firetide®

Video Surveillance

Using Wireless Mesh Networks to Enhance Safety and Lower Surveillance Costs

The providers of public safety continually face the challenge of managing the need for increased security in public spaces in a time of shrinking budgets and manpower. One solution—if properly deployed and supported—is video surveillance.

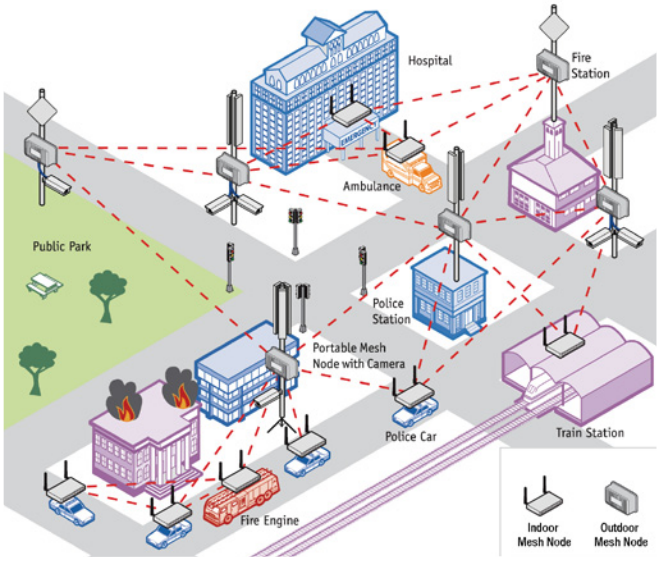
Video surveillance is the most effective force multiplier, providing 24/7 monitoring of both densely populated areas and remote, isolated locations. Surveillance video has proven to be a true crime deterrent, spotting criminal activity, identifying suspects, providing evidence, recording accidents, and offering increased security at major events.

Wireless technology has increased the flexibility and accessibility for both collection and distribution of video data, with cameras installed in more locations previously inaccessible to wired networking options.

Firetide private wireless broadband solutions are unrivalled at supporting inside and outside environments, handling mobile and fixed assets, and delivering live, high-bandwidth video feeds reliably, securely and with low latency. By providing wireless network connectivity, Firetide mesh networks enable cameras to be installed without pulling cable through walls, trenching for fiber between buildings, or drilling holes for cables in older and historic buildings that were not designed for computer networks.

"Results have been impressive, especially in the quality of video the Firetide network supports. We were also able to increase coverage and save on manpower."

Detective Chris Jensen
Drug Enforcement Bureau, Phoenix PD



The Firetide HotPort® wireless mesh network allows indoor, outdoor, and mobile video surveillance without costly backbone cabling between walls and buildings. The mesh network forms itself and is self-healing. If one link is blocked or if a node is removed, the mesh will reroute traffic over a different path.

By being able to deploy cameras quickly and cheaply in indoor and outdoor settings, security professionals can extend safety services with minimal additional staff or installation costs. Video surveillance for temporary venues such as concerts, festivals, and sporting events can be set up and removed quickly to service many events. This provides maximum utilization of the equipment with minimal installation effort and expense at each location.

CCTV, Digital Video, and Wireless Networks

In the past, security and surveillance cameras were connected to centralized monitoring and recording facilities with hard-wired coaxial cabling. Although analog closed circuit television (CCTV) cameras have provided affordable and reliable surveillance for many years, the combination of digital video and computer networks presented a number of major breakthroughs in surveillance technology. Digital cameras now allow more flexible and efficient transmission and storage of video images. And unlike analog images that lose quality when copied or transmitted over long distances, digital video quality is not degraded, making it even more effective for surveillance purposes. Newer digital cameras with Ethernet connections and support for Internet Protocol (IP) provide even more flexibility because they connect to standard computer networks as well as the Internet.

Many of these cameras even have integrated web servers making them accessible from any authorized web browser. Optional remote control features such as pan, tilt, and zoom (PTZ) add to the usefulness of these cameras, which in turn enhances security at surveillance sites. But too often these IP cameras are limited by how far their network cabling reaches. The ultimate in flexibility is to connect IP cameras to a wireless network so video surveillance can be installed virtually anywhere without cabling. And while some cameras have a built-in Wi-Fi interface allowing wireless connection to a nearby access point, Wi-Fi networks do not provide the bandwidth and prioritization required for high-speed video.

Reliable Connectivity for Video Streams

The Firetide mesh provides standard Ethernet ports on every wireless node through which any enterprise-grade IP camera can connect to the wireless mesh network. This capability means many more camera choices are available; it also allows the seamless extension of networks already in place. The Firetide mesh provides substantial bandwidth capable of supporting many simultaneous video streams. Traffic prioritization supports smooth, jitter-free images at high frame rates. An additional benefit: because the Firetide mesh is not an open network, it doesn't have any of the security concerns associated with Wi-Fi networks.

"Wireless connectivity provides tremendous installation freedom for anyone needing to deploy network cameras in remote or difficult locations or for temporary installations."

Fredrik Nilsson
General Manager, Axis Communications

HotPort mesh nodes provide the flexibility to support a variety of network topologies best suited to the needs of customer application traffic. These include point-to-point, point-to-multipoint, full and partial mesh, as well as loop protected architectures for reliability. In addition to IP cameras, the Ethernet ports of a HotPort mesh node enable many other network devices such as sensors, printers, and computers to be connected to the wireless mesh for operation virtually anywhere, indoors and outdoors, without the need for backbone wiring. The entire mesh network can be managed remotely using Firetide's HotView Pro™, mesh management software, allowing a single staff member to easily monitor and manage every node from one location.

HotPort mesh nodes are capable of providing wireless throughput bandwidths as high as 300 Mbps, depending on deployment design and environment. The product is designed to operate at 2.4 GHz, 4.9 GHz (U.S. public safety licensed band), or 5 GHz. Depending on the model, HotPort nodes are equipped with either single or dual radios, operating at 400 mW.

Firetide HotPort indoor mesh node

Firetide HotPort outdoor mesh node

Enhanced Safety For Less

The presence of more surveillance cameras, especially in remote areas, can be a powerful deterrent to theft and harmful activities. With a Firetide mesh network, conventional IP video cameras can be installed anywhere—indoors and outdoors—to provide 24x7 surveillance of an entire site. The video feeds from all cameras can then be monitored in real time and recorded for scrutiny later. Support for power over Ethernet (PoE) on Firetide outdoor mesh nodes eliminates the need to provide a power source for outdoor cameras. Video surveillance can save money while actually improving and increasing security. Video reduces the number of roaming security guards needed to cover large or remote areas while ensuring continuous rather than periodic checking of each location. And because the mesh is wireless, the cost of trenching and pulling cable for cameras can be eliminated or significantly reduced. New networks can be fully operational in a fraction of the time with fewer installers and much lower installation costs. Increasing the amount of video surveillance can also lower insurance premiums, reduce liability, and make facilities safer for everyone.

"The Firetide-based solution is extremely cost-effective. We deployed the entire network in four developments for a fraction of the cost of a conventional monitoring system."

Lewis Jordan
Executive Director, Rockford IL Housing Authority

Public Safety

With round-the-clock activity, facilities such as medical complexes, schools, college campuses, and hotels have a high volume of transient traffic. Firetide HotPort mesh nodes can cost-effectively extend surveillance capabilities for these facilities by providing network coverage of building perimeters, back sides of buildings, walkways between buildings, courtyards, information kiosks, and areas surrounding event venues. HotPort mesh nodes can easily transport video streams between floors of a building, making a Firetide mesh network an ideal infrastructure for monitoring floors in hospitals, financial services offices, government buildings, public office buildings, and shopping malls.

"The benefits of wireless quickly became obvious: the mesh enables quick setup of the network without a complete overhaul, while providing excellent bandwidth and security for video streams."

Tom Lawrence
Deputy Police Chief, Dallas PD

Transportation

Parking garages, bus stops, airports, and train stations as well as shipyards and freight areas are prime locations for expanded surveillance. Because they provide a wireless backbone, HotPort mesh nodes now enable camera installation anywhere, indoors or outdoors, on light poles, antennas, ticket booths, and billboards to increase network reach and monitoring effectiveness.

Facility Monitoring

A Firetide instant network enables security cameras to be placed wherever you need to monitor buildings and physical assets, such as in data centers, warehouses, shipyards, freight yards, storage centers, and shopping centers.

Recreation Areas

Firetide HotPort mesh nodes greatly simplify security network deployment for indoor and outdoor public facilities, enabling full surveillance for event venues, playgrounds, beaches, parks, swimming pools, sports complexes, walkways, and amusement parks. And because Firetide HotPort mesh nodes are portable and set up instantly, they are ideal for creating temporary security networks for concerts, festivals, fairs, and sporting events.

Moving Vehicles

Monitoring vehicles and their occupants is becoming increasingly important. Unlike traditional fixed wireless infrastructures, a Firetide HotPort mesh node can remain connected to the network even while it is moving. This makes it now possible for cameras installed in vehicles such as armored trucks, courier and delivery vehicles, taxis, buses, subways and trains to provide live feeds to the network.

About Firetide

Firetide, headquartered in Silicon Valley, has thousands of customers in more than 40 countries around the globe, including Seoul Metropolitan Rapid Transit and the world's longest mesh network at the Thailand Royal Irrigation Department. Firetide solutions are installed in more than 1,000 U.S. cities, including NYC, Atlanta, Chicago, and Houston.

For more information, visit www.firetide.com or follow Firetide on Twitter at @firetide.

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Reliable connectivity anywhere™

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