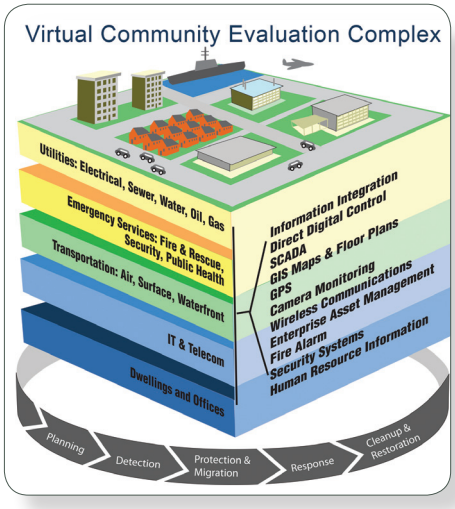

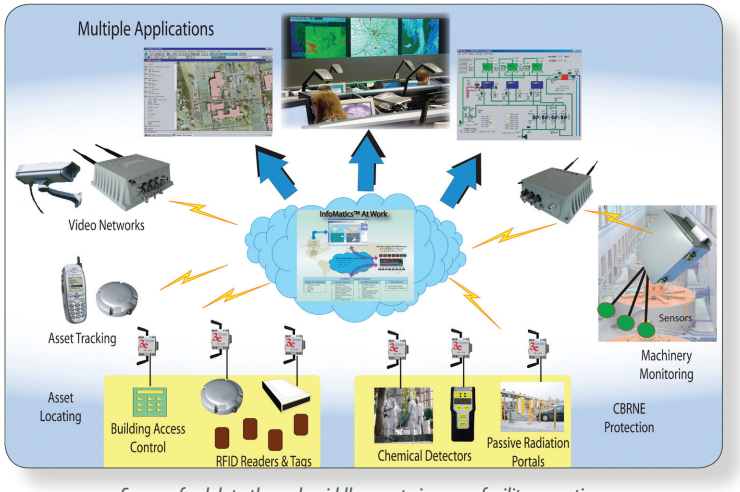

Sensors feed data through middleware to improve facility operations

Critical Area Protection
Military Installation Management Solutions

Naval District, Washington

PRODUCTS USED

- FIPS 140-2 Outdoor Wireless Interface (3e-523-3)
- FIPS 140-2 Outdoor Dual Radio Wireless MeshNode (3e-525A-3)
- FIPS 140-2 / 802.11i Video Server and Wireless Mesh Access Point / Bridge (3e-525V-3)
- Wireless Video and Sensor Surveillance System with Mesh (3e-538M)
- Wireless LAN-Enabled Data Acquisition System (3e-565)
- Sensor Display System (SDS) - ESRI GIS-Based Sensor Monitoring System
- Infomatics® Middleware

Challenge

The Naval District Washington (NDW) in Washington, D.C., is one of 3eTI's longest running customers for information technology (IT) solutions. NDW contacted 3eTI to help develop a solution to better secure their personnel, physical assets and confidential information. The objectives were to provide force protection, improve public safety, enhance critical infrastructure protection / management, and improve the efficiency of base operations. NDW wanted to install monitoring and controls on public works infrastructure and provide environmental support across the complex.

Solution

3eTI developed VCEC — a Virtual Community Evaluation Complex solution – that included core components of 3eTI secure applications software and middleware, along with a variety of fiber and wireless sensors and wireless sensor network devices. The solution included providing telematics — blending computers and wireless telecommunications technologies — to improve a host of business functions and government-related public services to support base operations. A range of secure wireless networking products were strategically positioned around the complex and integrated with 3eTI middleware, which was customized to meet NDW's various reporting needs.

The implemented wireless solution uses a network of sensors to provide information to a customized network with middleware that meets IEEE 1451 and OGC SWE standards. Sensors connected to the network report on asset tracking, asset location, and building access control; they also provide wireless video feeds. Chemical, Biological, Radiological / Nuclear, and Explosive (CBRNE) protection is provided via

sensors designed to detect hazardous materials; plus, the wireless network collects information from passive radiation portals.

Additionally, the VCEC solution provided for a Sensor Display System (SDS). Heating / ventilation / air conditioning (HVAC) and machinery monitoring is achieved via sensor data acquisition, allowing equipment problems to be detected in the earliest stages of failure. This network of sensors could be used to manage energy systems in buildings, enabling the control and monitoring of temperatures, HVAC conditions, and the status of equipment as well as the detection of hazardous or harmful substances.Improved public safety was accomplished by installing a wireless network on poles along the perimeter and throughout the complex. Fire department equipment and police cruisers were outfitted with GPS devices and wireless video servers to enable them to send voice, video, data and location information through the wireless network back to the emergency operations center (EOC). Equipment was also installed at each entry gate, enabling the EOC to see and hear what the guards were experiencing in real-time.

Benefits

The Naval District Washington and military installations everywhere can better protect critical infrastructure and benefit from VCEC in many ways. Installation of VCEC improves force protection and helps support anti-terrorism by securing critical voice, video and data communications and improving real-time situational awareness. It also aids in facilities management and asset tracking / monitoring to increase overall efficiency of the military operations by enhancing access to information and helping personnel to put the necessary alert and control systems in place.

The ability to manage energy benefits the District in several ways. First, the VCEC solution provides real-time information that can be used to help run the HVAC systems in the building efficiently and to provide maintenance at the earliest sign of a failure. Second, VCEC provides critical information that can be used to save lives. For example, in the event of anthrax detection (via CBRNE sensors), the air handlers in the building could be automatically shut down to prevent the spread of the substance. To repair the problem, air dampers could be opened and the building could be flushed without placing personnel in harm's way.

NDW put the 3eTI solution to the test in a simulated attack at the Dahlgren base. In the mock attack, the EOC received a phone call that people were taking sick and fainting. Then, the phone system was determined to be out of service, but the wireless network was there to support the operation. The wireless sensors detected a chemical in a building near the airstrip. The EOC was able to immediately contact and dispatch the vehicle closest to the scene. The fire department and rescue personnel were able to respond to the emergency quickly and efficiently. The building systems could be monitored, shut-down and then flushed to bring operations back to normal.

VCEC is a leading-edge, comprehensive security solution that brings horizontal integration across an entire military installation. These benefits are all achieved without a large disruption of operations or the need for construction associated with wired applications.

About 3eTI

3e Technologies International (3eTI), an Ultra Electronics company, is a leading provider of highly secure wireless networks that enable critical systems security, infrastructure security and industrial automation for the military, government, industrial and utility markets. Its product portfolio includes proven and robust secure wireless mesh networks, sensor networks, cyber security, and perimeter security solutions, deployed for a range of applications, including military base security, onboard military ship communications, rapidly deployable public safety communications, and advanced metering infrastructure for SmartGrid programs. 3eTI's platforms are approved for use by the most stringent and demanding customers: the U.S. military.

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