

AlphaACT HAZMAT at Urban Shield 2010

INTRODUCTION

From October 15 through 18, 2010, the San Francisco Bay Area Urban Area Security Initiative (UASI) hosted a Department of Homeland Security (DHS)-sponsored regional emergency response and anti-terrorism exercise called Urban Shield 2010. In the largest tactical exercise in the United States, over 40 eight-person response teams competed in more than 30 exercises. The exercises were completed during a continuous 48-hour period at venues scattered across a 750 square mile area. The purpose: to test preparedness for response to disasters and emergencies throughout the San Francisco Bay region.

One of the exercises at Urban Shield exposed response teams to AlphaACT™ HAZMAT, a web-based solution developed by AlphaTRAC, Inc. that teaches first responders how to deal with releases of hazardous chemicals. Deploying AlphaACT HAZMAT at Urban Shield allowed AlphaTRAC to train and test the ability of first responders to make critical decisions during a realistic terrorist event. It also allowed AlphaTRAC to obtain first responder evaluations of AlphaACT HAZMAT as a training and response capability.

Urban Shield Overview

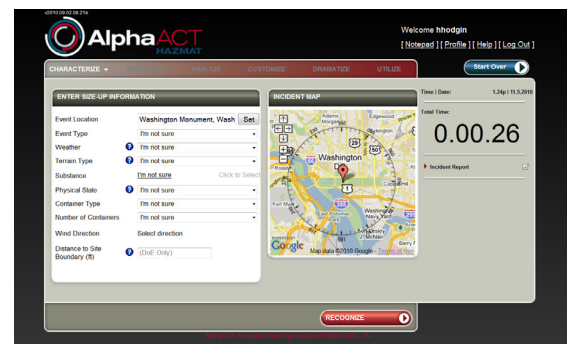
Urban Shield is designed to enable regional first responders to exercise their core competencies through scenario-based training

AlphaACT HAZMAT

AlphaACT HAZMAT teaches first responders how to deal with releases of hazardous chemicals through training scenarios based on the experiences of emergency response subject matter experts. While developed primarily for training, the system can also be used during real-time emergency response. The system uses observed characteristics of a release to help users identify similar cases from a knowledge base of information, which includes combinations of events, observable indicators, and recommendations for how to handle the event.

In training mode, AlphaACT HAZMAT operates in a game-like environment to teach rapid, effective decision-making. In response mode, it helps a responder make decisions quickly with limited information. The system is designed for first responders, Incident Commanders, and Emergency Operations Center decision makers.

A software application hosted on secure, central servers, the browser-based system combines knowledge databases, pattern recognition search functions, scenario modification tools, and an interface that operates on hardware platforms readily available to first responders.



THE AlphaACT HAZMAT EXERCISE

Differing from other exercises at Urban Shield, the AlphaACT HAZMAT exercise required teams to demonstrate thinking skills, rather than physical skills.



For more information

Contact our team to learn how AlphaACT HAZMAT can help your response community.

In the exercise's hypothetical scenario, an improvised chemical weapon exploded in Oakland, California, at an outdoor food festival attended by more than 30,000 visitors. The release injured or contaminated large numbers of victims and produced a plume that drifted away from the scene. Each team was told that it was the first organized response team to reach the scene. Other response organizations (e.g., fire, HAZMAT, incident command) had been requested but were unable to reach the scene during the exercise. The team was on its own!

The AlphaACT HAZMAT exercise ran 65 minutes and included a pre-exercise briefing, the exercise play, and a post-exercise evaluation. Exercise play lasted about 30 minutes and was organized around two indoor locations.

At the simulated Incident Command Post (ICP), teams gathered information, established team member roles, organized the ICP, established a reconnaissance team, made external notifications, requested support from outside agencies, and used AlphaACT HAZMAT for decision support. Limited technical assistance operating AlphaACT HAZMAT was provided, since teams received no training prior to the exercise other than a demonstration and overview of the system.



Figure 1 Using AlphaACT HAZMAT at the simulated Incident Command Post

At the simulated event scene, the reconnaissance team gathered event information, interviewed witnesses and victims, and reported back to the ICP by radio.

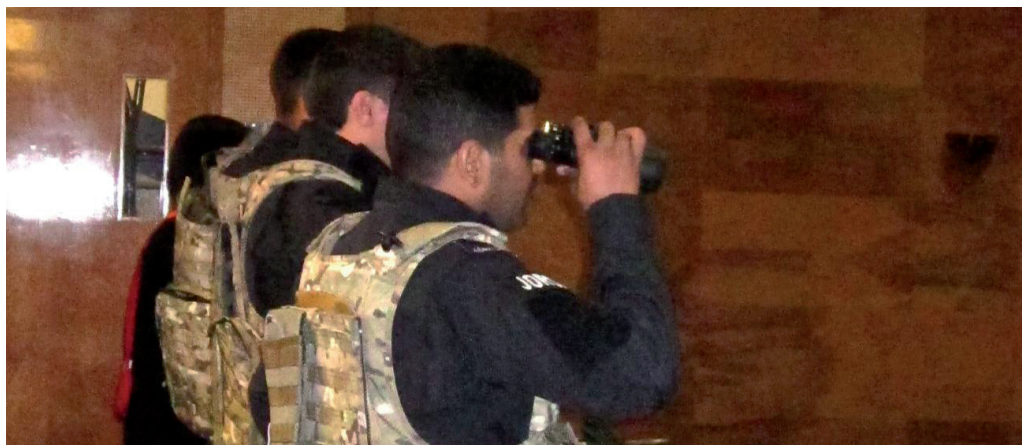


Figure 2 A reconnaissance team examines the scene from a safe distance

Cues needed to understand the event and make effective decisions were placed realistically throughout the event scene. Many of the cues were hidden, ambiguous, conflicting, or misleading, just as they would be in a real response situation.



Figure 3 The simulated event scene

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Limited information about the evolving scenario was provided to the teams through:

- An initial scenario briefing
- A staged event scene
- Radio communications with Dispatch
- Interactions with role players (both witnesses and victims)

Using AlphaACT HAZMAT, the team was asked to:

- Determine the nature of the event based on limited information
- Determine the protective equipment needed by responders
- Establish an appropriate Isolation Zone and Protective Action Zone
- Designate appropriate locations for the Incident Command Post (ICP) and traffic control points
- Determine protective actions to safeguard responders and the public

These decisions were outside the normal comfort zone for the participating special weapons and tactics (SWAT) teams, but it was a role the teams acknowledged they could be expected to fill.

EXERCISE RESULTS

Twenty-six local responder SWAT teams from the San Francisco Bay Area UASI completed the AlphaACT HAZMAT exercise within the target time of 30 minutes.

Three international teams — from the State of Israel, the Kingdom of Bahrain, and the Kingdom of Jordan — also participated in the AlphaACT HAZMAT exercise. Extensive controller support was required to bridge the significant language and cultural barriers that were encountered. Results from these exercises were not included in the AlphaACT HAZMAT evaluations.



EXERCISE EVALUATIONS

At the end of the exercise, each team was asked to evaluate AlphaACT HAZMAT from a first responder's perspective. The evaluation included 18 questions in categories such as value to first responders, ease of use, and the effectiveness of the decision process.

The evaluations were conducted in part to support a certification review of AlphaACT HAZMAT by DHS under its System Efficacy through Commercialization, Utilization, Relevance and Evaluation (SECURE) Program.

Representative responses included the following:

- ▶ Willingness to use AlphaACT HAZMAT: 92% of the teams willing or very willing
- ▶ Overall satisfaction with AlphaACT HAZMAT as a first responder tool: 92% satisfied or very satisfied (72% were very satisfied)
- ▶ Satisfaction with the AlphaACT decision process: 93% satisfied or very satisfied
- ▶ AlphaACT decision process is similar to that used by the response team: 88% said yes
- ▶ Satisfaction with the time it takes to operate AlphaACT HAZMAT: 92% satisfied or very satisfied
- ▶ Usefulness of AlphaACT HAZMAT as a training tool (a synthesis of multiple questions): 98% useful or very useful (83% said very useful)

When asked if they would recommend DHS provide AlphaACT HAZMAT to the field as a training and/or response tool, 96% of the teams indicated that they would recommend or strongly recommend this to DHS (69% would strongly recommend).

The Urban Shield site commander, who independently observed the exercises and privately debriefed competing teams, said this: "This training is an essential element for anyone who is involved in disaster preparedness, including law enforcement. I was able to witness the teams during this exercise and was amazed to see the problem solving, time management, and team building that occurred."

EXERCISE EVALUATIONS

AlphaTRAC would like to thank the following organizations for their superb support in making the exercise and evaluation a success:

- ▶ The Urban Shield site commanders and management team for the AlphaACT site
- ▶ The "Red Command" team The Urban Shield management and administrative staff
- ▶ The Alameda County Sheriff's Department
- ▶ The San Francisco Bay UASI
- ▶ The Lawrence Berkeley National Laboratory

We also express our appreciation to the Defense Advanced Research Projects Agency (DARPA) and the Department of Energy (DOE) for their support in the development of AlphaACT HAZMAT.

For more information

Contact our team to learn how AlphaACT HAZMAT can help your response community.

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