INFLUENCER Q&A

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# Wireless Perimeter Access Control: An Introduction

In high-security facilities, it's not enough to detect threats once they've reached the target; intruders must be anticipated before they have the chance to pose a threat. Whether a critical infrastructure site, utility substation or government building, a perimeter access control system can proactively define a perimeter around sensitive areas so that possible intrusions can be dealt with before they ever reach the fence line.

In the words of Jess Cobb, Senior Product Manager, Hardware & Wireless Infrastructure at Inovonics, which provides the radio link for many of these perimeter security technologies, "our partners talk about having multi-layered security systems and protocols, and invariably those start at the perimeter. The farther out you can detect a threat, the more likely you are to mitigate it."

Jess Cobb

Perimeter access control can use a number of technologies, including photoelectric and motion detectors, mechanical devices like spring-loaded cables that open a contact when moved, or volumetric sensors buried at a fence line. They generally fall into one of four broad categories:

- **Barrier-mounted:** These are deployed on or in conjunction with a fence or other physical barrier.
- **Ground-based:** These are deployed below ground, and do not require a physical barrier.
- **Free-standing:** Deployed above ground, these do not need to be installed on or in conjunction with a physical barrier.
- **Rapidly deployable:** These are designed for temporary deployment, usually to protect a mobile asset, and can include any of the above applications.

The first three categories can be installed as either a wired or wireless system, while rapidly deployable systems can only be installed wirelessly. Though there are some cases where a wired system may be more suitable, wireless systems typically offer numerous advantages over hardwired systems, including:

- **Ease of installation and maintenance:** Wired systems can be more time-consuming and disruptive to install than wireless; for example, with a wireless system, there is no need for trenching. Likewise, maintenance of a wireless system usually only involves periodic battery changing.
- **Flexibility:** Wireless systems can be easily expanded or modified to meet the changing needs of a commercial facility. They can be installed indoors or out, where power is not readily available, and easily shifted or scaled to meet the changing needs of a business.
- **Reliability:** Wireless systems are less susceptible to damage from tampering or vandalism than wired systems. They adapt to the environment, resist corrosion, and are typically unaffected by adverse weather conditions.
- **Cost-effectiveness:** Wireless systems are more cost-effective than wired systems, especially for large campuses. Not only do they eliminate the expense and disruption of trenching, but fully supervised wireless systems will send alerts to provide troubleshooting information when maintenance is needed, cutting down on labor costs.

As Alexis Du, Marketing Director for OPTEX Inc., a world leading manufacturer of high-performance sensing technologies, puts it, "Wireless security solutions have become increasingly popular due to their numerous advantages, and the evolving needs of users. They offer flexibility, ease of installation, scalability, and remote management, making them a preferred choice for applications ranging from residential to commercial and industrial. While traditional wired solutions still have their place, the convenience, cost-effectiveness, and functional capabilities offered by wireless security solutions have made them an integral part of the current security landscape."

Alexis Du

OPTEX's iSeries battery-powered indoor and outdoor detection solutions, powered by Inovonics, are examples of motion and photoelectric detectors. They are free-standing and rapidly deployable solutions, with each iSeries detector including an Inovonics EN1941 wireless transmitter pre-installed. They feature wireless connectivity, battery-powered operation, indoor/outdoor detection capabilities, intrusion alerts, integration options, and customizable sensitivity. Designed to enhance security reliability while enabling remote monitoring, they simplify installation by eliminating the need for trenching or wiring.

Another example of a perimeter security solution can be found in the fence vibration sensors provided by Flair Electronics. These barrier-mounted sensors attach directly to a fence and detect attempts to climb over or cut through the chain link or wire mesh. They include an advanced signal processor built into the sensor to differentiate between non-threatening or random events and real attacks, as well as sensitivity settings which allow each sensor to be tuned to a specific fence section or intrusion type.

As with OPTEX's free-standing photoelectric detectors, fence-mounted sensors detect and locate intruders at a defined perimeter, the fence line, before they get inside a property. And as with OPTEX's iSeries, they use Inovonics transmitters to ensure alarms make it to the head end.

When asked about the advantages of a wireless solution, Morgan Morgan, President of Flair Electronics, says, "The cost and disruption of installation is substantially less. A wired solution would require trenching under the gate, while battery-operated wireless sensors can be clipped to the fence in minutes. Moreover, each sensor can become its own zone with a specific location associated with it, so that when an intrusion is detected, security personnel can identify where the intrusion is taking place. We also have several customers who manage mobile sites, and they can reuse the technology, moving the entire system from place to place. The setup time is so quick, and the products so durable and reliable, that they can be reused in multiple projects and applications."

Morgan Morgan

Because perimeter access control systems are typically deployed in high-security environments, the integrability of a wireless system is another benefit. As Alexis Du explains, "Integrability directly impacts the overall effectiveness of a security or monitoring system. The ability of a detector to seamlessly integrate with other components, systems, and platforms cannot be overstated. Integrability enables comprehensive security through layered defense, real-time response to alarms, reduced false alarms, centralized management, customization, efficient resource allocation, data insights for decision-making, future expansion readiness, and user convenience. This the key to a responsive, adaptable, and efficient security solution that can evolve to meet changing needs."

Whether using a free-standing or barrier-mounted solution, wireless perimeter solutions using Inovonics transmitters allow an unparalleled integrability, which is essential to a complete security picture. A good perimeter solution is capable of being effortlessly integrated with existing intrusion, video, or access systems, to allow for seamless protection. The application of technology provides situational awareness from the perimeter to restricted areas, so that threat assessments can be made as early as possible.

Whatever type of perimeter solution you choose, Inovonics wireless transmitters can provide this integrability, as well as the reliability, flexibility and scalability necessary for commercial environments. The panel-agnostic EchoStream network can connect to almost any security system, offers direct interfaces with most industry-leading control panels, and every device is fully supervised to ensure reliability. Using Inovonics sensors to monitor the perimeter of a property, a good system will identify potential threats early enough to give security teams the time to prepare a response. ■

*This article was submitted by Craig Dever, VP of Sales and Marketing for Inovonics. Visit www.inovonics.com to learn more.*