

A CASE STUDY: NATIONAL SECURITY TECHNOLOGIES, LLC

SITUATIONAL AWARENESS AT THE NEVADA TEST SITE

Challenge:

The Nevada Test Site (NTS) command centers require a common operating environment that allows personnel to:

- make faster, better-informed decisions and maintain real-time control of NTS activities, including monitoring air and ground space and managing multiple projects simultaneously;
- unify multiple data feeds and geospatial information into one real-time common operating picture to track and analyze vehicles, personnel, aircraft, and facilities that support daily operations and contingencies at the site;
- disseminate real-time air and ground track information across a network of users through a server/client software system.

Solution:

National Security Technologies (NSTec) developed software dubbed C4VAS using AGI's 4DX technology. The software integrates multiple data feeds, displays geo-spatial information, and operates in an Intranet environment.

Results:

C4VAS tracks multiple lines of sometimes disparate data onto an easily accessible platform.



C4VAS gives a three-dimensional view of an F-35 Joint Strike Fighter aircraft flying over Las Vegas, NV.

The site's remote high-desert terrain, with its 700 miles of paved and unpaved roads, can be difficult to navigate and can experience lightning strikes and wildfires. Because it is situated near Nellis Air Force Base, more than 1,500 planes fly over it each month, making air-traffic monitoring essential to activities there.

For years the OCC had tracked aviation assets on one system using Federal Aviation Administration (FAA) radar feeds and monitored other data in separate two-dimensional displays. This approach, which used a modem dial-up, had limited capability to integrate multiple data feeds and display geospatial data. As the OCC was tasked with conducting and monitoring new and more diverse projects, its Deputy Department Manager James (JD) Daniels began looking for an upgrade to the system. He wanted to integrate all data feeds—such as radar and ground tracking—into a common operating picture. Doing so helps personnel easily see the interrelationships among aviation, ground, and weather tracks since all data are displayed on one monitor.

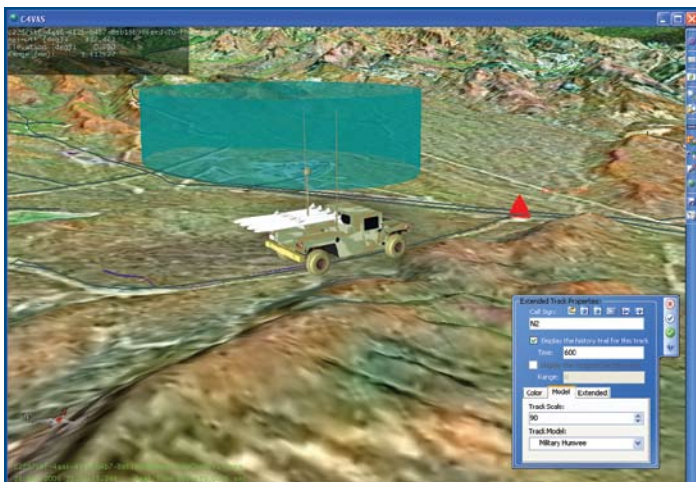
Daniels also wanted a system architecture that could easily:

- Disseminate information to a network of users on an existing Work Area Network (WAN)
- Distribute real-time video of 3-D visualizations across an Intranet
- Improve workflows for OCC operations personnel

Initially, the OCC team evaluated military, commercial, and government solutions and considered upgrading its existing system. Ultimately, OCC developed a real-time situational analysis tool called C4VAS (Command, Control, Coordination, Communication, Visualization, and Analysis) using 4DX Embedded Technology software available through Analytical Graphics, Inc. (AGI). AGI business partner Applied Defense Solutions (ADS) of Fulton, MD, assisted in the integration.

This application combines air and ground track data as well as geospatial information related to roads, borders, terrain, and imagery

The Operations Coordination Center (OCC) at the Nevada Test Site is responsible for the safety of 1,200 people who work on the vast outdoor laboratory about an hour's drive north of Las Vegas. Run by National Security Technologies (NSTec) for the U.S. Department of Energy's National Nuclear Security Administration, the 1,375-square-mile site supports national security missions, first-responder training, hazardous chemical-spill testing, environmental restoration, and waste management activities.



With more than 700 miles of desert roads, vehicle tracking is essential to daily activities at the Nevada Test Site. C4VAS displays real-time tracking and geospatial information in an integrated picture.

(Continued on back)

into an integrated 3-D picture. It will also allow the future integration of other data feeds such as wind, temperature, and lightning data.

The fused data in the 3-D display helps operations personnel and emergency coordinators make timelier, more accurate decisions; better manage aviation over flights; and more thoroughly understand test-site hazards such as air and ground space restrictions. For example, firefighters are outfitted with tracking devices that are monitored on the software. Consequently, operators can pinpoint firefighters' locations not only relative to a fire, but to any potentially hazardous areas they may encounter fighting the blaze.

C4VAS tracks 330 objects such as vehicles and personnel, and can be expanded if additional customers require the capability. The software displays information to clients on an Intranet using AGI's real time tracking technology as the server structure. The system also passed a cyber security accreditation evaluation to ensure it did not breach cyber security protocols.



C4VAS tracks 330 objects and can be expanded if additional customers require the capability.

DISCLAIMER OF ENDORSEMENT: Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or National Security Technologies, LLC. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or National Security Technologies, LLC and shall not be used for product endorsement purposes.

©2007 ANALYTICAL GRAPHICS, INC.

AGI provides software to national security and space professionals for integrated analyses of land, sea, air, and space assets. With more than 32,000 worldwide installations, key application areas include: battlespace management, geospatial intelligence, space systems, and national defense programs. For additional information about AGI or its commercially available software technologies, including its free flagship product STK, e-mail info@agi.com or explore www.agi.com. All copyrights, trademarks, and registered trademarks are the property of their respective owners.



GENERAL INFO & SALES
Phone: 1.800.220.4785*
1.610.981.8000
E-mail: info@agi.com

TECHNICAL SUPPORT
Phone: 1.888.785.9973*
1.610.981.8888
E-mail: support@agi.com
*Toll-free in U.S. & Canada

