

Tales from the Warfront

Warfighters Receive Onsite Geospatial Training

The sweltering 130-degree heat of the Afghan and Iraqi deserts is too harsh for typical business-casual attire. Preparing for a business trip to these locales requires T-shirts, lightweight cargo pants and work boots stuffed into an easily transportable duffle bag. Also on the to-do list: inoculations and a visit to the local shooting range.

This wasn't the usual business-trip preparation for BAE Systems employees. But then again, it wasn't the usual business trip.

BAE Systems product managers Eric Bruce and Robert Stout, along with application engineer Dennis Bryant, traveled from their offices to the Mideast war zones to train government field analysts on the company's SOCET GXP software. The trip was part of BAE Systems' formal partnership with the National Geospatial-Intelligence Agency (NGA) Deployable Systems (NDS) Program Office and upgrade team. In 2006, NDS purchased SOCET GXP to support its enhanced new software baseline in support of its customer, the Office of Global Support.

Geospatial Volunteers

SOCET GXP is a geospatial-intelligence tool that uses imagery from satellite and tactical means to identify ground features as well as for image exploitation. Analysts in the field can perform before-and-after site

comparisons and battle-damage assessment as well as detect potential improvised explosive devices and ambush sites. The data then can be used to coordinate troop maneuvers, helicopter landings and land-vehicle routes.

As part of an overall software upgrade, SOCET GXP was installed for the first time on the rugged portable computers used by analysts in Iraq and Afghanistan. During collective discussions between NGA and Dan London of BAE Systems, it was decided that in-country SOCET GXP training for the forward deployed would be extremely beneficial.

“NGA subject-matter experts volunteer to be placed in-theater to serve our country in a different capacity than they are currently serving as NGA employees,” says London. “We saw this as an opportunity to help, so we offered to send SOCET GXP product specialists.”

The people trained “were very experienced analysts who have used different tools in the past, so it was a matter of showing them how much faster and easier workflows are using SOCET GXP,” adds Bruce, who, with his counterparts, spent almost four weeks abroad. “Their input carried a lot of weight.”

Specialized Services

Benefits of the trip were twofold: Bruce and his colleagues were able to provide personalized training to forward-deployed personnel and, at the same time, see firsthand how the software is used. Input from the analysts will be used to hone the product in future releases.

“The goal of the trip was to provide operational capability to use the tool,” notes London. “At the same time, the information Eric, Rob and Dennis gathered in the field was invaluable, because seeing the product

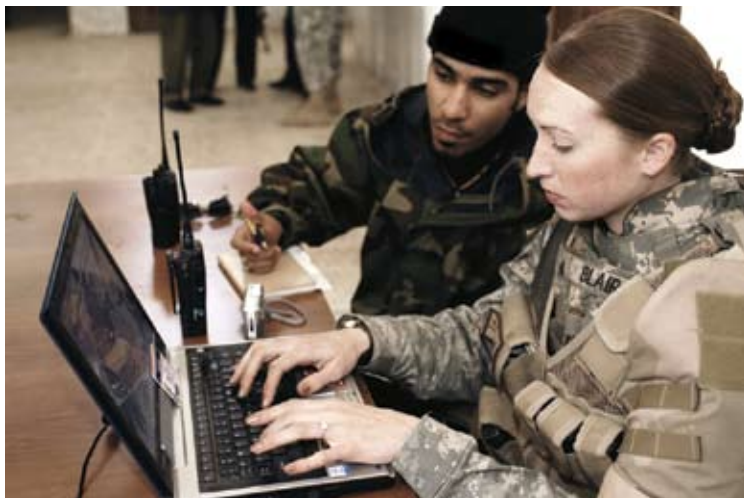


IMAGE COURTESY OF U.S. ARMY, PHOTO BY JEREMY L. WOOD

● **U.S. soldiers use a variety of technologies, including geospatial, during combat operations.**

in-theater, and the issues analysts face, helps us refine the product.”

For instance, analysts rely on interviews with members of the local population to determine points of interest that supplement data obtained through tactical and satellite means.

“Many of the locals can’t read maps, so they tell the analysts: ‘There is a mosque, next to a hill, with a river running through it,’” says Bruce.

With this information, image analysts go through miles of images to find the locations described.

SOCET GXP’s “search auto roam” capability enables users to comb large areas in a short timeframe. Analysts perform a roam function and highlight it with a “snail trail” to show the area they have already searched. With a push of a button, an item of interest can be saved for exploitation or follow-up analysis.

After the intelligence is gathered, geospatial analysts create maps and charts on a SOCET GXP template. The output is given to warfighters according to their specifications. Analysts also use SOCET GXP to study routes for known terrorist sites. The results are used on the frontline in the global war on terrorism.

“Change-detection tools within the software also are used to locate opium fields,” adds Stout. “Terrorists use opium to fund their war.”

Useful Experience

Because the training sites are in harm’s way, London and the SOCET GXP management team sought experts from BAE Systems with prior military experience. Bruce and Stout are active-duty reservists, and Bryant is a former U.S. Navy Intelligence petty officer. The trio traveled together to Qatar, where the desert heat hit them as soon as they stepped off the plane.



● **Eric Bruce and Rob Stout are in front of the airport terminal in Kabul, just after landing in Afghanistan.**

“There is no vegetation,” notes Bruce. “You are about 20 miles from the ocean, but you can’t tell.”

Once in Qatar, Bryant headed off to Iraq, while Bruce and Stout upgraded several sites in the area before heading northeast to Afghanistan. Bruce and Stout traveled with an NGA civilian and a logistics expert who facilitated their movement to training facilities such as bases, trailers and hangars.

Bryant traveled with a team from the Office of Global Support and a military-liaison lieutenant who coordinated the travel arrangements.

Due to the hectic schedule, the trainers found that they over-packed, even after leaving a couple of suitcases behind. Stout learned a useful lesson for future stops in the Middle East: “Rolling suitcases are not a good idea in the desert. They don’t roll on sand.”

Because darkness helps military transports move undetected, travel was limited to nighttime. Some travel was in armored buses and Humvees, but most of the transportation was by air. Sand blown by desert winds caused many flight delays and cancellations due to low visibility.

“The delays meant that once we were at the site, training started right away, and then we would move onto the next site,” says Bruce. “This two- to three-day process left little time to change clothes or even shower.”

Training Sessions

Before fingers hit the keyboard, Bruce and Stout would sit down with the analysts to understand their workflows, outputs and challenges. After they determined their requirements, they tailored the training—and amount of time spent with each analyst—to the analysts’ needs. Because each training session was unique, the trainers didn’t bother to bring any standard training exercises with them.



● Eric Bruce is aboard a C-17 heading back to Qatar from Bagram Air Base.

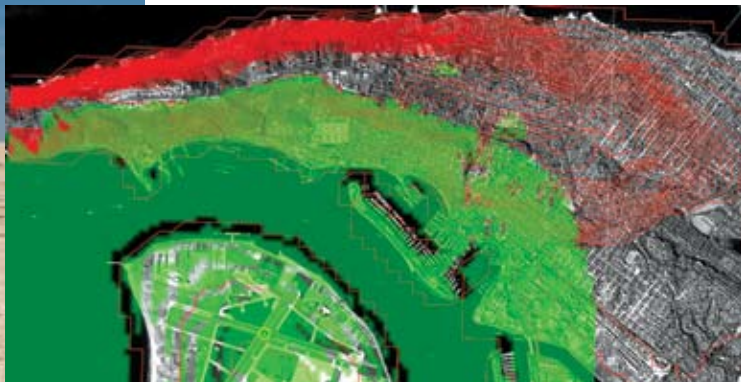
“Because each one of the sites was doing different things to support different missions, training varied at each location,” notes Stout. “We showed them the functions and techniques that were best suited for their specific operations.”

“The analysts were very attentive and interested in what we were talking about,” adds Bruce. “Because they’re in an operational environment, they know once we leave, they are going to have to put that knowledge to use. Therefore, they are grateful to receive hands-on training that allows them to integrate these new tools quickly.”

“Analysts generally run new software in parallel. They are not going to switch over fully until they are completely comfortable,” says Stout. “It’s like taking a new weapon into the field—they won’t use it until they are comfortable with it. However, there are some workflows they can only do in SOCET GXP, so they are going to start using it immediately.”

Having deemed the trip a success—with major benefits to the deployed analysts—the Iraq country lead for the NGA requested that BAE Systems return to the field when NDS 2.0 is deployed and new analysts are in-theater.

“This type of affirmation illustrates the value of the mission and underscores the benefits of one-on-one training in the field,” says London. “It’s rare to be invited to assist on the frontlines, and BAE Systems is honored and thankful to NGA’s Deployable Systems Program Office for including us on this critical deployment supporting the warfighter.”



● Using SOCET GXP’s Line of Sight tool, combined with a digital elevation model, analysts can set an observation point to study an image in fine detail.

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