IP Connections

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WiMAX is a preferred solution for long-range network infrastructure in outdoor environments

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Using WiMAX Technology

Q: What is WiMAX technology and what are its benefits?

WiMAX, the Worldwide Interoperability for Microwave Access, is a telecommunications technology that provides wireless data in a variety of ways, from point-to-point links to full mobile cellular type access. This is a standards-based technology that enables the delivery of last mile wireless broadband access as an alternative to "wired" technologies such as cable and DSL. When installing any IP-based physical security edge device—camera, encoder, door access or sensor—using technologies such as WiMAX increases the network reach so that these edge devices can be installed in areas that were economically and technologically unavailable before.

Q: What are some of the most widely used applications of WiMAX technology?

The bandwidth and reach of WiMAX make it suitable for the following potential applications:

- Personal broadband services.
- Residential broadband "triple-play" services.
- Enterprise and broadband services (data & voice).
- Municipal/Government/Public Safety video surveillance applications.

Here's a good example of how WiMAX technology is used in a physical security application. A DVTel installation, Harland and Wolff Heavy Industries, operates one of the largest dry docks in the world and specializes in ship and off-shore unit design, construction, repair, conversion and decommissioning. When choosing their new surveillance system, one of the primary demands was that the image access had to be extended so that the staff on the network could view ongoing projects anywhere, at any time.

To harness the potential of IP technology and ensure that its site was adequately monitored, the Harland and Wolff system was designed to implement a new CCTV infrastructure and surveillance system for the site. The system enables staff to monitor the organization's 90 acres from anywhere on the network, at anytime. Using a combination of transmission methods including fiber, WiMAX and xDSL connections, areas under surveillance are the perimeter and the 39 cameras across two dry docks, as well as the main yard and internal and perimeter floodlighting towers. WiMAX technology fills in where the other transmission technologies cannot go.

DVTel partners with Alvarion's Open WiMAX solutions.

Q: What do integrators need to know in order to properly install WiMAX technology?

Successful WiMAX deployments require:

- **Product selection.** WiMAX devices are available from a growing number of equipment manufacturers offering different levels of quality. Selecting a product from vendors who have proven field experience and a large install base will ensure better results.

- **RF Planning.** Radio Frequency planning is required to achieve optimized coverage and capacity, which impact the performance, efficiency, and cost of WiMAX infrastructure.
- **Certification.** The WiMAX forum defines levels of certification according to the development of the standard. Selecting a product from a vendor who is a member of the WiMAX forum and is committed to this standard, will ensure long term vendor commitment and support for future products.
- **Installation.** WiMAX subscriber units are available in both indoor and outdoor versions from several manufacturers. Self-install indoor units are convenient, but radio losses mean that the subscriber must be significantly closer to the WiMAX base station than with professionally-installed external units. Outdoor units are roughly the size of a laptop PC, and their installation is comparable to a residential satellite dish.

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Q: What is the most common use for WiMAX technology and how do you decide when it applies best for a specific application?

WiMAX is the preferred solution when high capacity and long range network infrastructure are required in outdoor environments, in areas where a wireless network infrastructure is not already in place, and in situations where mobility is required. When a wired network exists, WiMAX can still bring value as a back-up network for critical applications or as a separate network infrastructure for highly secured public safety and Homeland Security (HLS) applications.

Q: How is WiMAX technology cost-effective for the client?

In the case of Harland and Wolf, by linking their existing and new cameras in areas that were difficult to access, the company saved the major expense of trenching through concrete to install fiber cables.

Given the limited wired infrastructure in many installations, the costs to install a WiMAX station in conjunction with an existing cellular tower or even as a solitary hub are likely to be highly favorable in comparison to developing a wired solution.

WiMAX is another example of how IP-based physical security solutions give you more choices and flexibility to create a solution to fit end-user needs.

DVTel offers end-to-end IP physical security solutions. As the pioneer and dominant worldwide market player in the creation, development, and delivery of Multi-source Intelligence Systems over IP networks, DVTel software-based solutions create superior value and a unique level of freedom so customers focus on what's important—their primary business goals.

Ed Thompson has over 25 years of Product Development/Management experience and holds 10 U.S. and International Product Design Patents in the field of physical security technologies. He is chiefly responsible for both the development and bringing to market of the many IP video software and hardware solutions in DVTel's portfolio.