Schultz, Beverly Susan

From: Lin, Wayne C. [linwc@ornl.gov]
Sent: Wednesday, September 28, 2011 1:44 PM
To: Schultz, Beverly Susan
Subject: FW: (9/30/08) DE-AI05-08OR23329

----- Forwarded Message

From: "Gorman, Bryan L." <gormanbl@ornl.gov>
Date: Mon, 25 Jan 2010 09:11:04 -0500
To: Wayne Lin <linwc@ornl.gov>
Subject: RE: (9/30/08) DE-AI05-08OR23329

Dr. Lin (Wayne),

We had the Army's ISEC at Fort Huachuca undertake a Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) certification task for the Bragg Experimental SensorNet Testbed (BEST) for us. This task has successfully accredited the Automated Vehicle Location System (AVLS), Mass Notification System (MNS), Honeywell Fire Alarm, and the Intelligent Video Surveillance System (IVS2) initiatives into the Computer Aided Dispatch (CAD) system of the BEST Integrated Incident Management Center (I2MC).

Here's a draft copy of the final report for BEST.

Regards,
Bryan

Final Report for the Bragg Experimental SensorNet Testbed (BEST)

Goal

In 2003, the Fort Bragg Public Safety Business Center (PSBC), which was later re-designated as the Directorate of Emergency Services (DES), established a Work for Others (WFO) agreement with the Oak Ridge National Laboratory (ORNL). Under the WFO agreement, the Bragg Experimental SensorNet Testbed (BEST) was established with the goal of supporting various advanced technology projects to improve and enhance public safety, emergency services, and force protection at Fort Bragg, North Carolina.

Objectives

The principal causative objectives of BEST were to consolidate the 9-1-1 and emergency response services into an Integrated Incident Management Center (I2MC) and to establish an "interoperability framework" based on SensorNet protocols to allow additional components to be added to the I2MC over time.

Technical Methods

To facilitate "best of breed" components for the I2MC, ORNL provided its SensorNet interoperability framework to the testbed. The SensorNet interoperability framework is based on three non-proprietary components: the physical interface between sensors and a network; the transport layer that permits the flow of data and control between the sensor and application(s) over the network; the interface between the sensor data and alerts to

applications. For the physical layer, SensorNet specifies IEEE 802.11 smart transducer interface. For the transport layer, SensorNet specifies an IP backbone. For an application interface, SensorNet specifies the Open Geospatial Consortium's Web Features Service (WFS) and Sensor Alert Service (SAS). (For a complete description of the SensorNet interoperability framework, see Gorman, et. al., "Advancing Sensor Web Interoperability," Sensors Magazine, April 2005.) Security requirements and data definitions are governed by DOD and DA information assurance guidelines, information technology standards, and best business practices.

BEST provided a testbed for deploying public safety and force protection prototypes and for also assessing their utility in an operational setting.

The BEST I2MC

The I2MC has been operational since January 2007. As requirements arose, numerous components were added to enhance and improve the functionality of the I2MC. In each case, the components were interfaced to the I2MC via the SensorNet interoperability framework. The major components of the I2MC are (also see the attached PDF file for further descriptions):

Consolidated 911 Facility: ORNL conducted a competitive procurement for a state of the art 9-1-1 center with a computer-aided dispatch capability to consolidate all emergency dispatches at Fort Bragg. The procurement included compliance to the SensorNet interoperability framework. Intergraph was awarded the procurement.

Life/Safety Network (LSNet): ORNL awarded a contract to 3eTI for the deployment of a secure wireless LAN compliant with the SensorNet interoperability framework at Fort Bragg. The LSNet IP backbone was used to transport NOAA sensor data and to demonstrate chemical and radiological sensor interfaces to the I2MC. It was also intended to be a transport backbone for CBRNE sensors that were to be provided by PM Guardian; however, that program's funding was cut and plans to deploy CBRNE sensors at Fort Bragg were cancelled.

Automated Personnel Locator (APL): ORNL developed the client software for a Sprint/Nextel handset to report its GPS location to the I2MC using the SensorNet interoperability framework.

Automated Visitor Registration System (AVRS): ORNL contracted with Lowry to develop an AVRS to check and record all personnel and visitors who enter Fort Bragg via any of its access control points (ACPs).

Mass Notification System (MNS): ORNL conducted a competitive procurement and awarded a contract to Federal Signal to deploy an MNS, comprised of 21 Giant Voice speaker pods and wireless intercoms, throughout Fort Bragg.

Intelligent Video Surveillance System (IVSS): ORNL conducted a competitive procurement and awarded a contract to Stanley Security Solutions to deploy an analytical video surveillance capability at Simmons Army Airfield.

I2MC Enhancement: ORNL conducted a competitive procurement and awarded a contract to Onyx Engineering to enhance the I2MC's display systems.

Collaborations

Over the six years of BEST, there have been a number of collaborations that ORNL has supported. As with the operational components of BEST, these collaborations interfaced to the I2MC over the SensorNet interoperability framework. These collaborations were with:

National Oceanic and Atmospheric Administration (NOAA): NOAA is a scientific agency within the United States Department of Commerce focused on the conditions of the oceans and the atmosphere. NOAA warns of dangerous weather, charts seas and skies, guides the use and protection of ocean and coastal resources, and conducts research to improve understanding and stewardship of the environment. NOAA deployed five of its meteorological sensor stations at Fort Bragg.

United Defense Industries (formerly a United States defense contractor, now part of BAE Systems Land and Armaments): BAE produces combat vehicles, artillery, naval guns, missile launchers and precision munitions. Under the auspices of ORNL's SensorNet program, United Defense provided a trial deployment of its Water Sentry at Fort Bragg. The Water Sentry sensor was deployed on the Little River to monitor the health of algae to detect the presence of contaminants.

Joint Project Manager Guardian: PM Guardian is a DOD program or record chartered to provide integrated non-conventional and conventional weapon defense capabilities for Installation Force Protection and support to civilian authorities. PM Guardian originally planned to deploy chemical and radiological sensors at Fort Bragg, and BEST was to network them to the I2MC. These plans were abandoned when the PM Guardian funding was withdrawn.

Defense Threat Reduction Agency (DTRA): DTRA is an agency within the DOD created "to safeguard America and its interests from weapons of mass destruction (chemical, biological, radiological, nuclear, and high explosives) by reducing the threat and providing quality tools and services." DTRA's main functions are threat reduction, threat control, combat support, and technology development. Through DTRA, BEST conducted a trial deployment General Dynamics' PROTECTOR/Deployable Aerosol Collection System (DACS). PROTECTOR/DACS is bio-collector/detector prototype under development for DTRA.

Technical Support Working Group (TSWG): TSWG is a United States Interagency program for research and development into counter-terrorism measures. Established in 1986, TSWG falls under the oversight of the Office of the Coordinator for Counterterrorism at the Department of State and is a sub-group of the Interagency Working Group on Counterterrorism. Through TSWG, DES received technical support for the trial deployment of Sandia National Laboratory's Virtual Presence Extended Defenses (VPED). VPED is a system of remote wireless seismic sensors for perimeter security.

Defense Information Systems Agency (DISA): DISA is a United States Department of Defense combat support agency with the goal of providing real-time information technology (IT) and communications support to the President, Vice President, Secretary of Defense, the military Services, and the Combatant Commands. DISA provided support for the Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) of BEST.

Milestones

The BEST I2MC became operational in January 2007.

DIACAP certification for the I2MC was signed on June 2, 2009.

Lessons Learned

1. The SensorNet interoperability framework was demonstrated to work in an operational context, and it successfully interfaced numerous BEST components (e.g., MNS, APL, AVRS, and IVSS). However, because the framework is not broadly supported by the DOD or the commercial sector at large, BEST continues to rely on technical support of the interoperability framework in order to provide a viable alternative to a commercial solution with proprietary interfaces to interconnect the components of BEST. Because the SensorNet interoperability framework has not been established as a DOD or DA standard for installations, and because it will not likely be preserved as the standard for interfacing to the I2MC, its potential to reduce proprietary interfaces and expensive systems engineering on a broad scale has not been achieved.

2. DIACAP certification is a long and deliberative effort that should have been a critical factor, if not the leading factor, in planning any new BEST component deployment. The lack

of a DIACAP certification delay bringing numerous components on line with the I2MC. An early and proactive commitment to fund the expeditious accreditation of each of the BEST components would have facilitated a complete operational capability much earlier in the project.

3. In general, the level of technical support for DIACAP certification of complex hardware and software systems and the skills for maintaining and supporting a commercial 9-1-1 facility require training, staffing, and systems that exceed the information technology support available at most installation DOIMs. Moreover, there are no specific technical directives or guidelines to address the specialized public safety IT requirements within the DOD. The lack of technical skills and the lack of directives and guidelines for public safety IT deployments are stumbling blocks for broadly adopted, broadly supported improvements to force protection and public safety at military installations.

Recommendations

1. ORNL recommends that DES continue to support, to the best of its ability and resources, the principle of an interoperability framework for I2MC components. If not as an active operational practice, as a design principle the framework promotes a path forward for other DOD installations, particularly if DES were to forge an alignment with PM Guardian or OSD's Integrated Unit, Base, and Installation Protection (IBUIP) program.

2. We recommend that the DOD consider the specification of interoperability guidelines for public safety and force protection systems at military installations. The SensorNet program prescribes certain elements of such a guideline, but other requirements should also be addressed. Civilian efforts to specify such frameworks (e.g., the National Emergency Number Association <<http://www.nena.org/>> 's [NENA] NG-911 effort and the Department of Transportation's Next Generation 9-1-1 project) are a source of possible collaboration, but these efforts are not currently aligned with DOD IT requirements.

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From: Lin, Wayne C.
Sent: Thursday, January 21, 2010 2:53 PM
To: Gorman, Bryan L.
Subject: (9/30/08) DE-AI05-08OR23329

Bryan,

On 10/24/07 I approved the subject interagency agreement, which provided \$50,000 for the "Support to Fort Bragg Experimental SensorNet Testbed for Security Assessment and Department of Defense Information Assurance Certification and Accreditation Process" project with U.S. Army Information Systems Engineering Command at Fort Huachuca, AZ. Could you please give me a brief (2 or 3 paragraph) update on progress?

Thanks.

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Wayne C. Lin

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