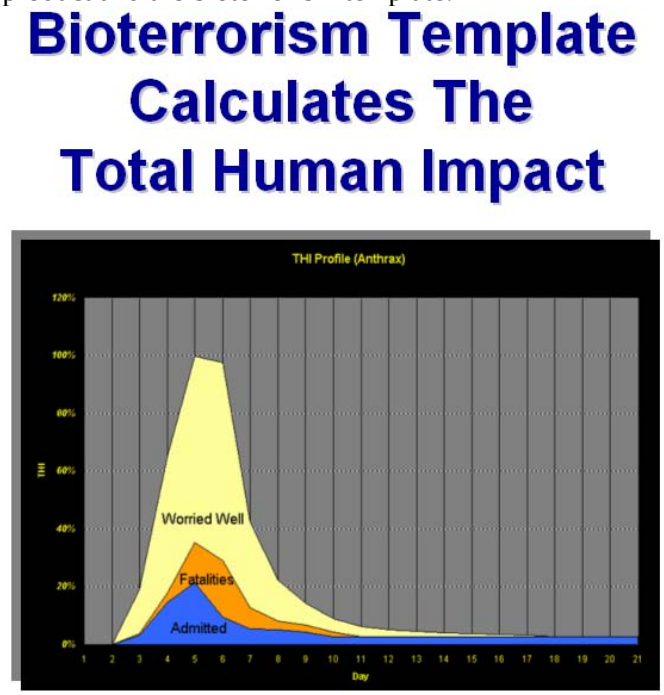
Both screenshots courtesy of RAMSAFE. The first screenshot shown RAMSAFE's ability to compile contact lists and the second screenshot shows that RAMSAFE displays information over a geographic map.

RAMSAFE includes automated bioterrorism response templates developed by the U.S. Army Soldier and Biological Chemical Command (SBCCOM) which predict casualties and response/resource requirements for an incident. Users can forecast events based on different sets of variables, such as: biological agent, number of infected individuals, available medical resources, and community population. There are detailed operational checklists that guide users through the different responses available in order to evaluate preparedness. Using the bioterrorism response template, RAMSAFE can predict the number of potential victims, worried

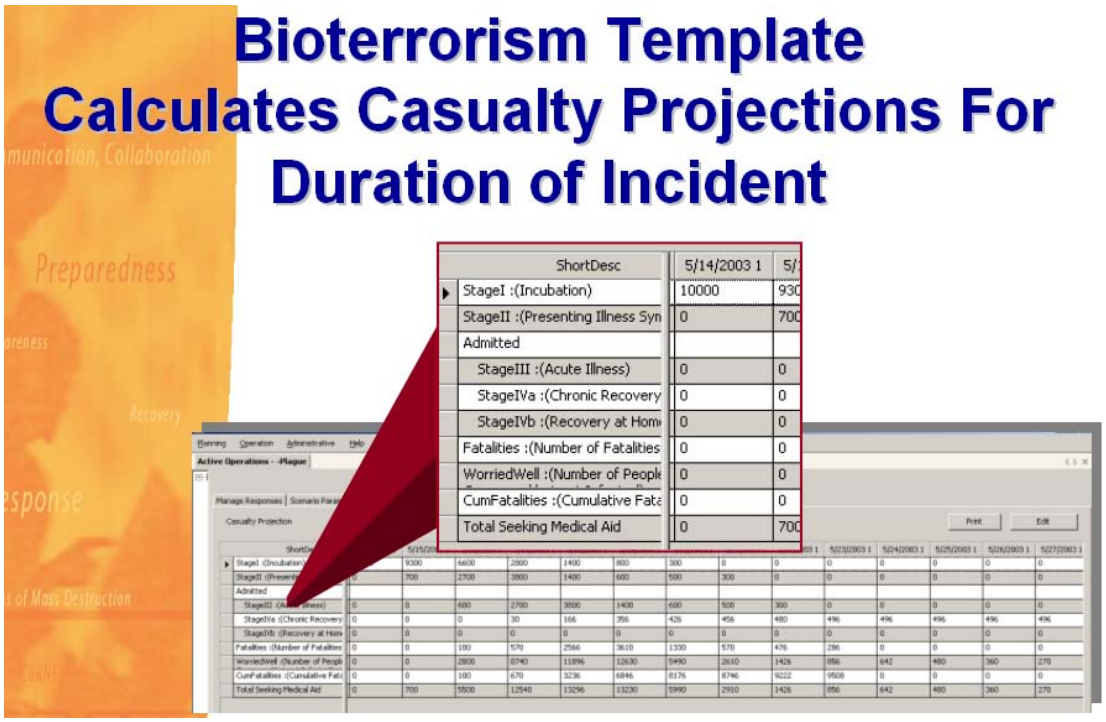
well, hospital admissions, and fatalities of a given biological attack or even influenza outbreak. Using these feature users can create "what-if" scenarios based on biological agents being released in their community. RAMSAFE's predictive models can be adjusted as the predictions unfold in the computer to mimic changes based on response or other conditions. This is closer to what might happen in a real world situation where the variables change over time and affect the number of victims.

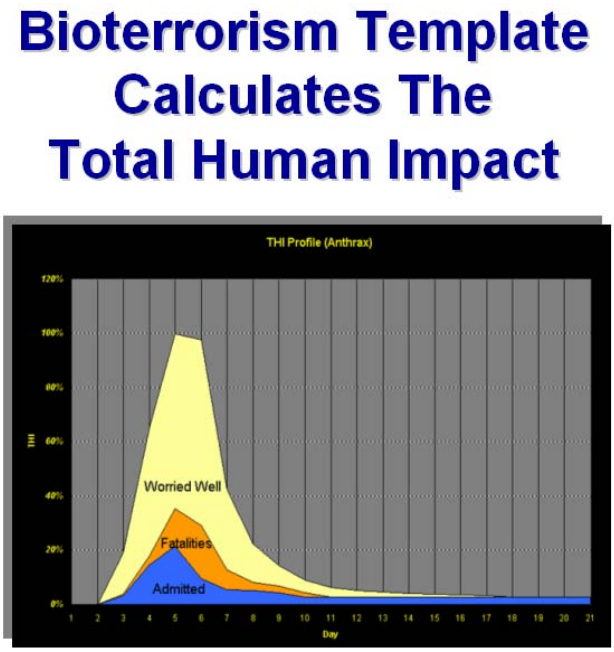
The bioterrorism response template (BWRT) was originally a decision tree in paper format developed by SBCCOM for communities to use to evaluate their preparedness for a bioterrorism incident. The paper version of the template can be accessed in The Interim Planning Guide: Improving Local and State Agency Response to Terrorist Incidents Involving Biological Weapons http://hld.sbccom.army.mil/downloads/bwirp/bwirp_interim_planning_guide.pdf. An automated version of the template is owned exclusively by RAMSAFE Technologies and is used as a component of their information management software designed for emergency managers.

The next two screen shots are from the RAMSAFE CD-ROM PowerPoint presentation describing their product and the bioterrorism template:



From RAMSAFE PowerPoint presentation





C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

0	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game

0	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	0	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
0	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Client-server interface installed on a server and distributed on a network. The web interface allows users to communicate with other

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

RAMSAFE can be networked or stand-alone.

c) Large multi-station system, or based on individual PCs?

Multi-station system

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?

Windows SQL Server: client-server interface, LAN and there is a web interface component so users can communicate with other agencies

f) Describe any debriefing after-action reporting support tools:

Reports can be created. Users need to be trained in their set up and execution.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Offices/EOC. Although it can be used on a laptop allowing for greater mobility

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other)*:
Dot net framework. Windows 2002 server family and Windows SQL and 2003 server family.

b) Processor speed (in MHz): Pentium III. 800Mhz or higher

c) Memory (SDR/DDR): 128 Mgb

d) Free disk space: 512 Mgb space on server for GIS mapping

e) Internet connection speed (if any): Internet explorer 6 or higher/Netscape 6.2 or higher. Uses acrobat, Itex media player. Connection varies with set up.

f) Display adapter: N/A

g) CD-ROM speed: N/A

h) Optional accessory requirements[5]: none

5. Describe the user interface characteristics:

RAMSAFE follows standard windows conventions.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Unlimited depending on the number of licenses you purchase

b) Number persons usually trained simultaneously?

RAMSAFE is not really a training tool but rather an operational one. The number of simultaneous users varies by location, the number is potentially unlimited.

c) Custom/proprietary hardware required? If so, identify:

None

7. Describe any user HELP features:

There are help menus provided for using the database

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): RAMSAFE records data describing the incident response by keep records of all resources, tasks, and communications which are time and date stamped and assigned to a FEMA category and reimbursement code.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

RAMSAFE Technologies usually provides training to users on how to populate and use the database.

2. Attributes

	Application Environment:		**Content**
2	Training	0	Knowledge
1	Exercise	1	Applied
1	Operational	2	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
3	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
2	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)

1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		0	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	0	Drills
1	EMA	1	TTX
1	Fire	2	FE
1	Govt. Administrator	2	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable): This product does not contain training content. It is a repository and a framework into which information can be placed.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

The bioterrorism response template has information pertaining to biological incidents. There are FEMA codes for reimbursement which are related to recovery efforts

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): RAMSAFE can be used as the technology piece (distributive-collaborative tool) during an exercise designed by another entity.

d) Exercise/scenario length/time(typical): Not designed as a exercise/scenario tool.

e) Potential equipment and/or facilities product can address: Only, in terms of information about and tracking of resources.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Curricula would need to be developed to make RAMSAFE usable for T&E. Users would also need to populate the framework

g) Are there any constraints on supported exercises or scenarios?

Users have to populate the database and develop curricula.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Table top delivery. Or use during an FSE or FE

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario) :

Scenarios are "what ifs" based on information users put into the database when using the bioterrorism response template feature. Users can predict the number of casualties based on specific bioterrorism variables they input into the template feature. Westchester County, NY is using RAMSAFE "to model their response to a large-scale infections disease outbreak with two table top exercises, measuring the preparedness of 400 staff members in the Westchester County Department of Health." (Homeland Security Solutions, May 2003)

c) How is training managed (e.g., Testing, certification of completion, etc.)?

N/A. RAMSAFE technologies provides training to users of its software program.

d) Does a curriculum already exist? If so, briefly describe its form and content

There is no curriculum for RAMSAFE created by RAMSAFE. Customers have used it operationally and in exercises with curricula they develop

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback per se is not provided. However, when used operationally RAMSAFE provides live updates and reports while in use. There are additional reports generated after an incident including the FEMA codes for reimbursement.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

The bioterrorism response template can generate "if then" scenarios. And RAMSAFE can be used in an exercise scenario as a distributed collaborative environment/technology tool to capture data. The bioterrorism template is a part of RAMSAFE and comes with the software.

The army used it to forecast the impact of plague and hoof-and-mouth outbreaks. "They generated checklists, outlined resources requirements, and assigned tasks. With that data in hand MEDCOM built a coast-to-coast central command, connecting its personnel with 150 local and state first responders, health officials, and federal agencies such as FEMA" (Homeland Security Solutions, May 2003)

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Displays and controls to support immediate data to participants. Participants can modify the variables as they progress through the scenario.

6. Customization

a) Can the product be customized? If so, how, and by whom?

Yes, it must be customized or populated with information and curriculum for exercises can be developed as well.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

N/A RAMSAFE does not generate scenarios but can be used in an exercise scenario as a distributed collaborative environment/technology tool to evaluate plans.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The customer creates their own scenario and exercise curriculum separately from RAMSAFE. RAMSAFE is designed as an operational tool.

d) What is the process and how much time does it take to setup an exercise/scenario to run? N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

RAMSAFE provides real time live updates as an incident or exercise unfolds. It summarizes data that can be reviewed later, too.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
0	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
1	N/A		
	Ease of Use-		
0	Easy		
0	Relatively Easy		
0	Difficult		
1	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
0	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

RAMSAFE Technologies will not share cost information.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. **No, Vendor must quote a system based on user requirements (*end here*)**

2. Does the cost apply to: (choose one)
    c. Product
    d. Service
    e. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    f. Standardized
    g. Vendor Customized
    h. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Information Source:

Review form filled-in by ATMET, LLC.
Reviewed, edited, modified by TLI team.
RAMS was not observed.

A. Basic Product Information

Name of Product:

Regional Atmospheric Modeling System (RAMS)

Developer: ATMET, LLC

Contact information:

Craig Tremback
ATMET,LLC
PO Box 19195
Boulder, CO 80308-2195

303-530-5200, extension 201

Technical Support Contact Information:

Same

Website: www.atmet.com

COTS/GOTS: GOTS/COTS

- Developed under Government funding
- Colorado State University holds copyright with ATMET
- RAMS will be released later this year under General Public Licensing (GPL) (i.e., open source)

Product status (version in use): Version 4.4

* This information was obtained via telephone discussion with the above contact.

Source(s) of Evaluation: ***check all that apply***

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
x	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
x	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  - Weather simulation … forecasting, emergency response, historical reconstruction, forensics.

  RAMS is a highly versatile numerical code originally developed by scientists at Colorado State University and the *ASTER division of Mission Research Corporation for simulating and forecasting meteorological phenomena, and for depicting the results. The RAMS model generates predicted weather data over time periods ranging from seconds to years, for various area sizes and topography, and at high grid resolutions (e.g., 500 meter and higher resolution grids). The data base generated by RAMS can be used to specify weather conditions at specific predicted times, or act as inputs to dispersion models (i.e., plume models). Hence, RAMS can be used as an operational tool, and analysis tool, and as a training tool (alone, or integrated with other simulation tools).

  RAMS major components are:

  (1) an atmospheric model which performs the actual simulations,
  (2) a data analysis package which prepares initial data for the atmospheric model from observed meteorological data, and
  (3) a post-processing model visualization and analysis package which interfaces the atmospheric model output with visualization software and other utilities.

  RAMS is most often used as a limited area model, and many of its parameterizations have been designed for mesoscale or high resolution cloud scale grids. However, RAMS may also operate as a global scale model for simulating large-scale systems. There is no lower limit to the domain size or to the mesh cell size of the model's finite difference grid; microscale phenomena such as tornadoes and boundary layer eddies, as well as sub-microscale turbulent flow over buildings and in a wind tunnel, have been simulated with this code.

- Current Target audience:

- Organizations using weather forecast data (e.g., all emergency responder organizations, cities, states, commercial organizations).

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
2	COTS	1	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
2	Individual	0	Multiple dynamic paths through the product and more than one out come possible
2	Group	1	Static configuration: fixed path, only one right way to use the product
2	Small multi-user team (up to 25 persons)		
2	Large multi-user team (more than 25 persons)		
2	Multi-agency participation		**AAR Capability**
		2	Scenario replay
	Applied Context	2	Automated summary of data
1	Non-specific	3	SME controls AAR
2	Equipment	1	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP)

- Stand-alone weather forecasting model.

- Batch mode running.
  - No interaction with users, after initial setup.

- Setup tools:
  - Documentation.
  - Tools for error checking at beginning of run.

- Provides wind speed, turbulence & other meteorological parameters as outputs.
  e.g., Precipitation, clouds, etc. … any meteoroligical parameters

- Inputs: Topography, land use, larger scale weather information (e.g., from weather service).

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

- Stand-alone product.

- Needs input data, such as topography.
  - ATMET has global data sets, with 1km resolution. Higher resolutions are available.
  - Manual data input for areas with greater resolution.

- Does not require other models or equipment to function.

- Output is weather a forecast, in the form of a numerical data base.

- Graphical visualization tools are available to view the RAMS output.
  e.g., Weather maps (temperature, wind speed, wind direction).

c) Large multi-station system, or based on individual PC's?

- Any computer configuration, generally:
  - Single PC.
  - PC clusters … typical.
  - Large parallel machines.

d) If simulation models are used how realistic do they seem:

- Very realistic.

- The atmospheric model is constructed around the full set of nonhydrostatic, compressible equations for atmospheric dynamics and thermodynamics, plus conservation equations for scalar quantities such as water vapor and liquid and ice hydrometeor mixing ratios. These equations are supplemented with a large selection of parameterizations for turbulent diffusion, solar and terrestrial radiation, moist processes including the formation and interaction of clouds and precipitating liquid and ice hydrometeors, kinematic effects of terrain, cumulus convection, and sensible and latent heat exchange between the atmosphere and the surface, which consists of multiple soil layers, vegetation, snow cover, canopy air, and surface water.

e) Web-based application, LAN, or a single computer/system-based application?

- Single system.

f) Describe the AAR support tools

- Output graphics, such as weather maps.
- Post processing tool, used for statistical verification of RAMS output (e.g., validation; output vs. observed conditions).

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

- None needed.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

- Linux, Unix, Windows.
- Maybe Macintosh … source code is/will-be distributed with the RAMS model.

b) Processor speed (in MHz):

- Above 2GHz is suggested, but model can run on lower speed processors.

c) Memory (SDR/DDR):

- RAMS can run on computers with 64MB.
- Suggested: 512MB minimum > 2GB (especially for larger problems).

d) Free disk space:

- 2GB - 20 GB.

e) Internet connection speed (if any):

- Internet connection needed only if accessing input data from internet.
  e.g., Larger scale grid fields from weather service over internet.
- Broadband is desirable, but not necessary; dial-up modem will work.
  e.g., Typically, 100MB needs to be downloaded for 24-48 hour forecast.

f) Display adapter:

- Animation, etc. desirable

g) CD-ROM speed:

- NA

h) Optional accessory requirements[5]:

- NA

5. Describe unique interface characteristics:

- None.
- Interface for input configuration data is, typically, a text editor.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

- Any number the primary training/exercising media can support.

b) Number persons usually trained simultaneously?

- NA

c) Custom/proprietary hardware required? If so, identify:

- No

7. Please describe the HELP features

- No built-in HELP features.
- Printed documentation is available.
- Error checking tools, for the input data, are provided.

8. Data recording & storage features (e.g., Scenario events; student performance):

- Model output is contained in a data base (numerical data).
- Input configuration data are available in the data base.
- No other data are provided. Other media would typically use RAMS data (i.e., RAMS would not typically be run alone); these would provide the scenario-related data recording and storage features.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- A customized training program is provided.
  - Customization is usually based on the expected trainee level of expertise.
  - 1 week of customized training is typical, conducted at the client's site.

- $10,000 order-of-magnitude cost for a 1-week customized training program, at the client's site; travel costs are included.

2. Attributes:

	Application Environment:		**Content**
2	Training	1	Knowledge
2	Exercise	1	Applied
2	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	2	Commanders
3	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
2	Intermediate	2	Awareness
2	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator	2	FSE
2	Health Care	2	FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		**Incident Stage Supported**
2	Private Sector	0	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	0	Recovery
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content:

a) Training content description (what trained, brief):

- Training content is dependent on the user.
- In a classroom context, RAMS may be used to address weather physics.
- Typically may be used in a training/exercising context to support other scenario simulation (i.e., provide accompanying weather data over time).

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

- None specific … weather related phenomena are addressed by the model.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Weather-related phenomena; but, would have to be developed by the user.
- May support a wide range of scenarios involving weather effects.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

- None specific.
- Depends on other associated media and training/exercising strategies.

e) Exercise/scenario length/time(typical):

- Can vary widely, from a few seconds to several years.

f) Potential equipment and/or facilities product can address

- NA

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

- Yes, in support of other tools, media, training strategies, etc. It would be used in two parts:
  1) Develop the weather data base for a scenario/exercise.
  2) The simulation scenario would then access the data base.
- It may also be used to support classroom training.

h) Are there any constraints on supported exercises or scenarios?

- Model runs as a discrete batch operation.

- No inputs are available while the model is running. However, usually, there are few, if any, events that will affect weather during an exercise. And exception, for example, may be smoke release.

4. Instructional Attributes:

- None of the following items are specifically relevant to RAMS. This model would be integrated with other instructional media, and dependent on how those media are used.

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

- N/A

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

- N/A

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

- N/A

d) How is training managed (e.g., Testing, certification of completion, etc.)?

- N/A

e) Does a curriculum already exist? If so, briefly describe its form and content

- N/A

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

- N/A

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

- N/A

5. Instructor/controller/evaluator tools:

- None of the following items are specifically relevant to RAMS. This model would be integrated with other instructional media, and dependent on how those media are used.

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

- N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

- N/A

6. Customization:

a) Can the product be customized?

- Model inputs can be customized at the time the model run is setup.

- Various physical processes could be customized
  e.g., Putting smoke into the weather
  The smoke would be passive, and blow with wind.
  It could be customized, however, to affect the weather by blocking the sun (i.e., affecting sun radiation).

b) What is the process and how much time does it take to develop a new exercise/scenario?

- By developer:
  - 1 month, typically (e.g., setting up the simulation, exercising the simulation, verifying that the results are realistic).
  - A longer period, if full validation is required.

c) What is the process and how much time does it take to modify an exercise/scenario?

- By developer
  - 2 weeks to 1 month, typically.

- Note, the RAMS computer run requires two hours to several days, or several weeks.
  - Running time depends on the problem (e.g., considerable running time would be required for a whole City at 50 meter resolution for a week.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

- 1 week, usually.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

- Graphical visualization tools are available to view the RAMS output.
  e.g., Weather maps (temperature, wind speed, wind direction).

- Note, RAMS does not run in real-time.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium	**1**	Somewhat
	Low		Limited
1	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
1	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
2	Specific objectives, criteria, metrics/measure or level of preparedness
3	Audit and evaluate plans and procedures prior to an exercise/Plan development
3	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
3	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
3	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
2	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
3	Part-task training
3	Pre-training
3	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Costs

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)

b. No, Vendor must quote a system based on user requirements (*end here*)

- Yes.

- $0 (actually, nominal) cost for RAMS … GPL.

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

   - Product, not service.

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

   - Standardized (source code will be provided, along with the run-time version).

4. What are the costs (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	COST			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage		$20,000 Approximate cost for 1 man-month of support (e.g., 1 week of		

		simulation setup, simulation running, and quality assurance.		
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel		$110 per hour	$80-$130 per hour	
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

Response Information Folder System (RIFS)

Developer: ALION Science and Technology

Contact information:
Marc Erlandson
1901 N. Beauregard St., Suite 400
Alexandria, VA 22311

703-933-3323
703-933-3325 fax
888-566-7672

E-mail: msiac@msiac.dmso.mil.

Website: www.msiac.dmso.mil
www.alionscience.com

Technical Support Contact Information:

Same as Contact information

COTS/GOTS: COTS

Product status (version in use): version 1.7

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
1	Observed Demo
	Played/Used product
1	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
1	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

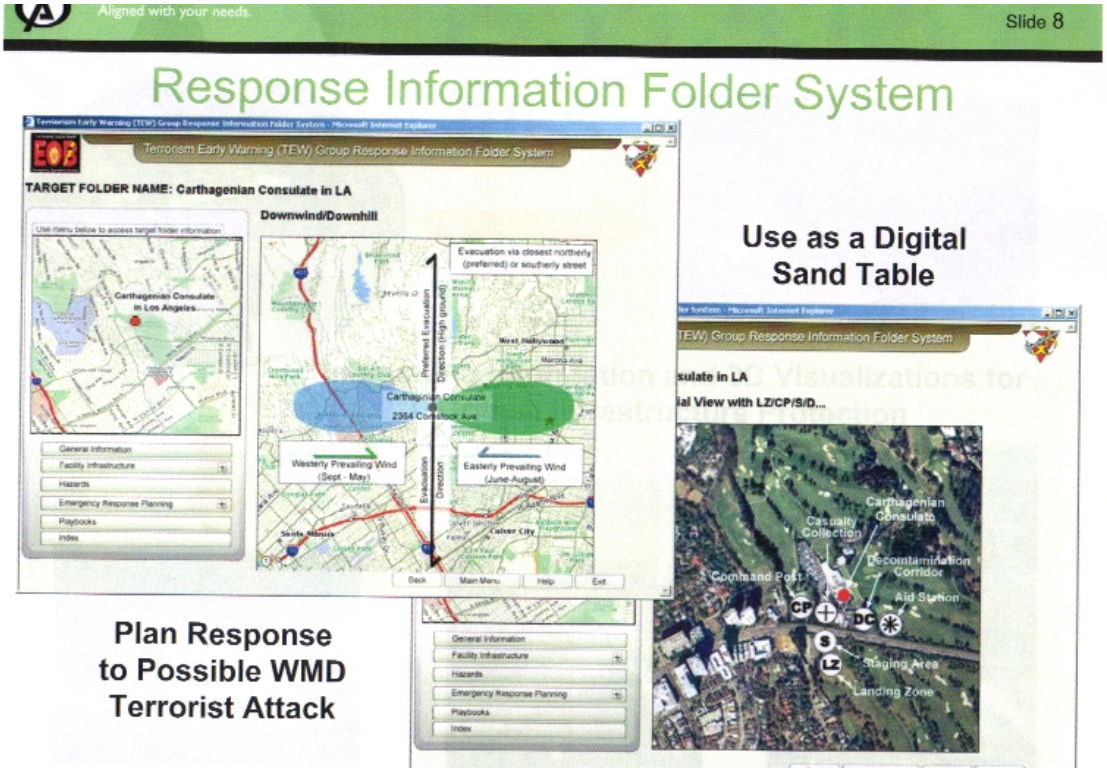
Materials in our Possession:

1	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

RIFS was designed to implement the Los Angeles County Sheriff's Department of Terrorism Early Warning Group's 23 target folder information categories. It is designed to be used operationally. It has also been used by LA County to help train for an incident at a specific location. It integrates 3-D Immersive images of terrain and buildings with critical information about specific buildings and locations. RIFS can be used for response planning, course of action analysis, operations, and training. It provides key information that first responders want in an incident such as, a response resource list and information on surrounding microclimates (winds) which helps with planning evacuations. The resource lists has detailed information about a site or a building and what is nearby such as a day care center. Los Angeles has developed playbooks listing who does what and standardized practices and procedures for various incidents. You can link to them through RIFS.



RIFS has been adopted by the interagency board (IAB.org) for standardization of emergency response. DOD and DOJ are federal sponsors.

In the future users will be able to populate RIFS with their own information and images.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
0	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
0	Instructor/Facilitator Aid: Student Interfacing
1	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
0	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	3	Automated summary of data
1	Non-specific	3	SME controls AAR
0	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

RIFS is a software program with a 3-D Immersive model and a 2-D topography map. This tool provides custom PowerPoint-based drawing toolbox icon and clip art incident management toolbars for the creation of training scenarios and scheme of maneuvers. An optional module featuring indoor/outdoor position location is also available for this tool,

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand alone or networked

c) Large multi-station system, or based on individual PCs?

Based on individual PCs

d) If simulation models are used, what is the basis of the data and/or distributions used?

JCATS, JANUS, OneSAF, or JSAF (please see the TLI reviews for JCATS and JANUS)

e) Web-based application, LAN, or a single computer/system-based application?

Web based, either via intranet, Internet, or standalone Computer system based (software)

f) Describe any debriefing after-action reporting support tools:

There are no formal debriefing or after action capabilities.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

None, RIFS can be put on a laptop and taken anywhere; Stand alone or networked multiple workstations

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 2000/XP

b) Processor speed (in MHz):

c) Memory (SDR/DDR):
64 MB minimum

d) Free disk space:
Varies depending on size of terrain database

e) Internet connection speed (if any):
Optional

f) Display adapter:
VGA or better

g) CD-ROM speed:
Basic

h) Optional accessory requirements[5]:

N/A

5. Describe the user interface characteristics:

Traditional computer set up with mouse, keyboard and monitor. RIFS is also traditional point and click configuration all computer users are familiar with.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Variable

b) Number persons usually trained simultaneously?
Variable

c) Custom/proprietary hardware required? If so, identify:
None

7. Describe any user HELP features:

Help button with access to very basic help information and contact information for phone and e-mail tech support

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Folders contain detailed information and are saved in the program. The information includes; the playbooks with policies and procedures, microclimate data, local infrastructure, any on-site hazardous materials, building utility controls and data, pictures of actual structures, data on important facilities nearby such as day care centers, etc.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Any training would be provided by Alion

2. Attributes

	Application Environment:		**Content**
0	Training	0	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on

1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	0	Drills
1	EMA	1	TTX
1	Fire	0	FE
1	Govt. Administrator	0	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
0	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Training content would exist outside of this program although RIFS can be used during a training it is not itself a training application. RIFS is a way of organizing critical information.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Anything the user wants to put into the program

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

N/A

d) Exercise/scenario length/time(typical): N/A

e) Potential equipment and/or facilities product can address: any facility photographed and included in the program.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Yes

g) Are there any constraints on supported exercises or scenarios?

No

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Table top and simulation supported exercises, classroom/group training

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

N/A

c) How is training managed (e.g., Testing, certification of completion, etc.)? N/A

d) Does a curriculum already exist? If so, briefly describe its form and content

N/A

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

A library of information can be created by the user including; the playbooks with policies and procedures, microclimate data, local infrastructure, any on-site hazardous materials, building utility controls and data, pictures of actual structures, data on important facilities nearby such as day care centers, etc. Currently, ALION needs to populate the resource folders. However, future versions will allow users to download their own information.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

n/a

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, the Alion software development team can add different terrain and functionality.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
Variable depending on the complexity, but lower than average tool in the market

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Could be done by either.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
Variable, as it is self-paced.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
1	Easy		

0	Relatively Easy		
0	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. Yes (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Rest Ops SRC

Developer: Visual Purple, LLC

Contact information:

John Creger
Domestic Business Development
Visual Purple
6633 Bay Laurel Dr., 2nd Floor
PO Box 465
Avila Beach, CA 93424

Email: john.creger@visualpurple.com
Tel.: 805-595-7579 Ext. 115
FAX: 805-595-7588

Additional Contact information:

Website: http://www.visualpurple.com/pages/products.htm

Product status (version in use): Rev.# 082003

Date of Evaluation: 14 November 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- X Played/Used product
- X Attended Briefing
- Reviewed CD-Rom or other software
- Reviewed Website
- Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- X CD-Rom
- Related Papers

Material from Internet
Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Computer-based incident response training system.

- Current Target audience:

  U.S. Air Force staff tasked with airbase operability (AOB) and base repair after attack (BRAAT) duties.

- Potential equipment and/or facilities product can address:

  RestOps is designed to familiarize combat service support staff in the operation of an Oracle software application used for airbase operability call SRC Command3 (SRC3) covering such areas as civil engineering, fire fighting, and explosive ordnance disposal.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  The instructional approach and mode of delivery are relevant to domestic preparedness training. The instructional approach includes the use of an incident response scenario that is videotaped for multiple learning segments that are cued by student decisions. The video scenario helps to provide the context for the emergency and to impart some of the stress that may be experienced under such conditions. This can aid in providing training "realism" and potentially motivate greater interest in the learning process. The part of the tutorial which emulates the Oracle SRC3 system can be replaced with dynamic content for essentially any other type of incident response system or application. Given such changes, the CD-ROM based tutorial could be used as a readily distributed means of providing self-guided training related to such areas as EOC operations, dispatch, or other key operational response functions.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   RestOps consists of software that features video segments, multiple choice questions (student decision points), and guided tutorial learning.

b) Large multi-station system, or based on individual units/PCs?

   The application is intended for installation on individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Standalone product.

d) If simulation models are used, what is the basis of the data and/or distributions used?

No simulation models are used.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Computer work space appropriate for CBT.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

IBM PC-compatible computers.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Microsoft Windows 98, 2000, XP.

Requires Microsoft DirectX 8.1 or higher.

b) Processor speed (in MHz): Pentium II 233 MHz or better

c) Memory (SDR/DDR): 64 MB

d) Free disk space: 192 MB for the program files (not including the video files)

e) Internet connection speed (if any): Not applicable

f) Display adapter: SVGA (1024x768 resolution or better)

g) CD-ROM speed: 4X or better

h) Optional accessory requirements

3. Describe the user interface characteristics:

The computer interface contains two screen windows: one window displays the video narrative, and the second screen displays the training content. The first window runs video segments that provide context and instruction, and prompts the trainee for decisions on what action to take. The second screen is segmented into three areas: the SRC3 emulation screen, a text-based tutorial guide, and a screen-wide view of the SRC3 display. The user interacts with the application using a mouse.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

RestOps is designed for use by a single trainee, or potentially several trainees using a single computer.

b) Custom/proprietary hardware required? If so, identify:

No custom or proprietary hardware is required.

5. Describe any user HELP features:

There are no Help features. The application features learning branches that allow the user to progress either through correct decision making or by process of elimination.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

There are no data recording or storage features.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The CD-ROM includes an auto-launch file that allows the user to install or uninstall the software, or view the Readme.txt file. There is a selectable learning mode which allows the user to activate or deactivate cues.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Not applicable.

b) Time required for a typical exercise or scenario (if applicable):

There is one scenario that may take between 20 to 45 minutes depending upon the student level, and the learning mode selected (whether or not cues are used).

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

As is, the product is not directly applicable to combating terrorism. The format of the learning (self-guided, video-enhanced media combined with system emulation) is applicable to training for many types of systems, including incident management systems. The training content, video material, and decision branching structure would all require modification to be applicable to counter-terrorism.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Not applicable.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

RestOps serves as a component of training Air Force combat support staff who are assigned airbase operability duties at Osan Air Base, South Korea. The training format is currently under consideration for adaptation to 16 other U.S. air bases throughout the world.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Decision branches, selected through multiple choice questions, cause different segments of the training scenario to be played as video. The action and dialog within the video segments is of an instructional nature. Within the emulation portion of the RestOps GUI, audiovisual cues (e.g., flashing boxes around icons) direct trainee attention to the toolbar tab to click on, and learning mode text is displayed in the dialog box if this mode is selected.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Not applicable.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Not applicable.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The product cannot be customized without product development and engineering effort by Visual Purple. There is no user customization.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Upon installation of the RestOps software, running the training session is just a matter of logging in to the application.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

There are no analysis features.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

See Appendix A for classification descriptions.

	Electronic Simulation
	Non-Electronic Simulation
X	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	0	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	1	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	0	Scenario replay
2	Group	0	Automated summary of data
0	Small multi-user team (up to 25 persons)	0	SME controls AAR
0	Large multi-user team (more than 25 persons)	1	Does not provide feedback or AAR
0	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	1	Standalone
		0	LAN
	Environment	0	WAN
0	Generic	0	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
0	Exercise	1	Applied
0	Operational	1	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	0	Local Officials
0	Instructor/Facilitator	0	State Officials
		0	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
0	Advanced	1	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	0	Planning & Mgmt. (incl. ICS)
1	Chemical	0	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	1	Equipment Training
1	Explosion	2	Awareness
		1	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	1	Drills
1	EMA	0	TTX
1	Fire	0	FE
0	Govt. Administrator	0	FSE
0	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
0	Public Health		
1	Public Safety Communication		
2	Public Works		
1	Transportation		
0	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. **No, Vendor must quote a system based on user requirements** (*end here*)

2. Does the cost apply to: *(choose one)*
    a. **Product**
    b. Service
c) Product & Service Bundle

3. Product (content) configuration, as priced, is: *(choose one)*
    a. Standardized
    b. **Vendor Customized**
    c. Allows User Customization

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

S3 Exercise

Developer: International Safety Research Inc. (ISR)

Contact information: Technical Support Contact Information:

Francois Lemay:
Director ISR
Phone: 613-241-4884, fax: 613-241-1250, cell: 613-282-4885
Email: FrancoisLemay@i-sr.ca

457-A Sussex Dr, 2nd floor
Ottawa, Ontario
Canada K1N 6Z4

Website: www.i-s-r.ca COTS/GOTS: COTS

Product status (version in use): Version 1.11

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

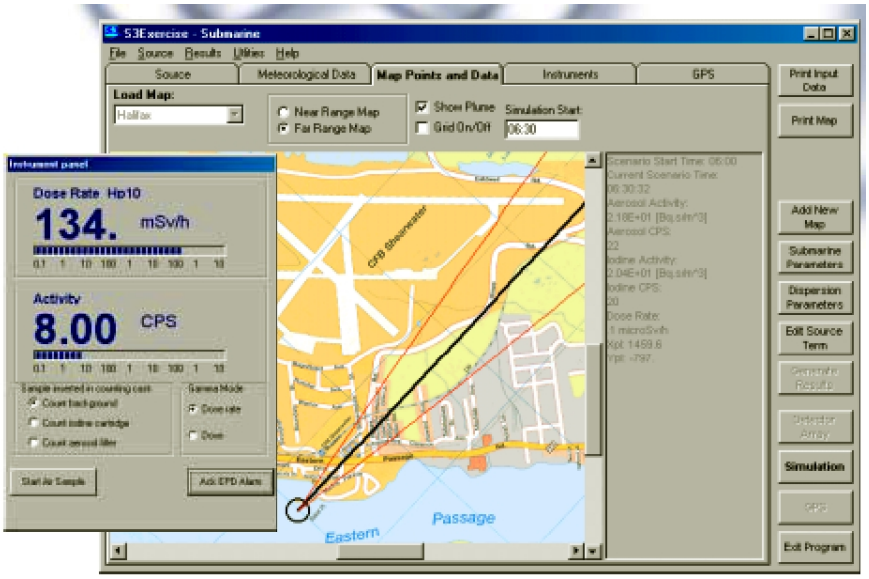
X	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:

S3-Exercise is a PC based computer simulation that can be used as a tool by controllers or trainers during a radiological table top, full scale, or functional exercise. Controllers see the computer screens with full information during exercises but players only see readings. Users can create a simulated radiological incident by choosing the location and time of release, as well as amount of radiation released, the shape of the plume, and duration of the event. Users can also choose meteorological conditions that will affect the plume over time. There is an option for type of environment such as open grass land or an urban area. Typically users purchase International Safety Research Inc. (ISR) maps of their community to be used with the program. Therefore, users can produce simulated radiological releases over any part of the community. The demo TLI saw placed the plume right over Pentagon City Mall in Arlington, VA. Clearly, any responders would have to make quick decisions about how and where to evacuate citizens in the shopping mall, office buildings, homes, and even the Pentagon itself.

S3-Exercise generates a simulated plume and displays it over the map of the chosen area on a PC monitor. There are four ways to run the program by controllers:

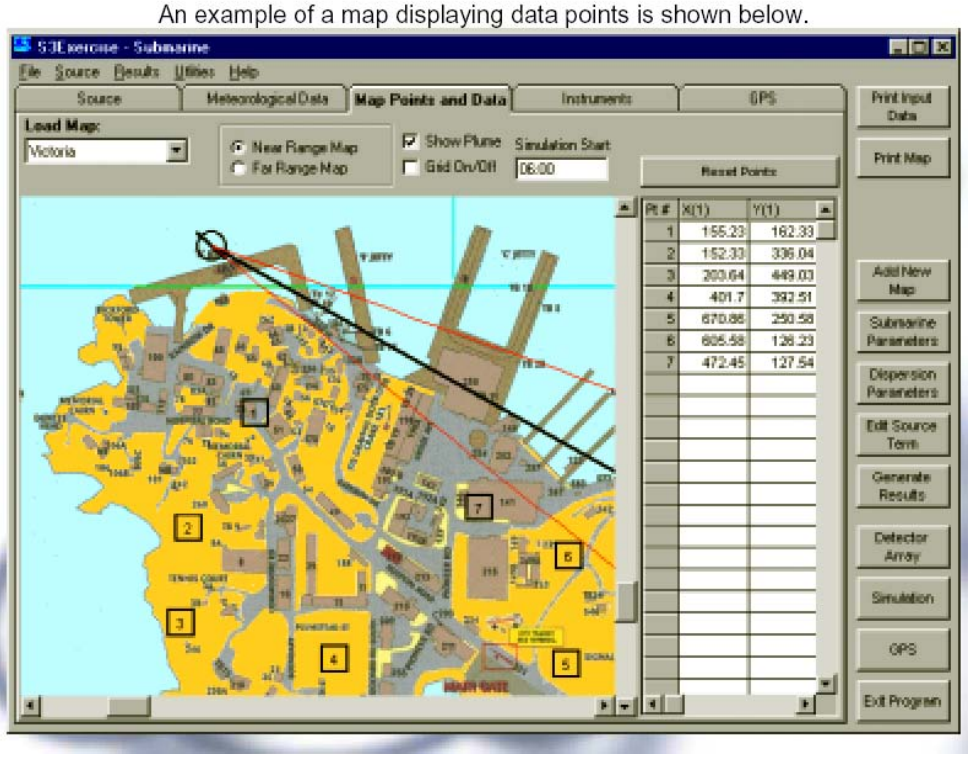
- Mouse Cursor: Trainers/facilitators can conduct a table top exercise by running the program with the mouse. The trainer moves the mouse cursor over the map and gets readings on the PC monitor. It also has an alarm that sounds as you do this. Participants can discuss the appropriate actions that would need to take place to respond to the simulated radiation plume that S3 Exercise has generated.
- Ring of detectors: If there is an actual physical ring of detectors in the area the simulation will provide simulated readings from them.
- Paper copy: It is good to have a back up in case of a computer problem. The computer can print out copies of the readings for various places and times.
- GPS: The simulation uses GPS data to calculate where response teams are relative to the plume. The program will send the simulated readings to the GPS equipped computers for the players to read off as they are moving in their vehicle or on foot.



The screenshot above courtesy of ISR shows S3 Exercise displaying readings for radiological material and the map pinpointing their location.

In a drill, full scale exercise or functional exercise, controllers would have access to all of the plume information but players would only see the simulated instrument readings that the program creates on computer screen. S3 Exercise is designed to generate realistic radiological instrument readings for HazMat responders to read/report to commanders during an exercise. It simulates the response of gamma survey instruments, electronic dosimeters, and air samples which would be used by response teams during a radiological incident to determine the location and amounts of radiation and radiological contamination.

An example of a map displaying data points is shown below.



The readings are designed to be as realistic as possible; in real situations readings vary widely (i.e. Chernobyl, ISR works with a consultant who took readings at the Chernobyl disaster). Usually the incident commanders will have to average the readings to get a picture of the amount of radiation present. This is very hard to do. This product simulates this situation and also simulates what happens when the survey teams become contaminated to add to the realism. S3 also simulates readings from air samples which take 10 minutes to gather in real life. These samples are not actually gathered in the simulation but the program will not produce the readings for 10 minutes.

With this program a real time drill can be created in less than one hour. Traditionally RDD (Radiological Dispersion Device) drills were time consuming to create as someone had to do all of the calculations that create the instrument readings and the scenario. ISR will be able to put this simulation on a handheld PC soon and the palm version is in development.

The following is from the electronic version of the S3 brochure:

Highlight of S3-Exercise Features

- Accepts up to 5 wind phases and 5 release phases
- Can customize the nuclide release by isotope
- The instrument panel mimics the appearance of an actual meter
- Digital maps of the area are provided (near and far fields)
- Alarms for turn-back levels can be set therefore allowing a controller to see if the team respects the turn-back limits
- With a GPS connected to the laptop it tracks the actual position of the vehicle in real-time
- Accumulates total dose for field teams, depending on where they travel in the plume, which gives them accurate electronic dosimeter readings
- Can simulate a detector array around a nuclear plant

- Can be used in simulation mode for table-tops using a mouse/cursor
- Readings are given in Sv or rem and CPM or CPS

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
2	Non-Electronic Simulation
0	Computer Based Training other than Simulation
0	Game
1	Instructor/Facilitator Aid: Student Interfacing
2	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	0	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	0	SME controls AAR
2	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

2-d topography. Plume model in a sense that a realistic plume is created for the exercise. Provides data to aid collaborative decision making but communication is via radio.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Requires software to function

c) Large multi-station system, or based on individual PCs?

Based on individual PCs

d) If simulation models are used, what is the basis of the data and/or distributions used?

Previous experience with the release of radiological material and how it acts in different environmental conditions as well as mathematical calculations determining what readings would appear on equipment based on how the radiological material is behaving.

e) Web-based application, LAN, or a single computer/system-based application?

Computer system based. Windows based software program.

f) Describe any debriefing after-action reporting support tools:

None, facilitator run AARs

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? A room to conduct the table top version and mobile units to conduct an exercise

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows NT, Windows XP

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any):

f) Display adapter: Visual Basic 6

g) CD-ROM speed:

h) Optional accessory requirements[5]:

5. Describe the user interface characteristics:

The controller/facilitator would use a traditional PC set up with mouse and key board. If used in a functional exercise a player would see only readings on their equipment to simulate a real event.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Unlimited in a sense as it can be used in different settings for TTX or drills. But, it does not replace exercise design and delivery so 30 to 200…

b) Number persons usually trained simultaneously?

30 for TTX and 200 for drills approximately.

c) Custom/proprietary hardware required? If so, identify:

Radiological instrumentation/detectors are needed for a true drill or FE.

7. Describe any user HELP features:

8. Data recording & storage features (e.g., Scenario events; student performance):

The program records the readings but not student performance. It is an exercise/facilitator aid

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
S3 can conduct exercises for customers or train customers in using the program in their own exercises. They assist with set up as well.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	1	Hands-on
0	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		

1	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
0	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
0	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	2	Equipment Training
0	Explosion	0	Awareness
		1	Part Task Training
	Functional Area Supported:	0	Pre-Training
0	EMS	1	Drills
1	EMA	1	TTX
2	Fire	1	FE
1	Govt. Administrator	1	FSE
0	Health Care	0	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	0	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

None

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Extensive knowledge base on plumes and dispersion

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications): equipment readings, knowledge of radiological agents, ICS process, decision-making, and team communications.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Simulation-supported, instructor controlled/facilitated

e) Exercise/scenario length/time(typical): varies

f) Potential equipment and/or facilities product can address: creates realistic readings for radiological agent release and can be used in an exercise addressing RDD response.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Yes

h) Are there any constraints on supported exercises or scenarios?
No.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

Table top, drill, functional exercise, full scale exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*
Yes.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.
Automatic reactive scenario can be created by determining the duration and volume of the radiation along with plume size and wind direction. In a drill or functional exercise the HazMat teams would be moving around the area getting readings of any radiological material. They would operate according to normal procedures. If they do not, they become contaminated.

d) How is training managed (e.g., Testing, certification of completion, etc.)?
Need facilitator/controller/observer. ISR can train local personnel to runt the program or can run exercises for users themselves

e) Does a curriculum already exist? If so, briefly describe its form and content
N/A

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Separate from S3 which does not support exercise design and delivery.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): No automated AAR

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Takes map data and defines plume and readings based on plume model and terrain, wind, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Can be used in real time and stopped for discussion if need be, not training tool in and of itself.

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, a trained user of the software can easily create a new scenario. The vendor provides training

b) What is the process and how much time does it take to develop a new exercise/scenario?
Simply enter the variables you want to test into the program; this takes less than an hour. Must have purchased map terrain from ISR first. Each license for the product includes the map for said community. Users have to purchase additional maps from ISR to use the program over any other terrain.

c) What is the process and how much time does it take to modify an exercise/scenario?
Same as above

d) What is the process and how much time does it take to setup an exercise/scenario to run?
Same as above.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools): None

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
0	Medium	**0**	Somewhat
0	Low	**0**	Limited
0	N/A		
	Ease of Use		
0	Easy		
1	Relatively Easy		
0	Difficult		

0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
1	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. **Yes (*proceed to Q2*)**
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

ISR licenses the program by site. There is no limit to the number of computers you can use. The map covers a 50 mile radius of the area you want to exercise in. You can do whatever you want with the program once you buy the map from ISR. The only restriction is when you want to license it for a new map.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

San Luis Rey (SLR)

Developer: Teleologic, for the Naval Postgraduate School

Contact information:
Teleologic
P.O.Box 166
114 SW Arch St.
Atlanta IL 61723
217/648-5077
FAX: 217/648-2479

Technical Support Contact Information:
Craig Baldwin
P.O. Box 25
Pomfret, CT 06258
860/963-7707
cbaldwin@teleologic.net

Website: http://www.teleologic.net

COTS/GOTS: SLR is dual-owned, so government can use it for other government projects. Teleologic has the right to use it for other clients or to sell it to commercial clients.

Product status (version in use): No version number used as yet – the current product is still the first iteration. Version control will begin after Jan 2004.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
X	Played/Used product (on NPS HLS site)
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers
	Material from Internet

	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

SLR is a hypothetical city that is used by several courses throughout the NPS HLS masters degree program. As of August 2003, the first generation of SLR consists of various 2-D maps and background information about the city, county, and two neighboring states. This information includes history of the area, information about personalities of key personnel, information about local services, and HLS plans for the city, county, and states. NPS needed a city that the students could become very familiar with but didn't want to use a real city.

The target audience for SLR is students in the NPS masters program in HLS (sponsored by ODP). The curriculum is designed to move the students from tactical level thinking and decision-making to an operational/strategic level that focuses on policies and assessment vs. actions. SLR is used in several courses in the curriculum.

San Luis Rey is implemented as a component of the network-based learning environment at www.hsld.org. The environment includes a digital library, collaboration tools, and scenarios that rely on SLR information.

There is an online module called "Scenario Demonstration" that illustrates the use of SLR.

A learner is guided through a sample piece of coursework that presents some background on a possible Al Qaeda threat to computer-controlled devices that remotely control services and various pieces of equipment, like switches to dams or power plants. The learner is guided through a vulnerability assessment of the SLR Lake Juniper Water Authority (LJWA) assets. This includes answering multiple-choice questions about next steps in the process, making recommendations on actions to take to help counter a possible threat against the LJWA, chatting with one's teammates, developing policies, and commenting on the overall risk assessment process. The risk assessment process is taken from the "FY99 State Domestic Preparedness Equipment Program Guidance for the Development of Three-Year Statewide Domestic Preparedness Strategy". A more detailed description of this module can be found at the end of this document.

In this module, the learner can refer to various SLR maps and read a background document about LJWA operations. The training covers more than just an intro to SLR – it's also an intro to online learning.

The learner moves through parts of the tutorial at their own pace, but at specific points in the scenario, they have to interact with their teammates via collaboration tools and make decisions or recommendations.

Scenarios using SLR are external to the environment and are not electronically linked to it.

Currently, SLR is used to promote discussion and decision-making among teams of students, with a fixed environment and scenario elements layered over that. In the future, they'd like to migrate to a 3-D system with an embedded simulation, in a game-like environment. The 2nd generation of SLR would incorporate a decision tree, so the scenario could progress along various fixed branches of a scenario. Then in the 3rd or 4th generation, it would be 3-D and more interactive, more like a "metaverse", an interactive game-like environment.

In a course on **Civil-Military Relations**, they use SLR in a biological scenario (they call it a simulation) in which the bug is spread on an airplane and eventually the National Guard have to be called in, which always happen, and that brings up the civil military relations aspect. The students are distributed, divided into teams, and use "forums" (chat rooms or bulletin board) to asynchronously discuss the scenario.

- Current Target audience: very limited right now – students in NPS HLS MA program.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
1	Computer Based Training other than Simulation – dominant way it's currently used
	Game
1	Instructor/Facilitator Aid: Student Interfacing – currently used this way by some professors
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	Commercially owned	1	Generic
1	Government owned	3	Locale Specific
	Media Scale		**Product Re-Playability**
2	Individual	1	Multiple dynamic paths through the product and more than one outcome possible
2	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
1	Multi-agency participation	3	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
3	Equipment	0	Does not provide feedback or AAR

		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

In this generation, the main components are maps and background info about services, people, and plans. Scenarios are added on top of SLR. Professors who want to use the environment work with Teleologic who makes up the scenarios which are conceptually linked to SLR. There is no physical or electronic linkage between the scenario and SLR. Another key component, in the primary way SLR is currently used, is the surrounding net-based learning environment which embodies the scenario and contains collaboration tools to let students interact around the scenario and SLR.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Not really stand-alone as implemented. In its primary use, it's embedded in an online collaborative environment. It could potentially be used in a stand-alone way, without the surrounding collaborative environment, with an instructor providing the scenario information, and students interacting with SLR from their individual workstations (or even reviewing hard copy of materials).

As used within the web-based NPS HLS courses, San Luis Rey simulations are hosted on a Web server and run as a "scenario". The only requirement is a https web browser and a FLASH plug-in.

c) Large multi-station system, or based on individual PCs?

Accessible over the Internet via individual PCs. Scalable to thousands of simultaneous users. San Luis Rey scenarios are server-based and accessible to any client device with proper permissions.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Currently, none. Eventually, these will be agent-based simulations.

e) Web-based application, LAN, or a single computer/system-based application?

Web-accessible

f) Describe any debriefing after-action reporting support tools:

None. AARs occur outside of SLR.

Each major scenario experience is linked to an online forum where those engaged in the scenario are expected to reflect on the implications for both theory and practice. These forums are almost

always moderated. Forum discussions are digitally archived and can be used as a source for FAQs and, eventually, for automated response and guidance.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Any OS

b) Processor speed (in MHz):
200Mhz or more: Recommend 1 Ghz.

c) Memory (SDR/DDR):
512MB

d) Free disk space:
30 MB

e) Internet connection speed (if any):
Minimum of 56Kbps, recommend DSL

f) Display adapter:
800 x 600

g) CD-ROM speed:
None

h) Optional accessory requirements[5]:
None

5. Describe the user interface characteristics:

It's a standard web-based user interface. Users can look at maps, read info, click around. SLR is primarily html with minimal java coding.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
Currently supports hundreds.

b) Number persons usually trained simultaneously?
Typically, 30

c) Custom/proprietary hardware required? If so, identify:
None

7. Describe any user HELP features:

Learners have ongoing access to staff support to locate necessary scenario resources. In some cases (especially during this early phase of development) this staff support produces new scenario elements that are required to fully engage the connections between theory and practice.

The web-based learning environment includes self-paced learner orientation and demonstration elements designed to facilitate learner familiarity with the interface and web-based utilities such as, forums, debate arena, library, and scenario events.

Learners are also encouraged to ask for help and provide feedback on each course. Each course contains an omni-present Feedback button that learners use to ask for help, or to make comments about a particular learning activity.

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Three kinds of data can be logged: 1) information about web pages accessed, 2) chat and forum (bulletin board) interactions, and 3) course management kinds of information.

1) SLR itself does not have any tracking features, although standard web event logging is available via other software on the server. This means that information about which web pages were visited and for how long, by each user, is available.

2) Software in the net-based learning environment tracks all collaborative interactions. All course forums (which are basically electronic bulletin boards) are accessible by the professor of the course and anyone the professor wants to give permissions to. Within a course, forums can be made selectively exclusionary. For example, in collaborative teamwork forum areas, the professor and only team members have access to the team forum. Or, when working collaboratively with the professor on individual projects, each learner is provided their own forum area. Only the professor and the learner have access to this site.

The data collected in a chat or forum is archived and can be made available according to school, learners, and professor policy.

For administrative purposes, the course facilitator has access to all forums.

3) In the surrounding net-based learning environment, individual student activities can be logged more closely. Triggers can be defined, e.g., to track quiz grades and how many times they selected a certain answer or who used which items in the digital library, and how many times and when.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

In general, anyone who is familiar with the WWW and their web browser can use it immediately.

As described in Section B, there is an online module called “Scenario Demonstration” that illustrates the use of SLR.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	0	Equipment Training
1	Explosion	0	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	2	Drills
1	EMA	2	TTX
1	Fire	2	FE
1	Govt. Administrator	0	FSE
1	Health Care	0	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
1	Public Health		
1	Public Safety Communication		**Incident Stage Supported**
1	Public Works	1	Prevention
1	Transportation	0	Detection & Identification
1	Private Sector	1	Response
		1	Recovery
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable): No content provided with SLR itself. Scenarios are developed separately and added around it.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]): None

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): The primary way in which it's currently used is a scripted, synchronous, 1-4 hour exercise involving a team. It could be used by an individual in a self-paced way or as a tutorial.

Exercise/scenario length/time(typical): Varies, but 1-4 hours is a typical range.

c) Potential equipment and/or facilities product can address: None, as it is not designed to specifically address facilities at a tactical level. The focus is on policies and plans.

d) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them. Yes.

e) Are there any constraints on supported exercises or scenarios? None known.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
Primarily collaborative web-based, team. Secondarily, is used in classroom as an instructor aid. Can be used as self-paced individual CBT.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)
Primarily scripted scenario; secondarily, is instructor-led. There is no reaction within SLR to events.

c) How is training managed (e.g., Testing, certification of completion, etc.)?
SLR is used in several courses in which the professors have determined how to fit it into their course's curriculum. These courses are then part of a larger Masters degree curriculum in HLS.

d) Does a curriculum already exist? If so, briefly describe its form and content.
See above.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): See description in C.8. The

key feature within SLR is the tracking of how much time a learner has spent in each area of SLR, however, in areas where materials can be printed for later review, this may not be an accurate measure. Looking at the collaborative environment in which SLR is currently embedded, additional information about student progress and performance can be tracked. This includes quiz scores and tracking usage of items in the digital library. Information about collaboration can also be tracked.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Limited. When there is a multiple-choice question posed in the scenario, students immediately see whether their choice was right or not, and get a description of why it's right or if it's wrong, what they should review. Students can view archives of chat and forum sessions; professors have access to the same information, as well as information about web page usage (when, how long, by whom, for which pages) and information about student performance in quizzes.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

b)

Currently there is no interface for people to develop their own scenario elements.

c) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

This occurs outside of SLR, via online forums, threaded conversations, and chat functions in the net-based learning environment in which SLR is embedded.

6. Customization

a) Can the product be customized? If so, how, and by whom?

Yes. Flash files and other digital objects are often adjusted to meet the needs of particular courses. New scenario elements are developed to meet the learning outcomes of particular courses. There is a pedagogical need, however, to maintain a consistent "narrative" across courses. Names, places, historical and geographical characteristics should remain consistent and coherent. To do otherwise would undermine the ability of learners to transfer contextual knowledge from course to course. Within these limitations, Teleologic provides customization.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

It depends on the scope and range of the new exercise/scenario. The current NPS course on *Law Enforcement and the Judiciary* included very substantial new elements involving

pre-9/11 characteristics of San Luis Rey and more typical post-9/11 elements. This was also the first course to draw heavily on individual persons/roles to be encountered in the scenario. Architecture and construction of this course required approximately 10 weeks elapsed time.

c) Does the customer or the vendor modify or develop a new exercise/scenario?
The vendor develops new scenario elements, based on customer requirements. The customer communicates learning outcomes and some preferences. Teleologic proposes scenario elements to achieve learning outcomes and preferences. Depending on the customer (at NPS this is often represented by an individual faculty member) the identification of final scenario elements can be very easy or very hard. Once final elements are selected, Teleologic actually develops and deploys.

d) What is the process and how much time does it take to setup an exercise/scenario to run?
Highly variable.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
X	High	**X**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
2	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
	Simulation Support

Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Part-task training
1	Pre-training
1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   - **a.** Yes (*proceed to Q2*)
   - **b. No, Vendor must quote a system based on user requirements (*end here*)**

2. Does the cost apply to: (choose one)
   - a. Product
   - b. Service
   - c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   - a. Standardized
   - b. Vendor Customized
   - c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

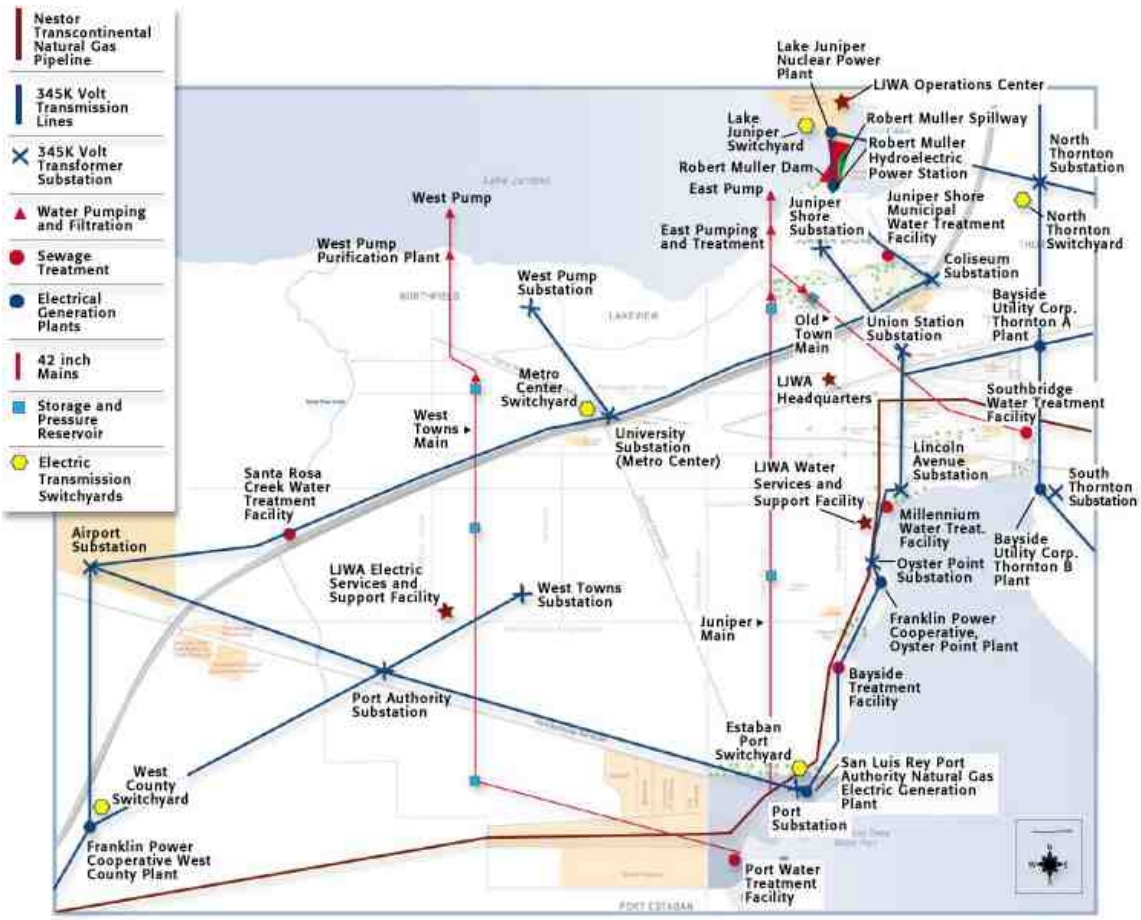
More detail on demonstration

Purposes: (taken directly from the web site)
1. To expose learners to the ODP assessment process and to encourage them to experience and then to critically examine the process in context.
2. To demonstrate the concept of the San Luis Rey scenario as a place to apply theory to practice.
3. To orient users to effective methods of engaging Network Based Learning.

Learning Objectives: (taken directly from the web site)
1. Learners will be able to identify the steps in the ODP process for conducting risk assessments.
2. Learners will be able to conduct a limited risk assessment for at least one asset of the Lake Juniper Water Authority.
3. Learners will be able to evaluate the role of strategy in setting the framework for tactical and operational decisions.

Days 1-90
Read background on situation (includes actual Washington Post article on evidence of Al Qaeda interest in remote-controlled devices)
Multiple choice question about what to do next (feedback on choice shows up immediately)
Hypothetical board designates team (I assume this assigns students to roles)
Team compiles list of most important facilities or activities in jurisdiction using:

- LJWA Fact Sheet (text: avg daily consumption, total # miles of pipes,...)
- Potential Targets List (text: organized by functional area, e.g., information and communications, public health, etc.)
- Critical Infrastructure: Water and Power Map (image – see below)



(from the NPS web site)

Create a preliminary priority list with about 10% of LJWA assets using:

- LJWA Fact Sheet
- WMD Impact Criteria
- LJWA SCADA Enterprise System Status Report
- Critical Infrastructure: Water and Power Map

Choose top 5 targets
Answer a multiple choice question about next step

Team is to conduct individual target vulnerability assessments – for this demo, will do just one target vulnerability assessment. This uses an ODP process (and paper handouts. Presumably would be a team F2F activity?).

Respond to a poll: choose your top three priority defensive recommendations. Then go to forum to discuss with teammates. If changes, re-vote in poll.

Day 120
Terrorist attack opens floodgate, video depiction of someone using computer to do the attack, SLR newspaper story on attack, its effects, and suspicions of Al Qaeda involvement.

Day 135

Group discussion – on-site or online
Team discusses whether there are any policy implications for prevention of future attacks on LJWA assets? Any changes needed in risk assessment process? (then students fill out demo assessment questionnaire to get feedback on demo)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

ScribeVision

Developer: ScribeVision Technologies Inc.

Contact information:
Ted Wilhite
President and CEO
ScribeVision Technologies, Inc.
144 Chippewa Avenue
Tampa, Fl 33660-3520
(813) 380-4002
tedw.rtw@gte.net

And additional Contact information:

Product status (version in use): ScribeVision Technologies
Website: http://www.scribevision.com

Product status (version in use): Since ScribeVision is modified to meet the requirements and specifications of the agency and/or exercise involved, version numbers apply to the application specifically. For example, the ScribeVision version for the Tiger Balm 04 Exercise to be jointly conducted by the U.S. Military and the Singapore Armed Forces next July will be based the fifth generation core SVC2 components but will be version TB04.

Date of Evaluation: 11/10/03

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo (Web)
- [ ] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in Possession:

X Brochure/Prospectus
CD-Rom
Related Papers
Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

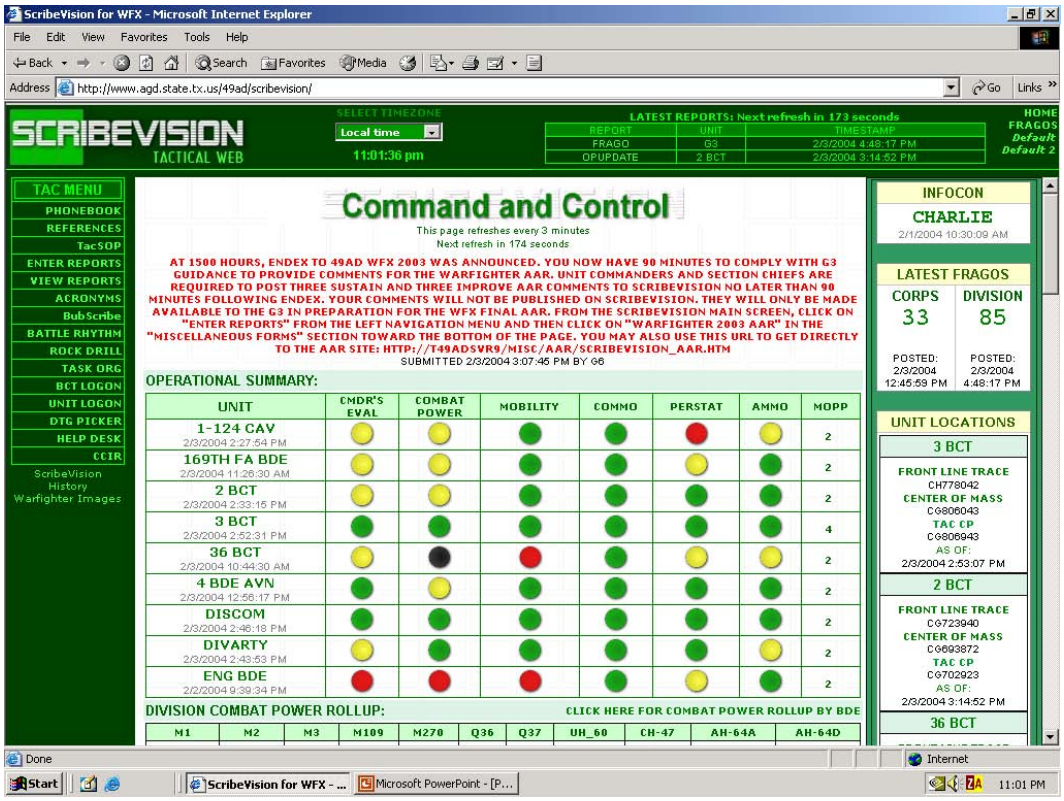
  "Commercial web-based command and control/decision support system. Designed to provide a single resource that unit commanders and training event observer/controllers can use to distribute orders, assess unit combat strength, review significant events and intelligence reports, monitor subordinate element activities and combine data elements from current and legacy C4I systems".

- Current Target audience:

  Military command and control personnel & field personnel for doctrinal reporting and distance training. Designed to convert manual reporting to an electronic platform that can be accessed by many users (according to permissions set). E.g., Commanders can set criteria (# of units required for a mission) and field units provide data inputs that are converted/displayed according to the criteria.

- Potential equipment and/or facilities product can address:

  Can be used for emergency management personnel to collect information from the field and other users. For example, public health can access different screens than law enforcement and makes different inputs; all user inputs are stored in the database; field personnel can input information related to an event and access updated information by linking into the database. It's also designed for distributed exercises and training designed by vendor (who will also provide hardware for exercise if necessary).



- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Tool "helps streamline voice and data communications to and from emergency response personnel in the field. It provides a "mission specific command and control platform for civilian emergency managers and law enforcement personnel". It allows first responders to have access to real time information as they link up to the main database that contains operation relevant information. In addition vendor provides exercises (from vignette design to observer/controllers to geospecific data on which responders and command can overlay actions, locations and status). The tool can also be support distributed planning as users can access it via the Internet (securely encrypted) to collaborate on plan formulation (e.g., shared view of maps and resources). Tool can be linked with vehicle and/or individual responder tracking devices (so as units move they can view real time available resources. It can also serve as a job aid (e.g., checklist or response manuals) as data can be accessed via wireless computer tablets on the field.

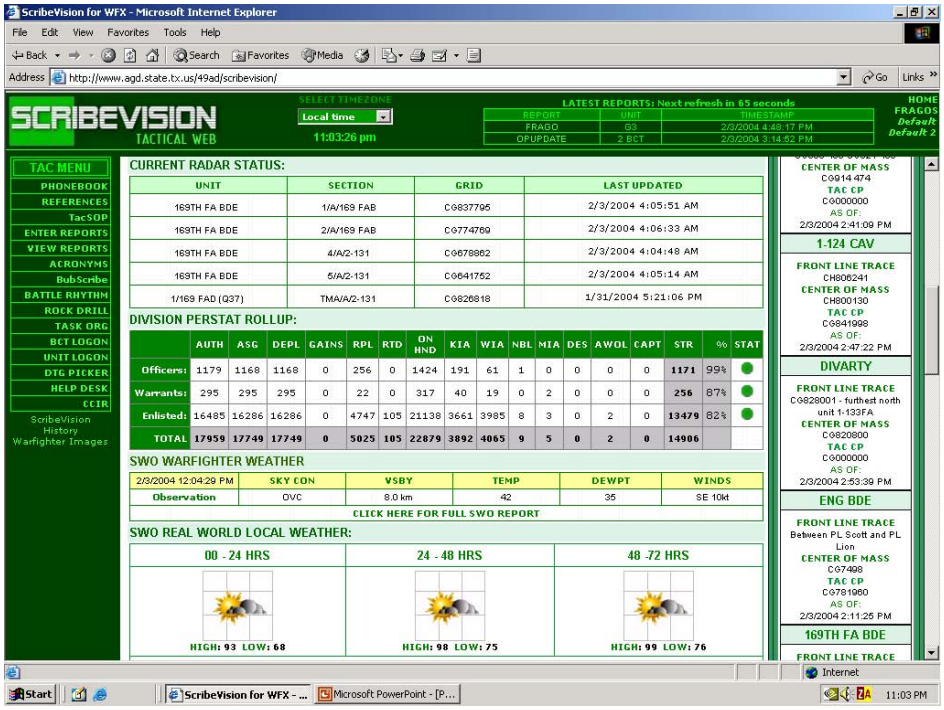
C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   Customized to meet the specific mission or training objectives of the command involved and can include:
   - Operational and logistical reporting as mandated by the units' TACSOP
   - Planning and coordination resources (Intel, weather, satellite imagery etc.)
   - Live and recorded tactical audio and video (UAV, VTC, and voice over IP)

- Live and recorded commercial audio and video (CNN, local broadcast)
- Automatically generated statistical analysis and briefing slides
- Messaging
- Research resources (internal classified/unclassified and commercial search engines and databases)
- Orders (FRAGOS, Warning Orders, etc.)
- Interfaces to external systems (C4I, Log, Personnel, unidirectional and bidirectional XML data exchange, export to file)
- Upload and download portals

Future versions are expected to support voice over IP



b) Large multi-station system, or based on individual PCs (if applicable)?

While the ScribeVision SVC2 platform can be deployed on a single server operating on an existing domain, the suggested configuration for a limited use exercise (5,000 or fewer concurrent users) is a LAN consisting of (at a minimum) a Microsoft Windows 2000, XP, or Server 2003 primary domain controller, a back up domain controller, a Microsoft Exchange server, a primary IIS (ScribeVision/Database) server, a back up IIS (ScribeVision/Database) server and a file server as required. In addition to these ScribeVision LAN requirements, each user or group of users will need to have access to a tablet, notebook or desktop PC with web access to the ScribeVision URL via a secure link through the Internet or on the secure internal network. These components can be purchased and maintained by the agency/agencies involved or ScribeVision Technologies, Inc. can install and maintain them for temporary use during the contracted period.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

ScribeVision SVC2 is designed to function on a Windows LAN/WAN or the Internet as a stand-alone product or in conjunction with Microsoft Exchange and Microsoft Outlook e-mail (PREFERRED). While interfaces to external systems are available, there are no other dependencies.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Designed to work in conjunction with existing (military combat) simulation programs.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The ScribeVision SVC2 platform itself has no such requirements but the operational requirements of the exercise and/or agencies involved may very well dictate that such these types of facilities are mandatory or advantageous.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Due to the operational security requirements for most secure networks, we recommend using only Windows 2000 or XP systems.

b) Processor speed (in MHz): Pentium II (366 MHz minimum)

c) Memory (SDR/DDR): 128 Mb minimum / 256 Mb recommended

d) Free disk space: 100 Mb minimum

e) Internet connection speed (if any): 56K dial-up minimum / 10/100 Mbps recommended

f) Display adapter: SVGA (800x600 minimum / 1024x768 recommended) 65,000 colors minimum

g) CD-ROM speed: CD not required

h) Optional accessory requirements: Audio board for audio alerts, and web cam and microphone (if video teleconferencing option is used).

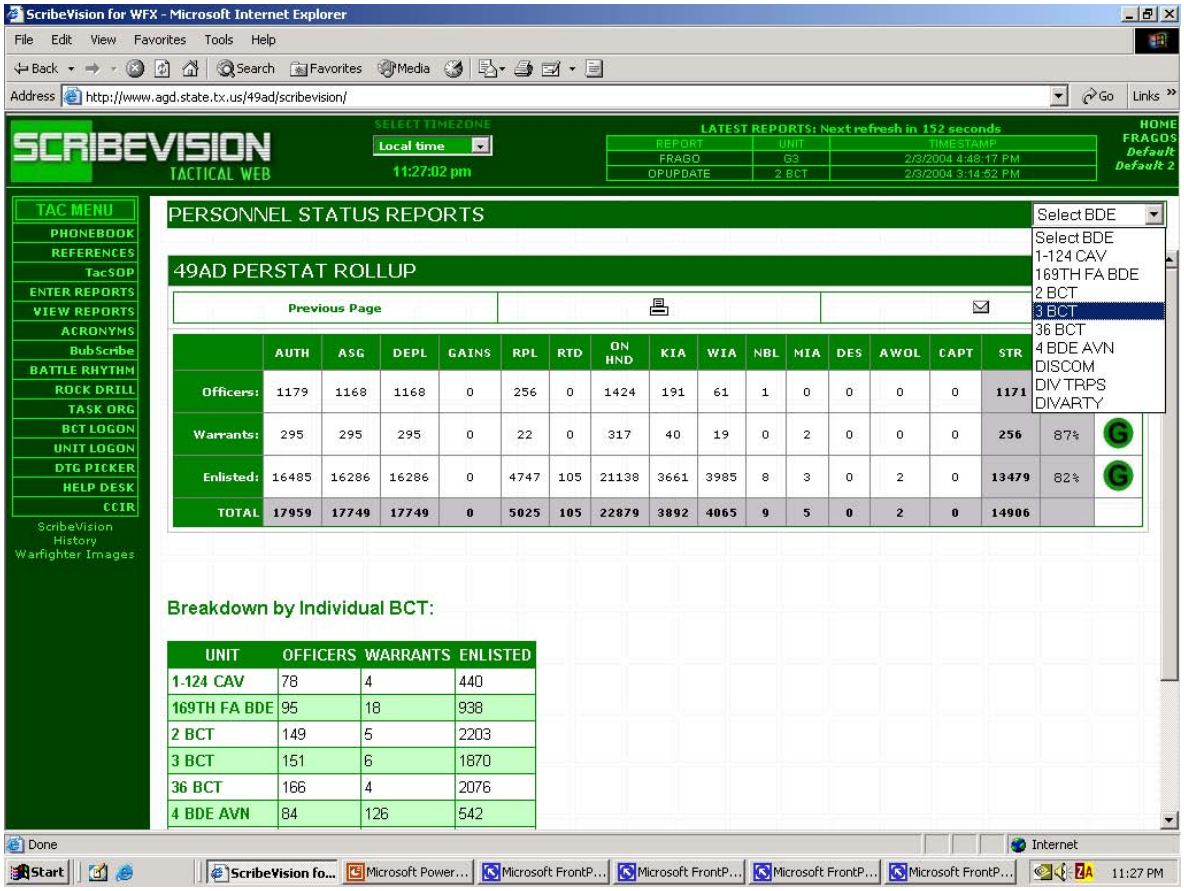
3. Describe the user interface characteristics:

The user interface is web browser based and can be customized.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

1 to 10,000+ simultaneous users



b) Custom/proprietary hardware required? If so, identify:

None.

5. Describe any user HELP features:

Reporting templates contain descriptions of information required for each field. All input forms can contain varying degrees of embedded help. As forms to capture input are developed, the embedded help may take on the following formats:

- *Narrative text* throughout the form explaining what type of information is expected to be input (with formatting examples)
- *Edits* attached to the form fields will validate the input data and notify the user if data is invalid
- *Links to sample forms* containing completed forms with sample data
- *FAQ's (Frequently Asked Questions)* will allow users to find answers to common questions
- *Chat Client* - Real-time live technical assistance can be provided through a secure chat client built into the ScribeVision system. This chat client can also be used by exercise participants for collaborative purposes.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Scenario events are recorded and time stamped. Operators provided by ScribeVision Technologies, Inc. will record all exercise data throughout the training event. If, as a requirement of the exercise or training vignette it is determined that a particular emergency response was inadequately executed during the exercise or it could provide significant educational value if replayed, STI operators can perform system rollbacks to restart the event without loss of data for after action evaluation and discussion.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

STI will provide training and training material in the following formats:

- *User manuals* containing instructions on how data is input into the system with explanations of the purpose and format of the various input forms and reports – and how the inputs and outputs fit into the process flow
- *Formal classroom sessions* will be scheduled that will tailor the training to the organizational level required.
- *One on One Sessions* with specific users/groups can be arranged as well for more complex areas
- CBT (Computer Based Training) – STI can provide training on CD that will basically provide recorded examles of how various elements of the system or used. For example, a user wishing to understand how to complete and submit a report can click a link that will play a movie of what the screen looks like when the report is filled in and submitted.
- If desired, a training version of the system can be hosted on a secure site that can allow users in multiple locations to evaluate and train through an IP connection

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Can be customized to include a library of user relevant information (e.g., plans, checklists, SOPs).

b) Exercise/scenario length/time(typical):

The exercise length is relative to the predefined objectives for the agency/agencies involved. Typical exercises to date have ranged from 3 to 5 days. The system is designed to be used in real world applications 24/7/365.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Modifications are required to customize reporting (and other features) for civilian use (current templates and screens are designed for military use). According to the vendor "many areas of the current system are essentially compatible with counter-terrorism training exercises. The mechanism to capture and display the information may be basically the same. Formatting changes will be necessary to incorporate event specific reports required by the training scenario, agencies involved, and training curriculum. Reports, on-line reference materials (regulations, statutes, hazardous chemical response data) and visual information layout will be customized to meet exercise requirements".

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Task Force Texas Camp Mabry, JRTC Fort Polk, Task Force Eagle MND - North, Stabilization Force (SFOR) Bosnia, United States European Command (EUCOM) Stuttgart, GE, III Corps Warfighter Exercise Fort Hood, and the Alamo III Exercise Fort Hood, and the 49th Armored Division.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

"Training has been conducted at all of the previous implementations of ScribeVision. STI creates the instruction curriculum, based on the specific agency-specific requirements and mission objectives of the customer. The instruction consists of four components. The first is pre-execution training to prepare exercise participants for the exercise and to give them an overview of the purpose and capabilities of the ScribeVision system. Live demonstrations are provided in which specific reports are created to demonstrate the features of the system. Users can quickly learn to use ScribeVision since they are often already familiar with web-based systems through their day-to-day use of the Internet.

The second component of the curriculum consists of the use of ScribeVision for the execution of the exercise. During the exercise, users are facilitated by STI-provided observer controllers that facilitate in the use of the system, provide guidance on scenario specific procedures and to monitor how exercise participants react to vignettes introduced into the exercise via the ScribeVision platform.

The third component of the curriculum facilitates exercise organizers and agency executives who are observing the event but who are not participating. The ScribeVision system has an observer/controller interface to provide this select group with statistics and vignette overviews not available to exercise participants. It is through this interface that agency executives gain insight into the strengths and potential weaknesses of their organizations.

The final component of the curriculum is the After Action Review. This critical part of the ScribeVision training allows agency executives, exercise participants, and the STI observer/controllers the opportunity to come together and discuss the vignettes played out during the event. STI moderates this AAR session to ensure that feedback is constantly productive and remains on track according to the predefined goals and objectives. STI moderators work with the agencies involved to identify any real-world methodologies that may differ from those used by ScribeVision during the exercise. This is key for agencies that do not use ScribeVision as their primary command and control platform outside of the exercise environment. During the AAR, moderators will point out these differences and discuss the real-world procedures as they relate to the specific agencies involved".

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

"Video teleconferences and local observer/controllers provide immediate feedback, assistance, and work with unit commanders during the AAR phase of the exercise".

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Observer/controllers are provided by ScribeVision. STI will work with all required client/participating agency to develop a training exercise model and scenarios specific to the event and/or agency mission as outlined in the previous section. Per the vendor, "simply stated, ScribeVision not only provides…a training execution platform for local, state and national exercises but it also allows agencies to use the same tool in the real-world as their primary or supplementary command and control platform or for interagency collaboration".

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Each vignette is a series of trigger events to which exercise participants must react. As events are introduced into the exercise by phone, fax, e-mail, and/or ScribeVision (as required by the exercise rules determined in advance), students collaborate, prepare reports and execute their emergency responses if appropriate. All reports and associated actions are recorded for review and training purposes. Depending on the requirements of the exercise, central and regional command centers can be established for event tracking and executive observation.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Yes, vendor customizations and limited user customizations (e.g., reporting fields). Since ScribeVision is a database-driven product, many elements of the system can be customized. For example, values that a user may select from a 'drop down menu' while inputting a form are dynamically pulled from a table within the database rather than 'hard coded'. An 'administration' area of the system has forms that allow a designated user or users to modify the contents of the populating tables. As the data are modified, they are propagated to all areas of the system data.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The process of formulating a curriculum for an exercise is conducted through a series of meetings. Usually 4 to 6 meetings are required to establish the criteria for the event and confirm the vignettes developed as a result of the initial meetings. Traditional project management disciplines are employed throughout the exercise so that the agencies involved and event planners (if different) are fully informed and know what to expect at each milestone.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Vendor observer/controllers can conduct mid action reviews (pause exercise and replay certain vignettes) and AAR.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
X	Computer Based Training (other than Simulation)
	Game
	Student Learning
X	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	1	Multiple dynamic paths / probabilistic outcomes
	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual		Scenario replay
	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)[39]
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
2	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

[39] While current versions of ScribeVision SVC2 do not incorporate HLA, it can be incorporated and supported if HLA is a requirement of the exercise.

3. Training Attributes

	Application Environment:		**Content**
	Training	2	Knowledge
1	Exercise	1	Applied
1	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
	Self-paced		Local Officials
1	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear		Equipment Training
2	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA		TTX
1	Fire		FE
2	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
2	Transportation		
2	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
	High
1	Medium
	Low
	N/A

	Current Applicability to ODP
1	Very
	Somewhat
	Limited

	Ease of Use
	Easy
	Relatively Easy
	Difficult
1	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

5) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) **No, Vendor must quote a system based on user requirements** (*end here*)

Vendor stated "it is difficult to provide a narrow cost range since exercise requirements will vary greatly from one agency to another. In some uses we will provide customization during training as the leadership determines it wants to create new data streams or have new reports available that are different from when the exercise began. The length, breadth and depth of the exercise can be a factor, too. Furthermore, if the system is being used as a daily operating tool, then less interface from our people will be needed due to better operator familiarity. We will need to assess each situation individually and price accordingly".

6) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

7) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

8) What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

SEAS/Homeland Security Simulation (a customized version of SEAS)

Developer: Simulex, Inc.

Contact information:
Simulex Inc.
Purdue Technology Center
3000 Kent Avenue
West Lafayette, IN 47906
Phone: (765) 463-2690
Fax: (765) 463-2699
Email: alok@simulexinc.com

Technical Support Contact Information:
Alok Chaturvedi, Ph.D. (Chief Technology Officer)
Shailendra Raj Mehta, Ph.D. (Chief Economist)
Phone: (765) 463-2690

Website: http://www.seasllc.com/

COTS/GOTS: COTS

Product status (version in use): v. 4.3

Source(s) of Evaluation: *check all that apply*

X	Observed Product in use during a training or exercise *(in Measured Response July 2003)*
	Observed Demo
X	Played/Used product *(in Measured Response July 2003)*
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
X	Related Papers *(Local HHS user's guide, Measured Response PPT briefing; MR 2002 and 2003 brochures)*
	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

This is a flexible agent-based simulation that can be extensively customized by the user or developer. It's designed to be support computational experiments. The agent-based simulation engine is integrated with multiple models: mobility, well-being of people, epidemiological, radiological, and transportation to simulate a variety of incidents and the economic effects.

It can be used by a single person (and is being developed for a single-user bioterrorism application for the Dept. of Justice) or by multiple people or teams. It can also run without any interactive input, as an agent-only simulation.

Key features include:

- It requires customization – this is not an off-the-shelf product.
- Incorporates world modeling (geography and infrastructure) & agent modeling (citizens and their behavior including. epidemiology & well-being) at varying levels of detail with a variable number of agents.
- Integration across models – effects can be intertwined among models
- Modeling of psychological aspects – it simulates changes in behavior (panic, rioting, clustering, crowd behavior). This is theoretically based in cognitive psychology research and can be tweaked if desired.
- Scalability in terms of the number of agents and the granularity of simulation – there can be more or less detail in agent and world modeling. The maximum number of agents is limited by processing capacity.
- Multi-resolution environment – Agents can represent varying numbers of people in different parts of the simulation at the same time
- Underlying economic model means that any action can have an economic impact
- Highly customizable – 1) can vary detail in world and agent modeling, 2) vary # agents and resolution (how many people are represented by each agent), 3) user intended to customize user interface to include just those variables of interest – however many there are.
- Extensive back-end data query capability. Users have access to the entire data dictionary and can drill down into any part of the data that's captured in the simulation.
- Supports 1 to N users

The US Army is using a version of the underlying simulation (called SEAS) customized for recruiting. It's used in 2 ways: 1) for staff training on the process of recruiting; 2) to develop vision for future for recruiting. DOJ is having Simulex develop a single-user version to train intel people on response to bioterrorism.

ThoughtLink observed the Homeland Security version of the simulation during a proof-of-principle exercise or demonstration called Measured Response, at Purdue University in July 2003. This demonstration was essentially a facilitated functional exercise involving multi-agency, multi-jurisdictional teams.

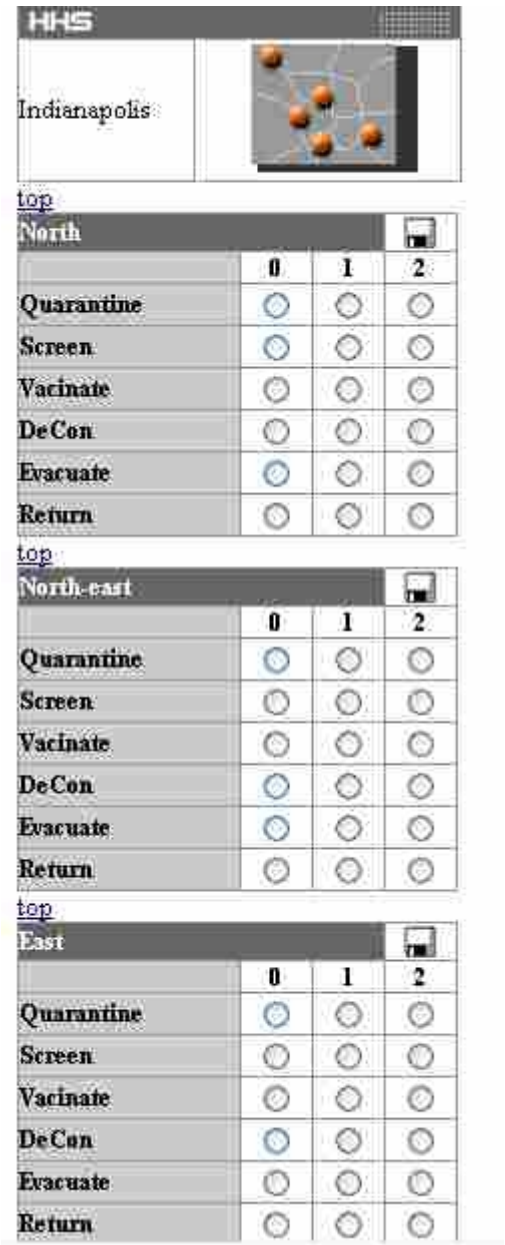
Participants were organized into local, state, and Federal levels. Within each level, sub-teams represented HHS, HLS and DOT for that level. Local teams viewed info on a map of 5 burgs around a city; state teams viewed 5 cities in the state; and Federal teams viewed a US map with info on 5 cities highlighted. ThoughtLink played on two of the local response teams: HHS and HLS.

Structure of exercise: facilitated workshop, short intro to game, play one round, AAR; facilitated workshop, play a second round, AAR.

Situation: starts on the day of a local music festival, participants find out that one guy from Qatar who attended the festival has smallpox. The local teams have choices that include: close road, railway or all transportation; start quarantine, screening, decon, and vaccination programs; evacuate area or return to area. State and Federal levels have similar kinds of choices covering their larger geographical areas.

Participants entered decisions into small handheld devices – sample interface shown below for the Local HHS participant. The 0/1/2 levels for each action are described in a user's guide provided to players.

Figure 1. User interface for Local HHS player

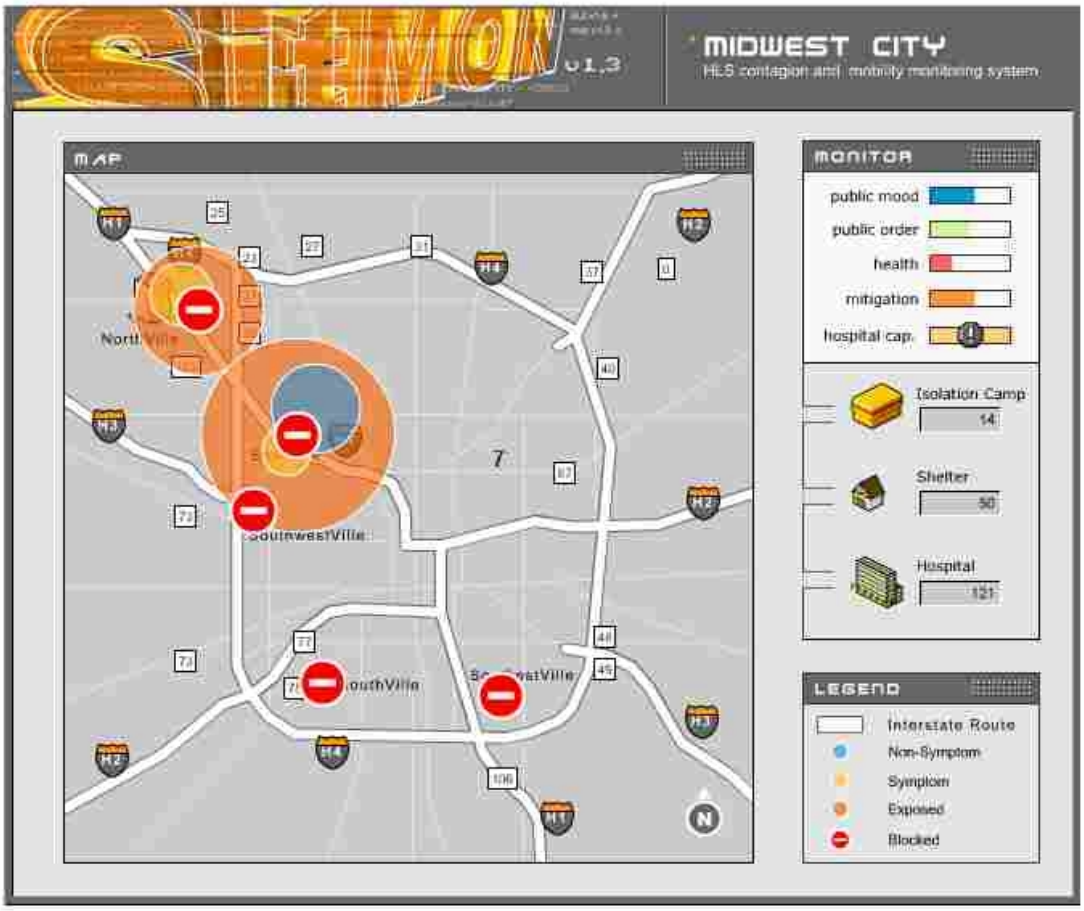


The simulation is handling movement of people, spread of disease, effects of exposure to the disease (illness and mortality), and how those change (if at all) as a result of player decision-making. 470K agents were used. The level of resolution varied: At the Federal level, one agent represented 1000 people who would act similarly, at the state level the ratio was 1:100, and 1:10 at the local level.

> The players were in one room, in 3 clusters. Each level of government was in one cluster, looking at 2 screens showing their geographical view (burgs, cities, or states) and some result indicators. At the local level, one screen showed a 2-D map with public mood in each ville (could drill down see # people in isolation camp, shelter, hospital – see figure below). The second screen had a 2-D map with the ability to click on each ville and see # infected, exposed, and recovered. Both views had monitors showing state of public mood, health, mitigation, estimated financial loss, and hospital costs. Players communicated with each

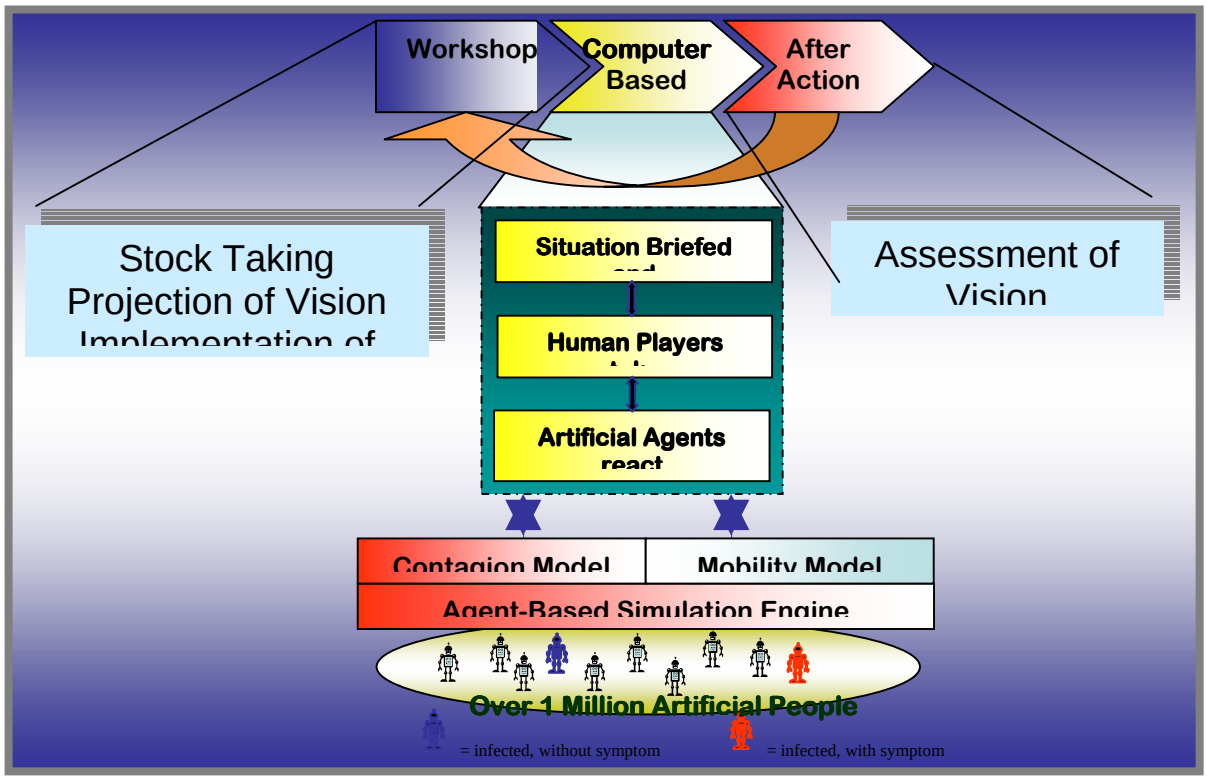
other by text chatting (always available at the bottom of each user interface) or by walking around to talk face-to-face.

Figure 2. Sample view of local screen from an earlier homeland security exercise:

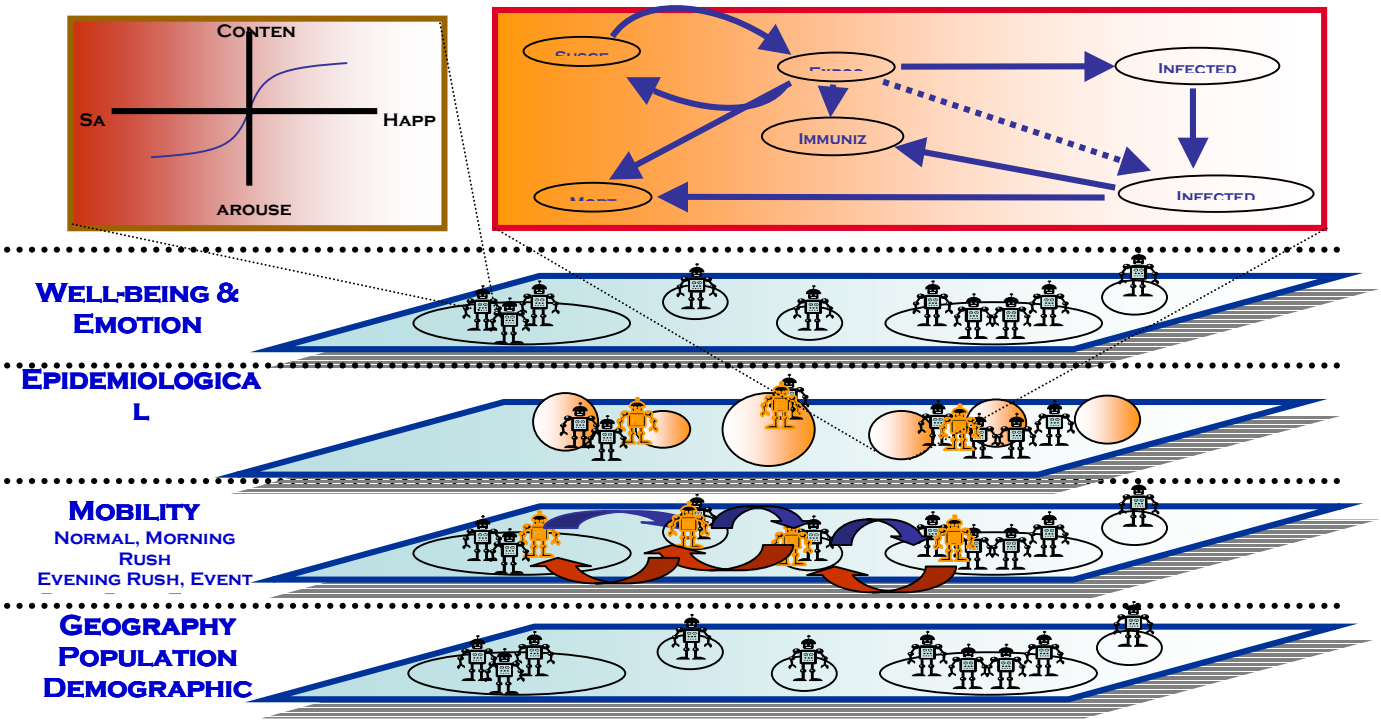


Play ended at an arbitrary point – updates were available on # people sick and dead, well-being, other selected results. When round 2 began, the local team found out that Northville had about 300+ people exposed and infected, while the other 4 villes had < 20 infected and exposed people in each ville.

Graphic depicting process/structure



Graphic of the models involved in the simulation



- Current Target audience:
  Anyone in HLS area

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
0	Non-Electronic Simulation
3	Computer Based Training other than Simulation
3	Game
3	Instructor/Facilitator Aid: Student Interfacing
3	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and

			more than one outcome possible
2	Group	2	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
3	Equipment	3	Does not provide feedback or AAR
		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

1. Multi-Users Collaborative Tool - allows multiple users to collaborate to make decisions.
2. Visualization and Statistic Acquisition tools - a set of three-D and two-D interactive graphics that allow the user to query and view information of the simulation in a user friendly way.
3. SEAS Engine - Multi agent simulation engine.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand-alone. If the customer has enterprise-level resources, those can be linked in with the simulation but are not required.

c) Large multi-station system, or based on individual PCs?

SEAS is a distributed multi-station system.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Simulation models can be self-driven or trace-driven by which is meant respectively, deriving input values by sampling randomly from probability distributions, or deriving data from measurements of the real world systems. The simulation outcomes are validated to ensure an accurate representation of the behavior of its real-world counterpart, and for a specific level of resolution.

e) Web-based application, LAN, or a single computer/system-based application?

Distributed multi-player collaborative Web-based simulation.

f) Describe any debriefing after-action reporting support tools:

After-action analytic intelligence reporting is a versatile, integrated three-D and two-D interactive graphics platform for a wide range of in-depth analysis. Its capabilities include predictive and descriptive modeling, forecasting, optimization, with drilldown capabilities into the simulation, and more. It provides analysis-ready information compatible with relational, OLAP and XML storage options - all from the same, consistent foundational inputs. The dynamic data and retrieval tool allows customized selection of important categories to create analytical statistics and graphic for in-depth investigation. Moreover, its open design is compatible with existing query/reporting tools and allows integration into third-party BI environments for smooth information dissemination.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Multimedia immersive command decision center. For example, in Measured Response 2003, there were 7 screens in use: 6 screens showing maps and various indicators of results in the simulated world (2 screens each for Federal, state and local) plus a screen showing a 3D view of the people in the simulated world, in this instance they were walking around the downtown festival area.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Server software includes:

Apache Web server
Oracle 9 database
JavaSpace
Jini 2.0
Xindice database
Flash 6.0
Internet Explorer
Tomcat Web application server

The server side is grid-enabled and scalable. It can run on one computer or thousands of computers in a Linux or Solaris environment. It's also possible though not optimal to run it in a Windows environment.

The following describes the client software requirements.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Windows XP, 2000, PocketPC, and Linux.

b) Processor speed (in MHz): 1 GHz

c) Memory (SDR/DDR): 128 MB

d) Free disk space: 100MB

e) Internet connection speed (if any): 56 Kb, Ethernet connection (10 MB) recommended

f) Display adapter: SVGA 1024 X 768

g) CD-ROM speed: N/A

h) Optional accessory requirements[5]: N/A

5. Describe the user interface characteristics:

There are two components to the user interface: the interface used to enter data/decisions and the display of results. The interface used to enter data/decisions is reconfigurable – it's designed to support iterative rapid experimentation. The exercise planner can reconfigure the data entry interface. The data entry interface can be slimmed down to run on a portable device or be more full-featured to run on larger monitors.

Results can be shown in a variety of 2-D maps, bars, graphs, etc. A 3D view of the agent world is also available.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)? 1-200

b) Number persons usually trained simultaneously? 40-50

c) Custom/proprietary hardware required? If so, identify: No.

7. Describe any user HELP features:

On screen user prompted scenario support with online documentation

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

SEAS allows for multi-period performance data for each entity in each period to be stored in a database. This allows for student performance to be tracked on an individual basis under each scenario. For learning purposes, if students make a mistake, the game master can turn the clock back and pick up the simulation at a previous time and to rerun the game from there.

SEAS allows for the analysis of the exercise inputs, participants' response to overall resource utilization, and resulting outcome review. Furthermore, analysis-ready information is compatible with existing BI query/reporting tools and with relational, OLAP and XML storage options.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Only a brief time is needed to familiarize the user before starting the scenario.

2. Attributes

	Application Environment:		**Content**
2	Training	0	Knowledge
1	Exercise	1	Applied
1	Operational	3	Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
2	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	3	Awareness
1	Advanced	3	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
2	Nuclear	3	Equipment Training
2	Explosion	3	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training (they had a 3 here – ask RA or TomH?)
1	EMS	3	Drills
1	EMA	1	TTX
1	Fire	1	FE
1	Govt. Administrator	3	FSE
1	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		**Incident Stage Supported**
1	Public Works	1	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
2	Initial Acquisition	1	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
Training on the software is provided to the system administrator or experiment designers in how to configure it and design experiment. These people then develop T&E content and train users as needed.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

The knowledge bases contained in this integrated simulation environment help determine the preparedness and response effectiveness of the emergency response personnel during a terrorist attack. Relevant information is used to define the traits and behaviors of agents using computational models for emotion/psychology, demographic, economic, financial, transportation, IT (Cyber-terrorism), epidemiology(Bio-terrorism), and spread/dispersion of chemical and radioactive agents used in simulation of terrorist attack. Infection potential of various viruses that may be used the context of bio-terror attacks already programmed.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

The exercise characteristics are customizable (real-time/fast-time/time-jump) and can include long, short, tutorial, self-paced, normal, operation, failures, simulation supported and scripted among others.

d) Exercise/scenario length/time(typical):

Sequences of 10-30 minute rounds (time is customizable due to varying levels of simulation complexity). The exercise developer/planner can control the length of rounds.

e) Potential equipment and/or facilities product can address: N/A

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Currently applicable to biological, chemical, and radiological events.

g) Are there any constraints on supported exercises or scenarios?

The capacity of the hardware hosting the SEAS engine could limit the overall simulation complexity.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The single player DOJ simulation under development will be self-paced. Typically it has been used to date as a web-based collaborative tool. It is flexible enough to be used in many other ways, e.g., classroom, near-real-time exercise, or case study.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

The simulation can operate under all the modes listed above - Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

N/A

d) Does a curriculum already exist? If so, briefly describe its form and content

Simulex/Purdue University has developed a one day curriculum for bio-terrorism first responders which includes management of the emergency, coordinating with other agencies, dealing with the media, managing the public mood and the well being of the citizens. Simulation runs are interspersed with after action reviews. Curricula have also been developed for training students in business settings.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Scenarios can be recorded and played forwards and/or rolled back. Performance measures and metrics are available.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Participant/team feedback include both immediate and AAR. Both feature 2D and 3D animation with text and analytical graphics to relate performance with actions taken during simulation.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Tools are available to support scenario and environment building with extensive scenario library support.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The integrated controls environment allows immediate feedback to participants in exercise to real-time/fast-time/time-jump data recording & real-time analysis support.

6. Customization

a) Can the product be customized? If so, how, and by whom?
The product can be customized by the user or vendor depending on complexity of proposed modifications. It mimics the geography, demography, behavior responses and infrastructure of the target situation.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Once Simulex has obtained the data and modeled the business process; the setup time can range between two days to two months depending on the complexity of the scenario.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

This depends on the complexity of the proposed modification.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

It typically takes 10-30 minutes depending on scenario complexity.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Its capabilities include predictive and descriptive modeling, forecasting, optimization, with drilldown capabilities into the simulation through the dynamic data and retrieval tool to create analytical statistics and graphic for in-depth investigation and review.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High	**X**	Very
X	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
X	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
1	Structured feedback among players
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
1	Remote Observation
2	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Part-task training
1	Pre-training
1	Distributed, collaborative, decision-making environment
3	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) **No, Vendor must quote a system based on user requirements (*end here*).** The vendor quote depends on the customization involve, the complexity of the situation being modeled, the number of human players supported and the supporting materials developed.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Security and Emergency Response Information System (SERIS)

US ARMY ARDEC, Picatinny Arsenal, NJ

Contact information:
Ms. Beverly Laidig, Development Project Officer (DPO)
Tel #: 973-724-3018,
Email: blaidig@pica.army.mil

Additional Contact information:
Richie Pooran, Software DPO
Tel #: 973-724-6908,
Email: rpooran@pica.army.mil

Website:
http://www.pica.army.mil/HLD/

Product status (version in use):
Version 1.0 to be Beta tested in 01/04

Date of Evaluation: December 11, 2003

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [ ] Observed Demo
- [ ] Played/Used product
- [ ] Attended Briefing
- [x] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [x] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

- [x] Brochure/Prospectus
- [x] CD-Rom
- [ ] Related Papers
- [x] Material from Internet
- [ ] Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

The Security and Emergency Response Information System (SERIS) is a prototype situational awareness, control, tracking, and decision support system for Homeland Security and Incident/Emergency Response operations by local and regional emergency management agencies. This system is an emergency response adaptation of the Army's Combat Decision Aid System (CDAS), developed by US Army Armaments, Research, Development, and Engineering Center (ARDEC) at Picatinny, NJ, designed to assist army commanders, at all levels, in making tactical decisions based on situational awareness and available resources.

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  SERIS provides customizable and expandable database management and graphical user tools tailored to meet the specific requirements of a response organization to employ and control assets, update and assess situational information, plan contingencies, and train for potential events. By leveraging and integrating emerging networking, information processing/decision support and information assurance technologies, this system provides both military and civilian emergency response and security agencies with the capability to perform site protection, vulnerability assessment, damage mitigation, and response and recovery operations for civil disasters (hurricanes, flooding, catastrophic accidents, etc.) as well as antiterrorism and counter terrorism operations within a fully distributed and secure information environment. SERIS will recommend courses of action based on analysis of situational and available resource information, and potential scenarios to optimize the deployment of response assets. This dynamic system can be networked to individual vehicles and command centers that distribute and continually update critical situational information graphically throughout the network. These capabilities will assist in gaining and maintaining situational awareness focusing on friendly security and response assets, command and control of these assets, War-gaming of response to potential threats or incidents, and actual deployment of response assets.

- Current Target audience:

  SERIS will be utilized by first responders (police, fire, EMS, HAZMAT, etc) emergency operation centers, incident command, dispatch centers at all tier levels (local, county, state and federal).

- Potential equipment and/or facilities product can address:

  Critical infrastructure such as roads, buildings and vehicles. SERIS will also address personnel. SERIS does not address the use of a particular piece of equipment, but can perform vulnerability analysis for critical infrastructure (i.e., identify potential locations from which a facility may be attacked).

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  SERIS has the following capabilities:
  - COORDINATION
    - between regional entities

        - inter-agency intelligence sharing
        - allows the military to coordinate with civil governments
    - VIGILANCE
        - monitor/detection
        - infrastructure security
        - medical security
        - security priorities
    - EMERGENCY RESPONSE:
        - situational awareness
        - course of action analysis
        - prioritization of events
        - allocation of resources
    - CONSEQUENCE MANAGEMENT:
        - stockpile commitment
        - information triage
        - continuity of operations
        - continuity of government
    - BEST PRACTICES:
        - planning
        - training

It will allow, first responders (police, fire, EMS, HAZMAT, etc), emergency operation centers, incident command, dispatch centers at all tier levels (local, county, state and federal) to train and exercise potential scenarios in advance of any incident. It would be used as a management tool during actual incidents and will be used during post-incident analysis to create after action reports and implement lessons-learned.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The SERIS software is capable to execute on hand-held devices such as PDA's, laptops, personal computers and on servers. The major components include a Graphical User Interface, Response Guidance, Database, Mapping, Networking, and Communications (both wired and wireless)

b) Large multi-station system, or based on individual units/PCs?

SERIS is a central system connected to various nodes. The central system can be a server, a PC or a mobile unit. The central unit communicates with various other nodes, which can be either fixed or mobile (laptop or PDA).

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

SERIS is a standalone system but will interface with other tools such as ADASHI, which generates plume models, and HAZUS (which is used in natural disaster such as dam-breaks, floods, hurricane, etc.). SERIS will also interface with other analysis tools such as EM2000.

d) If simulation models are used, what is the basis of the data and/or distributions used?

SERIS will interface with EPICS, a simulation tool, for training scenarios. The basis for the data is from personnel in the field. EPICS utilizes personnel (police, fire, emergency, etc) that will be involved in the actual incidents to conduct all their exercises.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

No special or unique facilities beyond computers are necessary to execute the SERIS software.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System (Windows XP, 2000, etc.; MAC OS; UNIX; other):
Currently Windows 2000, but can be ported to other OS's (e.g., Linux)

b) Processor speed (in MHz):
3 GHz (can run on slower processor)

c) Memory (SDR/DDR):
40 GB IDE 7200 rpm

d) Free disk space:
512 MB

e) Internet connection speed (if any):
Can be linked to other agencies for information sharing (e.g., FAA and National Weather Service). Internet connection not necessary to run system.

f) Display adapter:

g) CD-ROM speed:

X 52

h) Optional accessory requirements: None specified

3. Describe the user interface characteristics:

As mentioned earlier, SERIS is a central system connected to various network nodes. The central system can be a server, a PC or a mobile unit. The central unit communicates with various other nodes, which can be either fixed or mobile (laptop or PDA). User interface characteristics could not be evaluated as SERIS is under development to date.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
N/A

b) Custom/proprietary hardware required? If so, identify:
None

5. Describe any user HELP features:

User Manual and help menu are available. Help menu includes index of help topics and searchable database.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

SERIS records all communication traffic and all incidents.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

SERIS is a user-friendly system that will allow operators to become proficient within 4 hours, as reported by the US ARMY ARDEC, Picatinny Arsenal. Installation and training is provided by the SERIS team and via a training manual or training video.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Content consists of user manual and a training video. SERIS can help agencies perform site protection, vulnerability analysis, damage mitigation, and response and recovery operations for disasters. Its high security profile makes it useful for counter-terrorism. SERIS provides customizable and expandable database management and graphical user tools tailored to meet the specific requirements of a response organization to employ and control assets, update and assess situational information, plan contingencies, and train for potential events. These potential events can be pre-arranged to reflect incidents involving WMD.

b) Time required for a typical exercise or scenario (if applicable):

Time required depends on the objectives of the exercise. Generally, between 2-4 hours as reported by the US ARMY ARDEC, Picatinny Arsenal.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

No modifications required. Any scenario that can be generated can be played within the SERIS modes of operation; training is a distinct mode of operation in SERIS.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Product is to be Beta tested 01/04. Currently, scenarios are being written to simulate a dam break at Lake Hopatcong, a bioterrorism attack in Morris County and a port incident in Newark.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

N/A

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

SERIS can be used as a tool to generate After Action Reports. It captures all communications and details of incidents to allow for a complete replay of any incident. This information is stored in its' database and facilitates the production of an AAR. The software was designed to capture lessons-learned for future enhancements.

4. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

Instructors would be required to stage an event. SERIS can be used to analyze the data and information shared during the reaction to this event, and feedback provided to the appropriate participants based on information stored in its' database.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

It will allow, first responders (police, fire, EMS, HAZMAT, etc) emergency operation centers, incident command, dispatch centers at all tier levels (local, county, state and federal) to train and exercise potential scenarios in advance of any incident.

5. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

System can be customized to meet user needs. The details and functions available to operators of this system are based on their needs.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

N/A. This system has not been fully demonstrated during an exercise/scenario to date. ARDEC is partnering with the U.S. Military Academy at West Point to deploy SERIS

6. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

SERIS can be used as a tool to generate After Action Reports or it can be integrated with other IT to provide this function

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	1	Multiple dynamic paths / probabilistic outcomes
0	Commercially owned	0	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
2	Individual	1	Scenario replay
2	Group	1	Automated summary of data
2	Small multi-user team (up to 25 persons)	2	SME controls AAR
1	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
1	Multi- Agency Participation		

		1	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
0	Equipment	0	Standalone
		1	LAN
	Environment	2	WAN
1	Generic	2	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
1	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
2	Chemical	1	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
2	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
1	EMA	2	TTX
2	Fire	2	FE
1	Govt. Administrator	2	FSE
2	Health Care	2	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
2	Private Sector		

	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
0	High
0	Medium
0	Low
1	N/A

	Current Applicability to ODP
1	Very
0	Somewhat
0	Limited

	Ease of Use
0	Easy
0	Relatively Easy
0	Difficult
1	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
2 Tracking participant performance through multiple tries (automation)
2 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

2 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
0 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. **No, Vendor must quote a system based on user requirements** (*end here*)

2. Does the cost apply to: (choose one)
    a. Product
    b. Service
    c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

SIMfX Interactive Training Simulations

Developer: Jake Jacobson

Contact information: 5590 50Th. St. N.W.
Salmon Arm, B.C.
V1E 3A6 Canada

Additional Contact information:
Email: info@simfx.com Ph/Fax: 250-832-2300

Website: www.simfx.com Product status (version in use): v5.0

Date of Evaluation: December 17, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo
- X Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- X Brochure/Prospectus
- X CD-Rom
- Related Papers
- X Material from Internet
- Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  The SIMfX simulation program is geared primarily for two main groups, first line responders such as Firefighters, and support staff such as incident decisions makers. The program can be used for practical training exercises, pre planning, enhancing overhead managements view of a situation, a media presentation tool, a public relations tool, and much more.

- Current Target audience:

  Audience could be any organization that must deal with an emergency situation, be it a local Fire Department, Emergency Operations Centre, Security force, Institution management, etc.

- Potential equipment and/or facilities product can address:

  This simulation provides a database of over 400 pictures of various facilities and equipment. This product can also store up to 168 additional pictures of equipment or structures that the user can add to the pre-existing library.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Communities, organizations or agencies that have any form of response plan, must put the plan to a test to see if it is effective or needs modification. SIMfX simulations easily permit an agency to set up a computer based scenario specific to the agencies needs, using actual pictures of the area in question, and run various "what if" situations. The program can be made to reflect the training needs of the personnel involved.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   There are two major components, one being the hardware consisting of any computer, the other being the SIMfX software program. Additional components used to enhance the effectiveness of the simulation would include a data projector and a digital camera.

b) Large multi-station system, or based on individual PCs (if applicable)?

   The program is currently set up for single PC use.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

SIMfX is a standalone product. Its effectiveness can be enhanced by additional A/V components.

d) If simulation models are used, what is the basis of the data and/or distributions used?

SIMfX does not rely on data input, but rather the acquired experience of the trainer. The program does not present the user with "canned" scenarios, nor is it limited to a particular number of possibilities and options. The trainer sets up the scenario using the pictures, videos, and sound effects provided. The program can be modified with local pictures to represent local scenarios or newly acquired equipment. Scenes are brought to life with the help of simulated fire, smoke, sound effects, flashing lights and a variety of items such as vehicles, hoses, ladders, victims, bystanders, all of which can be manipulated by the trainees.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

There are no required facilities. Any small room or large auditorium can be used.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other*:
Any platform can be used.

b) Processor speed (in MHz):
200 MHz minimum

c) Memory (SDR/DDR):
32 MB RAM

d) Free disk space:
25 MB on hard drive

e) Internet connection speed (if any):
N/A

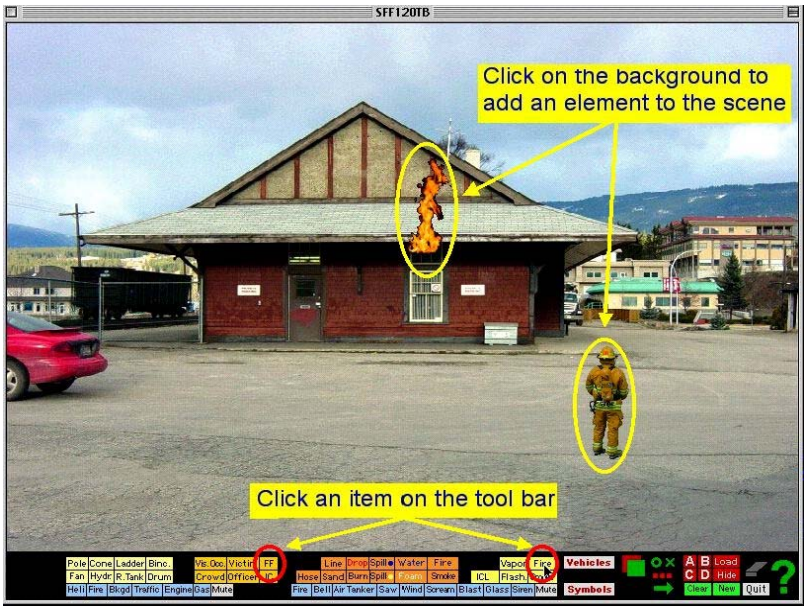
f) Display adapter:
Standard

g) CD-ROM speed:
2X

h) Optional accessory requirements:
N/A

3. Describe the user interface characteristics:

Program is icon driven, point and click with a mouse. Once a background or scene is selected the trainer can arrange the scenario to best simulate the event. This is done by pointing and clicking the mouse and by dragging items (equipment, victims, vehicles, chemicals, etc…) across the screen. See below for interface.



4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
N/A

b) Custom/proprietary hardware required? If so, identify:
N/A

5. Describe any user HELP features:

There is a user's manual embedded in the program. There is also a "balloon" explanation option available in the Assistance Menu.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Recording and storage of scenarios must be done with the aid of a third party program. This product does not record or track the trainee's performance itself.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The simulation program is self explanatory and comes with a user's manual. Usually it takes about 1 to 2 hours to become familiar with the program, according to the vendor.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

The program can be modified with local pictures to represent local scenarios or newly acquired equipment. Scenes are brought to life with the help of simulated fire, smoke, sound effects, flashing lights and a variety of items such as vehicles, hoses, ladders, victims, bystanders, all of which can be manipulated by the trainees.

b) Time required for a typical exercise or scenario (if applicable):

It depends on the complexity and number of trainees; it could run as little as a few minutes to several hours for more comprehensive and complex training.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Modifications would be needed. These would require loading pictures or clips of the desired images or equipment into SIMfX and then using these to construct the scenario of interest (e.g., burning building, chemical spill, hostage crisis).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

There is no curriculum associated with the simulation.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback or AAR must be provided by trainer, who is managing the simulation. A third-party program could be used for this if desired (e.g., Snagit or Dazzle).

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

This product is comprised of 4 programs that each relate to both overlapping and distinct scenarios. These are structural firefighting, wildland firefighting, airport rescue and firefighting, and hazardous materials incidents.

Scenarios can be made on the fly, and changed instantly according to training needs. They can also be pre-planned or recorded as they are being played out. Scripting is not needed because the trainee's are responding to a situation as they would in real life. There is a user's manual included with the program that has tips, suggestions and includes demonstrations of how to set up a scenario.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The program consists of sound and visual cues. The pace can be changed at any time. The trainer/instructor has full control over every aspect (excluding the decisions that the trainee's make). The program can be stopped at any time for review. There is a clock timer available if required.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Yes, customization is an option. The user customizes the program by adding the desired background pictures. SIMfX will customize it by adding elements (such as company trucks) provided by the user. The user can send SIMfX pictures in jpg. format, which can be added to the program permanently. Customization done by SIMfX takes 1-2 weeks, as reported by vendor, and customization done by the user takes minutes. If a client wants to have a picture of their own fire truck, for example, they would take a digital picture and send it to SIMfX to load into the program. If the user wants to add a background picture from their local area, they take a digital picture and drop it into the program. The user can also add maps, air photo's, text and video clips at will.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The program boots up in about a minute or two, depending on your processor speed. It can take up to 10-15 minutes for a new user to set up a scenario, and as little as 2-3 minutes for an experienced user to set up a scenario.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

The scenario can be stopped (and then continued) at any time for analysis. You could also record the scenario to future playback or practice.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning

X	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	1	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	3	Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
1	Group	0	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)	3	Does not provide feedback or AAR
1	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity**
2	Equipment	1	Standalone
		0	LAN
	Environment	0	WAN
1	Generic	0	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	2	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
0	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)

1	Chemical	2	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	2	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
2	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
2	Govt. Administrator	3	FSE
2	Health Care	2	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
2	Law Enforcement	3	National Training Exercise
2	Public Health		
1	Public Safety Communication		
1	Public Works		
1	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
1	High
0	Medium
0	Low
0	N/A

	Current Applicability to ODP
1	Very
0	Somewhat
0	Limited

	Ease of Use
0	Easy
1	Relatively Easy
0	Difficult
0	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
2	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
2	Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
2 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

2 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
3 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

3 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. **Yes** (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. **Product**
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. **Standardized**
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	495.00			
Module Purchase				
Product License (unspecified)	100.00			
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				

Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option	150.00			
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

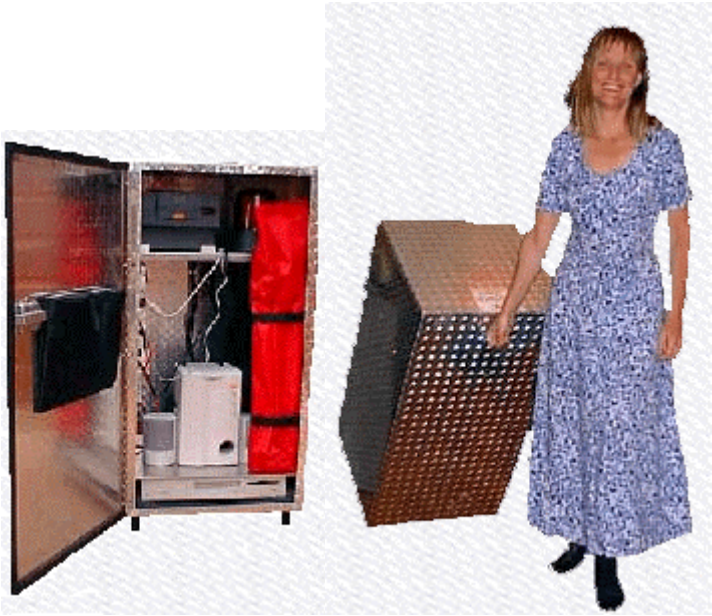
Please note: A complete simulation unit (opposed to C.D. only) is available for $8500.00. See below for details (information from www.simfx.com).

BX120: The complete SIMfX Simulator System

The SIMfX Emergency Response Training Simulator system is completely self contained. It comes with one copy of each of our software programs and includes all the necessary components for a simulation: a LCD projector (suitable also for other uses), digital camera, sound system, rear projection screen, flashing light and computer... all housed in a sturdy aluminum case.

The unit is designed to be portable: everything is securely buckled in and the attached wheels make it very easy to move around.

It is extremely easy to set up - set up time is only 5-6 minutes. All you need to supply are your trainees with a few portable radios.



SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: This survey was completed with significant input from STAR Technology Corporation, and substantially reflects their judgment of system capabilities.

A. Basic Product Information

Name of Product:

SimViz/3400ICS-S

Developer: STAR Technology Corporation

Contact information:
Johnny J. Harper
President and CEO
Star Technology Corp.
8003 Forbes Place, Suite 310
Springfield, VA 22151

Technical Support Contact Information:

Website: http://www.startechcorp.com/structure.htm

COTS/GOTS: COTS

Product status (version in use): SimViz/3400ICS Version 1.0

B. Summary Product Description:

1. What is the focus/specialty of the product?

The SimViz/3400ICS simulator is a computer-based system that provides a synthetic environment in which structure-based emergency incidents are used to train emergency response command staff in the application of the Incident Command System (ICS).
The system can also be used to teach strike team leaders or division supervisors how to manage their response resources and make proper decisions based on the audiovisual cues they receive in a scenario.

2. Current Target Audience:

The existing product version is targeted toward fire and rescue training academies at the federal, state, and large municipality level. The DoD Fire Academy is evaluating a similar operational prototype to this version.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing

	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	2	Generic
0	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	0	Multiple dynamic paths through the product and more than one out come possible
2	Group	1	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)	1	
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The SimViz/3400ICS system consists of a software simulation application and related utility programs. It is offered as a turn-key system including industry standard computer hardware (PCs, and networking hardware). The software provides a virtual interactive environment that supports multi-player collaboration via networked workstations with the following attributes:

- 3-D interactive models are developed to represent a geo-specific or generic location;
- 2-D topography;
- The SimViz/ICM, which is a standard feature on the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database. This system is inclusive of all of the hardware and software subsystems required to setup, manage, and operate the entire incident.
- The SimViz/EPF, which is a component of the SimViz/ICM, provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS, which is a component of the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

- The SimViz/IDS is a 3D graphics image display system that provides role-playing personnel with their own view of an incident from their perspective at the incident scene.
- The SimViz/IDS comes standard with the SimViz/LAN, which includes the network components required to connect the SimViz/ICM host and up to nine workstations.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The product is sold as a turnkey solution inclusive of all hardware and software components required for operation.

c) Large multi-station system, or based on individual PCs?

Individual PCs, linked via a peer-to-peer network.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The structural fire scenario contained in the base version of SimViz/3400ICS is a deterministic model. Outcomes of potential trainee decisions are not probabilistic but rather are predetermined and coded (e.g., emergency vehicle transit times are fixed) according to subject matter expert knowledge of fire ICS. The application has an ideal solution, worst-case solution, and up to five incident-related terminating events.

e) Web-based application, LAN, or a single computer/system-based application?

SimViz/3400ICS is a LAN-based application that may be used as a single stand-alone application.

f) Describe any debriefing after-action reporting support tools:

- The SimViz/ICM timestamps all player decisions and actions, and records them in a standard database.
- The SimViz/EPF provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

System may be housed in the facility of the customer's choosing, with work areas needed for each workstation. It requires a local area network to interconnect the workstations.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows NT, Windows 2000, and Windows XP.

b) Processor speed (in MHz): 2.0 GHz Intel® Pentium® 4

c) Memory (SDR/DDR): 512 MB DDR SDRAM

d) Free disk space: 20 GB Hard Drive

e) Internet connection speed (if any): N/A

f) Display adapter: 64 MB Industry Standard (e.g., NVIDIA GeForce4 MX AGP)
g) CD-ROM speed: N/A

h) Optional accessory requirements[5]:

Depending on the options selected, the system may also include a portable multimedia projector with a minimum resolution of 1040x768 pixels and a minimum of 1200 ANSI lumens, and a portable color printer.

5. Describe the user interface characteristics:

The user interface of the SimViz application comprises Windows-like drop down menus accessed by mouse or keyboard input. There is an instructor mode that allows viewing and control of all incident scenes, and a player mode that has a single view point of the scene.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The system supports one to nine users.

b) Number persons usually trained simultaneously?

The system is designed to train two incident command level officers simultaneously – e.g., incident commander and safety officer. The system is capable of training division-level officers and therefore supports training of up to nine students simultaneously.

c) Custom/proprietary hardware required? If so, identify:

No proprietary hardware is required.

7. Describe any user HELP features:

The SimViz application includes a fully interactive help system.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

The SimViz/ICM, which is a standard feature of the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Upon delivery, the customer is given sufficient training to setup and operate the system. This usually takes 1-½ days.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
2	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
0	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
0	Biological		
0	Radiological		**Training Type Supported**
0	Nuclear	0	Equipment Training
1	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
0	EMS	2	Drills
1	EMA	0	TTX
1	Fire	1	FE
0	Government Administrator	0	FSE
0	Health Care	0	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
0	Public Health		
0	Public Safety Communication		**Incident Stage Supported**
0	Public Works	0	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Content is developed according to user specifications.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Information/knowledge base is developed according to user specifications.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercise characteristics are developed according to user specifications.

d) Exercise/scenario length/time (typical):

Exercise/scenario is developed in accordance with user specifications.

e) Potential equipment and/or facilities product can address:

Equipment and/or facilities are developed and supported in accordance with user specifications.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Exercise characteristics are developed in accordance with user specifications, which could include those related to counter-terrorism.

g) Are there any constraints on supported exercises or scenarios?

The current version of SimViz supports approximately 150 structure types and about 50 entity types, up to ten single-function, staffed resource vehicles with predetermined arrival/departure paths, ETA, and parking spots (resources may be dispatched individually or in one or more alarms); five prop vehicles with predetermined arrival/departure paths, ETA, and parking spots; and any combination of thirty victims and prop people with predetermined roles. New scenarios would require additional product development by the vendor.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

System can be used in a wide range of settings – including, but not limited to:

- Classroom
- Real-time exercise
- Self-paced individual CBT

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

SimViz/3400ICS is primarily a scripted scenario that provides student cues for eliciting response behaviors/decisions.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

The customer manages training. The SimViz product may support a variety of student training systems.

d) Does a curriculum already exist? If so, briefly describe its form and content

SimViz/3400ICS can be used as part of a user defined curriculum, but does not provide an integrated teaching system in and of itself.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The SimViz/IRS, which is component to the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise design is in accordance with customer requirements. Scenario conditions & events scripting techniques are employed as well as taking advantage of previously defined/developed scripts, models, libraries, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Student-action/situation warning/cues; scenario/exercise conduct controls; real-time; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants are all supported.

6. Customization

a) Can the product be customized? If so, how, and by whom?

SimViz can be customized by the vendor to customer specifications.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Depending on the complexity, a new exercise/scenario (including developing the virtual simulation models and environment and scripted scenarios) is estimated to take 90 to 120 days. Modifying existing scenarios using the same virtual environment should take between 30 and 60 days.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The vendor develops new scenarios or modifies existing scenarios.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Exercise will reside on the simulation workstations. It will take the instructor less than a minute to setup the scenario. The time required to run the scenario is dependent on the script and learning objectives.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

System supports post-exercise/scenario analysis tools.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
X	Medium	**X**	Somewhat
	Low		Limited
	N/A		
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation

1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. **Yes** (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. **Product**
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. **Standardized**
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$31,500			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				

Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: This survey was completed with significant input from STAR Technology Corporation, and substantially reflects their judgment of system capabilities.

A. Basic Product Information

Name of Product:

SimViz/3400ICS-T

Developer: STAR Technology Corporation

Contact information:
Johnny J. Harper
President and CEO
Star Technology Corp.
8003 Forbes Place, Suite 310
Springfield, VA 22151

Technical Support Contact Information:

Website: http://www.startechcorp.com/structure.htm

COTS/GOTS: COTS

Product status (version in use): SimViz/3400ICS Version 1.0

B. Summary Product Description:

3. What is the focus/specialty of the product?

The SimViz/3400ICS simulator is a computer-based system that provides a synthetic environment in which structure-based emergency incidents are used to train emergency response command staff in the application of the Incident Command System (ICS).
The system can also be used to teach strike team leaders or division supervisors how to manage their response resources and make proper decisions based on the audiovisual cues they receive in a scenario.

4. Current Target Audience:

The existing product version is targeted toward fire and rescue training academies at the federal, state, and large municipality level. The DoD Fire Academy is evaluating a similar operational prototype to this version.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing

	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	0	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	0	Multiple dynamic paths through the product and more than one out come possible
2	Group	1	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The SimViz/3400ICS system consists of a software simulation application and related utility programs. It is offered as a turn-key system including industry standard computer hardware (PCs, and networking hardware). The software provides a virtual interactive environment that supports multi-player collaboration via networked workstations with the following attributes:

- 3-D interactive models are developed to represent a geo-specific or generic location;
- 2-D topography;
- The SimViz/ICM, which is a standard feature on the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database. This system is inclusive of all of the hardware and software subsystems required to setup, manage, and operate the entire incident.
- The SimViz/EPF, which is a component of the SimViz/ICM, provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS, which is a component of the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

- The SimViz/IDS is a 3D graphics image display system that provides role-playing personnel with their own view of an incident from their perspective at the incident scene.
- The SimViz/IDS comes standard with the SimViz/LAN, which includes the network components required to connect the SimViz/ICM host and up to nine workstations.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The product is sold as a turnkey solution inclusive of all hardware and software components required for operation.

c) Large multi-station system, or based on individual PCs?

Individual PCs, linked via a peer-to-peer network.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The structural fire scenario contained in the base version of SimViz/3400ICS is a deterministic model. Outcomes of potential trainee decisions are not probabilistic but rather are predetermined and coded (e.g., emergency vehicle transit times are fixed) according to subject matter expert knowledge of fire ICS. The application has an ideal solution, worst-case solution, and up to five incident-related terminating events.

e) Web-based application, LAN, or a single computer/system-based application?

SimViz/3400ICS is a LAN-based application that may be used as a single stand-alone application.

f) Describe any debriefing after-action reporting support tools:

- The SimViz/ICM timestamps all player decisions and actions, and records them in a standard database.
- The SimViz/EPF provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

System may be housed in the facility of the customer's choosing, with work areas needed for each workstation. It requires a local area network to interconnect the workstations.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows NT, Windows 2000, and Windows XP.

b) Processor speed (in MHz): 2.0 GHz Intel® Pentium® 4

c) Memory (SDR/DDR): 512 MB DDR SDRAM

d) Free disk space: 20 GB Hard Drive

e) Internet connection speed (if any): N/A

f) Display adapter: 64 MB Industry Standard (e.g., NVIDIA GeForce4 MX AGP)
g) CD-ROM speed: N/A

h) Optional accessory requirements[5]:

Depending on the options selected, the system may also include a portable multimedia projector with a minimum resolution of 1040x768 pixels and a minimum of 1200 ANSI lumens, and a portable color printer.

5. Describe the user interface characteristics:

The user interface of the SimViz application comprises Windows-like drop down menus accessed by mouse or keyboard input. There is an instructor mode that allows viewing and control of all incident scenes, and a player mode that has a single view point of the scene.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The system supports one to nine users.

b) Number persons usually trained simultaneously?

The system is designed to train two incident command level officers simultaneously – e.g., incident commander and safety officer. The system is capable of training division-level officers and therefore supports training of up to nine students simultaneously.

c) Custom/proprietary hardware required? If so, identify:

No proprietary hardware is required.

7. Describe any user HELP features:

The SimViz application includes a fully interactive help system.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

The SimViz/ICM, which is a standard feature of the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Upon delivery, the customer is given sufficient training to setup and operate the system. This usually takes 1-½ days.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
2	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
2	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
1	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
1	EMA	0	TTX
1	Fire	1	FE
0	Government Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
0	Public Health		
0	Public Safety Communication		**Incident Stage Supported**
2	Public Works	0	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Content is developed according to user specifications.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Information/knowledge base is developed according to user specifications.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercise characteristics are developed according to user specifications.

d) Exercise/scenario length/time (typical):

Exercise/scenario is developed in accordance with user specifications.

e) Potential equipment and/or facilities product can address:

Equipment and/or facilities are developed and supported in accordance with user specifications.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Exercise characteristics are developed in accordance with user specifications, which could include those related to counter-terrorism.

g) Are there any constraints on supported exercises or scenarios?

The current version of SimViz supports approximately 150 structure types and about 50 entity types, up to ten single-function, staffed resource vehicles with predetermined arrival/departure paths, ETA, and parking spots (resources may be dispatched individually or in one or more alarms); five prop vehicles with predetermined arrival/departure paths, ETA, and parking spots; and any combination of thirty victims and prop people with predetermined roles. New scenarios would require additional product development by the vendor.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

System can be used in a wide range of settings – including, but not limited to:

- Classroom
- Real-time exercise
- Self-paced individual CBT

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

SimViz/3400ICS is primarily a scripted scenario that provides student cues for eliciting response behaviors/decisions.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

The customer manages training. The SimViz product may support a variety of student training systems.

d) Does a curriculum already exist? If so, briefly describe its form and content

SimViz/3400ICS can be used as part of a user defined curriculum, but does not provide an integrated teaching system in and of itself.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The SimViz/IRS, which is component to the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise design is in accordance with customer requirements. Scenario conditions & events scripting techniques are employed as well as taking advantage of previously defined/developed scripts, models, libraries, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Student-action/situation warning/cues; scenario/exercise conduct controls; real-time; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants are all supported.

6. Customization

a) Can the product be customized? If so, how, and by whom?

SimViz can be customized by the vendor to customer specifications.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Depending on the complexity, a new exercise/scenario (including developing the virtual simulation models and environment and scripted scenarios) is estimated to take 90 to 120 days. Modifying existing scenarios using the same virtual environment should take between 30 and 60 days.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The vendor develops new scenarios or modifies existing scenarios.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Exercise will reside on the simulation workstations. It will take the instructor less than a minute to setup the scenario. The time required to run the scenario is dependent on the script and learning objectives.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

System supports post-exercise/scenario analysis tools.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
X	Medium	**X**	Somewhat
	Low		Limited
	N/A		
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation

1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. **Yes** (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. **Vendor Customized**
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$37,500			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				

Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: This survey was completed with significant input from STAR Technology Corporation, and substantially reflects their judgment of system capabilities.

A. Basic Product Information

Name of Product:

SimViz/3400ICS-C

Developer: STAR Technology Corporation

Contact information:
Johnny J. Harper
President and CEO
Star Technology Corp.
8003 Forbes Place, Suite 310
Springfield, VA 22151

Technical Support Contact Information:

Website: http://www.startechcorp.com/structure.htm COTS/GOTS: COTS

Product status (version in use): SimViz/3400ICS Version 1.0

B. Summary Product Description:

1. What is the focus/specialty of the product?

The SimViz/3400ICS simulator is a computer-based system that provides a synthetic environment in which structure-based emergency incidents are used to train emergency response command staff in the application of the Incident Command System (ICS).
The system can also be used to teach strike team leaders or division supervisors how to manage their response resources and make proper decisions based on the audiovisual cues they receive in a scenario.

2. Current Target Audience:

The existing product version is targeted toward fire and rescue training academies at the federal, state, and large municipality level. The DoD Fire Academy is evaluating a similar operational prototype to this version.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

x	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing

	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	2	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	2	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
0	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	2	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The SimViz/3400ICS system consists of a software simulation application and related utility programs. It is offered as a turnkey system including industry standard computer hardware (PCs, and networking hardware). The software provides a virtual interactive environment that supports multi-player collaboration via networked workstations with the following attributes:

- 3-D interactive models are developed to represent a geo-specific or generic location;
- 2-D topography;
- The SimViz/ICM, which is a standard feature on the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database. This system is inclusive of all of the hardware and software subsystems required to setup, manage, and operate the entire incident.
- The SimViz/EPF, which is a component of the SimViz/ICM, provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS, which is a component of the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

- The SimViz/IDS is a 3D graphics image display system that provides role-playing personnel with their own view of an incident from their perspective at the incident scene.
- The SimViz/IDS comes standard with the SimViz/LAN, which includes the network components required to connect the SimViz/ICM host and up to nine workstations.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The product is sold as a turnkey solution inclusive of all hardware and software components required for operation.

c) Large multi-station system, or based on individual PCs?

Individual PCs, linked via a peer-to-peer network.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The structural fire scenario contained in the base version of SimViz/3400ICS is a deterministic model. Outcomes of potential trainee decisions are not probabilistic but rather are predetermined and coded (e.g., emergency vehicle transit times are fixed) according to subject matter expert knowledge of fire ICS. The application has an ideal solution, worst-case solution, and up to five incident-related terminating events.

e) Web-based application, LAN, or a single computer/system-based application?

SimViz/3400ICS is a LAN-based application that may be used as a single stand-alone application.

f) Describe any debriefing after-action reporting support tools:

- The SimViz/ICM timestamps all player decisions and actions, and records them in a standard database.
- The SimViz/EPF provides playback of a previous exercise based on the database for use during post-incident-analysis (PIA).
- The SimViz/IRS provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

System may be housed in the facility of the customer's choosing, with work areas needed for each workstation. It requires a local area network to interconnect the workstations.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other)*:

Windows NT, Windows 2000, and Windows XP.

b) Processor speed (in MHz): 2.0 GHz Intel® Pentium® 4

c) Memory (SDR/DDR): 512 MB DDR SDRAM

d) Free disk space: 20 GB Hard Drive

e) Internet connection speed (if any): N/A

f) Display adapter: 64 MB Industry Standard (e.g., NVIDIA GeForce4 MX AGP)
g) CD-ROM speed: N/A

h) Optional accessory requirements[5]:

Depending on the options selected, the system may also include a portable multimedia projector with a minimum resolution of 1040x768 pixels and a minimum of 1200 ANSI lumens, and a portable color printer.

5. Describe the user interface characteristics:

The user interface of the SimViz application comprises Windows-like drop down menus accessed by mouse or keyboard input. There is an instructor mode that allows viewing and control of all incident scenes, and a player mode that has a single view point of the scene.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The system supports one to nine users.

b) Number persons usually trained simultaneously?

The system is designed to train two incident command level officers simultaneously – e.g., incident commander and safety officer. The system is capable of training division-level officers and therefore supports training of up to nine students simultaneously.

c) Custom/proprietary hardware required? If so, identify:

No proprietary hardware is required.

7. Describe any user HELP features:

The SimViz application includes a fully interactive help system.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

The SimViz/ICM, which is a standard feature of the SimViz/3400ICS, tracks all actions and decisions and timestamps them into a standard database.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Upon delivery, the customer is given sufficient training to setup and operate the system. This usually takes 1-½ days.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
2	Advanced	2	Performance (operations)
		2	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
2	Chemical	0	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
1	Explosion	1	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS	2	Drills
1	EMA	0	TTX
1	Fire	1	FE
2	Government Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
1	HazMat	2	Distributed Collaborative Exercise
1	Law Enforcement	0	National Training Exercise
2	Public Health		
2	Public Safety Communication		**Incident Stage Supported**
2	Public Works	0	Prevention
		0	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	2	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Content is developed according to user specifications.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Information/knowledge base is developed according to user specifications.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercise characteristics are developed according to user specifications.

d) Exercise/scenario length/time (typical):

Exercise/scenario is developed in accordance with user specifications.

e) Potential equipment and/or facilities product can address:

Equipment and/or facilities are developed and supported in accordance with user specifications.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Exercise characteristics are developed in accordance with user specifications, which could include those related to counter-terrorism.

g) Are there any constraints on supported exercises or scenarios?

The current version of SimViz supports approximately 150 structure types and about 50 entity types, up to ten single-function, staffed resource vehicles with predetermined arrival/departure paths, ETA, and parking spots (resources may be dispatched individually or in one or more alarms); five prop vehicles with predetermined arrival/departure paths, ETA, and parking spots; and any combination of thirty victims and prop people with predetermined roles. New scenarios would require additional product development by the vendor.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

System can be used in a wide range of settings – including, but not limited to:

- Classroom
- Real-time exercise
- Self-paced individual CBT

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

SimViz/3400ICS is primarily a scripted scenario that provides student cues for eliciting response behaviors/decisions.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

The customer manages training. The SimViz product may support a variety of student training systems.

d) Does a curriculum already exist? If so, briefly describe its form and content

SimViz/3400ICS can be used as part of a user defined curriculum, but does not provide an integrated teaching system in and of itself.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The SimViz/IRS, which is component to the SimViz/ICM, provides detailed reporting of all evaluated events performed throughout the exercise in customer specified formatted reports.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Scenario/exercise design is in accordance with customer requirements. Scenario conditions & events scripting techniques are employed as well as taking advantage of previously defined/developed scripts, models, libraries, etc.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Student-action/situation warning/cues; scenario/exercise conduct controls; real-time; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants are all supported.

6. Customization

a) Can the product be customized? If so, how, and by whom?

SimViz can be customized by the vendor to customer specifications.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

Depending on the complexity, a new exercise/scenario (including developing the virtual simulation models and environment and scripted scenarios) is estimated to take 90 to 120 days. Modifying existing scenarios using the same virtual environment should take between 30 and 60 days.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

The vendor develops new scenarios or modifies existing scenarios.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Exercise will reside on the simulation workstations. It will take the instructor less than a minute to setup the scenario. The time required to run the scenario is dependent on the script and learning objectives.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

System supports post-exercise/scenario analysis tools.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
	Medium		Somewhat
	Low		Limited
X	N/A *(Content is user dependent)*	**X**	Unknown/Unable to Evaluate
	Ease of Use		
X	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
0	Audit and evaluate plans and procedures prior to an exercise/Plan development
2	Dissemination of best practices/expansion of learning benefits i.e. report generation

1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) **Yes** (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase	$47,500			
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				

Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

SoftRisk SQL

Developer: SoftRisk Technologies

Contact information:

PO Box 20163
St. Simon Island, GA 31522

912-634-1700
912-638-3340 fax

Mr. Jim Fraser jfraser@softrisk.com.

Technical Support Contact Information:

techsupport@softrisk.com.

Website: www.softrisk.com.

COTS/GOTS: COTS

Product status (version in use): 5.1

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
	Product developer filled-in evaluation form
	TLI team modified evaluation form

Materials in our Possession:

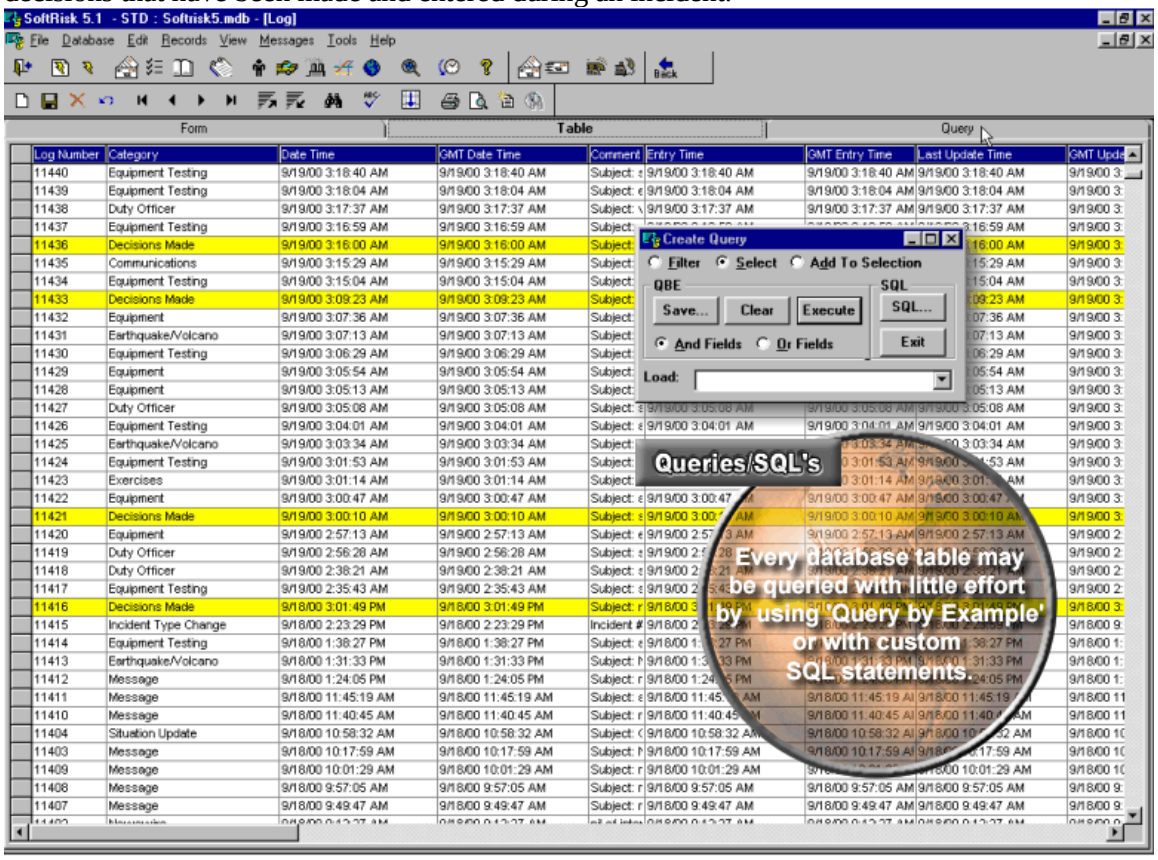
	Brochure/Prospectus
	CD-Rom
	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

SoftRisk is a real time emergency management software program used operationally to help a command post manage information related to an incident. It assists responders in keeping track of events, resources, equipment, and people during an incident by managing a large database that is integrated with word processing, graphic files, and mapping. Users can manage emergency operations, create standardized data collection and reports, as well as manage resources and information about resources. The program creates an audit trail which provides users with excellent data that can later be analyzed and used to improve response plans. Users enter information about events, equipment, and people in the database during an incident allowing them to share information with other users on the network. Once information is entered into the program it is immediately available to all users on the system.

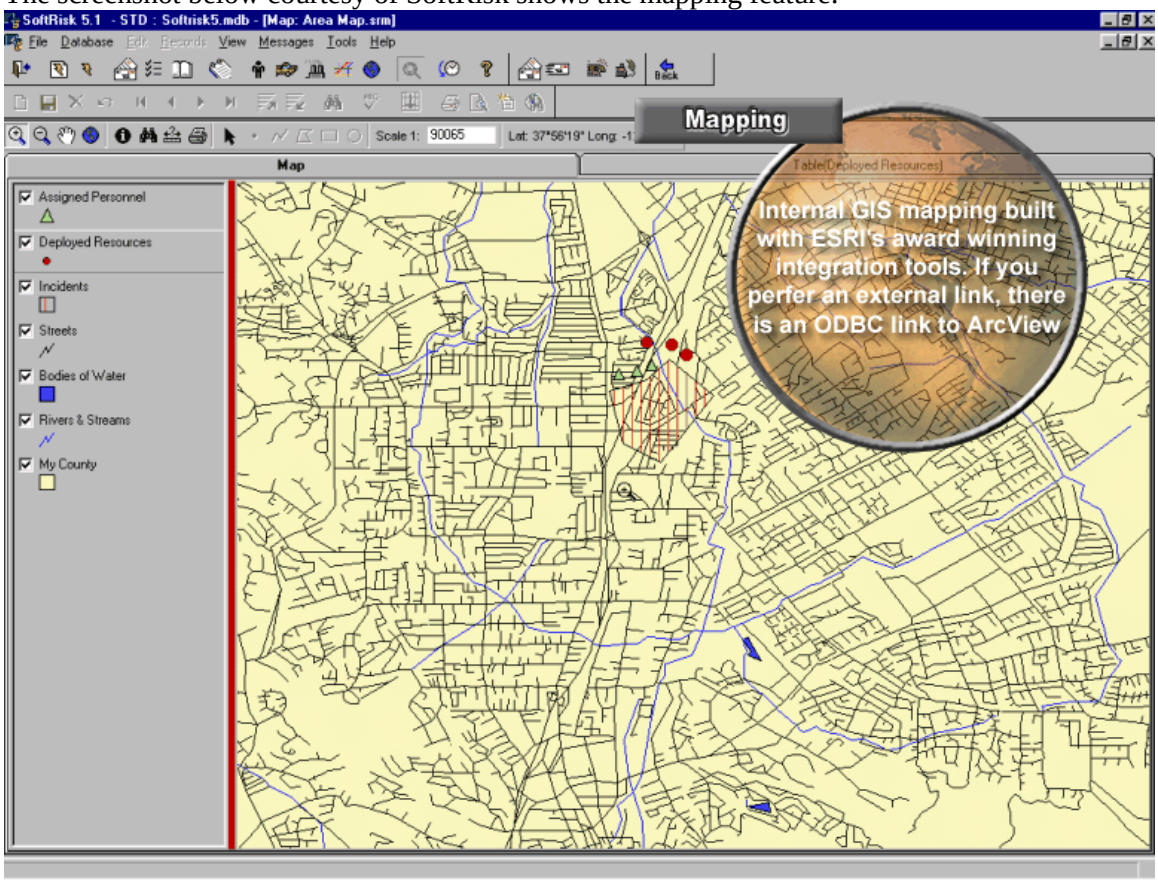
The database is designed to be incident centric and information is organized and linked to a particular incident as entered by a user, such as a flood. The software includes a contact manager that includes the name and contact information of a person as well as their special skills and availability. SoftRisk can send messages internally and over the internet. The program keeps track of all message threads. Reports can easily be generated from the database to assist emergency managers with decision making.

The screenshot below Courtesy of SoftRisk shows the database being queried for decisions that have been made and entered during an incident.



SoftRisk has a built in mapping capability so a user can customize pertinent information with the integrated mapping. “This tool can be used to locate shelter, routes and resources and can be as simple or as complex as the operator wishes. This portion of the ***Soft*Risk** product was created with ESRI's MapObjects development tools and in partnership with ESRI's Australian component. The mapping is seamless with the ***Soft*Risk** Database System.” (SoftRisk website) By using these products with the SoftRisk database a user can also add GIS capabilities to the applications. With the mapping capability a user can place the locations of resources on the map.

The screenshot below courtesy of SoftRisk shows the mapping feature.



Customers can link their own word processing files, video clips, and graphics files to SoftRisk and access these files and programs directly from SoftRisk. This allows response plans, policies, and procedures to become a part of the information available to emergency managers using SoftRisk.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing

2	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
X	Other: Emergency/Incident Management Software

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
0	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
3	Individual	3	Multiple dynamic paths through the product and more than one out come possible
3	Group	3	Static configuration: fixed path, only one right way to use the product
3	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		3	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	3	SME controls AAR
0	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

SoftRisk is a database with a mapping ability that uses ESRI's Map Objects tool set. It has a help menu and looks like a traditional windows program.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

It requires computers with standard monitor, keyboard, and mouse setup.

c) Large multi-station system, or based on individual PCs?

Individual PCs

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Web-based application, LAN, or a single computer/system-based application?

LAN, Windows SQL set -up

f) Describe any debriefing after-action reporting support tools:

The product creates an audit trail that can be used for review and as data for an after action report. Generally used operationally. Would need scenario/curricula development and a facilitator for use in training.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Office, server, computers

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 95, 98, Millennium, 2000 and NT

b) Processor speed (in MHz): 300Mhz

c) Memory (SDR/DDR): 64 MB of Ram

d) Free disk space: 100 MB of Disk Space

e) Internet connection speed (if any):

f) Display adapter: 800 X 600 or higher

g) CD-ROM speed:

h) Optional accessory requirements[5]:

5. Describe the user interface characteristics:

Typical PC set-up with monitor, mouse and keyboard. Users type information into the database which looks like a Microsoft Access-type set up visually. They query the database by clicking on features, much as in Access, and selecting the elements they are interested in seeing.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

b) Number persons usually trained simultaneously? Used operationally, unlimited

c) Custom/proprietary hardware required? If so, identify: none

7. Describe any user HELP features:

Help menus

8. Data recording & storage features (e.g., Scenario events; student performance, student tracking): It records all incident events and tracks resources. Creates audit trail when used operationally; manages information.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Soft Risk will train users to operate the database.

2. Attributes

	Application Environment:		**Content**
0	Training	3	Knowledge
0	Exercise	3	Applied
1	Operational	3	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
3	Self-paced	1	Local Officials
2	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
3	Basic		**Potential Training Levels:**
3	Intermediate	3	Awareness
3	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	3	Planning & Mgmt. (incl. ICS)
1	Chemical	3	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	3	Equipment Training
1	Explosion	3	Awareness
		3	Part Task Training
	Functional Area Supported:	3	Pre-Training
1	EMS	3	Drills
1	EMA	3	TTX
1	Fire	3	FE

1	Govt. Administrator	3	FSE
1	Health Care	3	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	3	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
	Learning Supported:		
3	Initial Acquisition		
3	Improvement		
3	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
N/A

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
N/A

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
N/A

d) Exercise/scenario length/time(typical): N/A

e) Potential equipment and/or facilities product can address: can track resources

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required?

If modifications are required briefly describe them. Yes, it can be used to keep track of information during an exercise and create an audit trail that can be analyzed later.

g) Are there any constraints on supported exercises or scenarios? No, does not currently support T&E. Would need facilitator and scenarios

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): N/A

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)

N/A

c) How is training managed (e.g., Testing, certification of completion, etc.)?
N/A

d) Does a curriculum already exist? If so, briefly describe its form and content
N/A

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
N/A

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
N/A

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

N/A

6. Customization

a) Can the product be customized? If so, how, and by whom?
Yes, by vendor

b) What is the process and how much time does it take to develop or modify a new exercise/scenario? Several months to a year

c) Does the customer or the vendor modify or develop a new exercise/scenario? N?A

d) What is the process and how much time does it take to setup an exercise/scenario to run?
N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Can be used to keep track of information during an exercise and create an audit trail that can be analyzed later.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
0	High	**0**	Very
0	Medium	**1**	Somewhat

0	Low	**0**	Limited
1	N/A		
	Ease of Use		
1	Easy		
0	Relatively Easy		
0	Difficult		
0	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
3	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
0	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
0	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
0	Remote Observation
0	Enhanced Communication T&E/does it practice/train/exercise communications?
0	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   - **a.** Yes (*proceed to Q2*)
   - **b. No, Vendor must quote a system based on user requirements (*end here*)**

2. Does the cost apply to: (choose one)
   - a. Product
   - b. Service
   - c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: This survey was completed with significant input from the Spectrum support team at the Extant Models Branch, Army Constructive Training Federation (ACTF) Directorate, National Simulation Center, and substantially reflects their judgment of system capabilities.

A. Basic Product Information

Name of Product:

Spectrum

Developer: U.S. Army, National Simulation Center, Fort Leavenworth, Kansas

Contact information:
Tim Metivier
Deputy Director
Army Constructive Training Federation Directorate
National Simulation Center
Ft. Leavenworth, KS
Tel.: 913-684-8160
Email: Timothy.Metivier@leavenworth.army.mil

Technical Support Contact Information:
Tony Medici
Spectrum Chief Trainer
Extant Models Branch
ACTF Directorate
National Simulation Center
Ft. Leavenworth, KS
Tel.: 913-684-8123/8339
Email: Medicia@leavenworth.army.mil

Website: http://www-leav.army.mil/nsc/famsim/spectrum/index.htm COTS/GOTS: GOTS

Product status (version in use): Spectrum Simulation Version 1.6.3, (14 Nov 2002)

DEVELOPER CAUTIONS: The following cautions and caveats are provided by the developer/vendor as necessary considerations for interpretation of this document.

1. Spectrum is owned by the U.S. Army. Currently, the simulation is only issued to DoD users.

2. Spectrum uses National Imagery and Mapping Agency (NIMA) data to produce the Spectrum Workstation map display. Data includes digital terrain elevation data (DTED), digital features analysis data (DFAD), and arc digitized raster graphics (ADRG). Street-level detail comes from NavStreet data also provided to the Spectrum team from NIMA. NIMA data and products produced from NIMA data have limited distribution currently to DoD users only. The NIMA liaison officer indicated that NIMA data derived mapping products could not be distributed to the National Guard unless they were in a federal status. Distribution of Spectrum mapping data to non-DoD agencies may become an issue.

3. Spectrum uses a commercial off the shelf mapping program, MapInfo Runtime version 4.0, to produce the Spectrum workstation map display. This is the only version the vendor can guarantee will operate the simulation. The program's cost is $495.00 per copy with a copy required for each Spectrum workstation and the Spectrum adjudicator.

4. The Community Response Emergency Simulation Training (CREST) exercise is currently owned by the National Interagency Civil-Military Institute (NICI). NICI, located in San Luis Obispo, CA, is a field operating agency of the National Guard Bureau.

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Spectrum is a constructive simulation exercise system that was developed by the National Simulation Center (NSC) to provide the Army a means for command and control training in military operations other than war (MOOTW). The simulation has been used successfully to drive WMD exercises for a state emergency operations center (EOC) composed of state emergency management personnel and federal officials normally operating from a state EOC (including FEMA, FBI, National Guard). The exercise is commonly known as the Community Response Emergency Simulation Training (CREST) exercise.

  In addition to modeling movement, combat, and logistics operations, Spectrum also models subjective political, economic, and socio-cultural activities that may impinge upon security and anti-terrorism decision-making through civil affairs and psychological operations (PSYOPS) activities.

- Current Target audience:

  Spectrum training audiences for military applications are command and staff officers at the division, brigade, and battalion level.

  For the CREST exercise, the training audience is the state EOC and those federal elements normally found at a state EOC (FBI, FEMA, National Guard, etc.). In the past, the CREST exercise was conducted at the National Interagency Civil Military Institute (NICI) in San Luis Obispo, CA. NICI would invite five states to participate in the training and exercise. Because of the mixture of participants from multiple states, participants readily accepted the use of a fictitious, somewhat generic scenario. However, after demonstrating the simulation and CREST scenario to a number of emergency management personnel, the feedback was the same. For homeland defense and emergency response exercises, participants want to exercise on their own terrain and with their own assets, equipment, and resources portrayed in the simulation.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation *(Exercise Driver. Requires workstation operators, exercise control cell, simulation trainer, possibly simulation system technician.)*
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game

	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
0	COTS	1	Generic *(CREST scenario is generic)*
1	GOTS	1	Locale Specific *(Can generate mapping to street level for 50 states.)*
	Media Scale		**Product Re-Playability**
0	Individual	1	Multiple dynamic paths through the product and more than one out come possible
2	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		0	Scenario replay
	Applied Context	0	Automated summary of data
1	Non-specific	1	SME controls AAR
2	Equipment	3	Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Spectrum is a combination of simulation software, auxiliary software, and computer hardware.

Simulation and related software:

- Spectrum workstation and adjudicator installation software
- Spectrum scenario installation software
- Spectrum training documentation (workstation and adjudicator operation, database managers guides, system managers guide, system administrator guide, exercise planning guide)
- On line HELP for workstation, adjudicator, all database editors
- Spectrum exercise support packages.

Auxiliary software (required):

- MapInfo Runtime version 4.0 (workstation mapping display).

Hardware: Local area network (LAN) consisting of-

- Multiple IBM compatible computers with network cards

- Windows 2000 server and workstation with latest service pack
- Network hub (Spectrum will not operate with routers or switches)
- Network cables
- Printers.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Spectrum is a system that requires computer hardware and software, apart from the simulation software itself. In particular, Spectrum requires a copy of MapInfo Runtime version 4.0 to be installed on each client PC for displaying maps.

c) Large multi-station system, or based on individual PCs?

Spectrum is a large multi-station system.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Spectrum is an accredited model for use in MOOTW. The simulation algorithms are based on Janus, a well established, accredited Army warfighting simulation.

e) Web-based application, LAN, or a single computer/system-based application?

Spectrum is supported on a LAN.

f) Describe any debriefing after-action reporting support tools:

Limited to raw data only. Human observers/controllers record actions and results of actions executed by the training audience. Data maybe archived, manually reinstalled, and actions again executed by workstation operators.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? Multiple rooms are needed: a room for simulation center with 14 computers and exercise control staff; a room for state EOC personnel; a room for AAR. Overhead projector and image projector with screens. Telephone, FAX, email for exercise communication.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Spectrum operates on a Windows 2000 local area network using IBM compatible computer equipment and network interface cards. Computers require a minimum of 128 MB RAM and a 2 GB hard drive. A clock speed of 500 MHz provides adequate speed. A faster processor will accelerate the simulation's operation and reduce workstation operator waiting time.

Spectrum can accommodate up to 50 computers in the network: one Windows 2000 server and forty-nine Windows 2000 workstations. One Windows 2000 workstation is designated as the Spectrum adjudicator; the remaining 48 machines are Spectrum workstations. Spectrum uses a central processing system with all calculations occurring on the adjudicator machine. These calculations include movement speed, visibility and line of sight, consumption of fuel, ammunition, water, rations, supplies, equipment,

production of casualties, completion of engineer projects, etc. Most exercises use between 11 and 20 computers. The CREST exercise requires 14 computers.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Windows 2000 Windows server and workstation with latest service pack
MapInfo Runtime version 4.0
Spectrum workstation and adjudicator installation software
Spectrum scenario installation software

Processor speed (in MHz):	500 MHz or better
b) Memory (SDR/DDR):	128 MB min.
c) Free disk space:	2 GB
d) Internet connection speed (if any):	None
e) Display adapter:	Industry standard
f) CD-ROM speed:	Industry standard
g) Optional accessory requirements[5]:	NA

5. Describe the user interface characteristics:

The workstation display shows a map of playbox and unit icons. The simulation has an infinite number of view levels, which the operator may change with mouse or keyboard commands. Main workstation view is two-dimensional; simulation has three dimensional view capability.

Spectrum uses a commercial off the shelf program called MapInfo to generate the map displayed on the workstation screen. MapInfo provides flexibility to the user when using map products. A Spectrum playbox is normally two degrees by two degrees in size with a degree being equal to 67 miles or approximately 110 kilometers. Playboxes as large as five degrees by seven degrees have been successfully constructed and displayed. The larger the playbox, the longer the workstation screen refresh time. Spectrum recently developed the capability to produce mapping data and playboxes that show street level names and details for the 50 states.

Workstation operators enter orders into the simulation using Windows drop down menus and dialog boxes. The simulation provides operator feed back on orders received and orders executed. Orders may be entered for movement, combat and police actions, splits and merges, messages between workstations, logistics, engineer construction and removal, medical and maintenance activities, and civil affairs and PSYOP missions.

The simulation operates in a game turn mode. It is normally set to calculate every 12 minutes, and will calculate what occurs in 12 minutes of time and space (units movement in space, consumption of fuel and ammunition etc.). The actual calculation and workstation update takes approximately 60 seconds, allowing the operator 11 minutes to enter orders, send messages, and generate reports before the next turn calculation.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Variable number, based on exercise design.

b) Number persons usually trained simultaneously?

Variable, based on exercise design. The CREST scenario, for example, provides training for a complete or substantially complete EOC staff.

c) Custom/proprietary hardware required? If so, identify:
No custom hardware is required. Proprietary software and data, however, are required:
- MapInfo Runtime version 4.0
- Spectrum (NIMA) mapping data.

7. Describe any user HELP features:

On-line HELP for the Spectrum workstation, Spectrum adjudicator, all editors--Data File, Situational Event, Regional Analysis Model, Terrain, Symbol, and Rapid Terrain Generation System. Scripted lesson plans to teach workstation and adjudicator operations, database construction, and system administration and management.

8. Data recording & storage features (e.g., Scenario events; student performance):

There are limited recording features. Manual backup and archive of files allows user to replay portions of the exercise. A report (duty log), manually entered by the workstation operator, captures events received by the workstation and any operator response to the events. Other reports may contain unit status data, messages received and sent, personnel and equipment losses.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

A Spectrum Simulation Training Course (STC) is conducted quarterly at Ft Leavenworth. Three sub courses are taught during the STC: the General Users course for workstation and adjudicator operations; the Database Managers course for building the three main simulation databases; and the System Managers course for hardware and network configuration, software installation, system management techniques, and exercise design and development.

The course is conducted over a two-week period in a “train the trainer” mode. Users are trained, receive the software and training materials, and return to home station to teach others how to use Spectrum. Monday of the first week is a travel day. Tuesday, Wednesday, and Thursday cover workstation operations. Friday is adjudicator operations and a mini exercise. Monday, Tuesday, and part of Wednesday of the second week are spent on databases. Wednesday afternoon and Thursday are for the System Managers course. Friday is a travel day.

The STC uses lecture/discussion combined with actual hands on training to accomplish learning objectives. Practical exercises (PEs) reinforce student learning. Students work as actual unit workstation controllers during the mini exercise.

At the conclusion of the STC, attendees are prepared to return to home station, establish the network, load the software, build databases, and operate the simulation.

2. Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
2	Operational	0	Hands-on
0	Analysis		
3	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	0	Commanders
0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials *(depending on exercise design)*
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	3	Awareness
1	Advanced	3	Performance (operations)
		3	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical *(in CREST exercise package)*	1	Integrated systems (multi-jurisdictional, beyond ICS)
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
2	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
2	EMS	0	Drills
1	EMA	2	TTX
1	Fire	1	FE
1	Govt. Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
1	Public Health		
2	Public Safety Communication		
1	Public Works		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Spectrum is an exercise driver. Training resulting from the exercise is dependent on the exercise scenario. The CREST exercise scenario begins after terrorists use an agricultural sprayer to spray a chemical agent, lewisite, on a 4th of July fireworks spectator crowd creating casualties on the order of 3000 to 5000. At the start of the exercise (STARTEX), the HAZMAT team identifies the agent as lewisite and the incident commander concludes the release is a terrorist act. The playbox is a Santa Barbara look-alike called San Luisa Del Mar.

State EOC personnel are located in a separate building connected to the simulation center by telephone, FAX, and email. City emergency management personnel and first responder subject matter experts (SMEs) are located in the simulation center. In the Spectrum model, fire, police, EMS, public works, media, and other icons have been placed in STARTEX locations in the city of San Luisa. Spectrum workstation operators move icons and respond to orders and directives as they would as if actually on the ground in San Luisa. Reports and requests flow from the city EOC/simulation center to the state EOC.

Spectrum's situational event generator is used to provide informative and directive events and injects to help drive the exercise. Exercise design includes collateral events conducted by the terrorists including a drive by shooting, bombing of an electrical sub station, and hostage taking. Role players are also used in the exercise including the governor, his chief of staff, media representatives, etc.

The exercise package is extensive including intelligence summaries, state and local government organization and response plans, mutual support agreements, demographics, detailed descriptions of San Luisa's fire, police, EMS, engineering, and public works organization and equipment, businesses, schools, churches, state military forces, and Coast Guard. When printed out, the package is in excess of 500 pages.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

Information contained in Spectrum is scenario dependent. Spectrum is not provided to users as a source of information. Instead, information other than the simulation entities modeled must be sourced externally. Terrain data, for example, is sourced from NIMA.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

High level objectives, usually at the state EOC level. Example training (terminal learning) objectives extracted from the CREST exercise scenario include:

- Identify WMD that may be used by potential terrorists.
- Identify characteristics of cyberterrorism and information warfare.
- Develop intelligence information.
- Plan and conduct mass casualty operations.
- Conduct integrated combined interagency operations.

- Integrate Active Component (AC), Reserve Component (RC), and National Guard (NG) support for civil response to a WMD terrorist attack.
- Plan and execute media operations, public affairs, emergency information, and command information programs in response to the threat of or execution of a terrorist incident.
- Develop and implement a response to specific events that occur during a terrorist attack.
- Protect the force.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Simulation supported exercise. The customer/user develops the exercise scenario and database after systems training provided by NSC.

e) Exercise/scenario length/time (typical):

Two to three days for the actual exercise. Prior to the exercise, NICI normally conducts training on a myriad of subjects including ICS, threat, Federal Response Plan, etc. to bring exercise participants up to a certain knowledge base.

f) Potential equipment and/or facilities product can address:

Spectrum's flexibility allows the user to portray just about anything in an exercise scenario.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required, briefly describe them.

Spectrum can currently drive exercises related to counter-terrorism. Location specific databases and mapping are needed, based on training audience requirements.

h) Are there any constraints on supported exercises or scenarios?

Distribution of NIMA mapping data and the simulation software is limited to DoD users.

Users may portray multiple sides based on exercise objectives and the scenario. Spectrum can simulate any combination of Army, joint, or combined forces; US and host nation governmental agencies; and non-governmental agencies and social groups with any variation of personnel, equipment, and supplies. Organizations may be modeled at any required level from large units to teams and individuals. Users may portray up to 10 sides distinguished by up to 90 different icon border and fill combinations (10 fill colors and 9 border colors).

Spectrum provides a flexible database system that allows the user to rapidly create any unit, organization, or agency. The simulation models virtually any system, weapon, or piece of equipment and personnel. The user can develop up to 1500 icons (hard coded limitation) for exercise play ranging from individuals and individual pieces of equipment to large unit organizations. More than 1100 to 1200 icons in an exercise will slow the simulation down during exercise play. Spectrum also allows users to combine or separate organizations as the task organization changes or the situation requires.

Spectrum uses the Regional Analysis Model to model the political, economic, and sociological aspects of a country or region. The simulation simulates societal groups, institutions, and outside actors who have interest or influence in the country. The purpose of the Regional Analysis Model (RAM) is to portray a thinking, reacting, and unpredictable civilian population with their own opinions and characteristics. Depending on the level of the exercise, the training audience can simulate the effects of plans, policies, and projects on the civilian population or simulate their forces' interaction with the population during operations. You may have up to 24 defined groups in the RAM.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The Spectrum simulation drives exercises. The exercise/scenario developer normally tailors a training program based on exercise objectives and training audience requirements. Training for workstation operators is a requirement prior to exercise execution.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

Instructors/facilitators are required for workstation operator training, any instruction conducted prior to the exercise, exercise control cell, role players, media representatives, and AAR.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

Spectrum exercises are scripted. Spectrum's Situational Event Generator tool is used to assist in the scripting of an exercise. The Situational Event Generator portrays situations, events, or incidents that pose operational problems for the training audience. These situational events maybe simple bits of information or complex vignettes and can be structured as informative, directive, or interactive depending upon the needs of the exercising organization. Situational events may be presented to the training audience based on time, proximity to a location on the ground, or protest level of a societal group. The exercise director may override the automated system and insert immediate situational events as the situation changes. Up to 500 events can be stored in an exercise database.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

User and scenario dependent.

e) Does a curriculum already exist? If so, briefly describe its form and content

The CREST exercise scenario package currently exists. Exercise is described above.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

User and scenario dependent.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Spectrum has limited AAR capabilities. Requires human collection of AAR data based on user requirements.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

The CREST scenario exists, and can be used as is or modified. Exercise design and development considerations are taught as part of the Spectrum simulation training course.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Feedback to the training audience usually occurs at end-of-day AAR and final post-exercise AAR. Simulation provides feedback to workstation operators relating to operations inside the simulation, e.g., movement, results of police actions, logistics consumption etc.

6. Customization

a) Can the product be customized? If so, how, and by whom?

Yes, scenarios can be modified or produced by the user. System modifications would have to be performed by the National Simulation Center support team.

b) What is the process and how much time does it take to develop a new exercise/scenario?

Normal exercise development cycle covers a six-month period. Exercises, including the database build, have been developed in two months by editing an existing database.

c) What is the process and how much time does it take to modify an exercise/scenario?

Dependent on the extent of modification.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Assuming the operating system is loaded, the network established, and the simulation software loaded, one to two days to install the scenario and test the database. Can be done in less than half a day for an existing scenario.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Limited AAR capability. Good raw data reports on the workstation. AAR requires observers/evaluators observe, record, and analyze events.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
X	High	**X**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
	Difficult		
X	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
0	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
3	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
0	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

> *Spectrum is owned by the U.S. Government and is normally issued to DoD users at no charge. The simulation is issued with several exercise and terrain packages. Users are*

responsible for procuring operating system software and MapInfo Runtime version 4.0 ($495.00 per copy, one copy required for each computer less the server.)

The Spectrum team does not have a travel budget. Users normally pay for team travel.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

   Yes.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

   Product.

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

   Allows User Customization.

4) What are the prices (in $USD) according to type: (fill in all applicable)

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)[1]	$0			
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				

[1] Government technology transfer to approved DoD customers only.

Auxiliary Product License[2]	$495			
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel[3]				
Instructor Fee				
Trainee Fee				

[2] MapInfo v. 4.0 license per computer
[3] Travel costs for training typically paid for by customer, not specified by the vendor

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

STAT Care

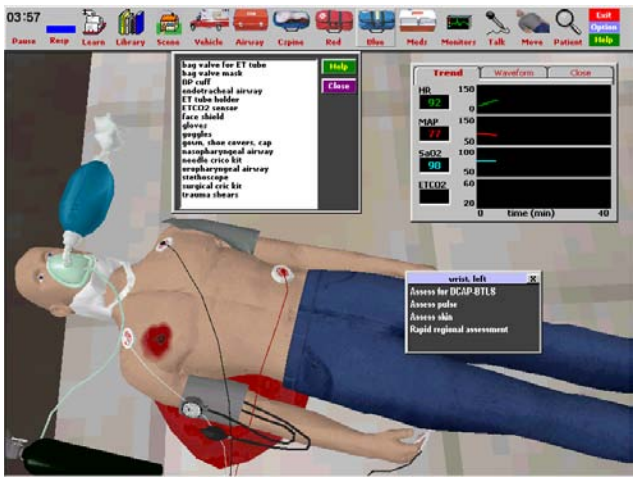
Developer: RTI International (formerly Research Triangle Institute)

Contact information:
Paul N. Kizakevich, M.S., P.E.
Principal Investigator, Technology Assisted Learning Division
RTI International, P.O. Box 12194, RTP, NC 27709
Office 919.541.6639
Cell 919.949.5556
kiz@rti.org

Technical Support Contact Information:

Website: http://www.patient-simulation.com/default.asp **COTS**/GOTS

Product status (version in use): 1.8.0



Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
	Attended Briefing
	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

X	Brochure/Prospectus
	CD-Rom
X	Related Papers: By the POC on virtual reality training for bioterrorism.
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other): Interactive, virtual reality, patient simulator that presents a scenario comprising a 3D scene, an incident that produces trauma or medical conditions, and one or more patients. The caregiver can navigate and survey the scene, interact and converse with the virtual patient, use medical devices, administer medications, monitor diagnostic data, and perform interventions.

- Current Target audience: Pre-hospital providers

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**

1	COTS	1	Generic
	GOTS		Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
	Small multi-user team (up to 25 persons)		
	Large multi-user team (more than 25 persons)		**AAR Capability**
			Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
1	Equipment		Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).
It features: case-based virtual scene scenarios and one or more patients, physiology responds to trauma and treatment, Integrated pharmokinetic drug models, & assignable probability of critical conditions. Reinforces DOT EMT training guidelines, reinforces decision-making skills, follows guidelines for NREMT examination and provides practice for critical trauma scenarios. The user can "navigate and survey the scene, interact and converse with the virtual patient, use medical devices, medicate, monitor diagnostic data, and perform interventions". Designed to "develop an appreciation for patient responses to appropriate or inappropriate treatment".

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand alone product. Includes: 10 trauma scenarios (more as developed); multiple user password security; user activity reports for instructor review; continuing education record keeping; and user session logging (limited by disk size).

c) Large multi-station system, or based on individual PCs?
Individual PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?
Physiological modeling is based on the BODY model developed by Advanced Simulation Corporation (www.advsim.com), & numerous peer-reviewed publications by N. Ty Smith. Protocol modeling is based on EMT training guidelines published by the Department of Transportation and WMD response guidelines from various agencies.

Virtual standardized patients (VSPs) have been developed for trauma, bioterrorism and other diseases, chemical exposures, and mentally-disturbed individuals. VSPs are 3-D characters

who respond and react realistically to injury, treatment, and user interaction. The simulated patients have facial expression, gestures, body movement, and can portray anger, fright, confusion, or other emotions or behaviors based on cognitive, emotional, physiological, and pathological models. VSPs can familiarize medical and emergency providers with specific signs, symptoms, syndromes, and behaviors for both rare and common conditions.

Computer-generated coach provides guidance and feedback throughout interaction; enables novice interviewers to gain experience by practicing taking patient histories and communicating with patient; objects: vehicles, furniture, buildings, etc.; casualties: male models with re-configurable multiple trauma (38 injury and injury-related 3-D body components); sounds: activity, events, weather, ambient nature; variations: time of day, weather, lighting; clothing: military camouflage, military green, civilian sport casual; history: physical, medical, scenario; 465 patient care interactions; & recorded casualty speech responses.

e) Web-based application, LAN, or a single computer/system-based application?
Single computer/system-based application.

f) Describe any debriefing after-action reporting support tools:
An integrated reporting system is included to user-casualty interactions. For each interaction protocol, a check-off listing note completed actions. A rule-based scenario-based AAR debriefing mechanism that would make use of the above recorded information needs to be developed.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
None.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*
Recommended configurations shown in parenthesis.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows 2K and XP, with MS Direct X 8.0

b) Processor speed (in MHz): 800 MHz, 2 GHz recommended

c) Memory (SDR/DDR): 256 Mb Minimum, 512 Recommended

d) Free disk space: 500 Mb

Internet connection speed (if any): Any may be needed for updates or system updates before running the software (Shockwave download, DirectX download, etc.)

Display adapter: DX 8.0 Compatible video card with 32Mb of RAM (this essentially means either an ATI or nVidia card.)

e) CD-ROM speed: Any.

Sound: Any, subwoofer preferred to hear heart sounds

f) Optional accessory requirements[5]: STATCare is a fully 3D simulation. It loads and uses large textures and has a high poly count. This means that a better, faster system will run the application much better than a lower end one. The performance difference will be dramatically noticeable. There will be a large difference between laptops and desktops and between regular business desktops and "gaming" machines or workstations (i.e., the machine being used will largely determine the user experience.)

5. Describe the user interface characteristics:

STAT Care follows the Subjective, Objective, Assessment, and Plan protocol for primary care. Each patient may present at different stages of disease with a chief complaint, vital signs, and animated clues such as hyperventilation, coughing, and sneezing. The clinician makes inquiries regarding medical history and physical condition, orders diagnostic (chest x-ray, CT scan) and lab (Gram stains, CBCs) tests, enters differential diagnoses, and plans treatment and patient management. The patient's medical record is updated as new findings become available. Clinical findings are taken from actual case studies."

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)? Individual use at this time.

b) Number persons usually trained simultaneously? 1

c) Custom/proprietary hardware required? If so, identify: None.

7. Describe any user HELP features:

Windows based. Three modes to the tool: learning, mentor and practice. During the practice no unsolicited help is provided. During the learning mode the student is given cues and is not allowed to progress until the correct actions are performed. The mentor mode provides hints for best performance and allows moving forward even if the correct/best action is not carried out.

8. Data recording & storage features (e.g., Scenario events; student performance):

All user-casualty interactions are recorded with a time stamp. All results of user-casualty interactions are recorded with a time stamp. Vital signs and other key physiological data are recorded every 10 seconds.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- A setup note is provided with the CD
- A windows-compatible help file is provided for user instruction, hits, FAQs.
- A tutorial video will be available in September 2003

2. Attributes

	Application Environment:		**Content**

1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:		Commanders
1	Self-paced		Local Officials
	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance A
		1	Technician B
	WMD Event Supported:		Planning & Mgmt. (incl. ICS)
1	Chemical		Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
	EMA		TTX
2	Fire	1	FE
	Govt. Administrator		FSE
1	Health Care		FSE Reinforcement
2	HazMat		Distributed Collaborative Exercise
	Law Enforcement		National Training Exercise
0	Public Health		
	Public Safety Communication		
	Public Works		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* Working on developing the tool further for triage with multiple players. Currently individual players triage and treatment available (I.e., not linked to other exercises).

3. Product Content

a) Training content description (if applicable):
Chemical and biological tutorials (in mentor and learning modes agent information is provided during play).

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

- Treating cyanide exposure
- Treating nerve gas exposure
- Assessing a trauma patient (according to DOT/NREMT)
- Diagnosing and managing an anthrax patient (primary care medicine)
- Conducting mass casualty triage

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):
Chemical and biological WMD training for emergency-medical personnel (e.g., practice diagnosis of WMD).

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
It provides realistic feedback to medical care personnel about medical, physical and psychological disorders. Physiology responds to trauma and treatment. It features scaleable patient care skill sets & procedures & natural caregiver-patient voice interaction (e.g., dialogue, level-of-consciousness behavior).

e) Exercise/scenario length/time(typical): 15-30 minutes

f) Potential equipment and/or facilities product can address:
STATCare can be readily adapted to depict most any equipment or device, its functional characteristics, its use in a WMD situation, and its repair or calibration.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable.

h) Are there any constraints on supported exercises or scenarios? None known.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): real-time exercise, self-paced individual CBT, positive guidance (learning and practice modes), and treatment case study. There is no fixed path so even though the exact same treatment is given to the patient the model will not result in the same outcome (e.g., patient may loose more blood at different times, respiration may vary etc).

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?* Not necessary to have an instructor.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.
Enables learning management for multiple users with password-protected record access. The instructor can recall and review each student's actions in a scenario, consider the physiological responses of the patient to appropriate or inappropriate care, and produce a printed record of the student session.

d) How is training managed (e.g., Testing, certification of completion, etc.)?
Up to the user.

e) Does a curriculum already exist? If so, briefly describe its form and content
Yes, the learning and mentor modes are essentially individual CBT. Features configurable scenarios and patients (scenes, trauma, injuries, gender, ethnicity). Extant scenes: village, kitchen, suburban street, construction site, farm, & highway.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): Study actions are checked against standardized protocols.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Automatic record-keeping and reporting

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
There is a Scenario Studio tool available only for RTI developers. Data and scripts are held in a database. A limited library of scenarios is available

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): RTI's STATCare simulator presents scenarios comprising a virtual scene, medical toolkits, and one or more patients. The caregiver can navigate and survey the scene, interact and converse with the virtual patient, use medical devices, medicate, monitor diagnostic data, and perform interventions. An animated, 3-D patient model is used to relate signs and symptoms of chemical-agent casualties to level of exposure for recognition of the appropriate level of treatment. Physiological & pharmacokinetic models of cyanide exposure, treatment & response have been developed. Providers can exercise assessment and decision-making skills, and develop an appreciation for patient responses to appropriate or inappropriate treatment. The software guides the user through standardized protocols, and challenges the user with complex scenarios. User interactions and physiological data are recorded for after-action reviews.

6. Customization

a) Can the product be customized? If so, how, and by whom?
The software can be extensively customized by RTI. Variations of the scenarios can be customized quickly. Additional scenarios, scenes, casualties, and protocols can be developed. Limited customization by the instructor can be made to scenario scripts

b) What is the process and how much time does it take to develop a new exercise/scenario?
That depends on the complexity and the potential need for new protocols, casualties, graphics, animations, voices, and other media. Contract to RTI, 1-3 months per scenario.

c) What is the process and how much time does it take to modify an exercise/scenario?

Scenario definitions are held in a database. There is a Scenario Studio tool available only for RTI developers. A distributed version of Scenario Studio could be made available for instructors. When the Scenario Studio tool is made available, about 1-4 hours

d) What is the process and how much time does it take to setup an exercise/scenario to run? Available scenarios are selected from a list a run time. 5 minutes.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Marketed applicable future enhancements: additional civilian and military scenarios, chemical terrorism training module, cardiopulmonary resuscitation simulation, first responder and safety training, case-based medical casualties, female and pediatric patient models, multiple-patient triage scenarios & natural language voice interaction.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	

	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
    a. Product
    b. Service
    c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Other RTI International tools:

VirtualClinic: provides virtual simulated patients for training clinicians in primary care. Each patient may present at different stages of disease with a chief complaint, vital signs, and animated clues such as hyperventilation, coughing, and sneezing. The clinician makes inquiries regarding medical history and physical condition, orders diagnostic (chest x-ray, CT scan) and lab (Gram stains, CBCs) tests, enters differential diagnoses, and plans treatment and patient management. The patient's medical record is updated as new findings become available. Clinical findings are taken from actual case studies

Self Aid: interactive 3D (i3D) courseware for the AMEDD Self-Aid Buddy-Aid course. The objectives are to provide realistic and effective simulations of combat trauma casualties for practice and evaluation of Self-aid / Buddy-aid first aid skills, to provide the young soldier with a modern, engaging medium for learning and practicing first aid skills, and to prepare each soldier to respond quickly and effectively to a life-threatening combat event. Interactive 3D scenarios were developed for five lessons: evaluate a casualty and first aid for bleeding of an extremity, for an open chest wound, for an open abdominal wound, and for a suspected fracture.

IGrade: an integrated solution for field evaluation of students training on task-based activities. Web-based software tools facilitate capture of standard evaluation forms and training scenario definitions.

RTI would like to combine STAT Care and Virtual clinic (distributed, collaborative environment) to follow the progression of exposed victims and conduct multi-player exercises. E.g., with Igrade it is possible to "treat" victims on the field (versus reading victim tags, scanning of the wireless device would be possible)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

TEMA- Tennessee Emergency Management Weapons of Mass Destruction Computer Based Training CD-ROMS

Developer:

Tennessee Emergency Management Agency
3041 Sidco Drive
Nasville, TN 37204-1502
Ph: 615-532-7825

Innovative Technology Applications, Inc
Suite 800, 6551 Loisdale Court
Springfield, VA 22150
Ph: 703-924-9200/3422

Contact information:
info@tnema.org
Media Relations: 1-800-258-3300

And additional Contact information:
Beverly Evans, Ph: 616-253-5849

Website:
www.tnema.org/training/DomestPrep.Htm

Product status (version in use):
version 1.0

Date of Evaluation: December 19, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- Observed Demo
- X Played/Used product
- Attended Briefing
- X Reviewed CD-Rom or other software
- X Reviewed Website
- Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- Product developer filled-in evaluation form
- TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- X CD-Rom
- Related Papers
- Material from Internet
- Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

TEMA developed this four CD-ROM set to support Weapons of Mass Destruction (WMD) training activities. These CDs were developed to provide the means to minimize and ensure survivability in the vent an incident involved WMD.

- Current Target audience:

The CDs were developed for emergency response disciplines that include fire service, emergency medical service, hospitals, law enforcement, public works, and emergency managements. Each of the four CDs addresses a unique audience.
Disk 1: Incident Commander and Staff
Disk 2: HAZMAT- First Responder
Disk 3: Hospital and EMA- First Responder
Disk 4: General Education

- Potential equipment and/or facilities product can address:

Each CD-ROM addresses equipment relevant to it's' target audience. During the testing option, included in each CD-ROM, trainees are assessed on their choice of equipment for a particular pre-arranged scenario. A wide range of facilities are represented including shopping malls, parking lots, and hospitals.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

The TEMA CD-ROMs were developed to directly support WMD training. Scenarios are provided in each CD-ROM to allow trainee to apply the acquired knowledge to a simulated WMD scenario. Following is training content that comprises each CD-ROM.
Disk 1: Incident Commander and Staff
    WMD Agents and Properties and Usage
    Planning and Procedures
    Control Procedures
    Protection Procedures
    WMD Review Library
    Testing
Disk 2: HAZMAT- First Responder
    Terrorism
    WMD Agent Properties
    Treatment Procedures
    Protection Procedures
    HAZMAT First Responder Skills
    WMD Review Library
Disk 3: Hospital and EMA- First Responder
    Terrorism

WMD Agent Properties
Treatment Procedures
Hospital and EMS Skills
Protection Procedures
WMD Review Library
Testing

Disk 4: General Education
Terrorism
WMD Agent Properties
Protection Procedures
Response Actions
WMD Review Library
Testing

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

There are two major components, one being the hardware consisting of any PC, the SECOND being the TEAM CD-ROMS. Additional components used to enhance the effectiveness of the simulation might include a projector if used to train larger audiences.

b) Large multi-station system, or based on individual PCs (if applicable)?

The CD-ROMS can be played on individual PCs and testing scores, are sent directly to TEMA via email.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Product is stand alone.

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The CD-ROMs were designed to be used by the trainees at home, but could be used to distribute training content to a larger audience if desired.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows

b) Processor speed (in MHz):
200 MHz or better

c) Memory (SDR/DDR):
64 Mb or better

d) Free disk space:
N/A

e) Internet connection speed (if any):
N/A

f) Display adapter:
N/A

g) CD-ROM speed:
12 X or faster

h) Optional accessory requirements:
Video Card: 800 x 600, 256 colors
Soundcard: 8 bit or better

3. Describe the user interface characteristics:

The CD-ROMs are interactive and allow the trainee to control the pace of training. Users can learn to perform essential operational and first responder tasks by listening to and reading along with the narrator. Content is also demonstrated with full-motion video, color photos and 2-D AND 3-D graphics. Each CD-ROM contains a scenario option in which the user must decide how to respond to an incident of WMD. Following is a screen shot of a WMD scenario simulated at a shopping mall.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The CD-ROMs were developed for individual training, but could be used to present general training content to a larger audience. Scenarios and testing are aimed at the individual.

b) Custom/proprietary hardware required? If so, identify:

N/A

5. Describe any user HELP features:

CD-ROMs contain a drop down HELP menu for basic troubleshooting.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

A test score is derived from a 50-item quiz and is sent to TEMA via email for each user.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

At start-up CD-ROMs prompt the user how to navigate through the system.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Following is training content that comprises each CD-ROM.
Disk 1: Incident Commander and Staff
- WMD Agents and Properties and Usage
- Planning and Procedures
- Control Procedures
- Protection Procedures
- WMD Review Library
- Testing

Disk 2: HAZMAT- First Responder
- Terrorism
- WMD Agent Properties
- Treatment Procedures
- Protection Procedures
- HAZMAT First Responder Skills
- WMD Review Library

Disk 3: Hospital and EMA- First Responder
- Terrorism
- WMD Agent Properties

Treatment Procedures
Hospital and EMS Skills
Protection Procedures
WMD Review Library
Testing
Disk 4: General Education
Terrorism
WMD Agent Properties
Protection Procedures
Response Actions
WMD Review Library
Testing

b) Exercise/scenario length/time(typical):

Each CD-ROM can take anywhere from 1-3 hours to complete and are self-paced.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

No modifications are necessary.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

N/A

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

N/A

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

WMD scenarios are simulated at the conclusion of each CD-ROM and users are provided with feedback during each scenario. If the user makes a mistake (e.g., chooses the wrong piece of equipment, performs tasks out of order), the virtual environment provides immediate feedback. If the user makes four mistakes, the scenario restarts itself. A 50-item test is available in each CD-ROM that allows the user to put into practice the skills obtained in the CD-ROM. The minimum passing score is 70 percent and once passed the quiz results are sent to TEMA via email.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

CD-ROMs were developed to be used in conjunction with hands-on training.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Product is standardized, but content could potentially be modified.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Pre-arranged scenarios in each CD-ROM take minutes to set-up and 20-45 minutes to complete.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Feedback is provided in each scenario, upon user mistake.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
X	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government owned	1	Multiple dynamic paths / probabilistic outcomes
0	Commercially owned	2	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual	1	Scenario replay
2	Group	2	Automated summary of data
2	Small multi-user team (up to 25 persons)	1	SME controls AAR

3	Large multi-user team (more than 25 persons)	0	Does not provide feedback or AAR
3	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
1	Equipment	1	Standalone
		0	LAN
	Environment	0	WAN
1	Generic	0	Internet
2	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
0	Operational	1	Hands-on
2	Analysis		
0	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
2	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
0	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	3	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	1	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	3	Drills
1	EMA	3	TTX
1	Fire	3	FE
2	Govt. Administrator	3	FSE
1	Health Care	3	FSE Reinforcement
1	HazMat	3	Distributed Collaborative Exercise
1	Law Enforcement	3	National Training Exercise
1	Public Health		
2	Public Safety Communication		
1	Public Works		

2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
2	Improvement		
2	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

1 High
0 Medium
0 Low
0 N/A

Ease of Use

1 Easy
0 Relatively Easy
0 Difficult
0 Requires trained support staff

Current Applicability to ODP

1 Very
0 Somewhat
0 Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
2 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
0 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
0 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

0 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
1 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

0 Distributed, collaborative, decision-making environment
1 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)

a) **Yes** (*proceed to Q2*)
b) No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)

c) Product
d) Service
e) Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)

f) Standardized
g) Vendor Customized
h) Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

Individual CDs are free to government users.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

A. Basic Product Information

Name of Product:

TUTOR

Developer: BCD Modeling Ltd.

Contact information: Patrick Benham-Crosswell
PO BOX136, ALTON, Hampshire GU34 1YR
Tel: +44 1420 590110. Fax: +44 1420 590113
paddy@bcd-modelling.com

Technical Support Contact Information:

Website: http://www.bcd-modelling.com/tutor.html COTS/GOTS: COTS

Product status (version in use): 2.0

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
	Material from Internet
X	Other: please state (Web printouts)

B. Summary Product Description:

- What is the focus/specialty of the product? TUTOR is a simulation environment designed for police and other emergency services decision makers to visualize, simulate and prepare for large and small crisis management contingencies, such as public order and safety incidents as well as terrorist and firearms incidents. In this capacity, TUTOR can be used to test plans and procedures. TUTOR was adapted from a military combat simulation developed by the UK government. The product features terrain visualization (replicated at 1 to 10 meter resolution), entities (up to 1,200 entities can be modeled), activities carried out by entities; management/control of events, and operational analysis and debrief for providing assessments. It was designed for command staffs and their subordinates to gain: experience of implementing contingency plans, and experience of making the plan work in spite on unanticipated problems.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
	Individual	1	Multiple dynamic paths through the product and more than one out come possible
	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
	Equipment		Does not provide feedback or AAR
		0	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

TUTOR uses a basic map model for the terrain and specific locations can be added to add information geo-specific to the training community. The terrain is in their own proprietary format and can be developed at multiple resolutions (1 meter, 5 meter, or 10 meter). Urban terrain is generally modeled at 1 meter. The estimated development time for a 20 meter by 20 meter area of digital terrain is approximately 1 month. All terrain is dynamic, and can be set to interact with (for example) the blast model, so that any building will deform if a bomb is detonated in or near it. Note that TUTOR relies upon external data to determine how much damage is done.

The simulation and simulated entities are built on a UK combat model (CAEn) and the core simulation software is written in Pascal, running on VMS. Client PC software is written in C++ and Delphi and runs on Windows NT, 2000 or XP-Pro
TUTOR runs on a standard PC with an n-Videa Ge-Force graphics card (typical cost $75)
TUTOR has an AAR capability and the AAR data is captured in a flat data file.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Requires a network of PCs linked to a VMS Server. PCs as described above. Server probably a single processor DS 15 or 25. VMS 7.3 preferred (the current version), but can run on most previous versions

c) Large multi-station system, or based on individual PCs?
TUTOR runs on a network of individual PCs – where each user might have a different view of the simulation. Different decision makers input their decisions into separate PCs
Typically 6-10 PCs will be networked to the TUTOR server.

d) If simulation models are used, what is the basis of the data and/or distributions used?
TUTOR has its own simulation models embedded in the tool. This includes a terrain model; entity model, and activity models. Some of the entities and examples of each include: personnel (police officer, fireman), vehicles (fire engine, ambulance), equipment (breathing apparatus, batons), weapons (bombs, hand guns). Some of the activities include: surveillance, movement, explosions, crowd behavior, and arrest procedures.

Data required for models is height, movement speed and equipment carries etc.
According to the vendor the military version has been validated against field trials, achieving a surprisingly high degree of correlation.

e) Web-based application, LAN, or a single computer/system-based application?
TUTOR runs on a LAN. They have tested it using a remote Internet link – but, TUTOR has not yet been used in this way. (The development effort is not significant to enable web usage—minor changes to the network message structure are needed to overcome Internet lag / latency).

f) Describe any debriefing after-action reporting support tools:

Scenarios can be played back, either interactively (allowing changes to be made) or passively. These playbacks can be on one overview, or can be split between players as before, or both. The entire scenario can be recorded as it is happening, and taken away for non-interactive playback on a laptop or other PC. Additionally results data can be extracted to spreadsheet applications. Typical information includes casualties, who saw what etc.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? Typically TUTOR training will take place in 2 rooms, command team in one and everyone else in another. Command team may or may not have TUTOR terminal, depending upon scenario / customer / level of training.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Server – VMS 7-3 with NAS 250 license
Client – Windows NT, 2000 or XP-Pro

b) Processor speed (in MHz):
Server – As fitted to DS10
Client – min 750MHz – the higher the better

c) Memory (SDR/DDR):
Server 512MB RAM min
Client 128MB RAM min

d) Free disk space:
Server 1 GB (but DS –10 comes with minimum 10GM)
Client 10MB

e) Internet connection speed (if any):
N/A

f) Display adapter:
PCs need N-videa Gee-force 2 32MB or better. If fits into AGP slot.

g) CD-ROM speed:
N/A. BCD installs on server and clients, they also configure network

h) Optional accessory requirements:
N/A

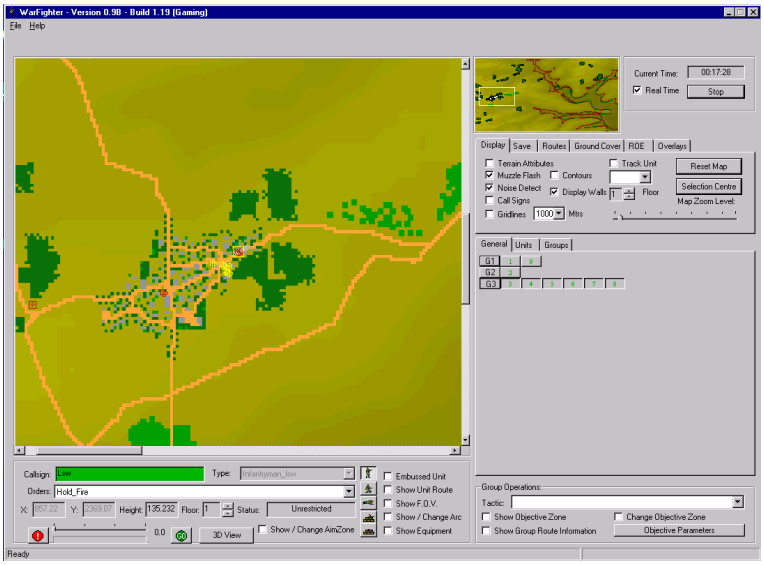
5. Describe the user interface characteristics:
The TUTOR users are divided into the command team, who are to be exercised in implementing the contingency plan, the lower controllers [LOCON], who operate the units that they command, higher controllers [HICON], who act as the command team's commanders and the facilitator, who is running the exercise. There may also be an enemy controller, who will operate terrorists and a public controller, who will control the public.
Typically the higher and lower controllers will sit in the same room, with the command team in a room of their own. The facilitator will move between them as required, and shall also have his own display, probably with the lower controllers. He may also control other elements, such as the public

and terrorists to manipulate the exercise as it unfolds. If required, he could also act as a higher controller.
The command team is in contact with HICON and LOCON via the normal channels (telephone, fax, radio) or emulations of them.
The scenario start point is usually some time before the incident starts. LOWER controllers move their assets as they would normally, until the incident (say discovery of a bomb) starts. At this point the LOWER controller who discovers the bomb initiates the procedures, informs the command team and they start initiating the appropriate plan. As they request assets and issue instructions the LOCONs implement the commands through their TUTOR workstations. The TUTOR simulation ensures that:

1. The LOCONs only have access to the information that they would have.
2. Entities are in the correct place at the correct time. If it takes 15 minutes for a search dog team to arrive on task, it will take 15 minutes in the simulation.
3. Frictions arise. For example, if the building is evacuated, but the evacuees block the arrival route for the search dog team, the search dog team will be delayed.

TUTOR is fully interactive, so LOCONs can update or change their entities activities as required.
TUTOR also runs in real time, so it there a re 5 minutes available for the Command team to make an assessment and issue orders, they will have 5 minutes available. If they are slow, then the speed of the entire response will be reduced by a corresponding amount.
Throughout the exercise, TUTOR records the situation to disc. This can then be used to review performance against defined parameters, as well as to provide a playback of the exercise to the participants.
The Facilitator has a control screen, which gives him a total view of the situation. This allows him to check the performance of the LOCONs as well as to assess how the command team is doing. If the facilitator desires, they can correct mistakes or ease the situation to ensure that the command team are learning the right lessons and not being overwhelmed.

Picture of user interface:



Below is a screen image from TUTOR showing the modeling of Emergency Service Responses.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
1 - 50

b) Number persons usually trained simultaneously?
4-10

c) Custom/proprietary hardware required? If so, identify:
VMS servers are only obtainable from Hewlett Packard.

7. Describe any user HELP features:
TUTOR has complete, windows standard format help file on every user interface. Also BCD / HP can provide helpline phone / e-mail connection for facility managers. Customers will also be integrated into BCD's web based support system when it becomes available. They can use this to report faults, request enhancements and access further help.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):
All exercises are stored. Any exercise can be brought up from its start point, or other points as required (this is an option embedded in the TUTOR start-up menu).

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
BCD creates terrain, installs TUTOR, creates / installs / verifies user entity database with customer, builds base case scenarios and trains the TUTOR manager and a selection of TUTOR users.

2. Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied

	Operational		Hands-on
1	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
	EMS	1	Drills
1	EMA	1	TTX
1	Fire		FE
	Government Administrator		FSE
1	Health Care		FSE Reinforcement
1	HazMat	0	Distributed Collaborative Exercise
1	Law Enforcement		National Training Exercise
	Public Health		
1	Public Safety Communication		
	Public Works		
	Learning Supported:		
	Initial Acquisition		
	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):
Scenario development is up to the user. TUTOR supplies the ability to consider any threat, including WMD.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):
Has an airborne particulate dispersal model that can be used to spread toxic / lethal chemicals.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):
Typically exercise start point, from 30 minutes prior to incident to 2/3 hours post incident, is created by a facilitator / SME who also runs the exercise.

d) Exercise/scenario length/time(typical):
4-5 hours typical, but could go on longer.

e) Potential equipment and/or facilities product can address:
First responders, and testing of emergency plan content and efficiency.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
The system started as a military combat model and changes have been made to support domestic preparedness exercises. (E.g., fire fighting systems). It is ready and available for counter-terrorism training now.

g) Are there any constraints on supported exercises or scenarios?
Subject to data availability.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):
   a. Classroom.
   b. Real-time team exercises (sub-team, full-team, and/or multi-team).
   c. Delayed feedback (AAR), typically. Alternative training strategies, depending on training objectives (e.g., Could employ immediate feedback, positive guidance, demonstration, etc.)

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario)
A scripted scenario could be created and run as a playback. There are no clues embedded per se. However the facilitator does have a 100% overview and so is able to intercede / prompt players as required.

c) How is training managed (e.g., Testing, certification of completion, etc.)?
This functionality could be added to the simulation, allowing verification of who played when. VMS does not overwrite files, so even without development it is possible to verify when training was conducted and how.

d) Does a curriculum already exist? If so, briefly describe its form and content
No.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):
See above.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): See above.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):
There are two components to creating a TUTOR exercise. First the scenario has to be designed. This task is performed by the facilitator, who will probably achieve this making heavy use of extant threat assessments and contingency plans. Once the exercise has been designed the Facilitator will enter it into TUTOR, allocating entities to players, and pre-positioning them, all of which can be done by pointing and dragging with a mouse. The scenario is then saved to disc with a unique name. It is possible to bring this scenario up, make minor adjustments, say to the wind direction, and save it as another scenario. It therefore does not take much time to build a library of relevant scenarios, each of which will be a little different. The LOCONs, HICONS and Command team need not know what is going to happen in advance, and each exercise can be slightly but significantly different.
For the facilitator, the exercise preparation requirements are less than that for a tabletop. Once the start point has been created, the scenario will unfold automatically. This means that the facilitator has more time available during the exercise to watch the command team and train or coach them, rather than concentrating on making the exercise run. This reduces the number of control staff required.
It is possible to run an interactive playback, where not all the LOCONS are required, but the simulation still runs. Use of this facility means that it is possible to exercise the command team alone, further reducing cost.

Creating a new exercise scenario can be achieved through using the intergale scenario building tool, selecting an existing exercise, clicking and dragging entities to new start locations, and adding/ removing them as required, and then saving the exercise with a new name.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
Controller has 100% view of exercise, and can therefore monitor what players are doing.

6. Customization

a) Can the product be customized? If so, how, and by whom?
This is done by the user through the intergale scenario-building tool.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?
About 30 minutes, assuming that someone else has specified what the start point is to be. 1 month for a customized terrain database.

c) Does the customer or the vendor modify or develop a new exercise/scenario?
Customer, unless it requires a different terrain, in which case BCD will create the terrain.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

About 30 minutes, assuming that someone else has specified what the start point is to be. For Process, see earlier answers

7. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
Within a few minutes of an exercise being the facilitator may: Play the exercise back, in the same manner that it was run (i.e over the user work stations), Play the exercise back from an all-informed birds eye view – which will allow all participants to see what actually happened to everyone, Extract a recording to play back on any PC, anywhere, Extract results data to quantify the team's performance, and/or a combination of the above. All TUTOR data is objective, and easily comprehensible. Every result is time stamped, which allows analysis not just of the final outcome, but the key factors that lead to that result. If there is a capability gap, it should become obvious during this review. For example, it may be noted that 3 people were killed during a building evacuation. Checking the results will reveal that they were overwhelmed by smoke, because they were unable to exit fast enough and they were given insufficient warning by the alarms to get them out before the smoke density was too high. Solutions (which may, of course, be tested in TUTOR prior to selection) might include re-setting an alarm, changing the evacuation procedure or providing workers in these critical positions with smoke hoods.

Over time, as TUTOR is used by a wider selection of company staff, it will be possible to track the performance of various shifts, both against their previous attempt at an exercise and in comparison with other shifts. This will give the user an ability to demonstrate continuous improvement in their emergency procedures and to develop a common environment in which to establish best practice, and to consider new threats and risks.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
	High		Very
X	Medium	**X**	Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
	Relatively Easy		
X	Difficult (need to interview to users)		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	

1	Decision-making
	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
	Remote Observation
X	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

Typical cost breakdown for a 6 seat TUTOR installation [NOT a quotation]

License fee $200,000
Hardware $100,000 [if required]
Terrain $ 30,000
Data Set up $ 30,000
User Training $ 30,000
TOTAL $390,000

There is then an annual support / help charge of $50,000 per year for second subsequent years.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. Yes (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. <u>Product & Service Bundle</u>

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. <u>Allows User Customization</u>

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.
<u>Per vendor: "NOT a basis for quotation". See below.</u>

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				

Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
TUTOR License (Site)		y	200000	300000
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)		y	30000	100000
Warranty Upgrade (Terminal)				
Hardware Purchase		y	50000	150000
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance		y	30000	100000
Daily Rate and/or Travel		y	750	1500
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, &GAMES
Version 3, 10/8/03

A. Basic Product Information

Name of Product:

Vigilent

Developer: Compressus Inc.

Contact information:

Victoria Laing
Project Manager
Compressus Inc.
101 Constitution Ave., NW
Washington DC 20001
(O) 202-742-4307
(M) 571-228-0139

Website http://www.compressus.com/index/index.html

Product status (version in use): Vigilent

Date of Evaluation: October 13, 2003

Source(s) of Evaluation: *check all that apply*

- Observed Product in use during a training or exercise
- X Observed Demo (web)
- Played/Used product
- Attended Briefing
- Reviewed CD-Rom or other software
- X Reviewed Website
- X Spoke/emailed with POC
- Interview(s) with Product Users (please paste into the end of this document)
- X Product developer filled-in evaluation form
- X TLI team modified evaluation form

Materials in our Possession:

- Brochure/Prospectus
- CD-Rom
- Related Papers
- Material from Internet
- X Other: please state: Briefing on capabilities (ppt)

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements.

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Real-time surveillance and tracking tool for healthcare professionals decision makers to rapidly detect and identify known pathogens (I.e., identify WMD outbreak).

- Current Target audience:

  Public Health, Health Care.

- Potential equipment and/or facilities product can address:

  This system can substitute for paper reporting of medical surveillance based on simple collection of patient symptoms in the outpatient and inpatient clinical setting. This is often referred to as chief complaint, but can be more detailed. Also Critical Care Tracking (CCT):
  - Visual of the ambulance diversion status, give EOC, ECC and dispatch centers the ability to route patient to the appropriate facility
  - Visual of resources, bed counts and staffing tab
  - The combination of all three will give a clear picture of current capacity and surge capacity
  - Automatic alerts give for hospital diversion

The following modules have distinct features:

MedSight
- Gives a visual via mapping of syndromic information
- Automatic alerts for syndromic information to hospital, EMS, and PH
- PCR (Polymerase Chain Reaction testing) runs to help determine what pathogen, thus allowing for both hospital and pre-hospital planning

CommandSite
- Visual of incident, resources in use, resources available and population affected
- Visual of any and all syndromic and PCR information
- Visual of Diversion information
- Plans and checklist upload and activated
- Automatic logging of all actives and actions taken
- Patient tracking and triage in field

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

Many TTX players reported the need for a syndromic surveillance tracking system. During Federal emergencies the CDC can access various user's information. In addition, although this is not its primary intended purpose, this tool has training capabilities. For example, regional hospital exercise controllers can simulate a WMD attack by providing each hospital with syndromic information. The system can conduct regional analysis and maps incidence syndrome in a map.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

This system is a multi-member, collaborative environment, based on real time events that are then played back to team members for training purposes or quality improvement efforts. It provides continuous, 365-day a year access to monitoring, analysis, and response applications coordinated through a common user interface. The system provides an integrated surveillance capability, including tools that operate in real-time to aid in the collection, storage, and analysis of critical surveillance data. In addition, the VIGILENT applications are compatible with the world's fastest pathogen identification device, the Ruggedized Advanced Pathogen Identification Device (R.A.P.I.D.™).

A suite of emergency response applications accessed via an Incident and Event Management Portal (CommandSight) supplements the VIGILENT medical surveillance and disease monitoring and tracking capabilities. CommandSight seamlessly brings together multiple government agencies to effectively respond to disease outbreaks

VIGILENT allows secure access to critical information that is collected and stored in a centralized repository. These capabilities can be utilized effectively for disease surveillance in both human and animal populations. This feature provides approved personnel with the ability to access, display, and work with the same comprehensive, up-to-date view of the current and anticipated operational landscape providing for a rapid coordinated and cost effective response.

The main components of VIGILENT are:

MedSight – Enables the detection and identification of disease outbreaks using information collected and stored in the VIGILENT database. Several software modules that provide enhanced data capture, event analysis, pattern detection and alert generation, map-based temporal analysis, and pathogen identification, support these functions.

Critical Care Tracking – The Critical Care Tracking (CCT) module of VIGILENT facilitates communication between hospital emergency departments and emergency response agencies such as 911 dispatch operators and Emergency Medical Services (EMS). CCT allows authorized users to share Department Status information for Emergency Rooms, ICUs, P-ICUs, and other departments for all participating hospitals and indicates whether these departments are on Re-route, Closed, Full, or Open status.

CommandSight – Enables coordinated response to a potential or confirmed disease outbreak through a collection of command and control tools. These applications provide rapid situation assessment and response management, including resource requirements, multi-agency checklists, map-based visualizations, and real-time reporting.

Notification – Enables VIGILENT to send out pages and e-mails to individuals or groups to notify them of exceeding predefined disease thresholds or emergency or public health broadcasts.

Current VIGILENT™ Modules

- **Medical Surveillance Module**
  - Continuous Hospital Data Collection (e.g. ICD-9)
  - Real-Time Collection Form Generation
  - Event-based Syndrome Collection
  - Hospital (Medical Treatment Facility) Census
  - Dynamic Report Generation
- **Sample Management Module**
  - Real-Time Data Collection and Viewing of Pathogen Identification Sensor Results
  - Data Collection, Tracking and Reporting on Biological Samples
- **Critical Care Tracking Module**
  - Ambulance Diversion Support
  - Organizational Reporting
  - Resource Tracking, Bed Count Sheet

Current VIGILENT™ Modules

- **Incident Management Module**
  - Incident Manager
    - Incidents
      - Locations
        - Casualty Tracking
    - Incident Logs
  - Plan & Checklist Manager
  - Situational Awareness
  - Message Board – real-time messaging
  - Reports
- **Administration Module**
  - Users
  - Groups
    - Organizations
      - Departments
  - Roles
  - Contacts
  - Reference Code Lists
  - Access Rights
  - Module Administration
  - System Components

In addition there are 4 modules in development.

VIGILENT™ Modules in Development

- **User Initiated Data Upload**
  - Allow low end sites to populate VIGILENT directly without message interface
- **B2B Message Integration Hub**
  - Secure any-to-any message transport, transformation and end-to-end manageability
  - Support HL7, X12, EDI, XML and emerging formats (ebXML)
- **OLAP Analysis Module**
  - Architected Data Marts
  - Web Based OLAP analysis tools (drill, pivot, aggregate, graphs)
- **Bio-Surveillance Pattern Detection Module**
  - Sophisticated Thresholding
  - Pluggable Algorithms
  - User Interface for Parameter Setting and

b) Large multi-station system, or based on individual PCs?

Can be either, but the system is web based so easy to deploy to multiple end users.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand-alone. Hardware for PCR for DNA fingerprinting (Polymerase Chain Reaction testing) for field management is optional. PCR can detect minute amounts of DNA or RNA from bacteria or viruses, thereby allowing for the detection of biological agents.

Real-Time PCR Field Management

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not applicable. The incident is dependent on either active or passive user entry. The incident is dependent on either active or passive user data entry.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

LAN or other Internet connectivity.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Today the only requirement is a web browser and Internet connection. Minimum browser requires Microsoft IE v5.5 SP1, IE 6.0 SP1 recommended. Netscape 4.7 or higher. Others must support Java and should be up to date.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any): 28kbps or higher

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements:

3. Describe the user interface characteristics:

Web, windows based input.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Unlimited (built on Oracle, and supports many simultaneous users).

b) Custom/proprietary hardware required? If so, identify:
None.

5. Describe any user HELP features:

System capability to email tech support. Also phone tech support 24x7 (included in licensing costs).

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Time/day stamp of inputs. Since all incidents are both recorded and stored you could go back and use the actual incident as a training scenario. You could also setup a scenario to be stored for future training

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Vendor will conduct training at users site or over the web (as requested per customer. Cost included in purchase/license). System can be set up and operational within a few hours (depends on how many modifications of the windows, for example reporting screens, the user requests).

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

None.

b) Exercise/scenario length/time(typical):

Dependent on the user. This is an operational tool that can *support* an exercise.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

VIGILENT™ Deployments

- **'02 World Youth Day, Canada**
  - 6 Hospitals in Toronto, local PHO
  - 1 Hospital in North York, local PHO
- **'02 San Antonio, TX Pilot in Planning**
  - 20 Hospitals in greater SA metro area
  - Joint Military, Civilian, VA participation
- **'01-'03 Florida**
  - Over 45 Participating and Planned Hospital/Urgent Care Locations, Local/State PHOs, CDC BT
  - Large participation in Seminole, Orange, Hillsborough, and Pinellas Counties
- **'01 World Series – Phoenix, AZ**
  - 15 Hospitals in 4 Counties, CDC BT, Local/State PHOs,
- **'01 WTC Disaster Response – New York City**
  - 15 hospitals, CDC BT, Local PHO
- **'01-'03 Northern Virginia (INOVA)**
  - 18 Hospitals, CCT
- **'01 Super Bowl – Tampa, F**

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

No.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The tool is graphically based so the immediate feedback is real time, and users can see diversion status change, bed counts and staffing change. Also tracking on the map the moving of syndromic information, resources, Fire Truck, Police cars, etc. Each activity is logged and time stamped, and if you are employing a checklist as you move and update the color will go from Red (not started) to Yellow (in process) and finally to Green (completed).

Reports can be generated from MedSight (number of hospitals, number of syndromes dates and time).

Reports from CCT will supply diversion, bed count and staffing information some of our clients require a comparative report.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
User dependent. This is an operational tool and its primary purpose is not training and exercises. However users can choose to enter (fictional) data for exercises/training. As fare as the analysis portion one approach could be to start with lessons learned and then review the

activities and actions taken during the event then re-create the event with new activities and actions and do a comparative analysis.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): Real time display of syndromic information.

6. Customization

a) Can the product be customized? Yes. If so, how, and by whom? By the vendor. What is the process and how much time does it take to develop or modify a new exercise/scenario?

N/A. Vendors customize screens and reporting structures.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Up to the user. This operational tool's primary purpose is not exercises but it can support them.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Data is collected during events and then played back later for training. All analysis is done during the event (I.e., this is primarily an operational tool).

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	GO (government. Owned)	1	Multiple dynamic paths through the product and more than one out come possible
1	CO (commercially owned)		Static configuration: fixed path, only one right way to use the product
	Media Scale		**AAR Capability**
1	Individual	3	Scenario replay
1	Group	1	Automated summary of data

1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment		Standalone
			LAN
	Environment		WAN
	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
1	Operational		Hands-on
1	Analysis		
3	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:		Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:		Planning & Mgmt. (incl. ICS)
1	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
	Explosion		Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
	EMS	1	Drills
	EMA	1	TTX
	Fire	1	FE
	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement
	HazMat	1	Distributed Collaborative Exercise
	Law Enforcement	1	National Training Exercise

1	Public Health		
	Public Safety Communication		
	Public Works		
	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

X High
Medium
Low
N/A

Ease of Use

Easy
X Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

X Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*

Selected TTX Observations: product allows for/can be used for:

X Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
Enhanced Communication T&E/does it practice/train/exercise communications?
X Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

X Distributed, collaborative, decision-making environment

Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. No, Vendor must quote a system based on user requirements (*end here*)
    (Vendor preferred not to quote cost at this time).
2. Does the cost apply to: (choose one)
    a. Product
    b. Service
    c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, GAMES & SIMULATIONS

Note: The "Virtual Cities" program is not a stand-alone simulation system. It is a major component – the virtual synthetic environment – used by simulation systems. The responses provided below discuss both the Virtual Cities and the simulation system VERTS (Virtual Emergency Response Training System) which incorporates the Virtual Cities for training.

A. Basic Product Information

Name of Product:

Virtual Cities

Original Developer: Institute for Defense Analyses

As of 12/2003 Virtual Cities is supported by Advanced Integrated Systems instead of IDA.

Contact information: Mr. Robert Clover
Advanced Integrated Systems
1750 Tysons Boulevard, 4th Floor
McLean, VA 22102.
Tel.: 703-744-1034
Email: clover@ais-sim.com.

Website: http://ais-sim.com/ COTS/GOTS: GOTS

Product status (version in use): Virtual Los Angeles, Philadelphia, Lower Manhattan, DC, Salt Lake City, Ft Dix-McGuire-Lakehurst, Oklahoma City, Osan, Kosovo, and Afghanistan are all in use. Primary formats are OpenFlight v15.4 and CTDB format c7l.

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
X	Played/Used product
X	Attended Briefing
X	Reviewed CD-Rom or other software
X	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
X	Product developer filled-in evaluation form
X	TLI team modified evaluation form

Materials in our Possession:

X	Brochure/Prospectus

X	CD-Rom
X	Related Papers
X	Material from Internet
	Other: please state

B. Summary Product Description:

1. What is the focus/specialty of the product?

The Virtual Cities are highly accurate, geo-specific, immersive models of key cities, with interiors of selected buildings where requested. The Virtual Cities are the synthetic environments used by manned training systems to permit the military and first responders to train in the mitigation of WMD incidents in their own locales. The Virtual Cities also contain a set of specific 3D models to permit the training audience to create the scenarios to address the specific skills they desire to train. The Virtual Cities and the VERTS simulators have been used by WMD Civil Support Teams (of note, the 2nd CST in New York practiced numerous scenarios in and around the World Trade Center for 6 months preceding the 9-11 attack). Additionally, the VERTS simulators and the Los Angeles Virtual City were used by the Los Angeles Sheriffs Department and the Secret Service for security planning and rehearsal in preparation for the 2000 Democratic National Convention. The DC-Whitehouse Virtual City and the VERTS simulators are used by the Secret Service for training and exercises in and around the White House. The DC database was also used by the Defense Threat Reduction Agency for plume analysis and planning in support of the 2001 presidential inauguration.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

Realistic synthetic environments used by manned simulators and SAF applications

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Environment**
1	COTS *(Simulator)*	1	Generic
1	GOTS *(Virtual Cities)*	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	0	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team (up to 25 persons)		
1	Large multi-user team (more than 25 persons)		**AAR Capability**
		1	Scenario replay
	Applied Context	3	Automated summary of data
1	Non-specific	1	SME controls AAR
1	Equipment	3	Does not provide feedback or AAR
		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The product consists of software in the form of files that describe high definition, 2D and 3D environments that can be used for multiple purposes. Virtual Cities provide realistic, immersive, interactive 3-D environments for manned simulators; 2-D environments for scenario augmentation by way of the Semi-Automated Forces (SAF) applications and/or the VERTS Scenario Generation tool; 3-D geometry for accurate 3-D plume dispersion modeling using computational fluid dynamics algorithms.

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The Virtual Cities can function as a stand-alone product permitting a user to visualize a given city. However, the primary design function is for the Virtual Cities to be integrated into manned simulators, thereby permitting military and civilian first responders to interact with each other and with the environment to practice incident mitigation and coordination. In the manned simulator immersive environment, the responders can carry various operational equipment mockups, which can be stimulated by the simulated agents in the environment.

c) Large multi-station system, or based on individual PCs?

The VERTS simulation system is composed of a network of individual PCs on a local area network, which can be connected to a wide area network to interact with users at widely distributed sites.

d) If simulation models are used, what is the basis of the data and/or distributions used?

The Virtual Cities are built from accurate geographic information system (GIS) data provided by the various city governments, are verified by recent, orthorectified high-resolution (normally 6 inch or better) imagery, and by physical site visits for additional data collection. The VERTS manned simulators are based on over 12 years worth of work with the US Army on human performance in manned simulators.

e) Web-based application, LAN, or a single computer/system-based application?

A single PC can be used as a stand-alone system to visualize a Virtual City. When integrated into the VERTS simulators, Virtual Cities models are normally run interactively on a LAN, but can also be operated on a WAN.

f) Describe any debriefing after-action reporting support tools:

The Virtual Cities application, alone has no AAR support. The VERTS simulator suite has a data-logger and play-back capability permitting replay of the entire training session, pause the playback, and discuss what happened. Normally the unit's leader conducts the after action review, with input from the participating team members.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

The VERTS suite of simulators normally consists of two manned immersives, and up to six or more desktop computers. The immersives require a large room at least twenty to thirty feet deep (depending on projector lens), twenty five feet wide, and ten feet high. Additional space is required for up to six desktop PCs, and a conference area for after action review for four to ten people.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

For visualization of the Virtual Cities, the minimum requirements are a Pentium III 500 MHz CPU with a quality graphics card (preferably with 64 MB memory) and the free "Audition" viewer. The requirements listed below are for the VERTS simulator using the Virtual Cities software.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Windows 2000 and higher

b) Processor speed (in MHz): Pentium III 500 MHz

c) Memory (SDR/DDR): 1 GB

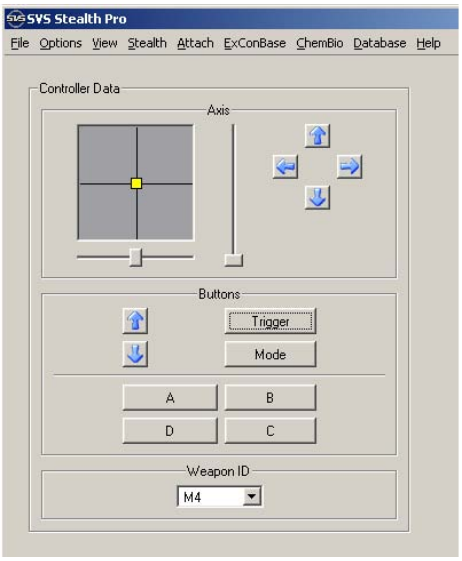
d) Free disk space: 1 GB

e) Internet connection speed (if any): T1 preferred (depends on the number of participating sites on the WAN)

f) Display adapter: Industry standard, with 64 MB memory
g) CD-ROM speed: N/A

h) Optional accessory requirements[5]: Joystick
For the immersive if used, the Intersense Mark 2 tracker; ICAM, MultiRae, and Hapsite simulated monitors are available.

5. Describe the user interface characteristics:



For the VERTS desktop computer, the only user input device is a joystick. For the VERTS immersive, the participant wears a sensor on his head to track body position and eye point, the participant can carry one of three simulated monitors (ICAM, MultiRae, or Hapsite). Numerous modes of locomotion are possible, the simplest and cheapest is a belt-mounted joystick. The buttons on the joystick can be programmed via the SVS interface, shown at right, to provide different virtual functions to the user based upon role.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Since the VERTS system is based on the same protocols as SIMNET and CCTT, the actively participating audience size is, for all practical purposes, unconstrained.

b) Number persons usually trained simultaneously?

In a typical VERTS-type application, there would normally be from 3 to 6 members of a Civil Support Team actively engaged. In a first responder-type application, there could be upwards of 20 active participants.

c) Custom/proprietary hardware required? If so, identify:

None is required to use the Virtual Cities as a stand-alone to visualize a specific city. To use the VERTS simulators, the only proprietary hardware would be the simulated sensors that are stimulated by the simulated agents in the virtual environment.

7. Describe any user HELP features:

A detailed user's guide, online help, as well as telephone and internet help are available.

8. Data recording & storage features (e.g., Scenario events; student performance, students tracking):

For the VERTS simulators, scenarios can be generated, shared across the network, and stored on the PCs using the built-in Scenario Generation tool. Scenarios can also be generated, shared across the network, and stored on the PCs running SAF applications such as OneSAF Testbed, VERTS-SAF, JSAF, etc. There are also both COTS and GOTS data loggers that permit the capture and replay of an exercise. "Student performance" is a subjective evaluation provided by the commander of the unit being trained. There is no individual student tracking.

D. Training Characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

None is required for Virtual Cities. For a VERTS "Immersive" suite, there is normally a three day set-up and familiarization.

2. Attributes ***(Listed in the following table for Virtual Cities combined with VERTS)***

	Application Environment:		**Content**
1	Training	1	Knowledge
1	Exercise	1	Applied
2	Operational	1	Hands-on
1	Analysis (*subjective analysis only*)		
3	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	1	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Management. (including ICS)
1	Chemical	2	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
2	Radiological		**Training Type Supported**
0	Nuclear	2	Equipment Training
1	Explosion	1	Awareness
		1	Part Task Training
	Functional Area Supported:	1	Pre-Training
1	EMS	1	Drills
1	EMA	3	TTX
1	Fire	1	FE
2	Government Administrator	3	FSE
2	Health Care	1	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	1	National Training Exercise

2	Public Health		
2	Public Safety Communication		**Incident Stage Supported**
2	Public Works	3	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
1	Initial Acquisition	3	Recovery
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Product Content

a) Training content description (if applicable):

Virtual Cities contain accurate renderings of the cities to include accurate locations of all fire hydrants (a source of decontamination), storm sewers, streets, alleys, road widths, interior structure of selected key buildings. The VERTS simulator was initially designed to support the recon team, the team leader, and HAZMAT operators.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries):

The Virtual Cities, as both OpenFlight and CTDB databases can "hold" and "display" attributed entities that can be placed by either SAF or the VERTS Scenario Generation Tool. The VERTS Scenario Generation Tool can place the following agents into our Virtual Cities environments: Nerve, Blood, Blister, Choking, Vomiting, Tear, O2, CO, H2S, SO2, NO, NO2, NH3, PH3, CMB_GAS, VOCS, Nuclear. Once placed, the size of the contaminated area can be adjusted at will, and the density of contaminant can be adjusted anywhere from 1 to 5000 mg per square meter.

c) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

For the VERTS immersive system, the participants interact with the simulated Virtual Cities wearing a Level A protective suit, and get their oxygen from a self-contained breathing apparatus. About 40 minutes is the normal amount of time spent "in the hot zone" in simulation. The scenario can be constructed at will to support the specific tasks upon which they desire to work. It can be set up as a tutorial system, the team members can practice at their own pace, or the team leader can drive them hard. The system is flexible.

d) Exercise/scenario length/time (typical):

Normal scenario duration in the immersive system is about 40 minutes.

e) Potential equipment and/or facilities product can address:

The VERTS simulator has a simulated generic hand-held sensor that provides the functional capabilities of the ICAM, Hapsite, and MultiRae chemical sensors. It also has the ability to place ACADAs (warning sensors) in the virtual environment, as well as

dropping flag markers and marking doorways. The Virtual Cities can represent almost any physical facility needed, and in the level of detail needed.

f) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The VERTS system was specifically designed to support the military's weapons of mass destruction-civil support teams (WMD-CST) and the civilian first responder communities. No modifications are required given current functionality, but may be needed for new locations or training objectives.

g) Are there any constraints on supported exercises or scenarios?

The operator has total flexibility in designing scenarios as simple or as complex as desired. Scenarios will be limited to the functionality developed and incorporated into the simulation. For example, a fireman cannot now shoot water from a hose and put out a fire, but no inherent limitation that prevents this capability from being added to the system.

4. Instructional Attributes (if applicable)

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The VERTS simulation system was designed to support immersive real-time training, and detailed after action reviews.

b) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario):

The participant sees and reacts to the same things he would see and react to in the real world. The individual in the simulator will not "fall down twitching" if he is exposed to an appropriate chemical agent, but his avatar in the simulated world will.

c) How is training managed (e.g., Testing, certification of completion, etc.)?

Training is planned, conducted, and evaluated the same way as it is done for many military training exercises. The commander dictates the training guidance, a scenario is selected or developed that supports the commander's intent, the team executes and the commander reviews and critiques.

d) Does a curriculum already exist? If so, briefly describe its form and content.

The VERTS simulators have been deployed to the 2nd WMD-CST in Scotia, NY, the 7th WMD-CST in Ft Leonard Wood, MO, and to PEO-STRI in Orlando, FL. All three sites have developed numerous scenarios which are freely available from the POC's at those sites. There is currently no centralized repository for training scenarios although one could readily be established.

e) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Since the VERTS simulators are built on the DIS/HLA architecture, all of the PDUs from the exercise are recorded and available for playback in real-time, stopped, and viewed from any vantage point. Performance standards and measurements are made subjectively by the commander, the same way it is done in real exercises.

f) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

The feedback provided to the participants is an after action review playback of the exercise, with verbal comments from the commander and from the participants themselves.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

For the VERTS system, there is documentation on the use of the Scenario Development Tool (SDT), and archived scenarios available from the 2nd and 7th WMD-CST's. There are also many 3-D models both provided with the SDT and available on the web at http://virtualcities.ida.org/developersden/models/models.html.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

For the VERTS system, there are human participants in the manned simulators. Therefore, they all operate in real-time. The PDU's of the exercise are recorded and available for playback at the end of the exercise. The only immediate feedback to the participants is that provided by the commander observing the exercise.

6. Customization

a) Can the product be customized? If so, how, and by whom?

The Virtual Cities are OpenFlight files. They can be modified by anyone with a commercial modeling software package such as Creator or 3D Studio Max. The Virtual Cities can also be modified either permanently or temporarily by scattering various 3-D models with either of the software tools mentioned or with the SDT. The VERTS simulators can be modified to add new functionality to them, but that has to be done by the developers, not by the users.

b) What is the process and how much time does it take to develop or modify a new exercise/scenario?

For the VERTS simulation system, the time depends on the complexity of the scenario. Typically it takes from a couple of hours to half a day; however simple scenarios can be

created in a matter of minutes. Existing scenarios can be modified much more quickly than starting from scratch.

c) Does the customer or the vendor modify or develop a new exercise/scenario?

Normally, customers create their own scenarios using the SDT.

d) What is the process and how much time does it take to setup an exercise/scenario to run? The process is as simple as clicking on the "load scenario" menu item. The scenario is then instantly distributed over the network to all of the participating simulators.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Analysis tools, per se, are not part of the product. The current approach relies on the commander watching his team perform, noting what they did well and what they failed to do, and discussing his observations with the team.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
X	High		Very
	Medium	**X**	Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
X	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
3	Dissemination of best practices/expansion of learning benefits i.e. report generation
2	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
3	Decision-making
3	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
2	Remote Observation

3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
2	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)

   The price for existing code for use by approved government entities is free, otherwise development or augmentation of code must be quoted by IDA.

2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle

   Product.

3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization

   Allows User Customization.

4) What are the prices (in $USD) according to type: (fill in all applicable)

   The Virtual Cities are provided as GOTS products, there are no costs to the government (federal, state, city, or local) other than the original production cost, which varies from $50,000 to $150,000 depending on complexity.

   Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				

Product License (User)				
Module License (unspecified)[40]		$0		
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service[41]			$50,000	$150,000
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

[40] Cost for transfer to approved federal, state, and local government entities
[41] Cost to develop a new Virtual City

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

Virtual Clinic

Developer: RTI International (formerly Research Triangle Institute)

Contact information:
Paul N. Kizakevich, M.S., P.E.
Principal Investigator, Technology Assisted Learning Division
RTI International, P.O. Box 12194, RTP, NC 27709
Office 919.541.6639
Cell 919.949.5556
kiz@rti.org

And additional Contact information:

Website: http://www.patient-simulation.com/default.asp

Product status (version in use): Research project prototype. Virtual Clinic is an interactive 3D model of a patient presenting in a primary care setting. The software platform was developed as a research project for the Agency for Healthcare Research and Quality with one patient with cutaneous anthrax. Additional investment is needed for the development of additional simulated patients.

Date of Evaluation: 11/26/2003

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo
- [ ] Played/Used product
- [x] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

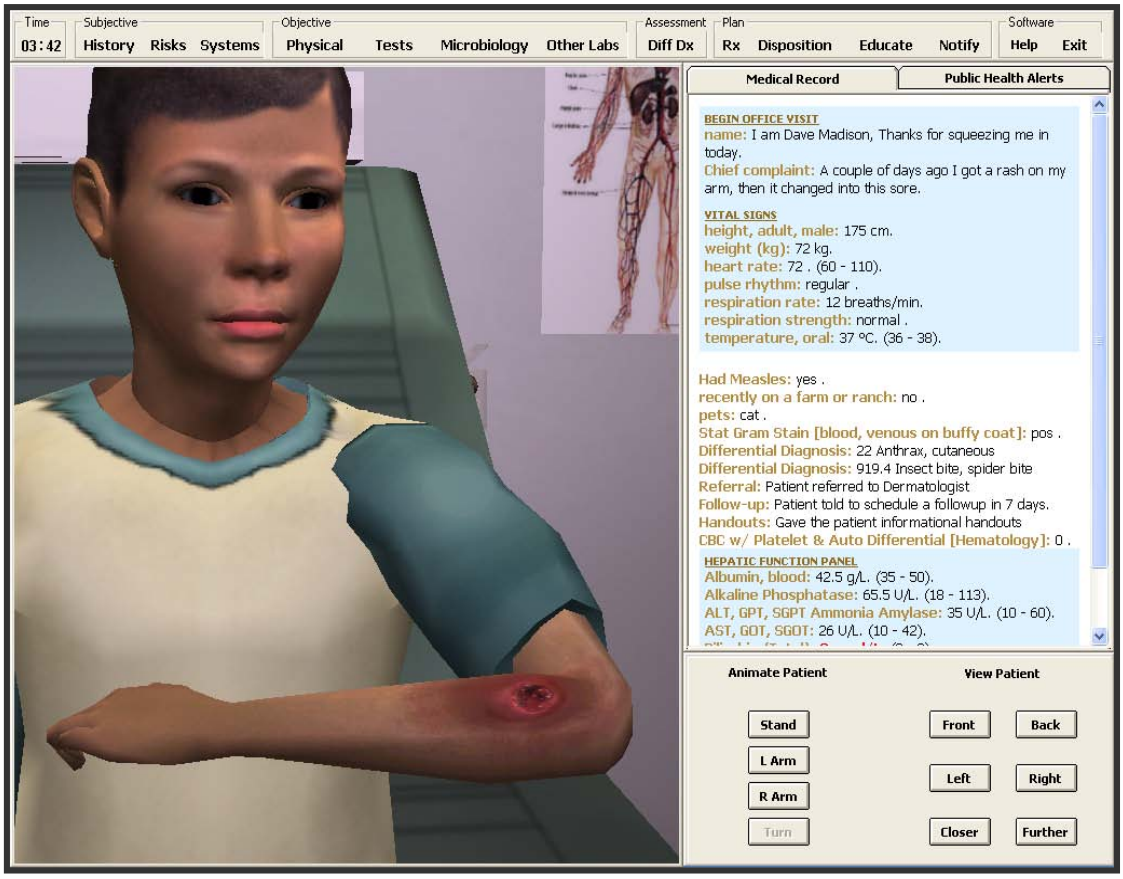
- [x] Brochure/Prospectus
- [ ] CD-Rom

X Related Papers
Material from Internet
Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Virtual patient simulator for training clinicians in identifying and treating bioterrorism or other diseases. Each patient may present at different stages of disease with a chief complaint, vital signs, and animated clues such as hyperventilation, coughing, and sneezing. The clinician makes inquiries regarding medical history and physical condition, orders diagnostic (chest x-ray, CT scan) and lab (Gram stains, CBCs) tests, enters differential diagnoses, and plans treatment and patient management. The patient's medical record is updated as new findings become available. Clinical findings are taken from actual case studies.



Child with cutaneous anthrax in VirtualClinic.

- Current Target audience:

- Medical treatment providers.

- Potential equipment and/or facilities product can address:

  Walk-in clinics and other treatment facilities.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
  ▪
  This tool provides hospital personnel with experiential (simulated hands on) practice in treatment of biological WMD. It can be combined with other exercises and tools to allow more realistic victim treatment for clinicians (e.g., during a full scale exercise victims transferred to the hospital could be simulated with the tool).

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

VirtualClinic, follows a Subjective, Objective, Assessment, and Plan (SOAP) model for primary care.

- Subjective: The clinician can query the patient about present illness, past medical history, social and family history, lifestyle and medical risks, and symptoms according to body systems. The patient verbalizes his response (using a text-to-speech processor) and may show a related expressive behavior. A definitive textual response is then (automatically) recorded in the medical record.
- Objective: Physical exams are conducted according to body systems. Diagnostic tests (e.g., chest x-ray) and clinical laboratory tests (e.g., blood chemistries) may also be ordered. Test results, such as Gram stains and radiograms are displayed. For each query, a textual response is recorded in the medical record, and lab results that are outside normal limits are highlighted.
- Assessment: Diagnostic hypotheses are made using a disease table comprising over 1,500 expected diseases in primary care, augmented with bioterrorism and emerging diseases. Multiple disease hypotheses can be specified, and each is recorded in the medical record. Whenever a definitive diagnosis is available, the clinician can update the differential diagnosis and a revision is noted in the medical record.
- Plan: The clinician prescribes medications, provides patient education, schedules follow-up visits, makes referrals, and ultimately disposes of the patient. All actions are recorded in the medical record. Referrals can be ordered to any of 16 medical specialists

The medical record contains demographic information, the chief complaint, and a panel of vital signs (presumably taken by a nurse). All inquiries, patient interactions, diagnostic tests, disease hypotheses, prescriptions, and other plans are automatically accumulated in the medical record as the clinician performs each task. Clinical laboratory results are presented along with their expected normal ranges; such results are highlighted whenever the clinical data are outside normal limits. Laboratory test panels (e.g., lipid panel) are highlighted to indicate that all data came from the same sample.

A public health alerts window contains public health information in the form of a "Blast Fax" alert associated with the current scenario. This helps remind clinicians to read their public health alerts, because such alerts may contain clues to patient diagnosis. The public

health alert frame shares screen space with the medical record window frame. The clinician uses a tab metaphor to switch between the two frames.

b) Large multi-station system, or based on individual PCs (if applicable)?

Individual PCs.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Stand alone.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Physiological modeling is based on the BODY model developed by Advanced Simulation Corporation (www.advsim.com), & numerous peer-reviewed publications by N. Ty Smith. Protocol modeling is based on EMT training guidelines published by the Department of Transportation and WMD response guidelines from various agencies.

Virtual standardized patients (VSPs) have been developed for trauma, bioterrorism and other diseases, chemical exposures, and mentally-disturbed individuals. VSPs are 3-D characters who respond and react realistically to injury, treatment, and user interaction. The simulated patients have facial expression, gestures, body movement, and can portray anger, fright, confusion, or other emotions or behaviors based on cognitive, emotional, physiological, and pathological models. VSPs can familiarize medical and emergency providers with specific signs, symptoms, syndromes, and behaviors for both rare and common conditions.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

None.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Windows 2K and XP, with MS Direct X 8.0

b) Processor speed (in MHz): 800 MHz, 2 GHz recommended

c) Memory (SDR/DDR): 256 Mb Minimum, 512 Recommended

d) Free disk space: 500 Mb

Internet connection speed (if any): Any may be needed for updates or system updates before running the software (Shockwave download, DirectX download, etc.)

Display adapter: DX 8.0 Compatible video card with 32Mb of RAM (this essentially means either an ATI or nVidia card.)

e) CD-ROM speed: Any.

f) Sound: Any, subwoofer preferred to hear heart sounds

g) Optional accessory requirements[5]: There will be a large difference between laptops and desktops and between regular business desktops and "gaming" machines or workstations (i.e., the machine being used will largely determine the user experience.)

3. Describe the user interface characteristics:

The VirtualClinic user interface comprises a menu bar across the top of the screen, a 3-D interactive window frame for graphical presentation of the virtual patient, tabbed window frames for accumulation of medical records and presentation of public health alerts, and a command and navigational window frame to direct patient behaviors and provide alternative patient views.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

Individual use at this time.

b) Custom/proprietary hardware required? If so, identify:
None.

5. Describe any user HELP features:

A MS Windows-compatible HTML Help file hold software setup and usage information.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

All user-patient interactions are recorded with a time stamp. All results of user-patient interactions are recorded with a time stamp. Vital signs and other key physiological data are recorded every 10 seconds.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

- A setup note is provided with the CD
- A windows-compatible help file is provided for user instruction, hits, FAQs.
- A tutorial video will be available in September 2003

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

Simulated "hands on" treatment of biological victims.

b) Exercise/scenario length/time(typical):

10-20 minutes/scenario

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

Directly applicable.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Not yet used for training.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Historical and clinical information of bioterrorism agents and emerging diseases have been prepared as instructional content. These are available for review at http://bt.rti.org/. A supervisor software shell is under development to support four phases of a curriculum: familiarize, acquire, practice, and validate. A learning content design tools and training structure developed by RTI, published at The Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) 2003 this past December in Orlando, Florida, and employed at multiple military installation.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Automatic record-keeping and reporting

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

There is a Scenario Studio tool available only for RTI developers. Data and scripts are held in a database. A limited library of scenarios is available

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

An after-action review system is in development..

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The software can be extensively customized by RTI. Variations of the scenarios can be customized quickly. Additional scenarios, scenes, casualties, and protocols can be developed. Limited customization by the instructor can be made to scenario scripts.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Scenario definitions are held in a database. There is a Scenario Studio tool available only for RTI developers. A distributed version of Scenario Studio could be made available for instructors. When the Scenario Studio tool is made available, about 1-4 hours

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools; After Action Reviews):

An after-action review system is in development.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	X	Multiple dynamic paths / probabilistic outcomes
X	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
X	Individual		Scenario replay
	Group	X	Automated summary of data
	Small multi-user team (up to 25 persons)		SME controls AAR
	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
	Multi- Agency Participation		
		0	**HLA Compliance** (does product support HLA?)
	Applied Context		
X	Non-specific		**Interconnectivity**
	Equipment	X	Standalone
			LAN
	Environment		WAN
X	Generic		Internet

	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training		Knowledge
2	Exercise	1	Applied
	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:		Commanders
1	Self-paced		Local Officials
	Instructor/Facilitator		State Officials
			Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
			Technician (specialist)
	WMD Event Supported:		Planning & Mgmt. (incl. ICS)
	Chemical		Multi-jurisdictional Integrated Systems
1	Biological		
	Radiological		**Training Type Supported**
	Nuclear		Equipment Training
	Explosion		Awareness
		1	Part Task Training
	Functional Area Supported:		Pre-Training
2	EMS		Drills
	EMA		TTX
	Fire		FE
	Govt. Administrator	2	FSE
1	Health Care		FSE Reinforcement
	HazMat		Distributed Collaborative Exercise
	Law Enforcement		National Training Exercise
	Public Health		
	Public Safety Communication		
	Public Works		
	Transportation		
	Private Sector		
	Learning Supported:		
	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity
1	High
	Medium
	Low
	N/A

	Current Applicability to ODP
1	Very
	Somewhat
	Limited

	Ease of Use
1	Easy
	Relatively Easy
	Difficult
	Requires trained support staff

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
	Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
	Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support

Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
	Enhanced Communication T&E/does it practice/train/exercise communications?
1	Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:	
3	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
    a. Yes (*proceed to Q2*)
    b. <u>No, Vendor must quote a system based on user requirements (*end here*)</u>

2. Does the cost apply to: (choose one)
    a. Product
    b. Service
    c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
    a. Standardized
    b. Vendor Customized
    c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Basic Product Information

Name of Product:

Virtual Emergency Response Training Simulation (VERTS)

VERTS exists as a prototype system that began as Science and Technology Objective. The VERTS program is currently seeking Federal funding to develop the simulation technology into production systems for deployment at active, reserve military, and National Guard sites. Because the system is still under development, it is not possible to fully describe VERTS and its characteristics in this document.

Product is hardware, software, or both?
VERTS consists of both hardware and software, but its chief component is software.

Large multi-user system, small multi-user product, or individual-user product?
VERTS is a large multi-user system.

Focus/specialty of product:
The focus of VERTS is consequence management preparedness training of Incident Command System (ICS) commanders and staff for CBNR threats. VERTS combines a constructive simulation with immersive virtual reality environments for training and exercises. The constructive simulation maintains the terrain database, entity behaviors, and models of incident effects. The virtual reality stations enable role player personnel to interact with the constructive simulation as control and input mechanisms. The virtual suites consist of two immersion training stations, inside which trainees wear Level-A chemical suits. Outside the immersion stations, trainees participate in synthetic environment simulations from desktop computers.

Screenshot courtesy of Institute for Defense Analyses.

Incident response operational tool/system:
Domestic, military, other users?
VERTS is not intended for use as an operational system, but was used by the 2nd Weapons of Mass Destruction Civil Support Team to support operations by assisting in the choice of ingress/egress routes and potential CP sites just before responding to the WTC attack.

Incident response training/exercise tool/system:
Domestic, military, other users?
Intended users of VERTS are active and reserve military components, and domestic safety agencies. VERTS is targeted to support the WMD-

Civil Support Teams (WMD-CST) of the National Guard, Installation Support Teams (IST), Rapid Response Teams (RRT) of the active Army, and the US Army Reserve (USAR) reconnaissance and decontamination mission support to Home Land Security (HLS). VERTS is proposed to serve as a training resource and exercise support tool for selected institutional courses at the United States Army Chemical School (USACMLS) and possibly other institutions. It is not envisioned that VERTS will be taught in any resident courses as a system.

Other operational tool/system (Identify):

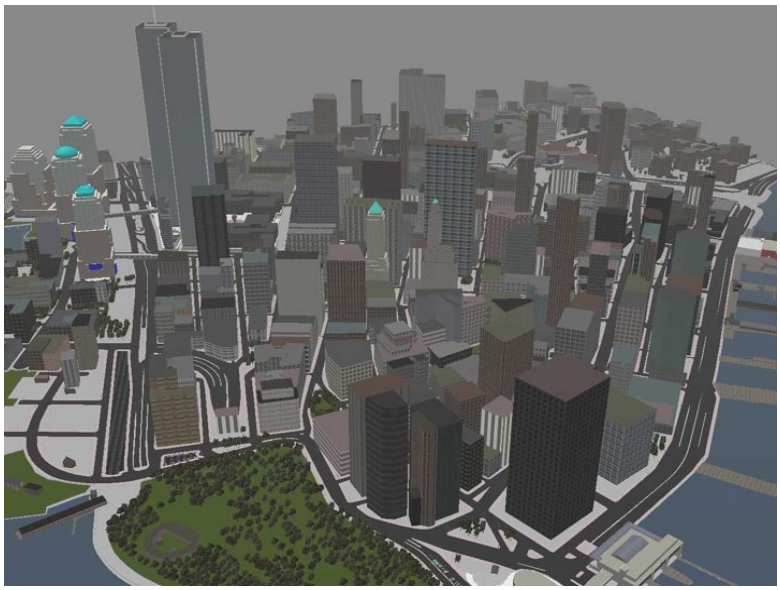
Typical users (e.g., Military, consumer)?

Not applicable.

Other training/exercise tool/system (Identify):

Typical users (e.g., Military, consumer)?

The Virtual Cities database initiative, undertaken by IDA, uses VERTS as a technology platform to model high fidelity 3D renderings of US cities (to date: LA, Philadelphia, New York, Washington, D.C.) and buildings of interest (landmarks, stadia, government offices). Users of Virtual Cities are primarily Federal, state and local security agencies.



Screenshot of Manhattan courtesy of Institute for Defense Analyses.

Functional-area identification of product (Broad range, or specific):

VERTS covers a range of training types and audiences. The near-term intent is to train National Guard WMD Civil Support Teams (WMD CSTs) to address survey (site recon, sampling), medical, and command functions. Accordingly, VERTS targets First Responders and Commanders, using immersive training and distributed/collaborative environments.

Developer/owner: Name of person or entity that created, owns, sells the product (identify each, if different; identify relationship between each):

U.S. Department of Defense

Program Executive Office, Simulation, Training and Instruction (PEO STRI)

Contact info ref. technical questions (Person, title, organization, telephone, email):

Mr. James Grosse
Principal Investigator, Simulation Technology Center
US Army RDE COM (Provisional)
12423 Research Parkway
Orlando, Florida 32826
Wk. phone: 407-384-3872; Fax: 407-384-5454;
James_Grosse@stricom.army.mil

Contact info ref. Buying the product (Person, title, organization, telephone, email):

Major Lee Dunlap
S-CATT/ VERTS Project Director
U.S. Army PEO STRI
Orlando, Florida 32826
Wk. phone: 407-384-5358;
Lee_Dunlap@peostri.army.mil

COTS/GOTS (circle one).

VERTS is government owned technology. It is not currently available off-the-shelf.

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? If modifications are required, briefly describe them.

Yes, it is directly applicable to counter-terrorism training and exercises. However, VERTS is a prototype system, and as such will require further modification and adaptation to achieve mission objectives. Further development of VERTS will support interoperability with other HLA and DIS compliant simulations or simulators.

Product status (Production version in use; prototype in use; under development)?

VERTS is under development. There are two sites where VERTS prototype suites are deployed: Institute for Defense Analyses (IDA), Alexandria, VA, USACMLS, Ft. Leonard Wood, MO. Full deployment in 2006 to active and reserve military bases depends on Federal funding.

If in use, identify users, types of use:

Users of either VERTS or Virtual Cities include:

- National Guard WMD Civil Support Teams 2 and 7 – Training WMD response
- NYPD & HazMat – Civilian first response training
- Salt Lake Olympic Committee, FBI, DTRA – Large event security planning (Winter Olympics)
- U.S. Secret Service – Scenario rehearsal and training, LOS evaluation
- Boston PD and 1st CST, LAPD, LASD, FBI – Large event security planning (DNC conventions)
- Defense Threat Reduction Agency (DTRA) – JACE/CATS integration
- DoD Labs – Various transport and diffusion models
- Naval Research Lab (NRL) – CFD transport and diffusion modeling
- Lockheed Martin – Development of next generation GPS III
- NYC, design firms – WTC redevelopment

- NY-DOT – Transportation management study
- CNAC – Evaluation of Presidential Lift contenders
- JFCOM, J-9 – Joint Urban Warfare task support
- OSD-C3I-CIP – Planning of critical infrastructure protection in metro DC
- JFHQ-HLS and PEO STRI – Support of rapid construction of urban areas.

Product Description

Describe product, briefly. Address major functional characteristics (e.g., Individual CBT, large-team trainer, web-based collaborative game, VTC tool, PC-based incident response tool):

VERTS is a combination of a constructive simulation and virtual reality simulator intended to enhance training in the detection and sampling of CBRN agents and WMD consequence management.

Intended for operations, training/exercises, or both?

VERTS is intended for training and exercises.

If training/exercises, is it an instructor/controller/evaluator tool, or training media?

Training media.

Intended for individual, group or team use[1]?

VERTS is intended to exercise ICS functionality by teams. However, VERTS and Virtual Cities have functionality that can support individual and group use as well.

If multiple users, identify the range of persons it can simultaneously support (min-max)?

RDECOM anticipates no significant limit on the number of simultaneous users.

Number persons usually trained simultaneously?

As currently envisioned, about six team members would be trained per VERTS suite. Multiple suites would allow multiple teams to train simultaneously.

Large multi-station system, or based on individual PC's?

VERTS is intended to be a large, multi-station system run on a LAN or WAN, including immersive projection systems. The system may be implemented in both fixed and mobile configurations.

Custom/proprietary hardware required?

No. All computing, position tracking, and data logging hardware can be off-the-shelf products. The system, however, would require additional engineering to adapt to multiple different communications systems.

Identify major product components[2] and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

- Hardware:

  Baseline hardware of the prototype was provided by a company called Reality by Design, with significant upgrades performed by DoD battle labs and technology development centers. The VERTS Operational Requirements Document (ORD) (see below – Initial acquisition cost) will orient system design to modular components, such that the following information is only for baseline purposes.

PC-based multiple workstation LAN to run constructive simulation;
Data Loggers;

Immersive station consisting of:

- Digital projector - display the virtual world
- 9.5 x 7.5 ft. DA-LITE projection screen
- Precision Motor Trackers – sense head movement
- Joystick - used for navigating the virtual world.
- Mock-up chembio monitor/detector(s).

- Software:

  Virtual reality engine incorporates CHEM-BIO SVS2 software from Reality by Design, Inc., developed using SimStorm. Accurate geo-spatial and geodetic products are required to support operation of VERTS system. If required, this system will use standard format, standard media mapping, and charting and geodesy products from the National Imagery and Mapping Agency (NIMA) without transformation into system specific formats.

- Simulation:

  Proprietary constructive simulation is based on the OneSAF initiative.

If simulation models are used, identify their qualitative validity level (if possible):

VERTS is specified to achieve a minimum replication level of 80% for threats, and 90% for nuclear incidents. The intended modular design approach will allow for different levels for different applications (e.g., a 1st responder vehicle simulator may be produced to very high resolution/fidelity, while other simulation components have lower fidelity).

Stand-alone product, or require other hardware and software to function[3] (e.g., external simulation models, data base, operational equipment):

VERTS requires other hardware, as currently evolved in the prototype.

If other hardware and/or software required, or typically used, identify it/them.

Level-A chemical suits and related equipment are needed to use the immersive stations for the purpose of CBRN surveillance and sampling. A WAN would be necessary for distributed/collaborative use of VERTS. External engineering models may be needed to accurately simulate plume models in urban terrain.

Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

VERTS suites consist of multiple rooms or areas: two immersive training stations, and classroom/cubicle areas. Suites are proposed for both fixed (situated in a building) and mobile configurations, each occupying an area of 1500 to 2000 square feet.

Web-based application, LAN, or a single computer/system-based application?

The system is operated on a LAN, which can, in turn, be networked with remote VERTS sites over a WAN (potentially over GuardNet, a secure WAN).

Can the training be administered over a wide area network or a local area network?

Both.

Is an instructor or facilitator needed?

Yes. As currently conceived, VERTS training will be administered by instructors. However, the technology may be applied to individualized CBT.

If not, how is training conducted (e.g., Individual self-paced)?
Possibly self-paced.

If not, how is training managed (e.g., Testing, certification of completion, etc.)?
Any range of alternatives may be possible.

Describe unique user interface characteristics:
VERTS offers high-resolution 3D graphics terrain simulation that can be traversed with a joystick. The potential exists to incorporate a human body simulator, such as the Combat Trauma Patient Simulator (CTPS), for training medical response to CBNR events.

Other important product characteristics:
VERTS includes the immersive HITL functionality needed to replicate the actual physical process of WMD site recon and sampling. The Operational Requirements Document (ORD) for the system is anticipated to stipulate modular components whereby functionality can be tailored to specific training locations and types.

Product Operating Requirements & Cost

Purchase or license product, both, or optional?
At present, there is no mechanism for purchasing or licensing VERTS. It is a DoD supported prototype that may be applied to DoD approved projects given Federal funding.

Initial acquisition cost (purchase; licensing fees):
It is not possible to specify acquisition costs without known user requirements and a finalized system design. As this review was written, U.S. Army Maneuver Support Center (MANSCEN) was generating the ORD, upon which it may be possible to prepare pricing information.

POC at MANSCEN: Mike Robinson
Work phone: (573) 596-0131, ex 3-6257
DSN 676-6257
RobinMik@WOOD.ARMY.MIL

Product itself:
Not currently known or specifiable.

Other necessary support, software, equipment:
Support by one or more DoD sponsored labs (e.g., MANSCEN, PEO STRI, RDE COM, IDA) would be necessary to complete development and deployment of a VERTS system.

Contractor(s) required to run product? If yes, level of support required (people, costs, etc.)?
At present, the prototypes are run by DoD supported labs or contractors.

Number of staff required to setup, and operate product:
Not currently known or specifiable.

Staff training required to use product (identify briefly ... type, time):
Not currently known or specifiable.

Cost for staff training on product (Cost to purchase training):

Not currently known or specifiable.

Equipment/facilities required to install and use/operate product (If more than one personal computer; or, if special PC components are required):

See above.

Expected costs?

Not currently known or specifiable.

Product maintenance requirements/recommendations (identify briefly):

Not currently known or specifiable.

Maintenance costs (Expected or required software, hardware maintenance):

Not currently known or specifiable.

Software operating system (Windows XP, 2000, etc.; MAC OS; UNIX; other):

Currently runs on Linux and Windows 2000, but may be ported to other operating systems.

Can product be customized? How? Cost?

VERTS is currently an engineering prototype that can be fully customized to meet user needs.

Product modifications required to support counter-terrorism training/exercises:

Further development and testing of the prototype system would be required to complete deployment of VERTS suites.

Modifications:

Modifications to VERTS would be needed depending on the nature of the training objective and the need for geospecificity. New databases would need to be developed to model cities other than the five currently available, or to model, for example, human symptoms to CBNR agents.

Range of potential costs:

Tens of thousands of Dollars to develop a new Virtual City database, depending on level of rendering detail. To fully deploy VERTS will require substantial Federal funding (hundreds of thousands to millions of Dollars).

<u>Personal Computer Requirements</u> *(if appropriate)*

(Most software will offer minimum and recommended configurations).

The VERTS system is a prototype. System requirements are likely to change as the ORD is finalized, such that specifications given below are only for general informational purposes and not for purchasing specification.

Processor speed (in MHz):	700 MHz - Typical 200 MHz - Minimum
Memory:(SDR/DDR):	Nominal system spec of standard desktop PC
Free disk space:	Nominal system spec of standard desktop PC

Internet connection speed:(if any) Not currently functional

Display adapter[4,5]: NVIDIA GeForce 3

CD-ROM speed: Nominal system spec of standard desktop PC

Optional accessory requirements[5]:

The immersive interface uses a Proxima 9260 rear projector to display the virtual world on a 9.5 x 7.5 ft. DA-LITE projection screen, enclosed in a curtained off area. Head and body tracking is provided by Intersense Corp. IS-600 Series Precision Motor Trackers and a belt-mounted 3DOF joystick is used for navigating through the virtual world. A mock-up chembio monitor is augmented with buttons to allow drop sample flags, placing alarms, and marking doorways. The desktop interface displays the virtual world on a computer monitor, and uses a Microsoft Sidewinder Precision Pro 6DOF joystick for navigating and interacting with the virtual world.

Other functionality may be included in the production version such as a 1st responder vehicle simulator, and a human patient simulator.

Training/Exercise Characteristics

Product may support training, exercises, or both?

Both.

Potential type of WMD event product can support:

Chemical – Yes
Biological – Yes
Radiological – Yes
Nuclear – Yes
Explosive – Yes

Constraints on supported exercises or scenarios?

Not currently known or specifiable.

Potential disciplines product can support:

Emergency medical services	Yes
Emergency management agency	Yes
Fire	Planned
Governmental administration	No
Health care	Planned
HazMat	Yes
Law enforcement	Yes
Public health	No
Public safety communication	Possibly
Public works	Possibly
Global ... or other (Pelfrey)	

Provide additional sub-discipline description if possible.

- ICS training
- CBNR HazMat training

- Potential integration of human patient simulator for 1st responder EMS training
- Potential integration of squad car simulator

Potential types of learning product can support (S&K):

Initial/acquisition	No
Improvement	Yes
Maintenance/refresher	Yes

Target audience:

First responders/Crisis managers/Incident Commander
Law enforcement/Fire& Rescue/Hospital personnel
Primary, intended audience:

- Incident commanders, crisis managers
- Military CST, civilian HazMat teams
- Law enforcement
- 1st responders

Secondary audiences may include:

- Hospital personnel
- Fire/Rescue
- Government administration, public works

Potential responder training level(s)/categories product can support:

Awareness –	No
Performance [Operations]	Yes
Technician [Specialist]	Yes
Planning & Management [Incident Command]	Yes
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) -	Possibly

Potential equipment and/or facilities product can address:

- Level-A chemical suits and related equipment
- Communications
- Urban terrain and building interiors.

Possible facilities that may be modeled in a production version of VERTS could include decontamination, triage, and hospitals.

Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

- Equipment operation
- CBNR site survey and sampling
- EOC or CP decision-making
- Team communications
- Triage
- Decontamination process simulation

Training content description (what trained), in addition to preceding item (Brief):

Incident scenarios will cover command and control procedures, mission planning, initial response, hazard modeling, survey team operations, and medical surveillance tasks related to responding to a HAZMAT and CBRN incident. The simulated environment will produce command and control challenges produced by a major incident. The

personnel operate on simulated terrain of their area of operations. Select buildings are modeled in high resolution so the personnel can use the virtual suites to enter and conduct operations within. Other models will create the physical changes to the structure associated with an explosive device and/or a fire. Fire response units will intervene in structure fires to gain control and extinguish the fire.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required) :

Primary input for traversing virtual spaces is by joystick. Intermediate proficiency is preferable for most trainees, but all levels are accommodated.

Potential training/exercise types product can support:

Classroom -	Yes
Individual self-paced -	Yes
Seminar/workshop -	Yes
Drill -	Possibly
Individual and small-team exercises -	
Simulation-supported -	Yes
Gaming -	Yes
Collaborative -	Yes
Tabletop -	No
Functional -	Yes
FSE -	No
Other	

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level … e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

A combination of real time exercise and classroom AAR is the currently intended instruction methodology. The technology, however, can support a wide range of methods – including CBT, and distributed/collaborative approaches.

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

Exercises are simulation-supported, immersive, team-oriented training sessions guided by an instructor. The length of a scenario will depend on a range of factors such as intended training objective, actual performance, and resources.

Exercise/scenario length/time(typical):

Typically less than two hours.

Process and time to:

Develop new exercise/scenario:

Development time will be dependent on the nature of the exercise or scenario, whereby changes that require modifications to the software, as opposed to varying given functionality, will require additional engineering. Development of new databases can take one month to many months depending upon the model complexity. Given current development resources, modeling a new city with relatively low rendering detail would take one to two months, for example.

Modify an exercise/scenario:

The time to modify an exercise will depend upon the nature of the modifications. Times to modify the prototype system may not be the same to modify production versions.

Setup an exercise/scenario to run:

Several hours.

Does a curriculum already exist?

No, there is no curriculum to date.

If so, briefly describe its form and content:

Not applicable.

Instructional Assistance Features

Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, automatic reactive scenario):

Current exercises involve a wide range of conduct features due to the nature of the immersive simulation. Stimulus comes from other team members through COMS and avatars (animated representations of remote participants in the virtual environment), mock-up instruments give readings, and remote commanders give guidance.

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Communications and simulation data are captured by data loggers. This information is used to construct an After Action Review (AAR). Personnel health status and casualty counts will be maintained by the constructive simulation.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

As part of the immersive exercise, trainees use mock-up devices to stimulate or react to stimulus in the constructive simulation. Video animation of avatars and audio communications with other team members provides some immediate feedback. AAR is the main learning delivery mechanism.

Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

Not currently known or specifiable.

HELP features (Briefly identify):

Not currently known or specifiable.

Instructor/controller/evaluator tools:

Not currently known or specifiable.

Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

Not currently known or specifiable.

Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Data loggers record all time-stamped simulation and COMS information. Other features are to be determined.

AAR support tools (May overlap with "Student/participant/team feedback features", above):

Not currently known or specifiable.

Data recording & storage features (e.g., Scenario events; student performance):

Logging/tagging of all COMS and simulation data.

Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Not currently known or specifiable.

Training/exercise fidelity:

Environment (including situation/scenario):

High fidelity. Virtual environments can be developed for a range of fidelities, but high resolution geo-specific environments are currently used.

Hardware:

Level A chemical suits provide a high degree of realism. Mock-up meters, weapons, and fire fighting equipment will heighten realism.

Information (including interaction with other persons):

To support actual analog, digital or organic COMS.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

A. Basic Product Information

Name of Product:

Virtual Terrorism Response Academy (VTRA)

Developer: Program on Counter-terrorism Preparedness and Training
Institute for Security Technology Studies, Dartmouth College and Interactive Media Laboratory, Dartmouth Medical School

Contact information:
One Medical Center Drive
Colburn Hill Bldg. STE 204
Lebanon, NH 03756-0001
Phone: (603) 653-1500
FAX: (603) 653-1515

Dr. Joe Henderson
Email: joe.henderson@iml.dartmouth.edu

Website: http://iml.dartmouth.edu

Product status (version in use): In-house (early) beta release.
Currently under development.

Date of Evaluation: December 2003

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
x	Observed Demo
	Played/Used product
x	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
x	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)
x	Product developer filled-in evaluation form
x	TLI team modified evaluation form

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers

x	Material from Internet
	Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- **Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):**

  VTRA is a training system that could also be used as an exercise tool. It is configured for use on a PC with the student interacting via a display and typical input devices (e.g., mouse, keyboard). The content is provided by either CD-ROM media or transmitted over the internet.

  VTRA is intended for responders in law enforcement, fire service, and EMS who are already trained in hazmat at the operations level (8 hour course), as set out in OSHA 1910.120, NFPA 472, and NFPA 473. It builds on the minimum competencies established by those regulations and guidelines, preparing operations level responders to deal more effectively (and specifically) with terrorist attack using weapons of mass destruction. These include explosives, chemical, biological, radiological, and nuclear attacks. In addition to covering the basic hazmat aspects of these weapons, the program provides familiarization with more advanced techniques including use of selected detection/monitoring instruments and higher levels of personal protective equipment. Hence, Operations-Plus.

  The initial development of VTRA is intended for training individuals, or a 2-person team. The instructional strategy has several notable aspects, particularly the use of virtual mentors and instructors who work with and guide the student, a learning institution-like virtual environment in which the training takes place, a simulation lab in which the student participates in applied real-time scenarios, and a focus on applied experiential learning. More specifically, elements of this strategy include:

  - The student is initially placed in an academy setting (via the computer display), consisting of a virtual building with learning-relevant rooms and hallways. This academy virtual environment is similar to that of Figure 1, which uses the comparable concept of a virtual clinic to provide the context for clinical practice training.
  - The student can go into most of the rooms (e.g., Hazmat Learning Lab, Learning Resource Center, Conference Room) at will, although the early version will have limited options in this regard.
  - One room, the simulator, requires the student to have a key to enter. This is the advanced level of practicum, in which the student exercises skills and knowledge learned in the preceding learning situations. The entry-key is awarded after the student demonstrates certain competences (i.e., by participating in learning situations and passing tests). The simulator room is a virtual environment that places the student in a applied situations, some like a test lab (e.g., the student can evaluate radiation dangers at various distances from the source, using a geiger counter) and some like a real-world scenario situation (e.g., the student responds to an emergency call as a first responder in a real-time virtual environment, and

encounters a terrorist situation). Figure 2 shows the hallway in virtual academy leading to the simulator room.

- Prominent mentors, who are recognized master practitioners and teachers, interact with the student in the virtual environment. They move in the hallways and rooms of the virtual academy, speak to/with the student, demonstrate, and provide guidance and instruction. The training begins with a prominent mentor welcoming the student to the academy, explaining the buildings layout, the program's requirements, and the student's options.
- The training takes place in a progressive fashion, with the student moving through pre-planned activities and interacting with various experts. The student has various options, such as taking a test at any time to demonstrate proficiency in a particular area (and, hence, bypassing that part of training).
- In the final segment of training, after the student has obtained a key, the student participates in the simulated situations in the simulator room. This room can have various configurations, depending on the subject matter. Generally, it includes a briefing room (where the initial information is provided about the scenario situation), an equipment room (where the student can obtain certain equipment), the simulated scenario environment (which may be a lab, or may be an alleyway with accessible doors/rooms), and a debriefing room (for the post-scenario debrief). The simulated environment has visual and sound stimulation, and an event script, corresponding with the scenario and student actions taking place in real-time.

Figure 1. Example virtual training academy environment, for clinical practice.

Figure 2. Hallway in virtual academy leading to the simulator room.

- **Current Target audience:**

The program is intended for responders in law enforcement, fire service, and EMS who are already trained in hazmat at the operations level (8 hour course), as set out in OSHA 1910.120, NFPA 472, and NFPA 473. It builds on the minimum competencies established by those regulations and guidelines, preparing operations level responders to deal more effectively (and specifically) with terrorist attack using weapons of mass destruction.

- **Potential equipment and/or facilities product can address:**

  The product includes the capabilities of building computer-based replicas for just about any type of sampling/monitoring equipment. The 3-D engine supports nearly any "map" or simulation environment, subject to practical limits such as the resolution of the on-screen display and the size/complexity of the simulated environment relative to the expected performance of the typical client computer. These include explosives, chemical, biological, radiological, and nuclear attacks. In addition to covering the basic hazmat aspects of these weapons, the program provides familiarization with more advanced techniques including use of selected detection/monitoring instruments and higher levels of personal protective equipment. The developer calls this "Operations-Plus for WMD-Hazmat."

- **In one paragraph, how is this product potentially relevant to ODP's T&E program?**

  This program is likely to enhance "blended learning" strategies that are a primary goal of ODP's T&E initiatives. The Virtual Terrorism Response Academy could serve as a unifying agent, providing focus for coordination of different training types, topics, and training institutions. The project has already involved coordination and discussion among three members of ODP's consortium for domestic preparedness (CDP, NTS, and New Mexico Tech), as well as the National Fire Academy and FLETC. The program could support training at these and other training facilities, by helping students prepare to attend them, by providing materials that students and instructors could use during the training, and by supporting refresher training after trainees return to their communities.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

The major product components are a robust Advanced Distance Learning infrastructure termed the Virtual Terrorism Response Academy. It consists of reusable, effective, high-quality instructional and multimedia designs and an underlying set of technological capabilities and tools that are called the *Tamale* engine. The design is based on a learning model developed at Dartmouth called the *virtual practicum*. The model is described in detail in a paper available on the Internet (iml.dartmouth.edu). It relies on use of high quality video and audio of "mentors" and instructors, and action scenes to advance the "plot" of simulations. This, in addition to other graphic, audio, and text elements, create an immersive multimedia environment conducive to experiential learning. "Courses" attended in the Virtual Academy can be accessed from CD-ROM or DVD-ROM, or via broadband Internet.

The Virtual Academy, and the first course developed for it (*Ops-Plus for WMD-Hazmat*) incorporate several learning strategies: lectures; interviews with experienced responders; computer-based activities in a 2-D graphic environment; simulations in a 3-D environment; briefing and debriefings; integration for "blended learning" with other relevant training programs; and real-time, online conferences.

b) Large multi-station system, or based on individual units/PCs?

Based on typical, individual PCs with no specialized hardware.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The current program depends on Apple's QuickTime software for media playback and the VP3 video codec, both of which are available at no charge to the end-user. Installers for QuickTime are licensed from Apple and are bundled into the installer for the program. The developer also has a license for use of VP3.

d) If simulation models are used, what is the basis of the data and/or distributions used?

Simulation models (such as the radiation model within the 3-D simulation engine) are designed to provide first-order accuracy of physical and tactical events. They incorporate data based on physical data, models of hazmat equipment behavior, and conceptual knowledge based on best-practice recommendations of (and review by) leading experts.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

No specialized facilities are required.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System:

Currently supports (recommended): Windows XP, 2000, Me, 98
Planned support*: Mac OS X, Mac OS 9, Linux/Unix

* The Tamale multimedia engine is built on the open-source wxWindows framework, which provides cross-platform functionality for Win32, Mac, and Linux/Unix. The developer has only been debugging the engine for Win32 during this project, but the potential for full cross-platform capability is already built in and would be possible with a reasonable amount of additional effort.

b)	Processor speed (in MHz):	600 MHz P-II or equivalent
c)	Memory (SDR/DDR):	Minimum 128 MB; 512 MB recommended PC-100 SDRAM or better
d)	Free disk space:	~10 MB for the Tamale engine

	~100 MB for each full-sized training program (does not include video files on CD-ROM or on network)
e) Internet connection speed (if any):	Broadband Internet use: approx. 600 Mbits/sec. Dialup Internet access can be used if a CD-ROM or DVD-ROM version of the program is used. The program can also be used without a network connection.
f) Display adapter:	Any VGA adapted capable of 800x600 in High color or better. Minimum 2 MB of VRAM, 4 MB recommended.
g) CD-ROM speed:	4X or better
h) Optional accessory requirements:	Sound card and speakers/headphones

3. Describe the user interface characteristics:

The user interface is a full-screen graphical interface with audio and text used in conjunction with graphics. Navigation through the main parts of the program is node-based (similar to popular games such as Myst and Riven), while navigation through the 3-D simulations uses a simplified set of controls similar to those used in similar commercial games (such as Doom, Quake, and Half Life).

Hooks for section 508 compliance (Section 508 [29 U.S.C. ‘ 794d]) are already in place within the engine, and 508 support is planned on a per-program basis.

4. If multiple users:

a) **Identify the range of persons it can simultaneously support (min-max)?**

This is primarily designed for single users, or for a two-person team working in front of one workstation. Future plans include the addition of multi-player, network support to the 3-D simulation environment and access to multi-user, web-based forums.

b) **Custom/proprietary hardware required? If so, identify:**

No custom or proprietary hardware is required.

5. Describe any user HELP features:

The programs start with an introduction that includes video, graphics, audio, and text. A “mentor” guides the user throughout the course, offering feedback, hints, and discussion of both user actions and the broader issues raised by the scenarios/exercises.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

The engine fully supports scripting in Scheme and can collect and store any arbitrary amount of user data from the simulations and exercises on a per-user and per-program basis. Because of the multiple branches allowed to the student in the 2-D interface and the arbitrary interactions available in the 3-D interface, many aspects of user performance will already be stored within the program. These data may be written out to files, or passed over the network to a web-based Learning Management System (LMS). Plans are in place to support a version of AICC/HACP (HTTP-based communication protocol) for establishing a communications channel between the engine and an LMS so that user progress and performance data can be stored within the LMS for ease of administration and reporting.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

The program starts with a multimedia orientation. Set-up is similar to that of any modern computer game or application, and presumes that someone will be available who can install a program on a typical PC and then run it.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

All the modules developed for VTRA are specifically focused on initial response to WMD/HazMat incidents for Fire, EMS, and Law Enforcement. The content aims to train the users up through the Operations-Plus level. This program builds on the fundamental competencies outlined in OSHA 1910.120, NFPA 472, and NFPA 473. These documents set forth federal regulations (OSHA) and national consensus standards (NFPA) for hazmat-related work in the United States. The program assumes that persons using the program have already been trained and certified to these minimum standards at the operations level (see rationale, below).

The program also incorporates the hazmat-related competencies outlined in new guidelines developed by the Office for Domestic Preparedness, Department of Homeland Security: the *Emergency Responder Guide* (ERG). The document lists general categories of competencies related to key aspects of WMD hazmat response for several professions, including the primary audiences for this program.

Ops-Plus for WMD-Hazmat extends that training to include content specifically addressing response to terrorist attack involving weapons of mass destruction and/or disruption (WMD). The program adds WMD hazmat training on the various threats and their characteristics; personnel health, safety, and protection; use of basic instruments to detect and characterize a WMD-type hazard; casualty care (including diagnosis, treatment, extrication, and decontamination); unified command; operational security; mental health aspects; and crime scene operations. This list is preliminary and not exclusive; other content, such as dealing with the media during an event, may be added.

b) Time required for a typical exercise or scenario (if applicable):

Between two and four hours per module (radiological, chemical, biological, etc.) depending on user actions, performance, and choices. Estimated time to complete the program is 16-20 hours.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The programs developed in this project all specifically address initial response to terrorists' use of weapons of mass destruction and related mass-casualty incidents.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

The programs for this project are currently being developed with the cooperation of several on-site training centers with the intention of using the programs as pre-training, in-class demonstrations, continuation training, and take-home materials for their train-the-trainer courses. On-site training centers currently collaborating with this project include the Center for Domestic Preparedness, the Nevada Test Site, the National Fire Academy, the Energetic Materials Research and Testing Center at New Mexico Tech.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

The program is still in development and is not yet in its final form. It is based on, and adapts, existing curricula and content from the training partners mentioned above. Additional curricula refinements have been developed by a panel of nationally recognized experts in these fields.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Both immediate and delayed feedback are integral to the pedagogical model used for these programs. Modalities for the feedback include video, audio, text, animation, and replay of 3-D simulations.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The Tamale development environment – along with related development tools such as 3-D game level builders – can be used to develop completely new courses, or add new simulations and other content to existing courses. There will be 10-12 3-D simulations in this program, along with smaller scale simulations used in learning activities at other points in the program. Scripting is done in the Tamale development environment.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Trainees go through each simulation with the close guidance of a virtual instructor. The instructor asks questions, offers feedback and advice, and challenges the trainee to make decisions that can have different outcomes. There is also a debriefing/lessons learned session after each simulation in which the trainer comments on the trainee's actions, emphasizing particular learning points.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

One of the goals of this project is to allow local agencies to customize and extend the base program to a limited extent (to better match local laws, SOPs, etc.). Furthermore, since the multimedia engine itself has been released into the public domain, the developer hopes to encourage other advanced trainers and educators to build their own scenarios, modules, or even complete programs using the engine, templates/examples, and content objects that will be released with VTRA.

The Tamale engine functions much as a web browser does, taking its instructions from a text "source" file and using the code in that source file to coordinate the importation and display of other media elements (graphics, audio, etc.) in order to create the user environment.

The programs/modules are coded in a dialect of Scheme, which is currently taught in most introductory computer science courses and allows for tremendous customization and extension. The developer will also distribute a set of macros that simplifies the authoring process for multimedia developers. The current estimate is that it would take a coder at the level of a good web-applications developer, or a second-year computer science student, to substantially customize/modify one of the base programs developed for this project.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

The installation process is comparable to the installation of any recent computer game – roughly 15 minutes for a typical workstation. No additional installation is required.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Because the pedagogical model used depends heavily on timely and relevant feedback, analysis of user actions and after-action reviews of scenarios are built in on a per-module and per-program basis. Furthermore, the Virtual Academy will integrate with common web-based Learning Management Systems; thus, user progress data can be stored within the LMS or its back-end Relational Database Management System (RDBMS).

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)
See Appendix A for classification descriptions.

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance
	Support/Platform Technology*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
1	Government Owned *	**1**	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned *	**2**	Static configuration: fixed path, only one right way to use the product
1	Open-Source (General Public License) *		
	Media Scale		**AAR Capability**
1	Individual	**2**	Scenario replay
2	Group	**1**	Automated summary of data
2	Small multi-user team (up to 25 persons)	**2**	SME controls AAR
3	Large multi-user team (more than 25 persons)	**3**	Does not provide feedback or AAR
3	Multi- Agency Participation		
		0	**High Level Architecture Compliance**
	Applied Context		
1	Non-specific		**Interconnectivity ****
1	Equipment	**1**	Standalone
		1	LAN
	Environment	**1**	WAN
1	Generic	**1**	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

* The Tamale engine itself is an open-source project released into the public domain under the terms of the Gnu General Public License (GPL). This does not preclude different licensing arrangements for *applications* built on top of this environment (such as the training modules in this project). The analogy would be the difference between the ownership of a web browser (the engine), and a web-based educational program (the content displayed *within* the engine).

** Supports streaming/progressive download of program content and video over TCP/IP and RTP connections. Supports linking the student directly to web-based resources via HTTP/SSL. Planned support for the engine establishing a communication channel directly to a web-based Learning Management System (LMS) through a protocol like AICC/HACP.

3. Training Attributes

	Application Environment:		**Content**
1	Training	**1**	Knowledge
1	Exercise	**1**	Applied
0	Operational	**2**	Hands-on
2	Analysis		
2	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	**2**	Commanders

1	Self-paced	**2**	Local Officials
2	Instructor/Facilitator	**2**	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
1	Basic		**Potential Training Levels:**
1	Intermediate	**2**	Awareness
2	Advanced	**1**	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	**2**	Planning & Mgmt. (incl. ICS)
1	Chemical	**2**	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear	**1**	Equipment Training
1	Explosion	**1**	Awareness
		1	Part Task Training
	Functional Area Supported:	**1**	Pre-Training
1	EMS	**1**	Drills
2	EMA	**2**	TTX
1	Fire	**2**	FE
2	Govt. Administrator	**2**	FSE
2	Health Care	**2**	FSE Reinforcement
1	HazMat	**2**	Distributed Collaborative Exercise
1	Law Enforcement	**3**	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
	Easy		
1	Relatively Easy		
	Difficult		
	Requires trained support staff		

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
2	Audit and evaluate plans and procedures prior to an exercise/Plan development
1	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
2	Structured Feedback among players *(during collaboration they are aware of others' actions, otherwise not)*
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
2	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
2	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
2	Distributed, collaborative, decision-making environment
1	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification. See Appendix B for item definitions (questions and table items).

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)

   No. Goal is for program to be widely distributed at low cost. Exact amount has not yet been established. The development environment will be available at no cost, and open-source under a general public license from the Trustees of Dartmouth College. This is to ensure that the engine itself and any subsequent modifications and updates to it are freely available to all individuals/agencies and that it cannot be co-opted into a commercial product and then resold.

2. Does the cost apply to: *(choose one)*

   The cost would apply to the product. However, no cost has yet been established.

3. Product (content) configuration, as priced, is: *(choose one)*

   Not known at this time.

4. What are the prices (in $USD) according to type: *(fill in all applicable)*

   This product does not have a sales history; it is under development. No cost has yet been established.

   It is expected that the cost would be nominal (e.g., cost of blank media, software duplication, and distribution). It is anticipated that neither the development costs or a fee would be applied to pricing for VTRA software.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

Name of Product:

Weapons of Mass Destruction Basic Awareness Training. (2 CDs)

Product status (Production version in use; prototype in use; under development)? Version 0.3, release date: 10/18/01.

If in use, identify users, types of use: Not currently in use (per Barbara Biehn).

Author(s) of Product: Paratus Associates, LLC

Contact info ref. technical questions: JITL.MPL.COM 304-472-9520; Roger Dannenberg by phone at 412-268-3827, rbd@cs.cmu.edu; Ken Sharp 412-268-2613, ks5d@andrew.cmu.edu; jitl-list@cs.cmu.edu; rbd@cs.cmu.edu .

Contact info ref. buying the product: ?

Cost of Product (including licensing fees, maintenance, training, etc):

Purchase or license product, both, or optional? Purchase.

Initial acquisition cost (purchase; licensing fees):

Number of staff required to setup, and operate product: Individual trainee, no additional staff required.

Contractor(s) required to run product? None.

COTS/GOTS: COTS

System requirements

Software operating system: Just In Time Lectures (JITL) was designed to run on Windows 3.1, and subsequent versions. The current JITL player requires QuickTime v. 4 to run, which in turn requires Windows 9x/NT/2000. JITL also runs under the MAC OS from early versions to current. JITL does not currently run on any Unix or Linux platforms.

Installation Instructions: Installation instructions are printed on the inside cover of the CD. (Not in the copy available for review?). Manufacturer recommends installation of the latest video driver for your video card. To install Just-In-Time Lectures on your machine, run SETUP.EXE. (in CD1). Find Just In Time Lecture under 'Basic Awareness

Folder'/BasicAware (film strip icon) in CD1 and right click on it to start the self-paced presentation (i.e., it can be paused, stopped, and/or restarted at any time).

Staff training required to use product? Printed instructions regarding operations and module locations (i.e., which folder and in which CD) would suffice. No tutorial is provided but brief instructions are read in the initial portion of the first module (Weapons of Mass Destruction Basic Awareness Course).

Cost for staff training on product): None.

Equipment/facilities required to install and use/operate product? One personal computer (no special PC components are required).

Product maintenance requirements/recommendations? None. Tool can be used as a refresher for re-training but no additional scenarios are added.

Operation Instructions

Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP):

System is intended to provide basic WMD awareness training. It does not directly support the training/exercising of field responders.

Hardware: User's own PC/MAC

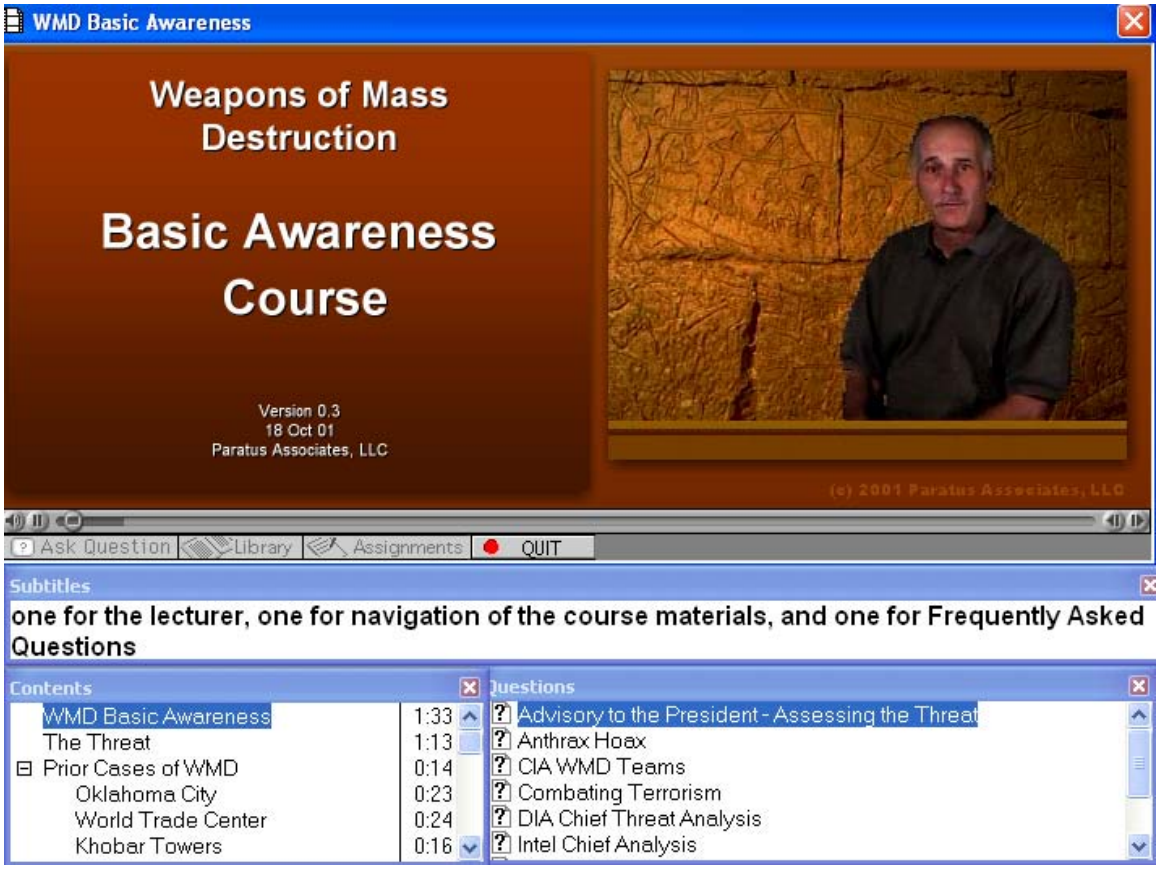
Software: Proprietary Weapons of Mass Destruction Basic Awareness Training software.

Simulation: None.

Models: None.

Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment): Basic stand-alone system.

Display: The JITL screen is divided into four sections (see below). The top left contains slides that move as the presentation goes along. The top right contains the video portion. The bottom left displays the content (navigation of course material with time to complete each) and can be chosen in any order at any time. The bottom right contains Frequently Asked Questions (FAQs). The FAQs change as the presentation progresses and are independent of lecture (i.e., one needs not read them to understand the course).



Display adapter: High-resolution graphics (videos). Image quality is best with a "True Color" (16-bit or more) display.

Describe unique user interface characteristics

Clicking on a supplied FAQ in the supplied window causes the JITL player to pause while the alternate resource is executed. The FAQs resources included are either a .DOC or .PDF file located in the CDs. Once the student exits the alternate application clicking on the play icon or choosing another topic from the table of contents can resume the lecture. Click on a topic in the Table of Contents window to quickly switch to that part of the presentation, with full synchronization of PowerPoint slides, audio track, FAQ window, and (optionally) the script (subtitles) display window. When too many topics are included for display in the Table of Contents window, a vertical scroll bar provides a method to slide the view to parts of the Table of Contents not currently visible. Alternatively, the student may use the horizontal scroll bar under the slide/video window to advance or egress the current presentation viewpoint. The bottom left of the screen shows presentation elapsed time. However, the time left for that section or for the entire course is not displayed. There is no prompt to insert the 2nd CD. The lectures are modular and independent of each other.

The options to click on the "Ask a Question" button or the "Library" or "Assignments" buttons (directly underneath the PowerPoint presentation and next to the always red-

highlighted ‘quit’ button were not available for this CD. (According to Just In Time Factory, http://www.mpl.com/JITL/JITLHome.nsf, when available this would cause a web browser to be called to create a mail message to the instructor. The message is pre-formatted with context information concerning the student's location in the JITL presentation, and the student then types his/her question into a text entry box, clicks "Send", and the question is then routed via e-mail to the instructor. The instructor can then respond privately to the student, and can include the question and its answer in an UPDATE.DAT file stored for reference on the course's web site. The library icon would cause a web browser to initiate, showing an HTML page containing links on the CD, or other JITL course location, to reference material or assignments for students to execute).

If the computer’s screen saver is set to go on it will start even when video is on. Click on the "QUIT" button to exit from the JITL player. Click on the "Pause" or "Volume" buttons to pause the presentation or adjust the volume. Readjust the JITL frame's dimensions, and the dimensions of each sub-frame (table of contents, FAQ list, or subtitles windows). Options to adjust the size of the slide/video window under the View menu are: Normal Size, Medium Size, or Large Size.

Processor speed (in MHz): Just-In-Time Lectures have been tested on 33Mhz 486 running Windows 3.1, with 16 Megabytes of RAM, an old Tseng video card (256 colors, standard VGA driver), and an old 2x CD-ROM.

Memory:(SDR/DDR) None needed, CD ROM based.

Free disk space: N/A.

Connection speed: There are supporting documents (e.g., troubleshooting and problems with Just In Time Lectures as well as resource website links—see listing below) that are linked online. However, no Internet connection is needed for the training per se.

CD-ROM speed:

HELP features (Briefly identify): The help topics under the Help menu is not highlighted (it’s not an option for this product).

Training Attributes

Applicable training audiences: Domestic, military and commercial users.

Typical users/ Functional-area identification of product: Fire Department, Emergency Medical, Emergency Management, Ambulance Service, Local Police, Sheriff, State Police, Public Health, Public Works, Rescue Squad, Search & Rescue, National Guard, Hospital, Airport Authority, Port Authority, Ranger Station, Private Industry, Local Level Government, State Level Government, Federal Level Government. Professional Background: Agency Head, Senior Management, Line Supervisor, Emergency Responder, Elected Official, Volunteer.

Potential responder training level(s)/categories product can support:

Awareness - Yes.
Performance [Operations] – No.
Technician [Specialist] – No.
Planning & Management [Incident Command] – No.
Integrated Systems [Multi-jurisdiction]) (5th category identified by Pelfrey) – No.

Required student/participant input characteristics to use product (Functional categories, not detailed) (Also, note if basic, intermediate or advanced proficiency is required: None.

Potential training/exercise types product can support:

Classroom - Yes.
Individual self-paced – Yes.
Seminar/workshop - Yes.
Drill – No.
Individual and small-team exercises - Yes (none provided but modules can be supported by instructor led discussions and live Q & A sessions).
Simulation-supported – No.
Gaming - No.
Collaborative – No.
Tabletop – No.
Functional - No.
FSE – No.

Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): Classroom (can be at any location).

Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): Self-paced.

Incident response training/exercise tool/system: Basic awareness training tool.

Is this a single-user or multiple-user product? Single user. (Can be used by a group and paused for discussion. However, no guided exercises or knowledge acquisition tests are included).

This is aimed at training for: chemical properties, chemical agents, biological agents, incendiary and explosive, nuclear/radiological, safety and personnel protection, key agency's roles and responsibilities, background of possible use of WMDs.

Is the product a web based application or a computer based application? Computer based application—CD ROM. Displayed using the freely downloadable JITL player that also supports URL (Universal Resource Locator) addresses that call up browsers, media players, and e-mail clients as needed. The player (and the required QuickTime installation kit) is included.

Can the training be administered over a wide area network or a local area network?

Is product directly applicable to counter-terrorism training/exercises, or modifications are required? Directly applicable to counter-terrorism.

Is the product designed specifically to train in disaster preparedness or is it an application that has the potential to train people in relevant skills? Specifically designed in disaster preparedness for WMD. It consists of basic level awareness independent modules, which provide definitions and examples.

Product Description

Brief product description: Individual CBT.

What level of technical expertise is necessary to administer the training? Very little; basic computer operating proficiency.

What kind of training does the product offer? Awareness training, Classroom/Academic.

What kinds of venues?

What kind of medium is used in the training? Text (PowerPoint slides), video and audio.

Aside from those listed, what other relevant skills can be gained from this product? Describes agency's roles, crisis and consequence management. This is more focused on federal and general first responder roles. In addition the resource materials used (listed below) can be good resources for trainees in the area of planning, basic education and available training.

Intended for operations, training/exercises, or both? Training.

If training/exercises, is it an instructor/controller/evaluator tool, or training media? Training media.

Can the product be customized? JITL uses Adobe Premiere as the front-end media asset assembly tool, and it supports an audio as well as a video channel. According to the manufacturer, using any of the available audio capture tools, .WAV files may be created and incorporated into the final JITL presentation in place of the audio originally recorded with the video.

How much time is required to generate a new scenario (if possible and if scenario driven)? N/A. No option to generate a new scenario.

Is there an AAR capability? Yes. This is strictly lecture and no student action required. Knowledge tests could easily be developed based on the material but no learning measures are currently included.

Is an instructor needed? No.

If not, how is training conducted? Individual self-paced.

If not, how is training managed (e.g., Testing, certification of completion, etc.)?

Are other support contractors needed? No.

Custom/proprietary hardware required? No.

What type of curriculum exists to be used with the product? Modules included and length of lecture:

CD 1 Weapons of Mass Destruction Basic Awareness Course 1:25:29; Weapons of Mass Destruction Federal Terrorism Response Plan 21:12.

CD 2 Chemical and Physical Properties 7:08; An overview of Biological Agents 7:46; An Overview of Chemical Agents 12:16; Overview of Incendiary and Explosive Agents 8:37; An Overview of Nuclear Agents 4:23; & Weapons of Mass Destruction Safety and Personal Protection 15:39.

Instructional Assistance Features

Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): No student action is required as it is this could be developed and incorporated into the FAQs section.

Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Exercise debrief (AAR)—none is in place. Though there is the capability to email instructors and they could give students feedback as to their performance (e.g., with a knowledge based test).
Exercise replay: Lectures can easily be stopped and replayed.
Graphic timeline: There are no scheduled delays between lectures and trainee response actions but this could be controlled by an instructor who can pause the presentation or require discussion and/or a knowledge acquisition test after a lecture.
Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content: Documents included and location:

CD 1

BasicAware/Resources/First Annual Report to The President and The Congress of the Advisory Panel to Assess Domestic Response Capabilities For Terrorism Involving Weapons of Mass Destruction. (PDF file).

BasicAware/Resources/WMDTHRET/WMD Threats 2001 Critical Choices for the Bush Administration (PDF file).

FRP/Resources/(Part of the PowerPoint presentation used in the lecture)

FRP/Resources/FEDTPLAN/United States Government Interagency Domestic Terrorism Concept of Operations Plan (PDF file).

FRP/Resources/OSLDPS/Fiscal Year 1999 State Domestic Preparedness Equipment Program Assessment and Strategy Development Tool Kit (PDF file).

FRP/Resources/FEMAGIDE/FEMA Issues Interim Rule on Public Assistance and Disaster Loan Programs (WordPad document)

CD 2

BioAgents/BIOTERR/Resources/Elements of Effective Bioterrorism Preparedness: A Planning Primer for Local Public Health Agencies by the National Association of County and City Health Officials (PDF file).

BioAgents/Baceteria (Real Time video of bacteria spread).

Explosives/Resources/A Guide for Explosion and Bombing Scene Investigation report by U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.

Explosives/Resources/Fire and Arson Scene Evidence: A Guide for Public Safety Personnel research report by U.S. Department of Justice, Office of Justice Programs, National Institute of Justice (PDF file).

PPESafety/Resources/National Institute of Justice Law Enforcement and Corrections Standards and Testing Program Guide for the Selection of Chemical Agent and Toxic Industrial Material Detection Equipment for Emergency First Responders NIJ Guide 100-00 Volume 1 by U.S. Department of Justice, Office of Justice Programs, National Institute of Justice (PDF file).

PPESafety/Resources/EPA Fact Sheet (PDF file).

PPESafety/Resources/U.S. Preparations for Biological Terrorism Legal Limitations and The Need for Planning (PDF file).

PPESafety/Resources/Domestic Preparedness Compendium of Weapons of Mass Destruction Courses (PDF file).

PPESafety/Resources/ Comprehensive Accreditation Manual for Hospitals: The Official Handbook (CAMH).

PPESafety/Resources/NDPO DoD Criminal and Epidemiological Investigation Report (PDF file).

PPESafety/Resources/WMDWEB (List of Internet sites of use for medical emergency planning and in particular Weapons of Mass Destruction (WMD) consequence event planning).

PPESafety/Resources/Biological scare forces thousands from government buildings in Toronto (newspaper article, WordPad document)

PPESafety/Resources/CIAWMDTM

PPESafety/Resources/COMBTERR/ Combating Terrorism: In Search of A National STRATEGY Testimony of Dr. Bruce Hoffman, Director, RAND Washington Office

PPESafety/Resources/DIANALY (newspaper article, WordPad document)

PPESafety/Resources/INTLANAL (newspaper article, WordPad document)

PPESafety/Resources/LONEWOLF/Lone Wolf activism (newspaper article, WordPad document).

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

A. Basic Product Information

Name of Product:

Weapons of Mass Destruction Decision Analysis Center (WMD-DAC) – Biological Implementation

Developer: Sandia National Laboratory

Contact information:
Howard Hirano
Advanced Concepts Group
PO Box 969 MS 9201
Livermore, CA 94551-0969
Tel.: (925) 294-2053
Email: hhhiran@sandia.gov

Technical Support Contact Information:
Michael Johnson
Systems Studies Department
PO Box 969 MS9201
Livermore, CA 94551-0969
Tel.: (925) 294-1388
Email: mmjohns@ca.sandia.gov

Website:

COTS/GOTS: GOTS

Product status (version in use): Prototype

Source(s) of Evaluation: *check all that apply*

	Observed Product in use during a training or exercise
X	Observed Demo
	Played/Used product
X	Attended Briefing
	Reviewed CD-Rom or other software
	Reviewed Website
X	Spoke/emailed with POC
	Interview(s) with Product Users (please paste into the end of this document)

Materials in our Possession:

	Brochure/Prospectus
	CD-Rom
	Related Papers
	Other: please state

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.

Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  The WMD-DAC, in its current form, is a prototype planning and analysis system that addresses the early identification of public health threats. The system is a distributed interactive simulation that models an anthrax attack. It requires the main user, in a public health officer (PHO) role, to interpret hospital data and choose a prophylaxis strategy. As a departure from typical, deterministic, tabletop exercises (TTX), the role player makes decisions that alter the outcome of the simulation (i.e., population morbidity and mortality are stochastic variables). While the WMD-DAC is not specifically designed for training and exercising, it represents an improvement on scripted, deterministic exercises and has clear application to TTX.

- Current Target audience:

  The reviewed version of the WMD-DAC (a biological implementation) targets local and state public health officials, and may have tangential interest to government administrators, law enforcement, hospitals, and public safety communications. The prototype has been trialed in two states: California (Alameda County) and New Mexico, primarily as proof-of-principle exercises. The underlying functionality of the system, however, is broadly applicable to any state and local public health and emergency management agencies.

C. Objective Category Product Attributes:

1. What is the product? (Descriptive Product Categories)

1	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Instructor/Facilitator Aid: Student Interfacing
	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

2. Product Capabilities:

	Developer/Owner		**Environment**
2	COTS	2	Generic
1	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
1	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group	3	Static configuration: fixed path, only one right way to use the product
1	Small multi-user team		
2	Large multi-user team		**AAR Capability**
		1	Scenario replay
	Applied Context	1	Automated summary of data
1	Non-specific	1	SME controls AAR
0	Equipment	0	Does not provide feedback or AAR

		1	**HLA Compliance** (does product support HLA?)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP)

The system is software that runs a simulation in a client-server computer network. The WMD-DAC is an HLA-compliant system that consists of multiple internal databases and linkages to external databases, a graphical user interface for input and output, and systems code that supports secure, distributed simulation using large data sets. The databases contain six model groups:

i. Geography Model (based on GIS)
j. Threat Model (using HPAC to model atmospheric dispersion of aerosolized anthrax)
k. Population Model (1990 Census data, treatment-seeking behavior, and anthrax disease models)
l. Healthcare Provider (HCP) Model (Hospital capacity and inventory data)
m. Background Disease Model (state health records)
n. PHO Model (Policy, national pharmaceutical stockpile, and prophylaxis distribution).

b) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The WMD-DAC is hosted on a large-scale distributed, secure computer network at Sandia National Lab, and the system integrates use of seven external simulation packages. The WMD-DAC can also run in standalone mode on a single computer.

c) Large multi-station system, or based on individual PC's?

The system can be based on a small client server computer system, or it can use a large 40-processor distributed memory system. The design allows for an arbitrarily large number of client PCs.

d) If simulation models are used, what is the basis of the data and/or distributions used?

WMD-DAC incorporates many levels of simulation, all of which have very high validity. Atmospheric dispersion is input as an HPAC (DTRA) plume model. The population model is based on census data (1990), and incorporates a science-based anthrax epidemiological model. Geographic data is modeled in GIS with high accuracy. The background disease model used for the Alameda exercise consists of about ten years worth of actual California state health data. These contribute to a very high degree of simulation realism.

e) Web-based application, LAN, or a single computer/system-based application?

The system is currently implemented over a secure LAN/WAN, and is designed for distributed access. The application layer is written in JAVA, which allows for run-time implementation on many kinds of computer operating systems that support Java Virtual

Machine. Although the WMD-DAC is a memory intensive distributed system by design, it can also be implemented as a single computer solution given sufficient hardware.

f) Describe the AAR support tools

After Action Reporting is primarily done by exporting simulation run data to Excel for trend analysis and graphing. PHO role performance can be gauged by population morbidity and mortality rates, as compared to best and worst case scenarios.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

A LAN or WAN is required to run the simulation in distributed mode, and a room or multiple rooms would be needed to house client PCs for role players, depending upon the nature and size of the exercise.

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*

Any OS that supports JAVA: Microsoft, Sun, SGI, MAC OS10 etc.

b) Processor speed (in MHz): Client & Server: 1 GHz Pentium III minimum

c) Memory (SDR/DDR): Client: 128 MB minimum
256 MB recommended
Server: 1 GB minimum

d) Free disk space: Client: 4 GB recommended

e) Internet connection speed (if any): Not applicable (currently)

f) Display adapter: Industry standard

g) CD-ROM speed: Industry standard

h) Optional accessory requirements[5]: External databases

5. Describe unique interface characteristics:

The graphical user interface (GUI) provides for role-based access to different views (tabbed pages) that present trend data, drill-down analysis capability, geographic information, plume model, and user input fields. The entire set of tabbed pages (accessible by the simulation administrator) are: Daily Hospital Utilization, BHCP, PHO Output, PDC Resources, PDC Capability, National Pharmaceutical Stockpile (NPS), Report List, Reporting Output, Threat Output, Population, Hospital Events, and Hospital Utilization.

The GUI is a straightforward mouse/keyboard accessible interface that is easy to use, replicates the types and timing of information available to PHOs, and hides the complexity of the underlying simulations.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

One to an unconstrained number of users.

b) Number persons usually trained simultaneously?

The system design has no constraint on the number of simultaneous users. However, the utility of training a large number of users simultaneously, with the current application, may have practical utility limits. It will be used in an exercise in the near future to support up to 15 users for a tabletop-like exercise.

c) Custom/proprietary hardware required? If so, identify:

Although Sandia utilizes a 40-processor distributed memory computer system to run large instances of the simulation, smaller simulations can be run on a single computer or relatively limited client-server system with industry-standard hardware. Proprietary hardware, therefore, is not required.

7. Please describe the HELP features

There is no help functionality built into the application at this time.

8. Data recording & storage features (e.g., Scenario events; student performance):

The WMD-DAC can be run in a dual mode in which a batch process records all simulation events and protocol data units (PDUs). This allows for storage and later analysis of an entire simulation, including analysis of role player actions. This data is used to generate the final performance metrics in terms of population morbidity and mortality.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Product and interface familiarization takes place just before an exercise. In about 15 minutes, players are acquainted with the accessible screens (which differ by role), input/output parameters, data sources etc. Users are assumed to have basic computer literacy.

2. Attributes:

	Application Environment:		**Content**
2	Training	0	Knowledge
2	Exercise	1	Applied
0	Operational	0	Hands-on
1	Analysis		
0	Entertainment		**Target Audience**
		0	First Responders
	Mode of Delivery:	2	Commanders

0	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
0	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced	0	Performance (operations)
		0	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
0	Chemical	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear	0	Equipment Training
0	Explosion	2	Awareness
		0	Part Task Training
	Functional Area Supported:	0	Pre-Training
0	EMS	1	Drills
1	EMA	1	TTX
0	Fire	2	FE
1	Govt. Administrator	0	FSE
2	Health Care	0	FSE Reinforcement
0	HazMat	1	Distributed Collaborative Exercise
0	Law Enforcement	0	National Training Exercise
1	Public Health		
2	Public Safety Communication		**Incident Stage Supported**
0	Public Works	0	Prevention
		1	Detection & Identification
	Learning Supported:	1	Response
0	Initial Acquisition	0	Recovery
1	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

2. Content:

a) Training content description (what trained, brief):

The WMD-DAC, per se, is not currently used as a training medium. Nevertheless, the system demonstrates applicability in helping improve the PHO decision-making process in three areas: alerting county EMAs, deciding upon a prophylaxis strategy (requesting NPS or other reserves and distribution), and alerting the public.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]):

The knowledge bases contained in the WMD-DAC provide for very high fidelity simulation. Much of the information is externally sourced:

- U.S. Census data for State of California
- GIS data for California and New Mexico
- Anthrax epidemiological model

- State of California medical records for the 1990s.

Rights to access certain information, such as the California state medical records, may not be readily transferable upon product licensing.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications):

Decision-making processes in the public health arena regarding detection and emergency management of a biological threat.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled):

The system can be used to support (or replace) tabletop exercises. To date, the system has been used in a discovery process that has been facilitated by Sandia staff. As designed, the system could support short or long TTXs without significant facilitation. In fact, the distributed system functionality provides the capability to transform traditional seminar-type TTX to a network-centric training mechanism.

e) Exercise/scenario length/time(typical):

The length of a simulation run will depend on several factors: the degree to which the role player pauses the simulation to retrieve and analyze data, the size of the overall simulation model relative to computing resources, and the user-selectable clock rate. A typical simulation will cover about two weeks of simulated time, which may take roughly three to six hours to complete, depending primarily on user behavior.

f) Potential equipment and/or facilities product can address:

The system addresses capacitation issues at facilities that include hospitals and distribution centers. Currently, hospital capacities are gauged by the number of beds, but the ability to include other factors (such as the number of respirators) exists.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The product is directly related to counter-terrorism training without modification.

h) Are there any constraints on supported exercises or scenarios?

The main constraint is in geographic and populational referencing of the models. The main attraction to the system is its fidelity to actual conditions, such that new models must be created for new locations. Currently, most aspects of the State of California and some aspects of the State of New Mexico are modeled. A key regulatory and time constraint is permission to access state medical records.

3. Instructional Attributes:

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC):

The application for which the WMD-DAC holds the greatest potential is for distributed (WAN-based) learning. The system may also allow for facilitated exercise, and self-paced individual learning.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?*

At present, use of the system is facilitated, only because it is still in the development stage. There may be no need for an instructor or facilitator in a production version of the system.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario.

The scenario is computer-generated, in which the user must seek out and interpret available information in order to make decisions.

d) How is training managed (e.g., Testing, certification of completion, etc.)?

There is no training program associated with the WMD-DAC, at present.

e) Does a curriculum already exist? If so, briefly describe its form and content

There is no curriculum to date.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards):

Participant evaluation is made by recording all simulation events (including participant inputs), and providing performance measures at the conclusion of the simulation. Performance is gauged by the number of fatalities and diseased patients, and can be judged relative to average results of four regimes: perfect detection and perfect decision-making, imperfect detection and perfect decision-making, perfect detection and imperfect decision-making, and imperfect detection and imperfect decision-making.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Feedback to the PHO role player, within the simulation, comes in the form of multiple data streams that require interpretation. The software keeps numeric and graphic tallies of many variables as a function of time and location. Examples of such statistics include:

- Population health status
- Health care provider metrics such as utilization, throughput, inventory consumption, turn-aways

- Threat statistics – location and exposure
- Medical reporting
- Strategic pharmaceutical stockpile statistics.

While final statistics are available at the conclusion of a simulation, there is no automated AAR built into the WMD-DAC. Performance evaluation of the role player is carried out by Sandia staff.

5. Instructor/controller/evaluator tools:

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)):

As such, there is no tool set for controllers other than Sandia staff. Development staff use a tool to create new geographic data sets for repositioning the simulation to a new geo-location.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

In order to simulate a biological event and epidemiological consequences over a multi-week period, the virtual action occurs in accelerated time. To allow the role player participant real time to analyze data and make decisions, the simulation can be slowed or paused. Graphs and mapping capabilities automatically update information as it becomes available in the simulation, allowing the PHO role player multiple means by which to detect and analyze a potential threat.

4. Customization:

a) Can the product be customized?

Because the WMD-DAC is a prototype at the time of this review, it has the potential to be modified and customized.

b) What is the process and how much time does it take to develop a new exercise/scenario?

There are multiple levels of possibility when discussing new exercise development. Major modifications to the models would be needed for:

a. Locational changes (requiring geographic, census, and medical background data additions)
b. Disease changes (requiring an epidemiological model other than anthrax)
c. Disease delivery changes (requiring a model other than airborne dispersion via HPAC or NARACS).

Such changes require significant development time (months to years).

c) What is the process and how much time does it take to modify an exercise/scenario?

To modify an existing scenario (e.g., airborne release of aerosolized anthrax in the San Francisco bay area), depending on the scale of the changes, may take approximately

hours to perform. Such modifications might entail the addition or subtraction of surrounding counties, the locations of distribution centers, hospital capacities etc., and exercise documentation.

d) What is the process and how much time does it take to setup an exercise/scenario to run?

Modifying startup variables and location within an existing geographic database are accomplished in minutes in the Analyst (universal view) role within the application.

Modification and Customization Table

Please denote if the product (as is) or the vendor supports the following changes by checking the appropriate box in the following table. Check the time scale box that applies to each type of change. If the change does not pertain to the product or cannot be provided, check "No Support / NA". Please provide details (e.g., types of CBRNE, input models, communications media) below.

Nature of Change	Modified by Customer before Use	Modified by Customer during Use	Compiled / Initialized by Vendor	Engineering Change by Vendor	Time to Modify		No Support / NA
Set up a given training session, simulation, or exercise			X		x	Minutes	
						Hours	
						Days	
						Weeks	
						Months	
Add new scenario training objectives given product constraints				X		Minutes	
						Hours	
						Days	
						Weeks	
					x	Months	
Modify existing scenario training objectives given product constraints			X			Minutes	
					X	Hours	
						Days	
						Weeks	
						Months	
Shift location-specific databases (e.g. census, GIS) to new site in U.S.			X			Minutes	
					x	Hours	
						Days	
						Weeks	
						Months	
Change the type of CBRNE threat to any other type				X		Minutes	
						Hours	
						Days	
						Weeks	
					x	Months	
Logging/ data capture of email, instant messenger comms				X		Minutes	
						Hours	
						Days	
						Weeks	
					x	Months	
Logging / data capture of voice, voice over IP comms				X		Minutes	
						Hours	
						Days	
						Weeks	
					X	Months	
Change input models (e.g., plume, epidemiological, weather, damage)				X		Minutes	
						Hours	
						Days	
						Weeks	
					X	Months	

Provide trainee performance metrics		X			x	Minutes	
						Hours	
						Days	
						Weeks	
						Months	
Provide scenario playback			X			Minutes	
					x	Hours	
						Days	
						Weeks	
						Months	

5. **Analysis features** (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

   Within the scenario, there are multiple variables tracked for the user (see Final tallies of simulation run statistics are used for post exercise analysis, plus data can be exported to Excel for more robust analysis.

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	**1**	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
1	Specific objectives, criteria, metrics/measure or level of preparedness
1	Audit and evaluate plans and procedures prior to an exercise/Plan development
0	Dissemination of best practices/expansion of learning benefits i.e. report generation
1	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
1	Decision-making
2	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support

Selected FSE Observations: product allows for/can be used for:	
3	Remote Observation
3	Enhanced Communication T&E/does it practice/train/exercise communications?
3	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
0	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

G. Costs

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)
2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle
3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization
4) What are the costs (in $USD) according to type: (fill in all applicable)

   There is no pricing information for the WMD-DAC. It is a prototype system that Sandia National Lab is in the process of licensing to a commercial vendor.

REVIEW CRITERIA
COMMERCIAL & GOVERNMENT SIMULATION PRODUCTS

A. Basic Product Information

Name of Product:

WebEOC Standard

Developer: Esi®--Emergency Services Integrators

Contact information:
John O'Dell, Chief Technology Officer,
jodell@esi911.com, (800) 596-0911.

Technical Support Contact Information: Same as below.

Website: http://www.esi911.com/esi/products/webeoc.shtml **COTS**/GOTS:

Product status (version in use): Version 5.6

B. Summary Product Description: please provide a quick introductory summary identifying what the product is and describing key elements.
Include the following:
Web-based information management system providing real time access to emergency information that can be simultaneously shared among emergency response teams, decision makers and supporting organizations during the planning, response and recovery phases of any emergency. Features automatic update of information displays (e.g., resource tracking, status reports) as different users (who can be remotely located) input information. It accomplishes this via electronic static boards, similar to topical status boards, except now they are separate windows viewed on a personal computer (or laptop). Their system was designed to be used with overhead projection systems (though not necessary). It is said to enhance response capability because everyone with access to the status boards, regardless of location, is able to see information as it is entered, resulting in "self-validating information". Video and other media (e.g., digital photos of a scene) can be integrated and displayed along with status boards. Other information (e.g. mapping, dispersion modeling, etc.) can be displayed as well.

Sample projections:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other): Incident response operational, training & exercise tool.

- Current Target audience: EOC personnel, and personnel outside the EOC who would normally have access to reporting and other information generated at the EOC at the during planning and response activities. Vendor says the tool has been designed to let the customer define their process it can be used within any organization.

C. Objective Category Product Attributes:

1. What is the product?

X	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
X	Instructor/Facilitator Aid: Student Interfacing
X	Instructor/Facilitator Aid: Instructor/Facilitator Assistance

2. Product Capabilities (please put an X in the appropriate boxes):

	Developer/Owner		**Environment**
1	COTS	1	Generic
	GOTS	1	Locale Specific
	Media Scale		**Product Re-Playability**
	Individual	1	Multiple dynamic paths through the product and more than one out come possible
1	Group		Static configuration: fixed path, only one right way to use the product
1	Small multi-user team		
1	Large multi-user team		**AAR Capability**

			Can playback events
	Applied Context	1	Provides automated summary of data
1*	Non-specific	1	Designed to have SME produce AAR
	Equipment		Does not provide feedback or AAR
			HLA Compliance (does product support HLA?)

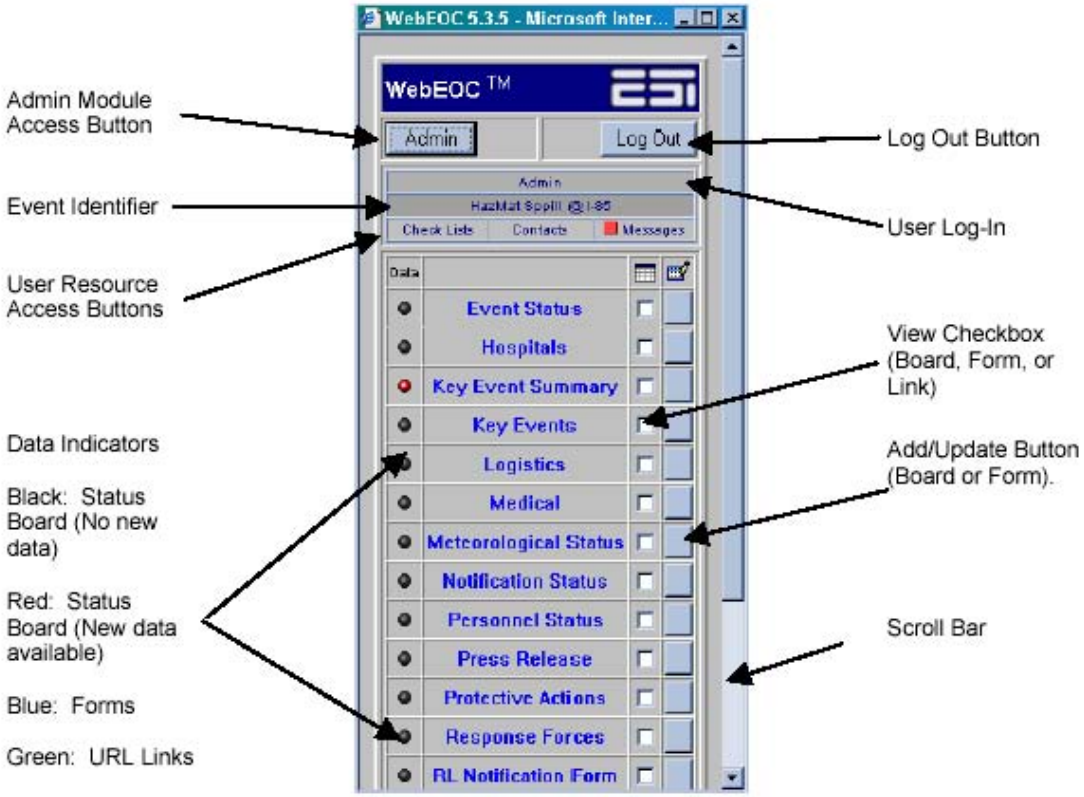
**Tool designed to reflect current equipment capabilities though actual use of the tool does not require equipment use in the intended sense (e.g., fire hose).*

3. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP)

Necessary: Software
Recommended: Projected screen displays

Once users are logged in they control displays through the main control window (shown here), which acts like a remote control.



Features available vary with versions:

Feature/Module	Description	WebEOC Standard	WebEOC Professional
1. Contacts	Contact lists		√
2. Checklists	Allows users to specify tasks and indicate		√

	their completion.		
3. Messaging	Allows system internal communications and export of messages (e.g., email, blackberry).		√
4. Drill Simulator	Simulator is a tool that automatically injects scenario inputs during an exercise (e.g., serving the role of a controller adding inputs to a tabletop). Once the simulation has been created each pre-defined board entry will appear on its status board in real-time. Controllers/facilitators can modify this (add delete events) during the course of the exercise.		√
5. Forms	Company forms can be imported using an HTML editor.		√
6. Dual Commit	Allows information to be posted from a secure WebEOC server to a non-secure server located outside an agency's firewall. Users can automatically or selectively decide which board entries to 'post' to the outside server, keeping sensitive information out of the public's eye. (Additional server required and cost is $5,000).		√
7. Data Linking	Entries can be posted from one status board to another using Data Linking. Data fields in one board are mapped (i.e., linked) to specified fields in the destination board(s) using utilities in the Board Builder module.		√
8. Links	URLs	√	√
9. Board Manager	Board Builder provides the tools necessary to create, modify, and delete status boards. Advanced Board Edit allows you to enable enhanced functionality within a status board, such as dual commit, data linking, and board/form HTML editing.		√

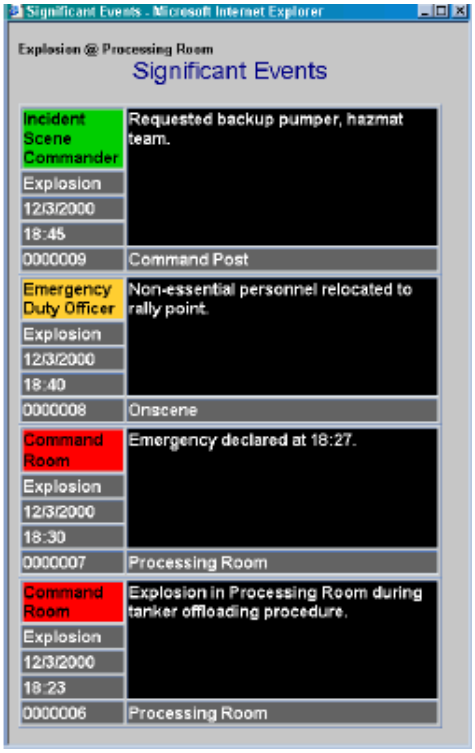
*The exclusion of the Drill Simulator would make the WebEOC Standard version a lot less useful for exercises to ODP at this time.

Boards

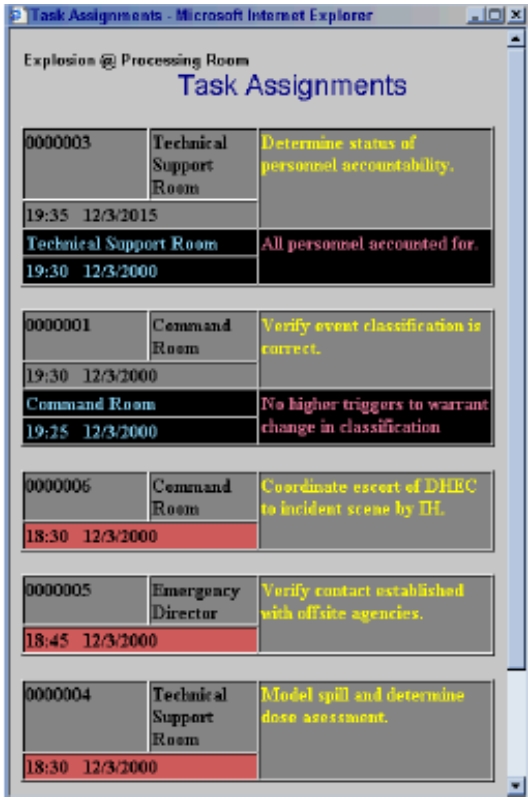
The following status boards are available for the two applicable[42] versions (WebEOC Standard, WebEOC Professional):

[42] WebEOC Air is also available for airlines.

Significant Events—used to track important events and activities and log ‘who did what when’; it provides the real-time chronology of actions taken during an event. Entries would normally include reporting authority, event type, date, and time of the entry, and a narrative summarizing the information. Board entries may be selectively filtered, sorted, linked and displayed.



Task Assignments—identifies responsible authorities, specifies completion times, and indicates whether the task is in progress, past due, or complete. Completion time fields are color-coded to indicate whether tasks are completed on schedule, past due, etc.



The following are categorical and break information down by functional group. WebEOC Professional users can create as many categorical boards as they desire.

Personnel—provides the ability to track status of personnel/populations affected by the event (e.g., example, injured, missing, contaminated).

Logistics—can be used to track availability and deployment of resources.

Media & Press Release—media briefings and other media-related information may be tracked.

Meteorological—displays current & forecast weather conditions that are manually updated.

Other available tracking screens include: hospital record tracking, funeral record, doctor's record, personal effects records, physical description records, etc.

b) Stand-alone product, or require other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand alone product. However if projection desired, as recommended, requirements include: projectors and space to project (usually eight feet wide by six feet high).

c) Large multi-station system, or based on individual PC's? Web-based application.

d) If simulation models are used how realistic do they seem: Simulated task inputs are used in exercises. The quality depends on the author (realism, etc.).

e) Web-based application, LAN, or a single computer/system-based application? Web-based application.

f) Describe the AAR support tools. Requires SME for interpretation. Tool records all inputs (e.g., status reports input) for review.

g) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)? Room to project screens (is setting it up as recommended).

4. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

Minimum display requirements are italicized and shown in parenthesis.

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Microsoft Windows NT 4.0 Server, Windows 2000 Server or Windows 2000; Internet Explorer v 5.5 (or higher) or Netscape v. 4.6 or higher. *Agencies with fifty or more users can offset performance slowdowns by using Microsoft SQL Server. In most cases where Microsoft SQL Server is warranted, purchasing by processor license(s) is often the most effective. (*Microsoft Windows NT 4.0, 2000, or XP Professional; Internet Explorer 5.5 or higher).*

b) Processor speed (in MHz): Single PIII 600 MHz minimum (*Single PIII, 600MHz or higher*).

c) Memory (SDR/DDR): 512MB of RAM minimum. Memory requirements are a function of how WebEOC is implemented and the number of simultaneous users. (*512 MB of RAM recommended; 256 MB of RAM minimum*).

d) Free disk space: (*6GB hard drive*).

e) Internet connection speed (if any): WebEOC has been designed to work with low bandwidth connections such as 19.2kbs cell phones and PDAs.

f) Display adapter: (*1600 lumens minimum (2000 or higher recommended; Support true XGA resolution; Support two (2) VGA inputs; Equipped with power zoom and focus that can be accessed from the remote control*).

g) CD-ROM speed: CD-ROM and 1.44MB floppy drive for installation.

h) Optional accessory requirements[5]: 10/100 Ethernet adapter, keyboard/mouse, single power supply (dual recommended). NOTE: If greater redundancy/fault tolerance is desired (similar to 911 applications), additional hard drives in RAID5 configuration are recommended. Minimum 10/100 Ethernet Adapter Sound Card/Speakers Keyboard/Mouse.

5. Describe unique interface characteristics: Designed to work with display systems that are used in EOCs across the country. The status boards will remember their size and position on a desktop that could span several displays, i.e. a display position that is using a multi-monitor video card might have one normal monitor for the display manager to control/preview/input and the 2nd-4th video outputs would be connected to 3 large screen projectors on the wall. The

projectors are just an extension of the display manager's desktop, so they can arrange status boards, maps, video, etc just by arranging the windows.

WebEOC uses a "Control Panel" type of interface that is configured specifically for an individual user or EOC position.

6. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?
WebEOC is licensed per server for unlimited users. If the customer installs Microsoft SQL Server licensed per processor on the either the WebEOC server or on a separate database server then the database can support an unlimited number of users. The limit really depends on the hardware and network resources (bandwidth available). WebEOC can also be installed on a laptop running Windows 2000/XP professional.

b) Number persons usually trained simultaneously?
WebEOC is licensed per server for unlimited users. If the customer installs Microsoft SQL Server licensed per processor on the either the WebEOC server or on a separate database server then the database can support an unlimited number of users. The limit really depends on the hardware and network resources (bandwidth available). WebEOC can also be installed on a laptop running Windows 2000/XP professional. The number of persons trained depends on the size of the organization. The user training is typically done by the customer after they have setup their users and process.

c) Custom/proprietary hardware required? If so, identify: No.

7. Please describe the HELP features.
24 hr. Tech support (included the first year, see costs thereafter described below). Vendor states WebEOC has been designed so that help is not needed. Customers can add "Help" comments to forms and status boards. All documentation is in PDF format and can be added as a link to a users control panel. The Admin side of WebEOC is covered during training and is fully documented, once a customer completes the one day of training they usually do not need additional help.

8. Data recording & storage features (e.g., Scenario events; student performance):
WebEOC uses Microsoft SQL Server and the type of information stored is typically text. The amount of space needed by WebEOC for storage is minimal. This is also largely based on the number of users, and if the system is going to be used everyday or just for emergencies.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Designed to be able to train an average responder on the basic mechanics of how to use WebEOC in 5-10 minutes and then be able to have the user come back 6 months later and be able to use the software without additional training. Two days onsite are usually all that is needed to install and train WebEOC. Assuming the hardware has been previously setup, WebEOC software installation only takes 20 minutes on the morning of the first day. Right after installation and testing are completed a "Train the trainer" session begins. By the end of the first day all WebEOC administrative training is complete. The second day is devoted to implementing the customer's process. This typically involves a series of Q&A and then showing the customer

another WebEOC customer that is similar to their process. The customer is trained on how to "copy" status boards and forms from other WebEOC users.

2. Attributes:

	Application Environment:		**Content**
	Training		Knowledge
1	Exercise	1	Applied
1	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		2	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
	Intermediate		Awareness
	Advanced		Performance (operations)
	WMD Event Supported:		Technician (specialist)
1	Chemical	1	Planning & Mgmt. (incl. ICS)
1	Biological	1	Integrated systems (multi-jurisdictional, beyond ICS)
1	Radiological		
1	Nuclear		**Training Type Supported**
1	Explosion		Equipment Training
			Awareness
	Functional Area Supported:		Part Task Training
1	EMS		Pre-Training
1	EMA	1	Drills
1	Fire	1	TTX
1	Govt. Administrator		FE
1	Health Care	1	FSE
1	HazMat		FSE Reinforcement
1	Law Enforcement	1	Distributed Collaborative Exercise
1	Public Safety Communication	1	National Training Exercise
1	Public Works		
	Learning Supported:		
	Initial Acquisition		
	Improvement		
1	Maintenance/Refresher		

3. Content:

a) Training content description (what trained, brief): Real time information management.

b) Information/knowledge base contained in product (Briefly identify any relevant WMD-specific content [e.g., Chemical agent summaries]): Can be customized to included hyperlinks or any other files (e.g., link to word documents). Entirely up to the user.

c) Training/exercise objectives potentially supported (High level ... e.g., Equipment operation, knowledge of chemical agents, ICS process, EOC decision-making, team communications): EOC information management.

d) Exercise characteristics (Long, short; tutorial; self-paced; normal operation, failures; simulation-supported; scripted/instructor-controlled): Normal operation.

e) Exercise/scenario length/time(typical): An average "graded" exercise usually runs from 0800-1400 with time for critique at the end.

f) Potential equipment and/or facilities product can address: EOC (and other incident management officials') status boards & information management.

g) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them. Directly applicable (to any disaster communications/management situation).

h) Are there any constraints on supported exercises or scenarios? None.

4. Instructional Attributes:

a) Potential instructional-strategies/delivery-methods (Identify potential examples at high-level ... e.g., classroom, real-time exercise, self-paced individual CBT, video scenario, Q&A, positive guidance, case study, web-based collaborative, real-time VTC): Real-time exercise.

b) Is an instructor or facilitator needed? *If not, how is training conducted (e.g., Individual self-paced)?* No. Users would run the course of their jobs (e.g., input and project information as they normally would) aided by the computerized tool.

c) Scenario/exercise run/conduct features (e.g., Positive guidance, student cues, scripted scenario, and automatic reactive scenario. Users can share (import/export) created scenarios (scenarios, for this tool means the actions and inputs into the system that are recorded and can be reviewed).

d) How is training managed (e.g., Testing, certification of completion, etc.)? Up to the user (e.g., EOC manager could require a drill per year with the tool).

e) Does a curriculum already exist? If so, briefly describe its form and content. N/A. Users can add simulations for exercises and screens desired for normal operations.

f) Student/participant/team evaluation features; identify each (e.g., Scenario/exercise data recording; performance measures; performance standards): Customizable to include expected tasks for successful event response—users can add injects and user inputs are recorded by the system. However, it would likely require SME interpretation and guidance to extract lessons learned.

g) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.): Same as would be received during real incident (e.g., emails, postings of information). There is not a mechanism for tracking communication's receipt; it is up to the individuals to seek available/posted information.

5. Instructor/controller/evaluator tools:

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support)): User's Manual, Administrator's Manual, Training Guide (Two-part guide containing training objectives for Administrators and Users), WebEOC Practical Exercises (Designed to assist Administrators learn the ins and outs of WebEOC) are provided. Tech support is available 24 hrs from the vendor (included only the first year, cost discussed below).

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants): Real time, jump ahead, pause and stop altogether. Up to exercise controller.

6. Customization:

e) Can the product be customized?

It can easily/rapidly reflect information desired in every screen (report, etc.).

Optional software: MapTac™, a web-based tool that allows emergency management personnel to plot the location of forces/resources at or around an incident scene, at staging, or other locations as necessary. Cost is additional to Web EOC license, $1500. Designed to replace or augment static, paper-based maps or magnetic/light boards and it can be used with any GIS or mapping system that can produce a static picture file (jpeg, gif, bmp). Existing web-based mapping resources available on the Internet, such as Yahoo Maps, Delorme, etc., can be used to plot any address, then saved into MapTac to add icons such as roadblocks, fire trucks, police units, etc. MapTac also allows responders at geographically separate locations to view, and depending on user privileges, update resources real time.

Esi also offers facility consulting, regardless of product purchase (e.g., Is the facility large enough? Has adequate space been allocated for equipment and utilities? Is emergency power available to critical systems? Have ergonomics been considered?). Basic assessments and "best practices" reports with notional designs delivered in Visio format for as little as $5K and other much more extensive designs/assessments including the actual construction subcontracting which of course are priced based on the level of effort. The average is $15K.

f) What is the process and how much time does it take to develop a new exercise/scenario? The screen shot below depict the simulator window. The user can easily and quickly add or disable events before or during the exercise. These events serve as injects to which players must take actions for (e.g., send status report, mobilize units, etc.). The time is takes is however long it takes to cut and paste scenario injects (see 6d below).

g) What is the process and how much time does it take to modify an exercise/scenario? Same process as to create a scenario mentioned above. The controller can import full scenarios created by others users or modify existing ones in minutes.

h) What is the process and how much time does it take to setup an exercise/scenario to run? The best way to setup a scenario/exercise in WebEOC is to first develop the scenario using Word, Excel, or whatever tool is familiar. Then copy each inject into a status board entry in the WebEOC simulator. Thus the process is to cut and paste and add the "T-Time" for each entry. The simulator then delivers the injects based on the timeline to where the users wants them posted.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

E. TLI Evaluation

	Face Validity		**Current Applicability to ODP**
1	High	1	Very
	Medium		Somewhat
	Low		Limited
	N/A		
	Ease of Use		
1	Easy		
	Relatively Easy		
	Difficult		
	Requires trained support staff		

F. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:	
	Specific objectives, criteria, metrics/measure or level of preparedness
	Audit and evaluate plans and procedures prior to an exercise/Plan development
	Dissemination of best practices/expansion of learning benefits i.e. report generation
2	Tracking participant performance through multiple tries (automation)
Selected TTX Observations: product allows for/can be used for:	
2	Decision-making
1	Tracking Interactions/info-sharing among players
Selected Functional Observations: product allows for/can be used for:	
1	Simulation Support
Selected FSE Observations: product allows for/can be used for:	
2	Remote Observation
1	Enhanced Communication T&E/does it practice/train/exercise communications?
	Hospital T&E
Selected New Concepts for Improving T&E: product allows for/can be used for:	
1	Distributed, collaborative, decision-making environment
	Measure of learning/retention & transfer of learning (implies pre-test and post-test)

G. Costs

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1) Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a) Yes (*proceed to Q2*)
   b) No, Vendor must quote a system based on user requirements (*end here*)
2) Does the cost apply to: (choose one)
   a) Product
   b) Service
   c) Product & Service Bundle
3) Product (content) configuration, as priced, is: (choose one)
   a) Standardized
   b) Vendor Customized
   c) Allows User Customization
4) What are the costs (in $USD) according to type: (fill in all applicable)

	COST			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase				
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)	30,000	30,000	30,000	30,000
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option	1500	1500	1500	1500
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License	5,000	5,000	5,000	5,000
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance			4800/yr	8800/yr
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

*The cost for Web EOC Standard is 15k for unlimited user license.
**Facility consulting costs (mentioned above) are not covered because it is considered separate from this product.

License cost denotes unlimited number of users and it is a one-time cost.

Tech support is included for the first year. Thereafter users have two options, which include 27X7 tech support: a) standard support includes vendor site visits & all software updates for $8,800/yr. b) Basic includes point release updates for purchased version for $4,800/yr. It does not include site visits and other software upgrades.

The Map Tech option is an additional $1500. A dual commit server (2 servers) is an additional $5,000.

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

WisdomTools Scenarios

Developer: Wisdom Tools

Contact information: Gale Nichols
Vice President, Finance and Administration
WisdomTools, Inc.
501 N. Morton Street, Suite 102
Bloomington, IN 47404
phone (812) 855-8632
fax (812) 856-4205
mobile (812) 369-6860
gale.nichols@wisdomtools.com

Website: http://www.wisdomtools.com/ Product status (version in use): 4.0

Date of Evaluation: 12/11/03

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [ ] Observed Demo
- [x] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

- [ ] Brochure/Prospectus
- [ ] CD-Rom
- [ ] Related Papers
- [x] Material from Internet
- [ ] Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  This is a tool designed to promote decision-making and judgment.

- Current Target audience:

  Knowledge workers, ranging from front-line employees to senior executives, in a variety of business, government or academic settings. Typically, they work in teams in complex organizations.

- Potential equipment and/or facilities product can address:

  N/A. Teaches critical thinking and judgment skills. It doesn't directly address equipment or facilities, though they could appear in a tangential way in a scenario.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  Unique features of this product are: 1) It's very engaging. The focus on stories and characters is unlike most simulations which are oriented toward events and resources and can be a bit dry. 2) There's tremendous potential for disseminating exercise or real-world experiences, lessons learned, and best practices. For example, a story could be developed based on the Seattle and Chicago mayors' experiences in TopOff2. Text and video could show the situations they confronted; at key decision points, activities and a facilitator could frame discussions of what should have happened, and then might show what actually happened. 3) This has the potential to be used for training and exercising of senior officials, as it promotes dialog, operates distributedly, and is oriented toward specifics of a given situation vs. general knowledge, which is more likely to be attractive to senior officials.

  Description:

  Wisdom Tools develops learning scenarios, customized for each client's application. These online scenarios are combined with an asynchronous distributed collaborative environment, allowing users to view a scenario event and participate in asynchronous activities with other members of their team.

  The scenario can be hosted on the client's server or by Wisdom Tools.

  The user logs in to a scenario and sees a graphic overview of the events in a scenario – see Figure 1. They can click on a numbered scenario item, then they'll see more details for that scenario event as shown in Figure 2. This can include reading text about the event, listening an audio clip, watching a video, or looking at related business documents (like a memo or form). Activities can also be associated with a scenario event: a quiz, a survey, or a point-counterpoint discussion on a bulletin board – see Figure 3. Hyperlinks to other web sites can be included with the scenario description or activities as well.

Figure 1. Overview of events in the scenario

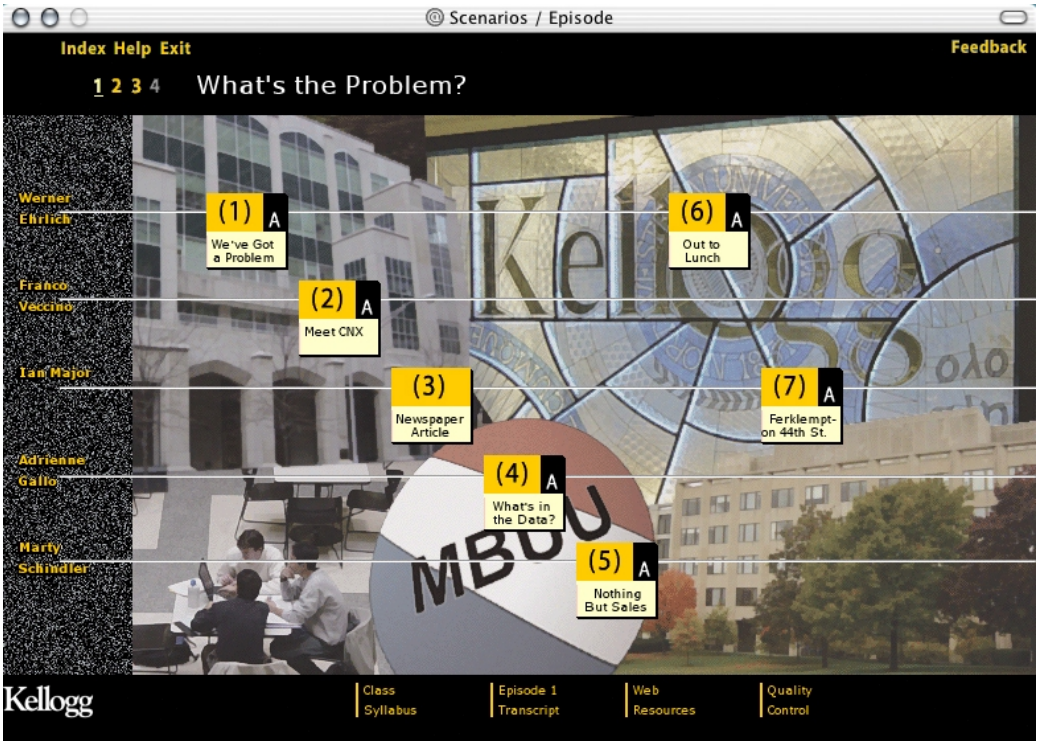


Figure 2. One event in a scenario

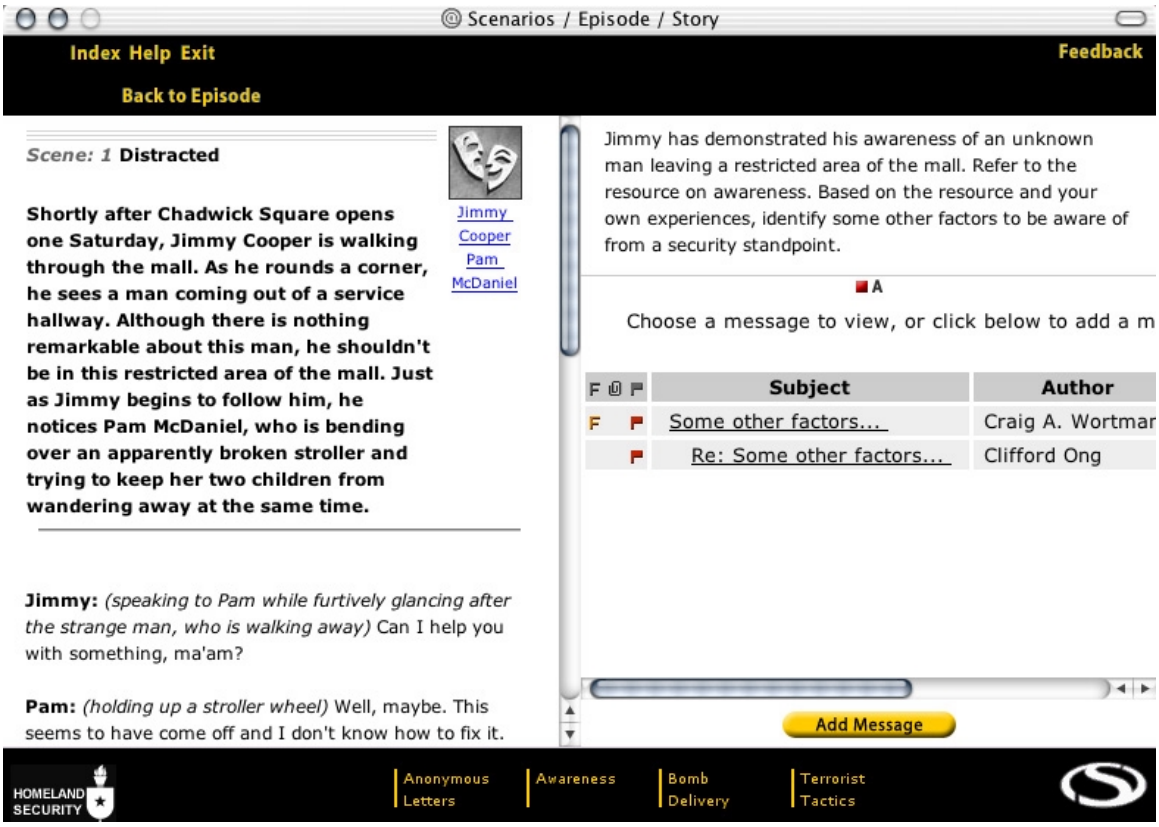
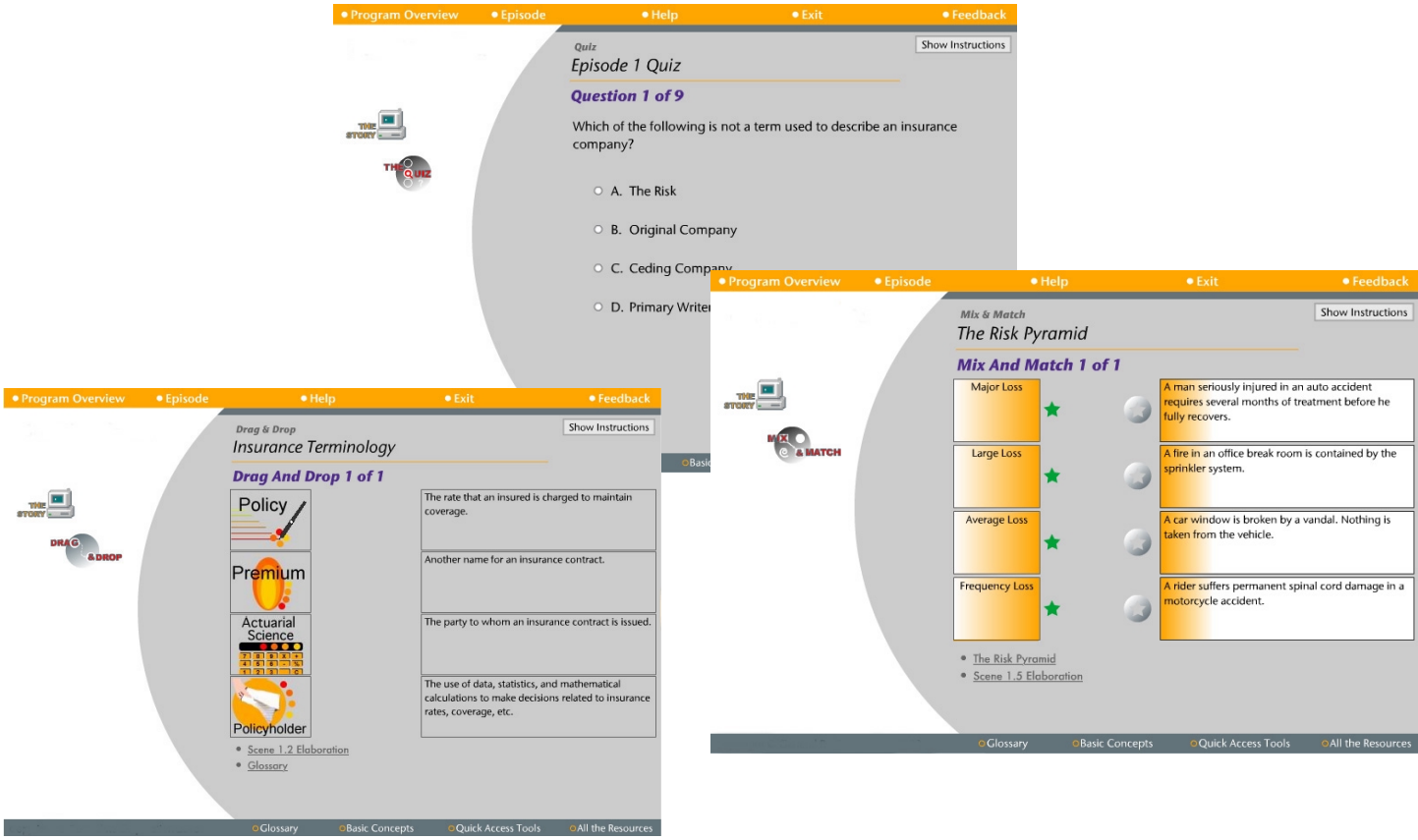


Figure 3. Activities associated with scenario events



Scenario events are typically released over time, e.g., once a week, so users have a chance to think about them and they're not able to jump ahead to the end.

Users are typically grouped into small teams of 8-12 people, with a facilitator (generally from the client, though occasionally from Wisdom Tools). The facilitator can monitor user participation: how many times they've logged in, how many minutes they've spent in the scenario, etc.

Many of the activities are asynchronous collaborative activities, where users can exchange their ideas and discuss questions related to the scenario event.

"WisdomTools Scenarios™ is a computer imaginative cognitive tool designed to leverage instructional techniques in problem-based learning, using case study, storytelling, role-playing, simulation, and collaborative learning. Key features include:

- **Stories that teach**. Good stories are memorable. They provide context (conditions). They communicate culture as well as skill. They communicate tacit knowledge (that which is difficult to describe in other ways). A scenario is relevant to the learner; it's the learner's story, not some abstract parable.
- **Learner interaction and collaboration**. If *Scenarios* were only a story, then learners would be "story voyeurs." Instead, we create interactive collaborative activities that engage multiple learners. The purpose of these activities is to help the learner reflect on the story's relevance and contribute to it. Multiple points of

view are discovered and new insights are learned through the asynchronous exchanges. Current activities include: discussion forum, point-counterpoint, survey, computer facilitated practice, and quiz. The *Scenarios'* object-oriented architecture also allows for other activities to be constructed.

- **Facilitation**. A facilitator moderates a discussion forum and guides the learners through the scenario. Good facilitation can result in sophisticated probes that lead learners to deeper understandings. Some probes may be simulated through seeded and time-revealed messages.
- **Just-in-time resources**. Digital resources anchor the story; they provide needed background material.

Scenarios take advantage of the Web to move participants beyond content mastery and memorization to judgment and deep insight. These electronic case studies help employees tackle difficult issues through collaborative and interactive situations. By providing computer imaginative interaction – taking advantage of what humans and computers do best – *Scenarios* help learners ask appropriate and significant questions of the content, evaluate and synthesize information from diverse sources, grasp multiple perspectives, and develop judgment as well as strategic skill. " From "Falling Asleep at Your Keyboard: The Case for Computer Imagination", by Martin Siegel, http://www.wisdomtools.com/documents/Siegel_Falling_Asleep_whitepaper.pdf, accessed on 12/17/03.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

This is an online multimedia collaborative framework.

b) Large multi-station system, or based on individual PCs (if applicable)?

Individual PCs are used to access the scenarios.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

Requires Flash 5.0 and an Internet browser

d) If simulation models are used, what is the basis of the data and/or distributions used?

N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
No

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows 98, NT, 2000, XP

IE 5 or Netscape Navigator 472 or higher
Flash 5.0

b) Processor speed (in MHz):

c) Memory (SDR/DDR):

d) Free disk space:

e) Internet connection speed (if any):

f) Display adapter:

g) CD-ROM speed:

h) Optional accessory requirements:

3. Describe the user interface characteristics:

The software is accessed through an Internet browser, so it's a point and click interface, intended to be very intuitive, and does not require any training.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The technical max is limited by the server's capabilities and would be on the order of 1000's of participants. Functionally, participants are grouped into teams of about 8-12 people. Multiple teams can simultaneously access a scenario.

b) Custom/proprietary hardware required? If so, identify:

No.

5. Describe any user HELP features:

On each page of a scenario, there is a HELP link. This contains frequently asked questions (FAQ) for system problems and navigating through the content. Users can email Wisdom Tools with questions. Wisdom Tools typically sets up a point person at the client who knows how to handle common problems.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

Data are recorded about a participant's path through the scenario elements: how many times have they logged in, how much time have they spent in a scenario, how many surveys have they completed, etc. Electronic postings in the collaboration tools are saved and quiz data are saved.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

There is a short online intro to a scenario, describing key features the user will encounter.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

There are no WMD-specific scenarios at this time. Wisdom Tools developed a prototype scenario involving an explosion at a shopping mall, however, this was not fully fleshed out nor has it been used by a customer. The intended training audience would have included: mall management, mall security, police, fire, city government, public information.

b) Exercise/scenario length/time (typical):

Depends somewhat on the customer needs. Typical minimums for a scenario are 3-4 hours and typical maximums are 12-16 hours. Scenarios typically unfold over a few weeks; this is an instructional design choice, not a requirement or constraint of the software

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

New scenarios would need to be developed for WMD.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

Wisdom Tools developed a prototype scenario involving an explosion at a shopping mall, however, this was not fully fleshed out nor has it been used by a customer.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

There are no relevant extant curricula.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):

Survey results are immediate – users see the aggregated results for their team. During a quiz, if the user selects a wrong answer, they get immediate feedback telling what the answer is and why.

There is no post-exercise feedback built into the system. Any AAR would be done by a facilitator and occur outside of the software environment.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

There is a detailed facilitator's guide and Wisdom Tools will train a facilitator at the company. They also have an implementation guide given to the client describing how to conduct a successful implementation of Scenarios.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

Elements of the scenario are pre-defined; users have minimal opportunity to order what they do.

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

Customization is done by the developer at the outset. This is not an off-the-shelf product.

The typical process begins with a 2-day design retreat involving an instructional designer, project manager, and recorder from Wisdom Tools, plus 3-5 subject matter experts from the client. The client generally has learning objectives and a topic in mind, plus thoughts on the kinds of characters that will be needed and their roles and responsibilities.

At the retreat, the group comes up with the plot for the story, based on learning objectives and the goals of the program. The characters are developed, then the first event is developed, and the remainder of the story discussed.

Then Wisdom Tools writes a script and then creates the full-blown scenario, which will normally be test-piloted by the client.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

N/A. See AAR/feedback information above.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
1	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned		Multiple dynamic paths / probabilistic outcomes
1	Commercially owned	1	Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**
1	Individual		Scenario replay
	Group		Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
	Large multi-user team (more than 25 persons)	1	Does not provide feedback or AAR
1	Multi- Agency Participation		
			HLA Compliance (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment		Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training		Knowledge
1	Exercise	1	Applied
	Operational		Hands-on
	Analysis		
	Entertainment		**Target Audience**
		2	First Responders

	Mode of Delivery:	2	Commanders
1	Self-paced	2	Local Officials
1	Instructor/Facilitator	2	State Officials
		2	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	2	Awareness
1	Advanced		Performance (operations)
			Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
2	Chemical	2	Multi-jurisdictional Integrated Systems
2	Biological		
2	Radiological		**Training Type Supported**
2	Nuclear		Equipment Training
2	Explosion	2	Awareness
		2	Part Task Training
	Functional Area Supported:	2	Pre-Training
2	EMS		Drills
2	EMA	2	TTX
2	Fire	2	FE
2	Govt. Administrator		FSE
2	Health Care		FSE Reinforcement
2	HazMat	2	Distributed Collaborative Exercise
2	Law Enforcement	2	National Training Exercise
2	Public Health		
2	Public Safety Communication		
2	Public Works		
2	Transportation		
1	Private Sector		
	Learning Supported:		
1	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
Medium
Low
1 N/A

Ease of Use
1 Easy
Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP
Very
Somewhat
1 Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
1 Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
Enhanced Communication T&E/does it practice/train/exercise communications?
Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
1 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. **Yes (*proceed to Q2*)**
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. **Vendor Customized**
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase			$40,000	$125,000
Module Purchase				
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				
System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS & GAMES

A. Basic Product Information

Name of Product:

WorldReach Emergency Management Suite

Developer: WorldReach Software Corporation

Contact information:
Gordon Wilson, President
1420 Blair Place, Suite 500
Ottawa, Ontario, K1J 9L8
Tel. 613-742-6482
Fax 613-742-8188
gordw@amita.com

And additional Contact information:
Kim Burrett-Scott
Kim.Burrett-Scott@worldreachsoftware.com

Website: http://www.worldreachsoftware.com/emergency/?id=emerg_intro

Product status (version in use): v6

Date of Evaluation: December 15, 2003

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo (web)
- [ ] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [ ] Product developer filled-in evaluation form
- [ ] TLI team modified evaluation form

Materials in our Possession:

- [x] Brochure/Prospectus
- [ ] CD-Rom
- [ ] Related Papers
- [ ] Material from Internet

Other: please state

B. Summary Product Description: please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):
  "The suite includes specialized response and triage tools for CBRN (Chemical, Biological, Radiological and Nuclear) and WMD (Weapons of Mass Destruction) events, and major infectious disease tracking and management. The tools enable emergency health (triage), command center and on-going incident management. Included are specialized tools for Chemical, Biological, Radiological and Nuclear (CBRN) events, those involving Weapons of Mass Destruction (WMD), and major infectious disease tracking and management".

The Quarantine & Case Management records and manages basic information on people who have had potential exposure to an infectious disease or biological agent or have otherwise been classified 'at risk'. The Case Management component allows officials to assign cases to those individuals who have been classified as suspect or probable

- Current Target audience:
  "First responders, medical teams and emergency management agencies can use the Emergency Management Software System to share information, assist & track victims, patients and families, and have up-to-date information for other agencies and the public". Main audience is those involved with tracking cases and persons affected (e.g., Red Cross organization tracking victims, services rendered, and shelter status) versus other departments who track responder activities (although it could be customized to meet their reporting needs).

- Potential equipment and/or facilities product can address:
  Centralized database for case management.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?
  This tool is can serve as a real time central repository and case management suite for persons (e.g., government and other agencies such as the Red Cross) needing to 1) track those affected by any incident requiring treatment and/or assistance, and 2) Communicate internally and externally (e.g., send notification emails of possible infections, produce reports) about cases & 3) coordinate with other providers the status of the case and/or actions including requests for inputs into the system. All this information is stored in a central database with time and user stamps identifying inputs/actions and made searchable by certain fields (e.g., search for a particular case or person).

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

   The Emergency Management Software System consists of the following modules (integration and accessibility of data across all modules is possible):

1) Field Medical Systems[43] - Triage - Front-line software tool to track patient/victim status. It captures medical information about victims and patients. Two major components: a portable component used in the field and a stationary central database accessible via the Internet, including wireless. Field component is comprised of a simple configuration of the database that operates within a web browser and uses a standalone PC. It features:

- Multi-lingual software that includes on-line help and support documentation.
- It leverages off-the-shelf technologies such as standard Windows PCs and tablets for maximum economic efficiency
- It will store data using the Classification of Disease standards

RTMW (Rapid Triage Management Workbench) is an electronic triage system that enables collaboration among first responders in a CBRN event. RTMW captures casualty needs and priorities, treatments and disposition at the incident scene.

The Quarantine & Case Management records and manages basic information on people who have had potential exposure to an infectious disease or biological agent or have otherwise been classified 'at risk'. The Case Management component allows officials to assign cases to those individuals who have been classified as suspect or probable

2) Case Management - Detailed management and tracking of the many forms of assistance provided to individual victims, patients, and their loved ones in times of crisis. It is used to create, identify, record and manage information representing each interaction with an individual ('cases') in need of assistance. Information such as location, identification information, document references (i.e. health insurance), and descriptive information such as photographs can be recorded and shared online amongst staff at emergency facilities and headquarters. A media relations feature helps to create essential press releases. The Case Management module features:

- Multi-lingual software (currently English & French) that includes on-line help and support documentation
- Based on a shared central database for operations at city/region, state/province or national levels
- Runs on private network, Virtual Private Networks, Internet or dial-up using a browser for user access
- Multiple security options: access control, network encryption, flexible audit trail
- Generalized search function permitting users to search across all data for persons by various search criteria
- Flexible notes function to record comprehensive descriptive information or include other electronic documents or photos
- Communicator - a notification and monitoring feature that enables coordinated actions between users at dispersed locations. The monitoring feature allows users to proactively identify specific cases or individuals to which they wish receive alerts, or to track when changes occur
- Online reporting of the number and type of managed cases, and the assistance rendered, by a facility, unit or city/region
- "Lookout lists" for persons of interest to security/police agencies

3) Emergency Center Management - Incident management tools for the emergency command center and associated agencies. It supports emergency command/operations

[43] Note this module is currently under development and will be available sometime in FY04.

center staff with tools for coordination, status reporting, two-way communications, photographic identification of individual's press releases, detailed incident notes, and access to information about the people involved, at both aggregate and detailed levels. It features automatic entry of dates, initiation of individual cases and notifications of action required. Logging functions are available to record service requests received from emergency team members as well as actions taken and incoming calls and requests for assistance or information. It can produce statistical reports on the number of calls and type of assistance requested. These serve as a snapshot for management and are a valuable tool during times of crisis and increased demand for service.

Optional tools are:

- The Contingency Planning module: enables development, storage and exchange of contingency planning information needed by headquarters (municipal/regional, state/provincial, federal), and various facilities or special units. Contingency plans are based upon templates defined by the user which can be modified with word processing tools, and saved both locally and on a central database.
- The Public Information module: publishes information bulletins about the status of an incident, security, as well as health conditions and precautions either during an incident or the during recovery period. Information updates are forwarded to a web site for direct access by individuals, companies, medical facilities, and other agencies. A complete audit trail of all published information are saved for reference purposes.
- The special purpose People Registration module: is used during large scale evacuations or quarantines so Emergency Management Agencies can record the location of individuals or families after an evacuation, collect emergency contact information (employer, next of kin, home, etc.) and provide general communications assistance.

b) Large multi-station system, or based on individual PCs (if applicable)?
Product is a "scalable set of tools that can provide secure, flexible operations in various network or stand-alone environments. It is based on a modular architecture".

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):
Stand-alone.

d) If simulation models are used, what is the basis of the data and/or distributions used?
N/A

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?
No special facilities are needed to run WorldReach Software products. The systems are web-based and can be operated with standard workstations. They can be deployed over a virtual private network (created with security software and the Internet) or a dial-up connection.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):*
Windows XP or 2000, Internet Explorer 5.5 or higher
b) Processor speed (in MHz):

Pentium III

c) Memory (SDR/DDR):
128MB

d) Free disk space:
Total size of Hard disk: 13.5 GB (Hard disk)

e) Internet connection speed (if any):
16 Kbps

f) Display adapter:
Monitor –Colour Monitor

g) CD-ROM speed:
N/A

h) Optional accessory requirements:
N/A

3. Describe the user interface characteristics:

Windows based interface where users click on buttons that either show details of the requested action (e.g., patient information including address and identification information) and allows reporting of chosen data. Basic computer skills (e.g., mouse navigation, use of drop down menus, browsing ones system, adding attachments) are sufficient for operation.

4. If multiple users

a) Identify the range of persons it can simultaneously support (min-max)?
No maximum has been identified. Vendor mentioned one of their clients has about 1,000 with no problems.

b) Custom/proprietary hardware required? If so, identify:
None.

5. Describe any user HELP features:
Online manual and link for tech support email as well as 24X7 tech support available.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):
System records inputs along with date, time and user stamp as they are input and updates information real time.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):
Several training and installation options exist from on site installation and train the trainer at user's site or vendor site to online training to detailed set up instructions and manual for user to set up autonomously.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):
None.

b) Exercise/scenario length/time(typical):
N/A

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.
Directly applicable to any event that requires case and person management (particularly as it pertains to victims and service personnel communications to track and resolve cases). Not WMD specific (e.g., can be used for any event or hazard).

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.
RTMW will be tested in both TableTop exercises as well a full-scale 'live' exercise hosted by the Canadian National Capital CBRN Group in 2004.

3. Instructional Attributes (if applicable)

c) Does a curriculum already exist? If so, briefly describe its form and content?
N/A. This is an operational tool. Some users choose to use their real data for training purposes. This is up to the user.

d) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Real time information updates. Users can send notes (similar to an email message) to other users.

5. Instructor/controller/evaluator tools

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):
N/A

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):
N/A

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?
Yes. By user (e.g., templates defined by the user which can be modified with word processing tools, and saved both locally and on a central database). Most of the user modification involve drop down menus, more involved modifications (e.g., appearance of page and or labels) are done by vendor.

b) What is the process and how much time does it take to setup an exercise/scenario to run?
N/A

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):
N/A Cases are searchable by text and the database is searchable by cases or persons.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training (other than Simulation)
	Game
	Student Learning
	Instructor/Facilitator Aid
X	Support/Platform Technology

(See appendix for classification)

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
	Government owned	1	Multiple dynamic paths / probabilistic outcomes
1	Commercially owned		Static configuration: fixed path / deterministic outcomes
	Media Scale		**AAR Capability**

2	Individual	3	Scenario replay
2	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)		SME controls AAR
1	Large multi-user team (more than 25 persons)		Does not provide feedback or AAR
1	Multi- Agency Participation		
		3	**HLA Compliance** (does product support HLA?)
	Applied Context		
1	Non-specific		**Interconnectivity**
	Equipment	1	Standalone
		1	LAN
	Environment	1	WAN
1	Generic	1	Internet
1	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
2	Training		Knowledge
2	Exercise	1	Applied
1	Operational		Hands-on
2	Analysis		
	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
	Basic		**Potential Training Levels:**
1	Intermediate		Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	1	Planning & Mgmt. (incl. ICS)
1	Chemical	1	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
1	Nuclear		Equipment Training
1	Explosion		Awareness
			Part Task Training
	Functional Area Supported:		Pre-Training
1	EMS	1	Drills
1	EMA	1	TTX
1	Fire	1	FE
1	Govt. Administrator	1	FSE
1	Health Care		FSE Reinforcement

1	HazMat	1	Distributed Collaborative Exercise
2	Law Enforcement	1	National Training Exercise
1	Public Health		
1	Public Safety Communication		
1	Public Works		
1	Transportation		
2	Private Sector		
	Learning Supported:		
0	Initial Acquisition		
2	Improvement		
0	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity

1 High
Medium
Low
N/A

Ease of Use

1 Easy
Relatively Easy
Difficult
Requires trained support staff

Current Applicability to ODP

1 Very
Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

Specific objectives, criteria, metrics/measure or level of preparedness
Audit and evaluate plans and procedures prior to an exercise/Plan development
Dissemination of best practices/expansion of learning benefits i.e. report generation
1 Tracking participant performance through multiple tries (automation)
1 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

Simulation Support

Selected FSE Observations: product allows for/can be used for:

Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
2 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following set of questions can be used to collect MS&G product cost information that allows for ease of database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)
   a. Yes (*proceed to Q2*)
   b. No, Vendor must quote a system based on user requirements (*end here*)

2. Does the cost apply to: (choose one)
   a. Product
   b. Service
   c. Product & Service Bundle

3. Product (content) configuration, as priced, is: (choose one)
   a. Standardized
   b. Vendor Customized
   c. Allows User Customization

4. What are the prices (in $USD) according to type: (fill in all applicable)

Please make notations about price unit bases below the table (e.g., $/hour service), as appropriate.

	PRICE (USD$)			
	Actual	Typical	Min. Likely	Max. Likely
Product Purchase			20,000	150,000
Module Purchase			15,000	30,000
Product License (unspecified)				
Product License (Site)				
Product License (Base System)				
Product License (Terminal)				
Product License (User)				
Module License (unspecified)				
Module License (Site)				
Module License (Base System)				
Module License (Terminal)				
Module License (User)				
Product Upgrade Option				
Warranty Upgrade Option (Base System)				
Warranty Upgrade (Terminal)				
Auxiliary Product Purchase				
Auxiliary Product License				
Service Usage				
Vendor Quoted Service				

System Training/Support/Maintenance				
Daily Rate and/or Travel				
Instructor Fee				
Trainee Fee				

SURVEY FORM

COMMERCIAL & GOVERNMENT MODELS, SIMULATIONS, & GAMES

Note: This survey was completed with significant input from Xybernaut Corporation, and substantially reflects their judgment of system capabilities.

A. Basic Product Information

Name of Product:

Xybernaut Mobile Solutions
MA-V and the Atigo-M, and Atigo-T hand-held/wearable computers; Service Point mobile wireless server.

Developer: Xybernaut Corporation

Contact information: Ed Newman
Chairman
Xybernaut Corporation
12701 Fair Lakes Circle, Suite 550
Fairfax, VA. 22033
Tel.: 703-631-6925
Email: enewman@xybernaut.com.

Additional Contact information: Steve Newman, President, 703-631-6925;
snewman@xybernaut.com;
Joel Coulter, Business Development Advisor, 703-654-3510;
jcoulter@xybernaut.com;
Roosevelt Ellison, Chief Systems Integrator, 703-654-3602,
rellison@xybernaut.com.

Website: http://www.xybernaut.com

Product status (version in use): Version 5 MA
Atigo M and T.

Date of Evaluation: 12/19/2003

Source(s) of Evaluation: *check all that apply*

- [ ] Observed Product in use during a training or exercise
- [x] Observed Demo
- [ ] Played/Used product
- [ ] Attended Briefing
- [ ] Reviewed CD-Rom or other software
- [x] Reviewed Website
- [x] Spoke/emailed with POC
- [ ] Interview(s) with Product Users (please paste into the end of this document)
- [x] Product developer filled-in evaluation form

X TLI team modified evaluation form

Materials in our Possession:

X Brochure/Prospectus
CD-Rom
Related Papers
X Material from Internet
Other: please state

B. Summary Product Description: Please provide an introductory summary identifying what the product is and describing key elements. Include the following:

- Focus/specialty of product: (Incident response operational tool/system, incident response training/exercise tool/system, other):

  Wearable, mobile computer solutions with embedded operating systems (CE.net and XP) that enable wireless data interoperability with audio/video interoperability. Includes multiple touch, voice, and body activated controls and is used by DOD, state, and international agencies for emergency incident response, distributive training, distributive data communications/document management, distributive inspections, and mobile First Responder, and War Fighter emergency alert, maintenance, care, communications, tracking, and evaluation activities.

- Current Target audience:

- Homeland Security, First Responders, School Education, Adults with Disabilities, Maintenance, Logistics, Inventory, Mobile Field, Municipality, and Investigation Workers.

- Potential equipment and/or facilities product can address:

  Industrial, Biological, Chemical Maintenance, Mobile EOC, CBRNE and Learning Units, eGovernment Outreach Centers, Public Battle Labs, Distance Learning Centers, Fixed, temporary, and virtual emergency medical centers, fixed/mobile intelligent work spaces. Police, Fire, Rescue, Ambulance, removable in-vehicle communications systems for work in and outside vehicle. Asset, Manufacturing, Energy, Call Center, and Project Management facilities; Remote TelePort, TeleMaintenance, and TeleBorder Facilities.

- In one paragraph, how is this product potentially relevant to ODP's T&E program?

  This product would enable ODP teams involved in T&E exercises to incorporate an applied field learning component with their in-classroom instructional and desktop emergency exercise activities. This applied field learning component could include downloaded web T&E assessment and practice scenarios, simulations, strategic diagnostic analysis and evaluation activities, and "Just-In-Time" field multimedia data capture and After Action Reports for building a Best Practices knowledgebase.

C. Technical Attributes:

a) Identify major product components and their operation ... hardware, software, simulation and functional (e.g., Multi-player collaboration, gaming, 3-d interactive model, 2-d topography, video, plume model, questions & answers, HELP).

Xybernaut mobile solutions are computer hardware and wireless networking components that can be used for multiple purposes. The basic components of this system are wearable computers and a variety of I/O devices for mobile/field use.

The MA-V can come with Windows or Linux OS, 500Mhz Intel Mobile Celeron Processor, 128MB SDRAM, expandable to 256 MB; 10GB internal HDD externally expandable to 40GB; 1GB removable HDD using Compact Flash Card; **Ports:** Compact Flash, USB, Firewire, DC-in, supports LVDS and GFIF PDP Power Docking; **Audio/Video:** Video Memory 8MB SDRAM; build in sound card; full duplex, stereo I/O; Integrated DSP. CPU Chassis: Durable magnesium alloy case; **Software:** Windows 2000, XP, or Linux, CIC,JOT Handwriting Recognition; Onscreen Keyboard; SW FPD; Other drivers available including voice activated (e.g. Conversay) **XyberKey Wrist Worn Mini Keyboard;** 60 key ruggedized Qwerty keyboard; Worn with Belt, vest, suspenders, shoulder pack or backpack; protective pouches;

Atigo T System is comprised of a Transmeta Crusoe TM5800 1 GHz Processor, 256MB SDRA, 256 MB Flash Memory, 512 Optional, Slots PC Card (CardBus Type II) Compact Flash Type II, (CF-IO) Ports, 2-USB 2.0 Audio Integrated 16-bit Stereo, Stereo Speakers Headset Jack (2.5mm Cell Phone type with microphone and earphone, Workplace Mobility Kit, Internal Rechargeable Lithium-Ion Battery, Hot-Swappable Clip on Battery, Desktop Charging Cradle w/2 USB ports, A-C adapter, Optional Bluetooth, Barcode Scanner, Vehicle Adapter, and various battery pack chargers**. Display** 8.4 Touch Screen Enabled TFT-Transmissive Display, 800x600 Resolution, 24-bit Color, Xybernaut All-Light Readable (high contrast) is a hand-held/wearable computer 600-800 Screen Resolution with 1Ghz Processor **Operating System:** Microsoft Windows XP Embedded, Msoft IE6.0 Windows Media Player 8, Sun Java 2 Runtime Environment.

Thin Client Computing: RDP and ICA Clients for Msoft Terminal and Citrix Metaframe Servers, **Network Support:** 802.1x and IPv6 Supported; 802.11b WLAN Card Std.(uses PC Card Slot) **Custom Configuration:** Customizable VESA Wall Mount Cradle; Custom soft-goods holsters, and pouches, Custom Image Builds (OS Settings, Applications, etc) Unit by Unit configuration available.

b) Large multi-station system, or based on individual units/PCs?

The Xybernaut Mobile Solution can be configured to be a networked multi-station system that provides each person an individual mobile computer system with multiple communication interfaces. Usually the MA-V and Atigo-X combination are based on individual wearable and mobile computer configurations.

c) Stand-alone product, or requires other hardware and software to function (e.g., external simulation models, data base, operational equipment):

The MA V, Atigo M and T are networked products with interoperable communications components. Embedded software applications are stored on the MA-V or Atigo to perform worker responsibilities. They can be wirelessly networked to a portal with applications/applets, data, and resources downloaded from server(s).

d) If simulation models are used, what is the basis of the data and/or distributions used?

Not currently applicable.

e) Other facilities required (Home/office; building, multiple rooms, auditorium; LAN; etc.)?

Outdoor field use. Xybernaut's mobile solutions are small, light, and wearable so only small mobile/fixed A/V storage facility is required to launch individual or group exercise and training activities. Mostly for field use, however the mobile solution can be used as a classroom and/or field A/V and computer control device, and for the establishment of a wireless broadband infrastructure in the field where other computer and communication devices can operate. Batteries are hot swappable for short to long duration use. Holsters available for additional ports and battery configurations.

2. Personal Computer Requirements *(if appropriate; most software will offer minimum and recommended configurations).*

a) Software Operating System *(Windows XP, 2000, etc.; MAC OS; UNIX; other):* Linux, SCO UNIX, all Microsoft Windows platforms

b) Processor speed (in MHz): 1GHz, 500 MHz and 400 MHz

c) Memory (SDR/DDR): 64 to 256 MB

d) Free disk space: 5, 10, 20 GB hard drives

e) Internet connection speed (if any): WLAN: 802.11B and G
CDPD, CDMA, modem and mobile satellite.

f) Display adapter: Low Voltage Signaling for PCI (LVDS), Transflective

g) CD-ROM speed: 40X, 50X plus DVD, CDRW

h) Optional accessory requirements: Wrist mounted keyboard, scanners, GPRS, chem-bio sensors, and many other optional accessories for mobile use.

3. Describe the user interface characteristics:

Broad range of user interface options including voice, digitization of touch, passive or active pens, head and wrist mount displays and multiple voice microphone A/V and computer control and data input capabilities including on screen keyboard.

4. If multiple users:

a) Identify the range of persons it can simultaneously support (min-max)?

The Xybernaut Mobile Solution can support 5 to 25 users per wireless access point.

b) Custom/proprietary hardware required? If so, identify:

c) No custom or proprietary hardware is required. Xybernaut is a COTS open architecture platform. Various "off-the-shelf" hardware accessories can be attached to the Xybernaut including scanners, printers, wireless keyboards, and various memory and wireless communication cards. Has Compact Flash, USB, PC Card, FireWire, Type II or III PCMCIA, Cell Phone Jack etc. interfaces, and integrated 16-Bit stereo Audio. There are various custom soft goods, holders, vests, pouches, wall/vehicle mounts, semi-rigid or rigid, custom colors/logos, and custom enclosures available

5. Describe any user HELP features:

All applications have User Help Guides as well as audio/video tutorials.

6. Data recording & storage features (e.g., Scenario events; student performance, student tracking):

The MA-V and Atigo T can support various data gathering, analysis, synthesis, modeling, simulation, administrative, evaluative, and transactional events. Data storage can include RFID, GPS, GPRD, Flash, multimedia and other types of information. They have ability to automatically switch to on-board storage capabilities and distribute stored data back to server upon reconnection if the wireless link is lost. MA-V has 256 MB SDRAM and 5 or 10 GB internal HDD, expandable to 40GB, and optional external drive. Also there is a 1GB removable HDD through the use of a 1 GB Compact Flash card. The Atigo-T has 256 MB of Flash Memory, and 512 MB optional.

D. Training characteristics

1. Describe any initial training provided? (Set-up, familiarize user with product):

Xybernaut supplies all equipment with a quick start document and users' manual. Xybernaut provides user and technical training prior to shipment per customer requirements.

2. Product Content

a) Training content description (briefly identify any relevant WMD-specific content):

There is no knowledge base contained in the Mobile Solution. Xybernaut equipment can be used in conjunction with other tools to identify chemical/biological agents with various sensors like the new 911 Bioterrorist Alert sensor being tested in Richmond.

b) Time required for a typical exercise or scenario (if applicable):

Not directly applicable. It varies depending on the involvement of different First Responder, community, and Government organizations, ranging from one day to one week.

c) Is product directly applicable to counter-terrorism training/exercises or are modifications required? If modifications are required briefly describe them.

The Xybernaut Mobile Solution is applicable to field-based exercises requiring mobile telemetry, communications and sensing. Depending upon the focus and objectives of the counter-terrorism training and exercise activity, various mobile/wearable accessories, software applications, storage, and network configurations, A/V systems and data sensors such as the Gun-Shot sensor could be incorporated into training or exercising.

d) If the product has been used for WMD-related counter-terrorism training, please describe the event(s) and organization(s) involved.

The product was used in a technology demonstration drill (Northern Shenandoah Valley ITS Public Safety Initiative, 12/18/03), involving a smallpox outbreak, to trial an interoperable emergency alert and health crisis informatics for testing of hospital survivability protocols. Use of voice recognition software to input and manipulate data was part of the demonstration.

3. Instructional Attributes (if applicable)

a) Does a curriculum already exist? If so, briefly describe its form and content?

Not applicable.

b) Student/participant/team feedback features (immediate and AAR); identify each (e.g., Text/graphic information displays, animation; audio; situation cues; immediate/delayed; etc.):
Dependent on training design and content provision. Training and exercise leaders can load various web scenarios, surveys, A/V capture, and groupware technologies into Xybernaut's mobile solution to perform a variety of student/participant training and exercise guidance on the front-end, monitoring of performance during the training/exercise event, and evaluation of the exercise/training event on the back-end.

5. Instructor/controller/evaluator tools (if applicable)

a) Scenario/exercise design & development (e.g., Instructor handbook; scenario conditions & events scripting; fast-time models; scenario library; MSEL support):

The mobile solution does not include design or development tools. Xybernaut can work with exercise/training leaders to provide an instructor/evaluator and facilitator tool-kit with Xybernaut mobile solutions to achieve specific training and exercise objectives.

b) Scenario/exercise conduct (e.g., Student-action/situation warning/cues; scenario/exercise conduct controls; real-time/fast-time/time-jump; data recording & real-time analysis & display; displays & controls to support immediate feedback to participants):

The Xybernaut mobile solution is applicable to activities where a mobile field component is part of the training or exercise scenario (e.g., data display, wireless communication, remote sensing, data recording etc.).

6. Customization

a) Can the product be customized? If so, how, and by whom? What is the process and how much time does it take to develop or modify a new exercise/scenario?

The product can be customized into many different configurations depending upon the customer's requirements to include training and exercise download, monitoring, interaction, data capture, synchronous and asynchronous communications, and evaluation requirements.

b) What is the process and how much time does it take to setup an exercise/scenario to run?

Depends upon the exercise/scenario requirements, location, local, state, and federal involvement, etc. A partner has set-up a wireless infrastructure for a local exercise with state and federal interfaces in less than a day, and Xybernaut has the ability to deliver resources quickly to a location if needed.

7. Analysis features (e.g., Post-exercise/scenario analysis tools; real-time analysis tools):

Third-party vendors provide analysis applications (e.g., 1553, Diagnostic Analysis Machine - DAQ), and Xybernaut and its partners' assist customers integrate these into a custom analyst's tool-kit for the mobile and wearable platforms.

E. Product Attributes and Ratings:

1. What is the product? (Descriptive Product Categories)

See Appendix A for classification descriptions.

	Electronic Simulation
	Non-Electronic Simulation
	Computer Based Training other than Simulation
	Game
	Student Learning Aid
	Instructor/Facilitator Aid
X	Support/Platform Technology* *(Computer and wireless networking HW w/ installed apps)*

* A product may simultaneously conform to both this category and one of the preceding categories.

2. Product Capabilities:

	Developer/Owner		**Product Re-Playability**
0	Government Owned	3	Multiple dynamic paths through the product and more than one out come possible
1	Commercially owned	3	Static configuration: fixed path, only one right way

			to use the product
	Media Scale		**AAR Capability**
2	Individual	2	Scenario replay
1	Group	1	Automated summary of data
1	Small multi-user team (up to 25 persons)	1	SME controls AAR
1	Large multi-user team (more than 25 persons)	2	Does not provide feedback or AAR *(depends on applications loaded)*
1	Multi- Agency Participation		
		3	**High Level Architecture Compliance**
	Applied Context		
2	Non-specific		**Interconnectivity**
1	Equipment	2	Standalone
		1	LAN
	Environment	1	WAN
2	Generic	1	Internet
2	Locale Specific		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

3. Training Attributes

	Application Environment:		**Content**
1	Training	2	Knowledge
1	Exercise	2	Applied
1	Operational	2	Hands-on
2	Analysis		
2	Entertainment		**Target Audience**
		1	First Responders
	Mode of Delivery:	1	Commanders
1	Self-paced	1	Local Officials
1	Instructor/Facilitator	1	State Officials
		1	Federal Officials
	Student Level – Relevant Domain		
2	Basic		**Potential Training Levels:**
1	Intermediate	0	Awareness
1	Advanced	1	Performance (operations)
		1	Technician (specialist)
	WMD Event Supported:	2	Planning & Mgmt. (incl. ICS)
1	Chemical	2	Multi-jurisdictional Integrated Systems
1	Biological		
1	Radiological		**Training Type Supported**
2	Nuclear	1	Equipment Training
2	Explosion	2	Awareness
		1	Part Task Training
	Functional Area Supported:	2	Pre-Training
1	EMS	1	Drills

1	EMA	2	TTX
1	Fire	1	FE
2	Govt. Administrator	1	FSE
1	Health Care	2	FSE Reinforcement
1	HazMat	1	Distributed Collaborative Exercise
1	Law Enforcement	2	National Training Exercise
2	Public Health		
1	Public Safety Communication		
1	Public Works		
1	Transportation		
1	Private Sector		
	Learning Supported:		
2	Initial Acquisition		
1	Improvement		
1	Maintenance/Refresher		

(0 = Not Currently Supported, 1 = Currently Supported, 2 = Possibly Supported, 3 = Not Applicable)

4. TLI Evaluation

Face Validity
High
Medium
Low
X N/A

Ease of Use
Easy
Relatively Easy
X Difficult
Requires trained support staff

Current Applicability to ODP
Very
X Somewhat
Limited

5. TLI Observations & Recommendations:

Selected General Observations: product allows for/can be used for:

2 Specific objectives, criteria, metrics/measure or level of preparedness
1 Audit and evaluate plans and procedures prior to an exercise/Plan development
2 Dissemination of best practices/expansion of learning benefits i.e. report generation
2 Tracking participant performance through multiple tries (automation)
1 Structured Feedback among players *(during collaboration they are aware of others' actions)*

Selected TTX Observations: product allows for/can be used for:

1 Decision-making
1 Tracking Interactions/info-sharing among players

Selected Functional Observations: product allows for/can be used for:

1 Simulation Support

Selected FSE Observations: product allows for/can be used for:

1 Remote Observation
1 Enhanced Communication T&E/does it practice/train/exercise communications?
1 Hospital T&E

Selected New Concepts for Improving T&E: product allows for/can be used for:

1 Distributed, collaborative, decision-making environment
2 Measure of learning/retention & transfer of learning (implies pre-test and post-test)

F. Cost

The following questions are used to collect MS&G product cost information allowing for database coding. The question order is intended to assist in cost classification.

1. Can the vendor provide a price for a given (or typical) product or system? (choose one)

i) Yes (*proceed to Q2*)
j) **No, Vendor must quote a system based on user requirements** (*end here*)

2. Does the cost apply to: *(choose one)*

k) Product
l) Service
m) Product & Service Bundle

3. Product (content) configuration, as priced, is: *(choose one)*

n) Standardized
o) Vendor Customized
p) Allows User Customization

4. What are the prices (in $USD) according to type: *(fill in all applicable)*

Abbreviations/Acronyms

AAR	After Action Review
CBT	Computer Based Training
COTS	Commercial Off The Shelf
EMS	Emergency Medical Services
EMA	Emergency Management Administration
EOC	Emergency Operations Center
FE	Functional Exercise
FSE	Full Scale Exercise
GOTS	Government Off The Shelf
ICS	Incident Command System
LAN	Local Area Network
MS&G	Models, Simulations & Games
MSEL	Master Scenario Event List
Q&A	Question & Answer
SME	Subject Matter Expert
TTX	Table Top Exercise
VTC	Video Teleconference
WMD	Weapons of Mass Destruction