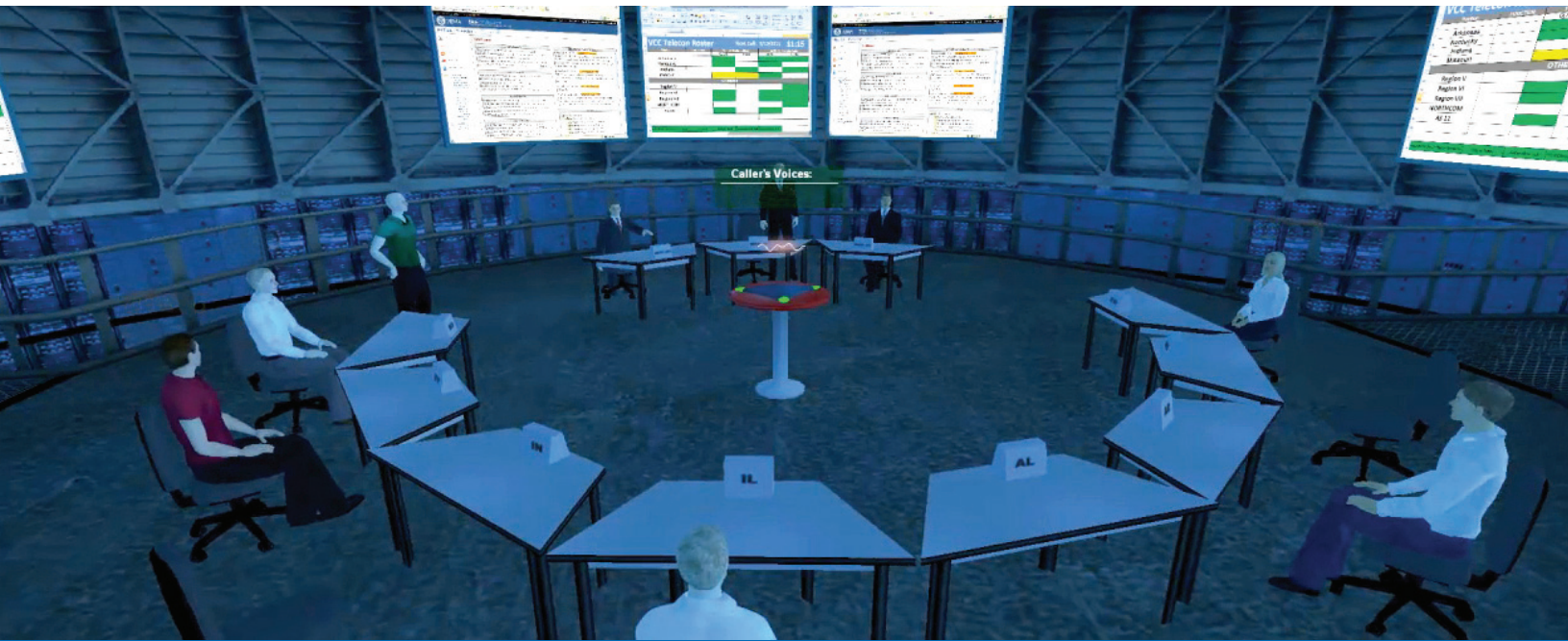


OLIVE

SAIC Supports National Level and Emergency Preparedness Exercises

The EMSe and OLIVE 3-D platforms connect participants across regions, states, government, and the world



“EMSe was customized up to the last minute, and worked flawlessly. To have that much new technology, updated with many additional changes at the zero hour, work without errors was miraculous and a testament to the SAIC teamwork and expertise.”

David Short, Program Manager, SAIC

With 10 years of experience behind it, SAIC supports local, state and the federal government in planning, managing, and executing one-day and multi-day large-scale emergency preparedness exercises and rehearsals to respond to catastrophic natural disasters and chemical, biological, radiological, nuclear, and explosive (CBRNE) attacks. SAIC’s team of multidisciplinary experts and technology platforms, like Emergency Management System enterprise (EMSe) and the On-Line Interactive Virtual Environment (OLIVE), can model and simulate every detail of damage from devastating earthquakes, acts of terrorism, and casualties to the effects of fires, floods, power outages, and more for thousands of participants from across the country and the world.

Overview

In 2011 SAIC was the prime contractor for one of the largest joint national preparedness events in U.S. history. The SAIC-led team integrated SAIC's EMSe tool, OLIVE, and other technology solutions to conduct and monitor the exercise and support thousands of participants, watching, communicating, and responding to the effects of a catastrophic earthquake. The exercise was designed to test the actions and decisions of officials, emergency responders, and other participants to support life-saving and life-sustaining activities in response to the widespread devastation within the first 72 hours after the massive quake. The exercise aimed to validate critical capabilities including:

- Communications
- Critical resource logistics and distribution
- Mass care (sheltering, feeding and related services)
- Medical surge
- Citizen evacuation and shelter-in-place
- Emergency public information and warning
- Emergency operations center (EOC) management
- Long term recovery

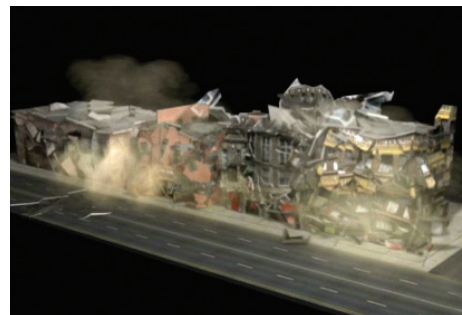
The Catastrophic Event

A simulated massive earthquake of magnitude 7.7 hit two fault lines in the U.S. and caused widespread death and injury and damaged major infrastructure in a number of contiguous states. The multi-day event simulated the impact of the earthquake and regional response and recovery activities involving thousands of players including:

- Federal government agencies
- U.S. military
- Local government agencies
- Volunteer organizations
- The private sector
- International community

The Approach

In the 18 months prior to the exercise, SAIC compiled a team of experts from inside and outside the company to provide exercise design consultation to the participating states, regions, and federal departments. The SAIC-led team planned for every possible outcome and detail in the exercise scenario from the earthquake to any and everything that it might trigger — fires, floods, power outages, loss of life, casualties, and more. The team developed and executed the exercise, with technology playing a critical role in this massive emergency preparedness event.



"It's a lot like being an event planner, pulling together thousands of details to make an exercise series happen smoothly and efficiently. The technologies leveraged were not specifically designed to integrate and the team had to ensure they were seamlessly linked and would have zero downtime during the multi-day exercise."

Bettina Stopford, Vice President, Program Manager, SAIC

Key Technologies: EMSe and OLIVE

The SAIC-led team seamlessly integrated and linked SAIC technology solutions along with others to conduct and monitor the exercise and support thousands of participants, watching and determining the effects of the natural disaster — from destroyed buildings to millions of people requiring food, shelter, and medical attention — and communicating to identify and decide upon solutions and action.

The technology cornerstone for the exercise was SAIC's EMSe tool, a customized online platform, used to conduct the exercise, monitor all aspects of the incident, and enable thousands of participants to be logged on at the same time and communicate with each other.

SAIC also integrated its OLIVE 3-D software platform to provide:

- A realistic virtual operation center (VOC) environment for collaboration with real-time exercise feeds for command and control, meetings, information-sharing, and decision-making pre-, during, and post-exercise
- A building damage visualization tool from a national laboratory model which processed analytical data on the state of building damage and evaluated a couple thousand buildings in several states
- Visualization of building and structure damage with photo-realistic textures in the earthquake-affected areas on multimedia screens within the VOC
- Virtual News Network (VNN) reporting 20 minutes every hour in the VOC and featuring live in-world anchors and video clips of geo-specific and geo-typical damage areas with dynamic effects such as smoke and fire.



The Results

This event was a test for one of the largest joint, national, preparedness exercises in the country's history, and assessed the ability of federal, state, regional, local and international governments, and nongovernmental and private sector partners to coordinate response to a catastrophic event.

The event also marked the first-ever immersive visualization of a national-level exercise. The OLIVE VOC allowed exercise directors in the states and regions to interact with leadership at the control center via avatars and also view scenario damage. The SAIC-led team created virtually everything to support the exercise, from the 24/7 VNN simulated news broadcasts covering emergency response and public updates, and a special emergency broadcast network to a simulated 'My Social Media' stream, similar to Twitter, which enabled participants to provide updates as if this were a real-life event.

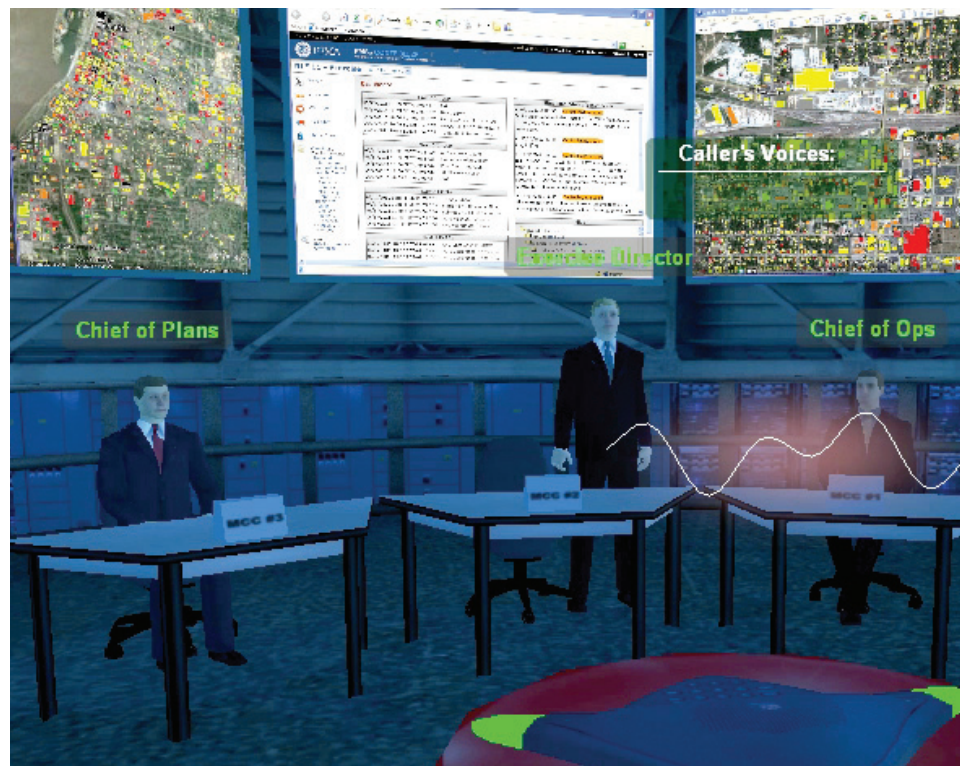
SAIC also developed ad-hoc, a virtual, unmanned aerial vehicle (V-UAV) ground station using OLIVE to support tactical, daylight TV and helicopter image sensors, and stream damage surveillance video images. The V-UAV downlink was distributed to ground station laptops, web service, iPhone 3G®, other technology platforms, and the virtual operation center in OLIVE to facilitate real-time monitoring of events after the earthquake.

In response to lessons learned, SAIC also developed an iPad® Ex manager application to provide future exercise directors with the capability to monitor in world activity remotely, including system health and status, avatar and UAV locations, and tracking.

SAIC and its team have been providing national exercise design for the federal government since 2000, helping communities, governments, and the nation be ready to respond to catastrophic events whenever and where they occur.

"The UAV was an innovation we put together on-the-fly to allow players and controllers to look at the damage in Memphis. We designed it so the participants' avatars could actually walk around in Memphis to survey the damage 'personally.' This considerably increased the effectiveness of the collaboration meetings."

David J. Rees, Special Projects Director, SAIC



About SAIC

SAIC is a FORTUNE 500® scientific, engineering, and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. The company's approximately 41,000 employees serve customers in the U.S. Department of Defense, the intelligence community, the U.S. Department of Homeland Security, other U.S. Government civil agencies and selected commercial markets. Headquartered in McLean, Va., SAIC had annual revenues of \$11.1 billion for its fiscal year ended January 31, 2011.

For More Information

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