DEPARTMENT OF THE NAVY

NAVY SBIR/STTR SUCCESS STORY

LOW-COST WIRELESS SHIPBOARD LOCAL AREA NETWORK

The wireless solution by 3E Technologies International, Inc. (3eTI) is a cost-effective technology that increases network services and security for the Fleet.

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THE CHALLENGE

The Navy requires innovative technologies and processes to enable the increased shipboard use of wireless Local Area Networks (LANs) by reducing the costs for system acquisition and installation. Acquisition and installation costs of LANs are a challenge throughout the Fleet and therefore have been difficult to implement. Use of Open System Architectures standard interfaces is essential to enable increased shipboard exploitation of commercial systems over long ship lifecycles.

THE TECHNOLOGY

3eTI (parent company Ultra Electronics), developed a low-cost wireless LAN system to address the need for reducing wireless signal degradation associated costs to meet the modern Navy shipboard communication requirements. Using ultra-wide band (UWB) technology, the architecture supports both the coexistence and the compatibility of various network functions and services. This wireless technology and LAN infrastructure soon evolved into facility security implementation, paving the way for the VirtualFence effort and ability to monitor extensive areas of interest.

THE TRANSITION

3eTI successfully leveraged their SBIR work to win a cost-plus-fixed-fee Phase III contract from the Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division. The contract, worth a potential $76M, calls for the implementation of a facilities critical infrastructure control and monitoring system interface as part of the Navy's Virtual Perimeter Monitoring System (VPMS). 3eTI's VirtualFence is a cost-effective, robust surveillance system that utilizes secure wired and wireless technology and video analytics to provide security personnel the tools they need to monitor points of interest. This includes facility perimeters, entry control points, security zones, buildings, infrastructure and other assets. It is currently in use at over 20 US Naval Centers.

THE NAVAL BENEFIT

VirtualFence, which was a result of the company's Phase III work, provides layers of security at the perimeter and within a facility, thereby improving the ability to detect unauthorized individuals approaching and breaching the established physical or virtual security threshold. The technology automatically alerts and notifies essential personnel of a security event, thus reducing response times using intelligent video analytics. This allows for autonomous monitoring of critical areas for potential hazards or intrusions, as well as increases surveillance efficiency.

THE FUTURE

Wireless technology represents one of the fastest growing sectors of the information technology (IT) market. Wireless LANs are in use in a number of commercial applications including industrial plants, office buildings, universities and more. The upfront costs of wireless LAN installation remain an impediment to increased proliferation, however schemes that reduce these costs for shipboard use are easily transferable to land-based use. In addition, the ability to create a connective mesh network that resulted from the Phase III work is in high demand across many industries that wish to transmit data between facilities. Companies can save on manpower costs as well, since surveillance through the system is automated.