WPL
WARFIGHTER
PROTECTION LAB

VIC

Virtual Incident Command

The VIC is an integration of GOTS and COTS hardware and software into a simulation-based immersive Incident Command training system.

Center for Domestic Preparedness

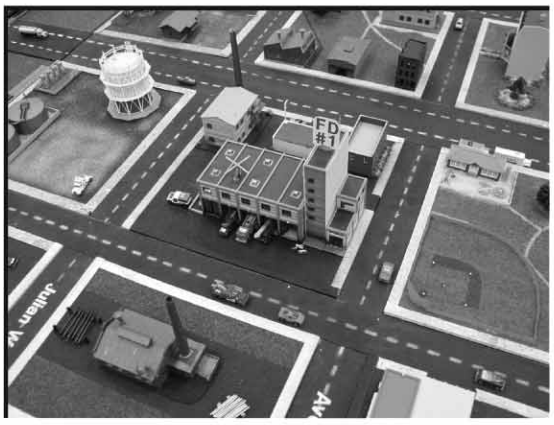
Homeland Security

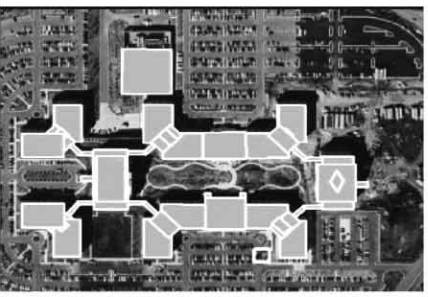
CDP Integrated Training Curriculum

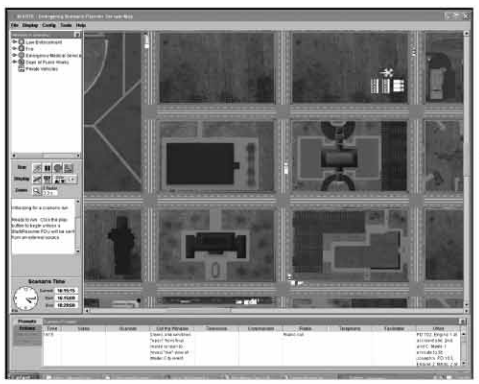
- Three-day course with exercise on third day
- Table-top "Model City"
- Paper and intercom injects
- Large group breaks into five teams of ten
- WMD event in Model City
- Trainees serve as Incident Command for the first three hours of event
- Exercise the Incident Management System
- AAR as large group between each hour of the exercise

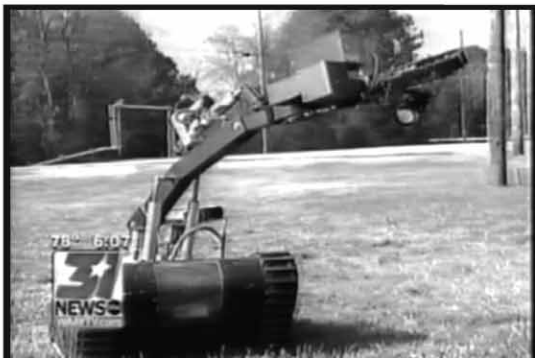
Terminal Learning Objectives

- Be empathic to other agencies
- Understand the resource requirements for a WMD event
- Appreciate the need to be proactive and diligent in pre-planning back home









Warfighter Protection Lab

Experience and Leverage

The Warfighter Protection Lab and its partners are fulfilling an urgent operational need to optimize protection and response technologies.

- Scenario Development
- Live-Virtual simulation
- Simulated CBRNE Attacks
- Simulated Sensor Detections
- Virtual Terrains
- Tactical Emergency Management Tools
- GIS-Based Situational Analysis
- Exercise Support
- Training Development
- Simulation Software Development
- Simulation Software Integration
- Infrastructure Management

The Opportunity

Applying technology in emergency response situations like we have accomplished with battlefield management.

Transitioning DoD technology investments into the civilian environment for minimal cost.

Using the same tools which helped us win the Cold War.

Homeland Security Context

TTP/SOP Formulations

- Communication issues
- MOAs/MOUs

Training

- Practical exercises
- Training needs determination
- Distance learning/refresher
- Training/Re-certification

Acquisition Cycle

- Equipment/Personnel needs determination
- Product/Technology evaluation

VIC

Virtual Incident Command

VIC Training System

Classroom Layout

Virtual Mobile Incident Command Unit

Where Trainees take on NIMS roles in a simulated event.

Facilitator Station

Where the Instructor monitors the scenario's progress and the group's response and has the equipment for discreet voice communication with the Dispatcher.

Dispatcher Station

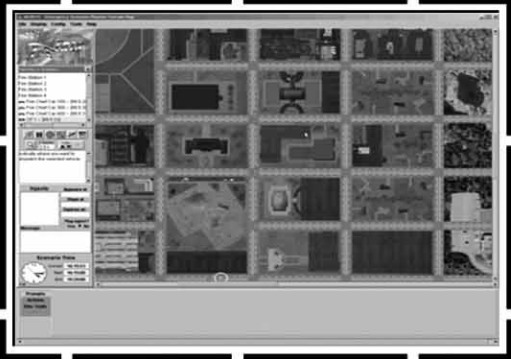
Where the VIC system's Operator interacts with the scenario.

Component Description

DIGuy Scenario

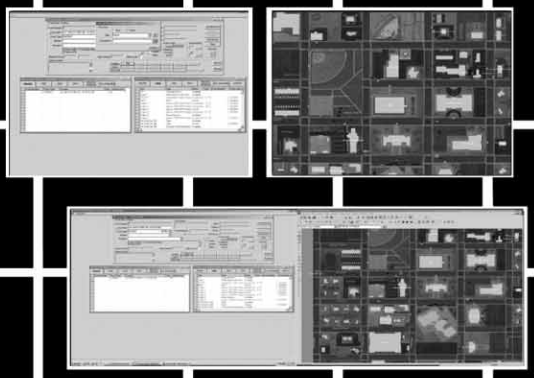
- Renders the 3-dimensional environment in Out-the-Window displays and Televisions
- Manages all people entities
- COTS software developed by Boston Dynamics, Inc.

ALERTS



- Manages scenario timeline
- Manages movement models for all vehicle entities
- Serves as Facilitator interface
- Offers inject prompts
- GOTS simulation engine developed for the WPL by SAIC

Commander



- Dispatching interface into simulation system
- Manages asset database
- Provides situational awareness to virtual EOC system
- GOTS software developed for the WPL by Intergraph

Component Description

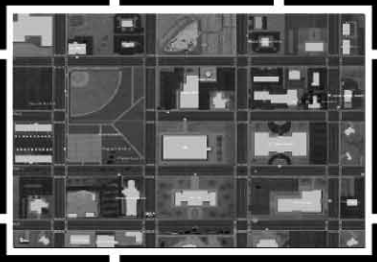
Continued

Terrain/Resource Databases

3D Model City rendered from a database of physical description data.

Resource and asset information supporting the Dispatching system.

Peripherals



- CCTV system allows for Dispatcher view into training area and video record of training session
- Digital audio system allows for pre-recorded radio and phone calls to be delivered into the training environment
- Two-way radio system allows for realistic communication method with Central Dispatch

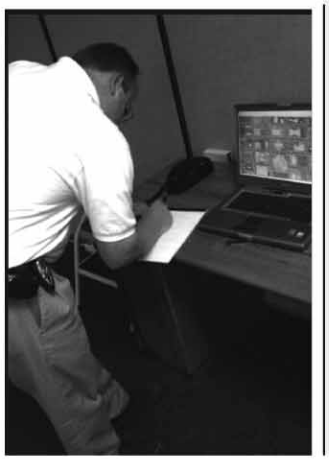
Instructional Functions

Automatic Events
The VIC system allows automatic scenario events to be delivered to the Out-the-Window displays, the Radios, the Telephone, or the Television.

Responder Requests
The VIC system allows responders to interface with a Central Dispatcher for any vehicles and requests they have. The Dispatcher serves as the system operator to dispatch vehicles and assets or record the requests in an event log. Depending on the location of the ICP, students may see vehicle or asset dispatches pass by the Out-the-Window displays in real time.

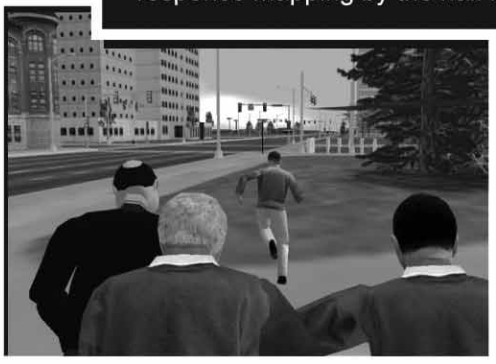
Facilitator View/Injects
The VIC system allows Facilitators to choose “injects” as appropriate for the trainees. Injects may be designated to appear in any of the system output modes: radio call, phone call, news break, Out-the-Window event. Injects are predefined to prompt, play and expire at logical scenario times.

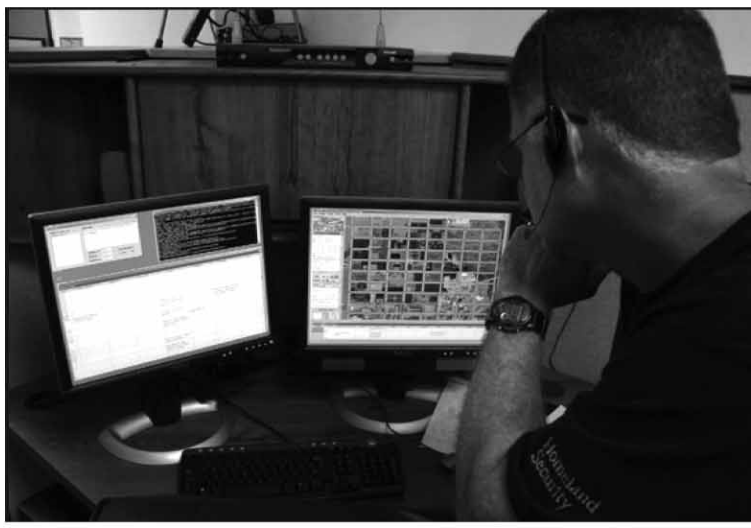
News Breaks/Press Statements
The VIC system allows for the responders to get scenario prompts from simulated news breaks. The system also allows for trainees to record press statements into the CCTV cameras that will be replayed as a news break on the television monitors.



Situational Awareness
The VIC system provides a situational awareness workstation in the overflow/EOC area. This workstation has a remote view of the Dispatcher’s event logs and map view.

AAR Reporting
The VIC system offers course administrators a web-enabled AAR system providing A/V clips of the training sessions, cost reporting based on dispatched assets and response mapping by the half hour.





CDP Application

The Center for Domestic Preparedness orients the Student Responders with an introductory video that not only introduces them to the virtual environment but quickly lays out the scenario and gets them to the point of assuming command as they enter the WMD Scenario Exercise.

Center for Domestic Preparedness
Homeland Security

New Users of the VIC system should understand the requirements for its application.

Demarcations

VIC System: Classroom Layout
Hardware/Software Components
Instructional Funtionality

CDP: WMD Scenario
Model City
Alerts Scenario Timeline
Commander Resource Database
Introductory Video

User Requirements

- Develop scenario timeline, scripts, injects
- Integrate plume or blast models, if appropriate
- Develop/Select terrain and resource databases
- Develop specialized victim behaviors, response vignettes, damage states, if necessary

The VIC system has tremendous potential. Consider these development opportunities.

Scenario Builder

CBRNE Event Selection

- Pre-developed, DHS-sanctioned training scenarios
- Integrate CBRNE plume and blast models
- Devise GUI and architecture to enable scenario building
- Develop associated victim behavior, response vignettes, damage states

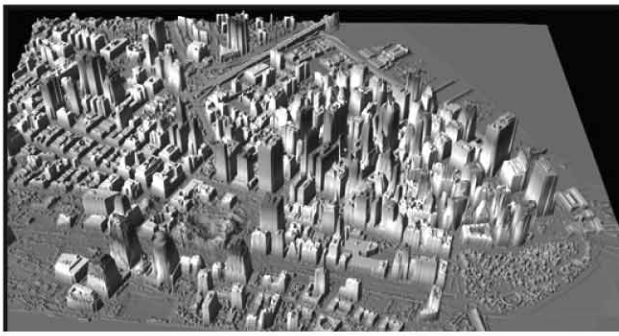
City Size Selection

- Develop terrain databases for small and large Model Cities
- Develop associated GIS and resource databases for small and large Model Cities
- Devise GUI and architecture to enable standard city selection
- Devise modular city block library for terrain flexibility
- Devise GUI and architecture to enable customization of city layouts
- Develop terrain interiors, as is prudent

The VIC system is easily configurable to operate from a truck or trailer to accommodate mobile training.

Geo-Specific Training

- Integrate geo-specific and resource information
- Integrate geo-specific maps
- Integrate geo-specific Lidar terrain imagery



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