

Solutions Guide

Updated

 Allied Telesis™

IP Security and Surveillance

Allied Telesis Enhanced IP Camera Video Surveillance Solutions



NETWORK SMARTER

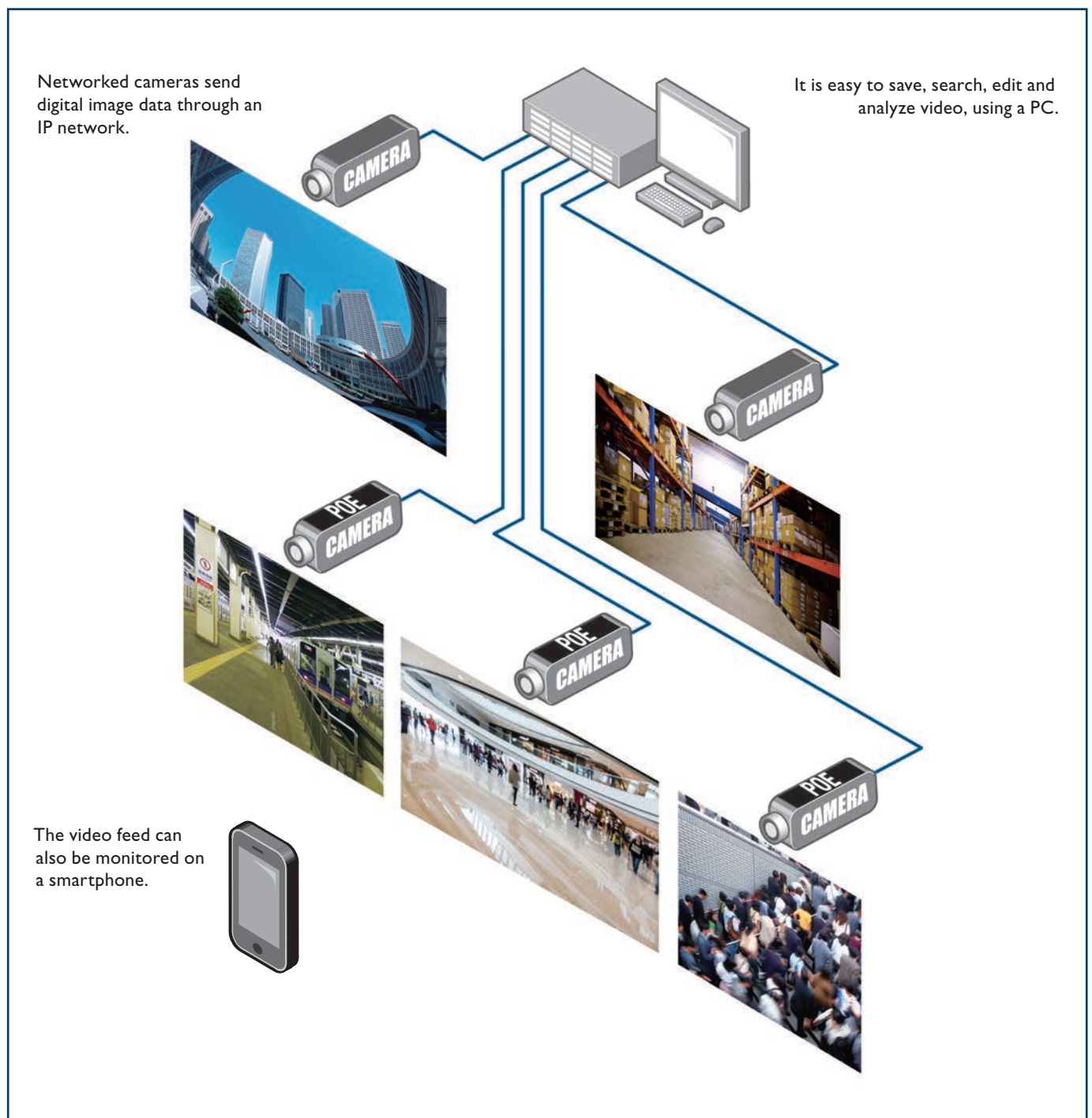
IP Video Surveillance

Introduction

CCTV technology has evolved exponentially—from simple video footage monitoring, to today's intelligent systems that are capable of identifying abnormal events or behavior.

As intelligence increases in CCTV systems, so do technology applications. Surveillance technology can now be used to observe consumer behavior, to help organizations increase their revenue and profitability, and to monitor retail environments to reduce shrinkage.

This document explains some of the benefits of intelligence in IP surveillance systems, and the advantages of working with Allied Telesis IP video surveillance solutions.



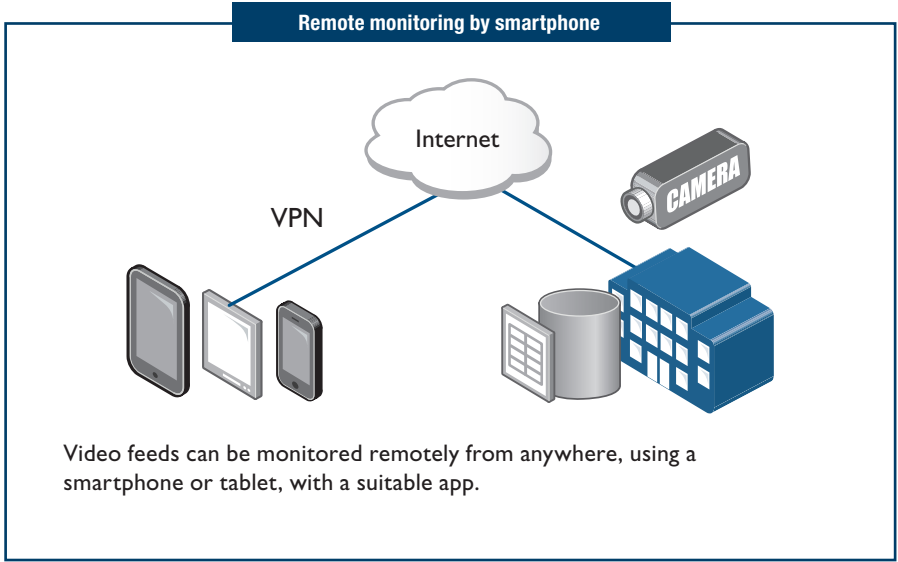


The Major Advantages of Moving to an IP Surveillance System

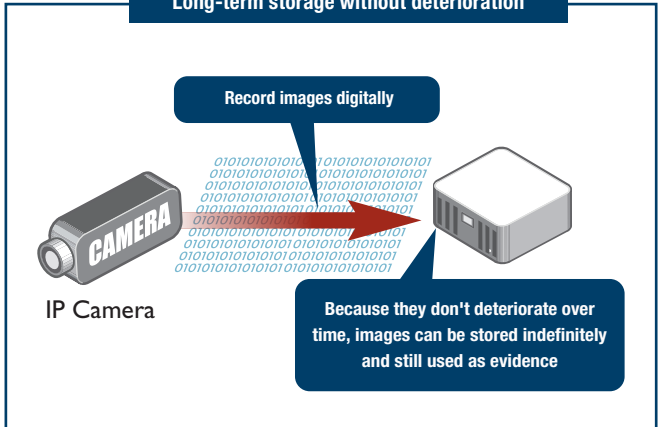
High-definition images

High-definition digital images are sharper and clearer than the lower resolution images typically produced by analog surveillance cameras.

Digital video can be stored on a variety of media—PC hard drives, Network-Attached Storage (NAS) systems, and more. Digital images do not degrade, regardless of how long they are stored. Furthermore, they can be searched quickly, even if large volumes of data have been stored.



Long-term storage without deterioration



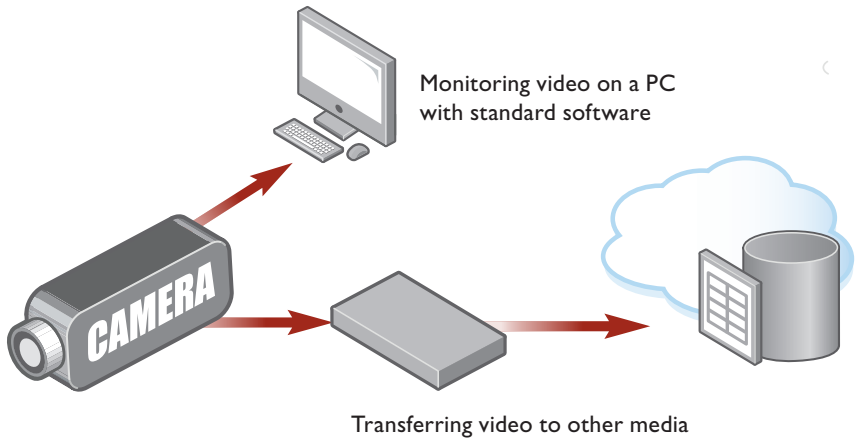
Improved search capabilities



Simpler operation

Depending on the system, it is possible to monitor the digital video feed with standard PC software.

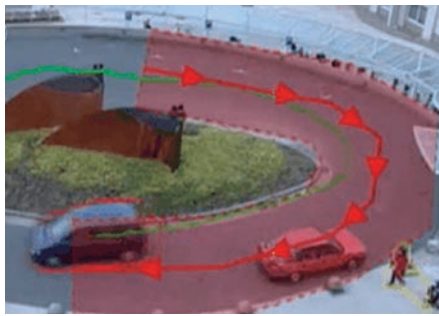
The images are stored as MPEG or H.264, so selected video segments can be uploaded to cloud-based storage, to be displayed or analyzed from anywhere.



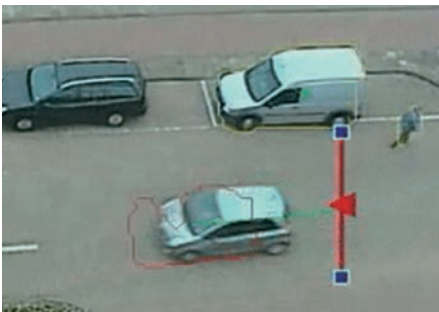
Detecting unexpected objects



Path tracking



Line crossing



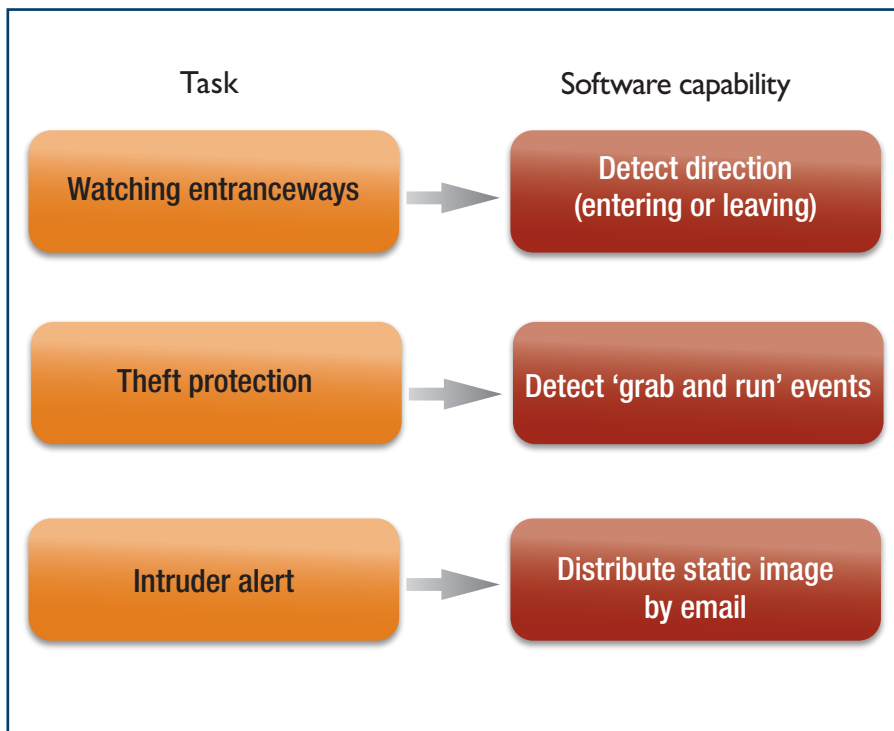
Unattended packages



Video analytics

Video surveillance analytics can assess security-related events using data about foot traffic, face recognition and reconstruction of events from several camera sources.

The Allied Telesis IP Surveillance Solution effectively achieves these benefits and provides secure, remote monitoring for further security assurance. Many everyday monitoring tasks can be automated, with a low rate of errors.



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Simple installation and cabling

By using Allied Telesis Power over Ethernet (PoE) switches, power can be provided to cameras over the same Ethernet cable as data, removing the need for separate power cables. The camera needs just a single UTP Ethernet cable run to it from its local switch. This simplifies the installation process.

As a result, even after the initial installation of the system is complete, any subsequent alteration or expansion of the surveillance network is also simplified.

Flexible deployment

Allied Telesis Industrial switches operate in a wide temperature range, so they are perfectly suited to outdoor video surveillance applications. All models support the 30 watts of PoE+, and some can provide 60 watts of power to end devices. This enables the latest outdoor Pan Tilt Zoom (PTZ) cameras with heaters/blowers to be connected and powered over a single Ethernet cable.

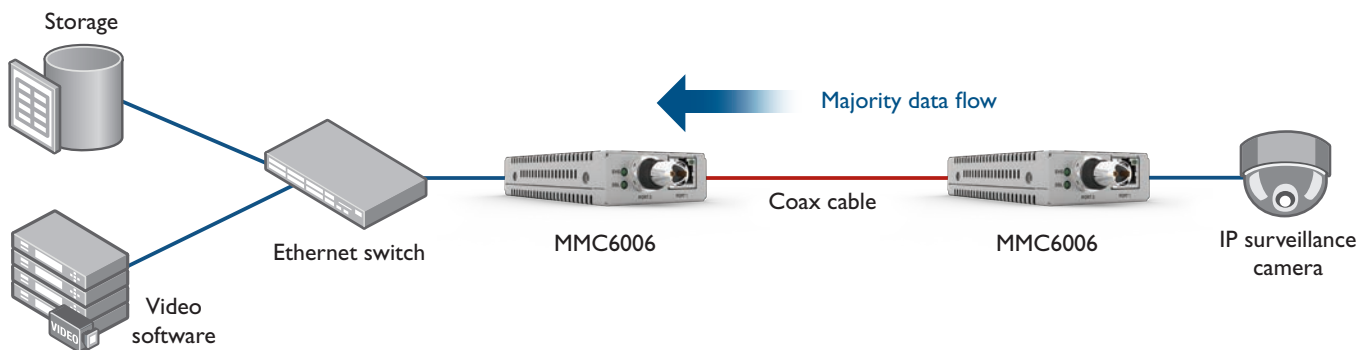
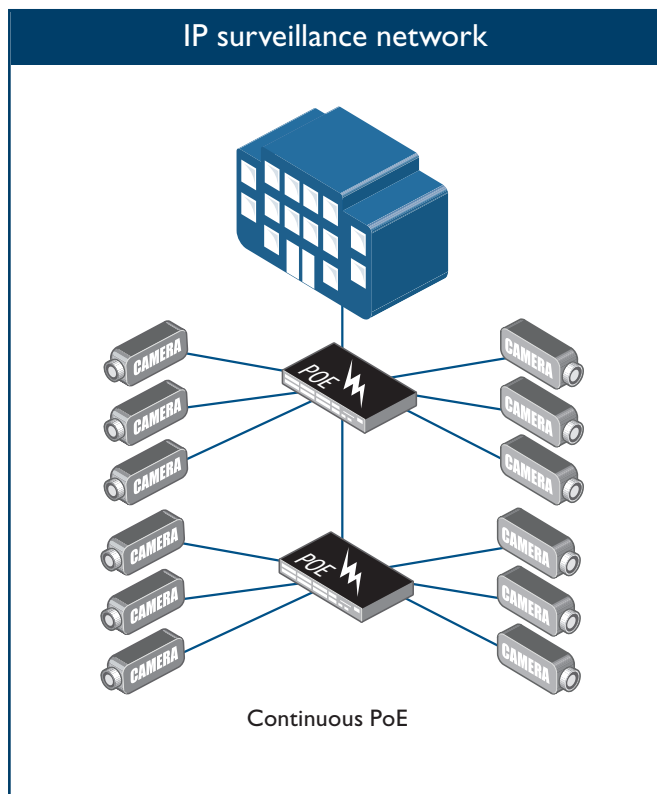
Continuous camera operation

Allied Telesis innovative Continuous PoE (CPoE) keeps cameras recording. CPoE is a unique feature that guarantees uninterrupted power delivery to cameras and other sensors, even when the switch is rebooted. CPoE lets switches perform actions such as software upgrades without forcing cameras to power cycle. Cameras that support local storage resync to the network when connectivity is back.

Utilize existing network infrastructure

For new installations, existing cabling can be incorporated to make network upgrades more cost effective. For example, existing coax cable can be reused to transport modern digital data.

To reuse coax cable, two MMC6006 Ethernet Extenders are used. The extenders are connected at either end of the cable, with one unit configured as a local device, and the other as a remote device. This enables surveillance cameras in remote locations, which may be hard to reach with new cabling, to connect over existing coax to the IP Ethernet network.



Easy distribution and system scalability

Video feeds from IP cameras can be monitored from remote sites. Additionally, the feeds can be transmitted across the Internet to locations outside the business. The feeds can also be viewed upon multiple displays or devices simultaneously.

Through integration with the existing Ethernet/IP network, the operation of the surveillance network can be incorporated in an organization's IT environment. IP networks are easily scaled to cope with the addition of new cameras. The organization can take advantage of the benefits that come from multiple applications (such as CCTV) being converged onto a single, unified network.

Deliver video to multiple receivers simultaneously

IP data streams can deliver video to multiple devices at the same time. This enables redundant storage of video. There is no limit to the number and locations of recording and monitoring devices.

Multicast communication enables efficient image distribution to multiple devices.

Secure Connectivity

Securing the network is an important part of modern data solutions, to prevent access from unwanted users and those with malicious intent. IP surveillance networks can use mechanisms such as 802.1x, which ensures video cameras are authenticated on the network before they can send any data, and removes the possibility of replacing a camera with a laptop to gain unauthorized access.

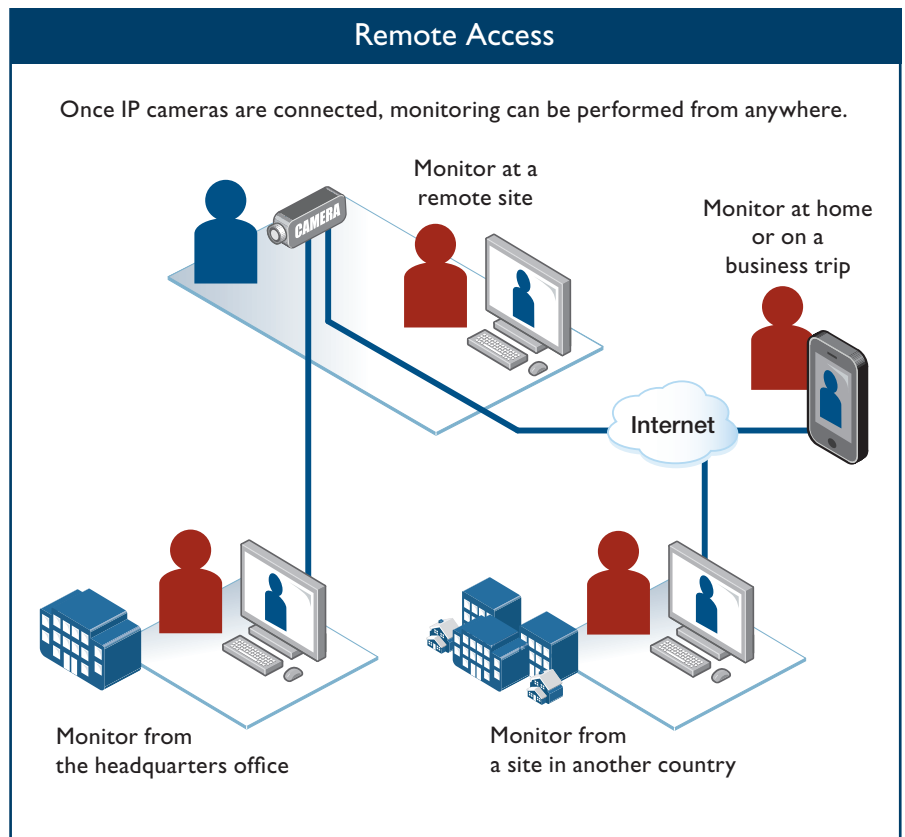
Allied Telesis Active Fiber Monitoring prevents eavesdropping on the fiber backbone links of an IP surveillance network, by monitoring received optical power. If an intrusion is detected, the link can be automatically shut down, and an operator alert sent, to ensure that video and other network data is safe from snooping.

Centralize management

Managing IP networks can be expensive and complex, especially in the case of large distributed networks which are often required for IP surveillance solutions. Allied Telesis has powerful automation, visibility and monitoring tools, to reduce the time and cost of managing large distributed IP video surveillance networks.

Allied Telesis Autonomous Management Framework™(AMF) automates and simplifies network administration. AMF enables centralized management of many or all devices at once, automated back-up, and zero-touch expansion and recovery to support plug-and-play networking.

Vista Manager EX provides a single-pane-of-glass graphical interface for AMF networks, for a complete overview, actionable reporting, and intuitive access to detailed information.



ACTIVE
Fiber Monitoring™

AMF™

VISTA MANAGER™ EX

The Scope of IP Video Surveillance

IP cameras are being used in more locations and for a broader range of applications

IP cameras continue to replace analog cameras, and are being deployed into new places for new uses. Powerful, specialized software applications are enabling IP cameras to improve security, and perform continuous monitoring with automated efficiency.

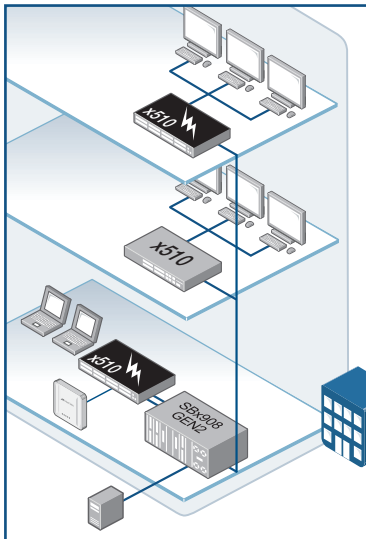
In addition, value is being added through marketing and increased customer service. The ways that people can interact with the surveillance system are diversifying, with the ability to connect via web portals and mobile devices.

Office building

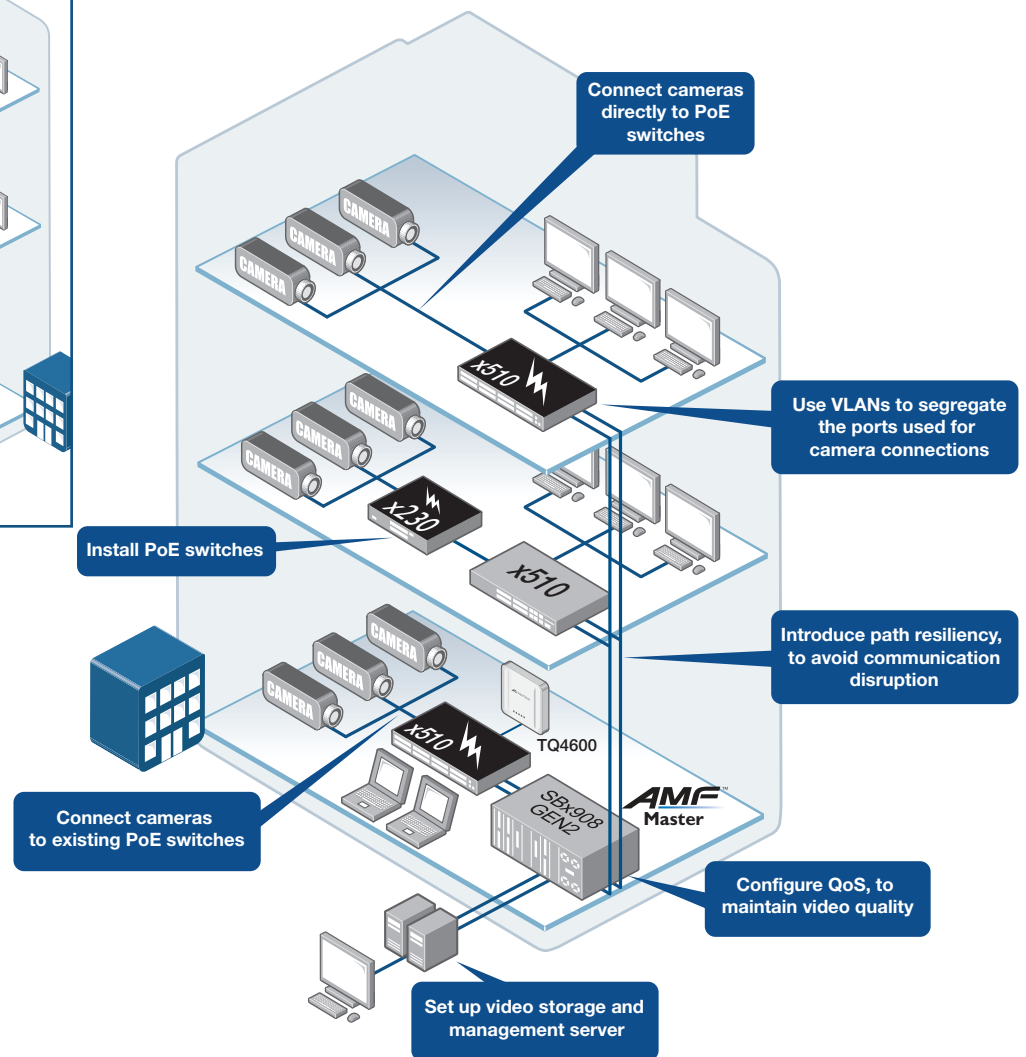
One aspect of the broadening use of IP cameras is the deployment for building management purposes. This application poses some challenges in terms of integration with existing networks, and cost-effective network construction.

The following diagrams illustrate best practices to follow when integrating video surveillance into an existing network. Taking advantage of IP cameras and following these integration practices enables a surveillance system to be added to an office building quickly and efficiently.

IT network before camera installation



Converged IT and surveillance network after camera installation

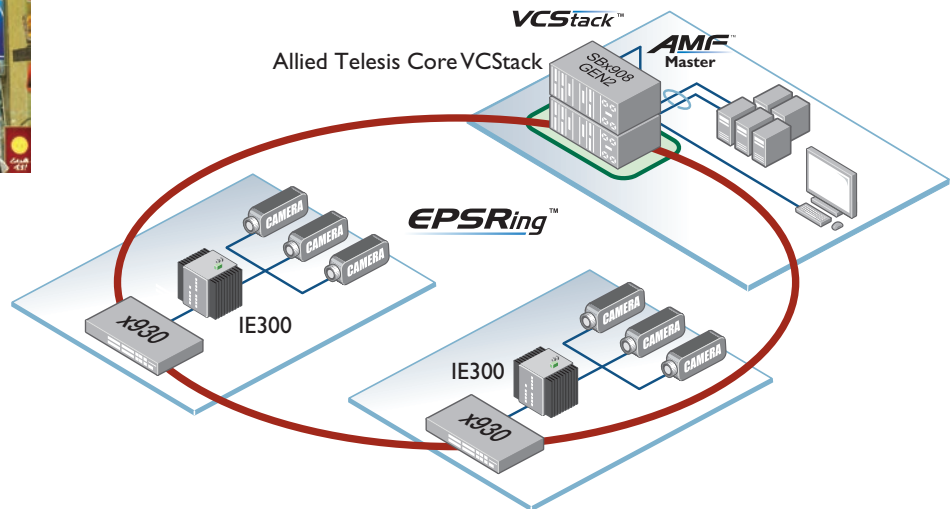


Shopping Mall



IP cameras in each zone can perform integrated surveillance. This reduces the need for security guard patrols and enhances security and safety. Facial recognition software is effective in the identification of suspicious individuals and shoplifters.

IP cameras can deliver video to screens to display live events, promotional announcements and messages to catch customer attention.

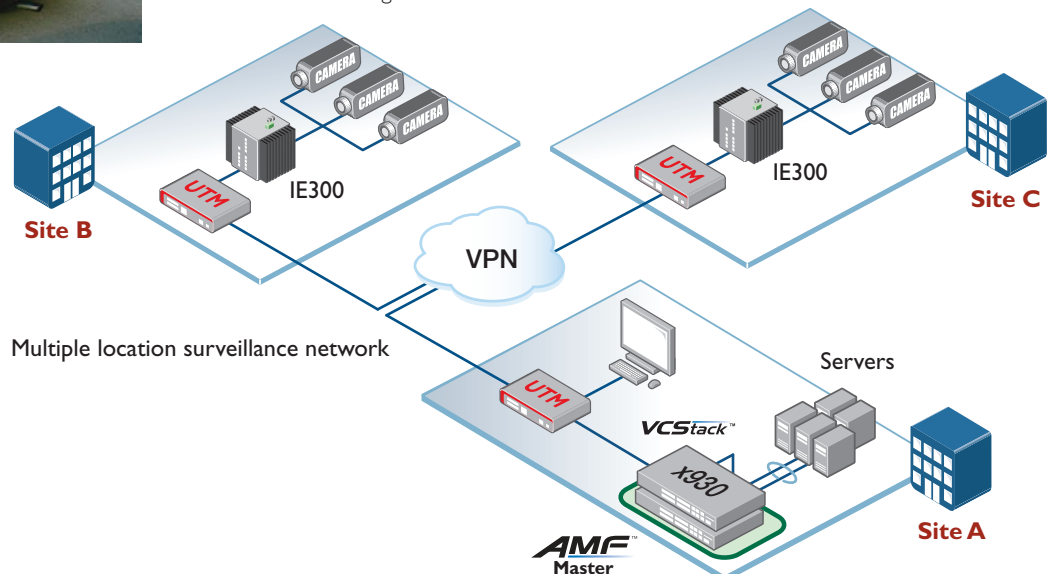


Chain Store/Parking



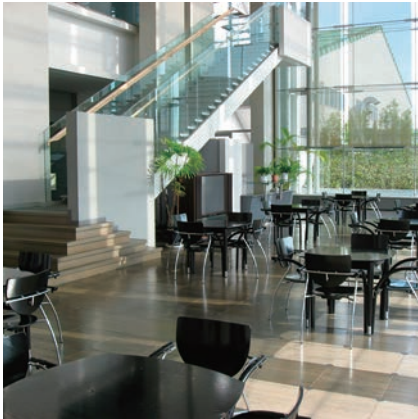
Integrated surveillance is an ideal security solution for parking areas and for stores with multiple locations. The high definition images provide a clear advantage, because large areas can be covered with fewer cameras. Software applications enable automatic detection of suspicious events. Intruder alerts can be raised automatically, working in parallel with other crime-prevention systems.

Pan, Tilt and Zoom (PTZ) camera control can be operated remotely, enabling thorough surveillance coverage from a central location.



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Hotel



Most hotels have IP networks throughout the buildings, providing Internet access for guests. Integrating the IP surveillance system with the existing well-distributed network saves on installation costs.

Warehouse/Factory

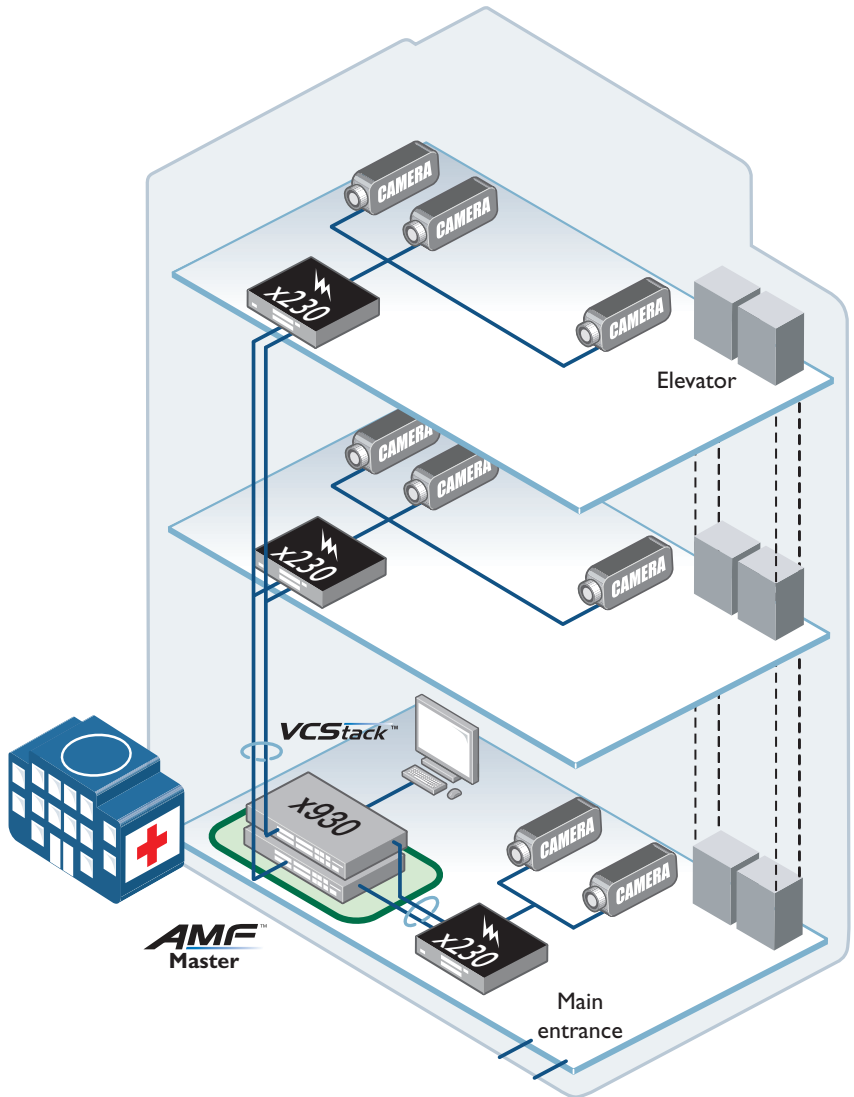


High-resolution video surveillance prevents the theft of equipment and valuable goods. For those facilities that wish to attain TAPA certification (a freight security standard), it is essential to install and use IP camera surveillance systems. IP surveillance also helps to monitor the safety of staff in potentially dangerous environments, and pre-empt events that could lead to accidents.

Hospital

Opportunities for crime are significantly reduced by installing cameras to monitor entrances, elevators, parking areas, etc. The surveillance can be used in conjunction with ID authentication to control access to restricted areas.

Surveillance can be used to monitor the welfare of patients waiting for treatment and also for staff safety.

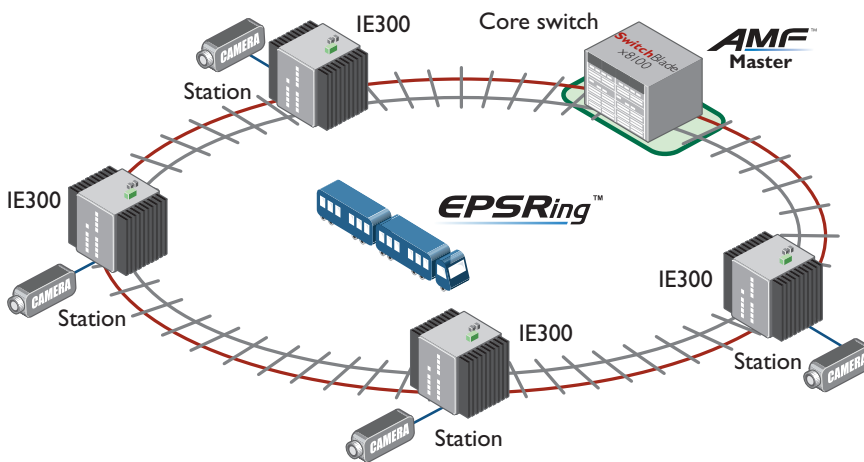


The camera network uses resilient pairs of links from an Allied Telesis Virtual Chassis Stack™ (VCStack) in the core to the distribution switches. This enables the network to continue operating even if links or switches go down. In the security control center, the surveillance monitors receive video feed from each camera, enabling security guards to maintain real-time surveillance of the entire hospital. Cameras help prevent crime for the hospital by monitoring all entrances, exits and elevator doors. It is important to install cameras in positions that do not have blind spots.

Railway/Superhighway

IP cameras can be connected into the network infrastructure that already exists along railways. The cameras can provide surveillance throughout stations, in unmanned stations, in electrical substations and more.

Alarms can be raised when passengers are seen entering restricted areas. The networks along railways and highways cover long distances and are well suited to a ring topology. Using a ring design reduces the amount of cabling and switching equipment required.



IP surveillance supports crime prevention by placing cameras throughout stations. This provides a safety and security service to passengers. Cameras are installed at points along the railroad to remotely monitor signals and check track settings at junctions. These cameras also help prevent vandalism and theft crimes, and can provide an early warning of fires. In areas where onsite security surveillance is difficult, such as at unmanned stations, the installation of IP cameras enables remote monitoring. Installed screens display the images being fed from the IP cameras and perform real-time surveillance using human eyes.

Disaster Warning

Municipal and regional authorities are evaluating the installation of IP cameras to monitor river levels, and provide early warning of floods and other disasters. IP surveillance networks are an important tool for increasing the safety and security of populated areas.



Schools

Many countries are encouraging the use of Information and Communications Technology (ICT) equipment in schools. Therefore, the majority of schools in these countries already have IP networks in place. It is simple to attach IP cameras to the network to provide surveillance of school gates, rooftops and parking areas.

Parents can check on the welfare of their children by connecting to the surveillance network via PC or smartphone, using a secure login.



Conclusion

Allied Telesis integrated IP video surveillance solutions

Allied Telesis is an equipment vendor and networking specialist that provides highly-reliable IP surveillance solutions to suit a wide range of customers and industries. Many modern networks include the convergence of business applications along with video surveillance, and Allied Telesis specializes in providing integrated solutions for the seamless transport of voice, video and data traffic.

The following are some Success Stories about city-wide, retail, and manufacturing customers, who have integrated IP surveillance into their advanced Allied Telesis network solutions.

Success Story | Bangkok Metropolitan Administration

Traffic monitoring system based on IP cameras

Bangkok, the capital of Thailand, with a population of nine million, is a truly international city within this fast-developing Asian region. The Bangkok Metropolitan Administration (BMA) has overall jurisdiction for administration and public infrastructure in the municipal area, which is comprised of 50 separate local authorities.

BMA selected the Allied Telesis solution for their traffic management system, which utilizes thousands of cameras. The traffic management system is an important part of their ongoing development of the city's infrastructure, and works hand-in-hand with the improvements in public transportation and upgrading safety management systems.

Challenge

To install a reliable IP traffic surveillance system that covers the entire Bangkok metropolitan area.

Requirements

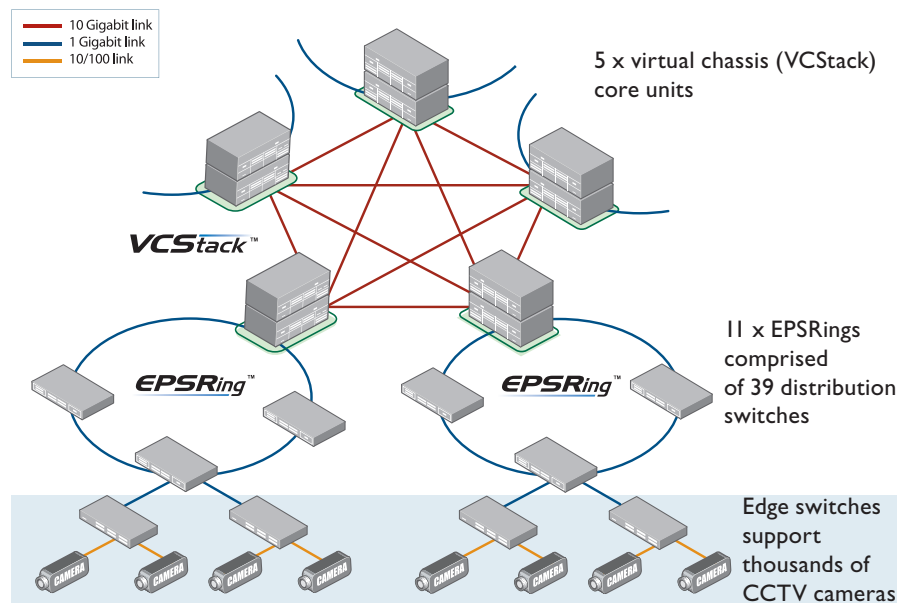
- ▶ High bandwidth
- ▶ Consistent high performance
- ▶ Resilient to link and unit failure

Key criteria in selecting Allied Telesis

- ▶ Highly-reliable Gigabit switches
- ▶ Excellent multicast IP
- ▶ Resilient ring-based network design

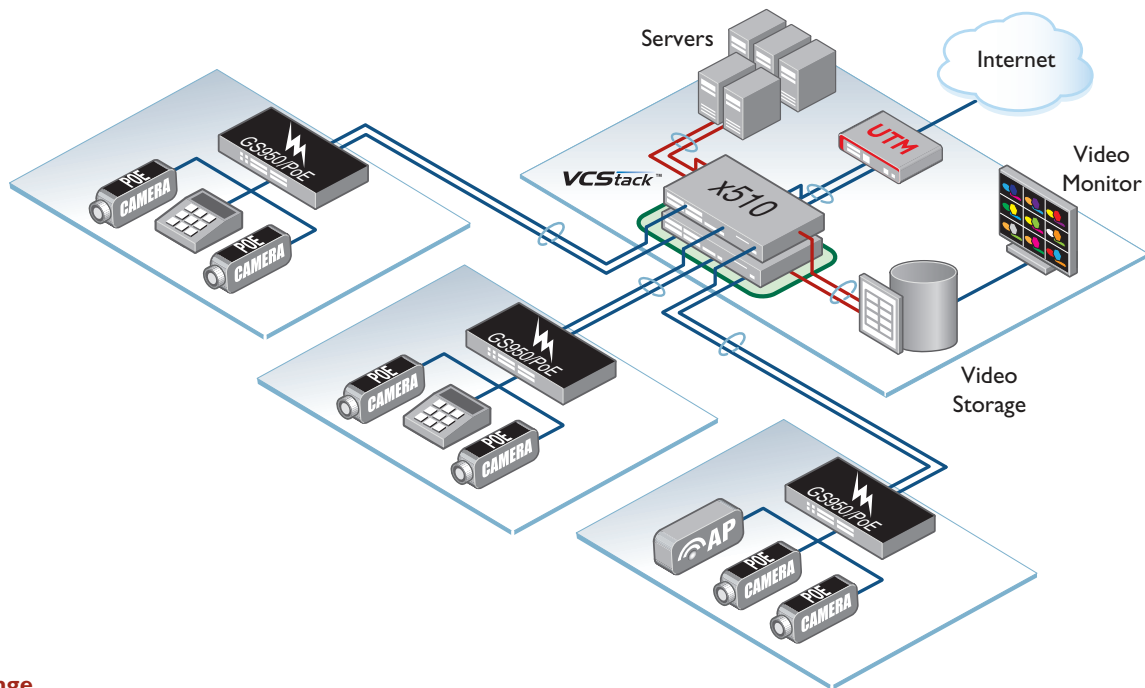
Benefits provided by the system

With this surveillance system installed, and running continuously 24/7, the city is able to deal more effectively with the daily traffic congestion. The city's five-year development plan includes a "Healthy City Development" guideline, developed by the World Health Organization (WHO). Part of the guideline is the implementation of a system to "Receive real-time images and information from all areas of Bangkok." The advanced IP surveillance system helps Bangkok achieve this goal.



High-Capacity Network with IP Surveillance for Brand New Mall

A comprehensive video surveillance camera network was a top priority for one of Indonesia's newest malls, Aeon Mall Jakarta Garden City (JGC). Located in Jakarta's Cakung area, the mall has 5 floors and houses over 220 stores. There are local and global shops, cafes and restaurants, a huge food court, and major entertainment features—including a rooftop ferris wheel, the country's largest ice-skating rink and a 200-seat cinema. The mall employs around 3,000 staff.



Challenge

Aeon Mall JGC 's new network had to be secure, easy to use, and capable of handling multiple converged IT systems, including IP video surveillance. It had to be high-performing and failure-resistant to ensure a safe shopping environment and meet today's standard for exemplary customer service.

Solution

The new highly-available network has the capacity and performance to seamlessly transport data from all IT systems, including video surveillance traffic.

The network core features two x510 Series Stackable Gigabit switches using Virtual Chassis Stacking (VCStack™) to create a single virtual unit out of two physical devices. This powerful design has no single point of failure, providing maximum network uptime.

Allied Telesis GS950 PoE switches connect and power security cameras and other IT system end-points.

Success

The Mall now enjoys a secure and easy-to-manage new network, which handles the data traffic from their numerous IT systems and security cameras. With cutting-edge technology supporting easy parking, digital signage, visitor information, and customer safety, Aeon Mall is providing an outstanding visitor experience.



Reliable and High-Performing IP Surveillance for Smart Factory

Established in 1947, Hitachi High-Technologies Corporation (HHTC) is a subsidiary company of the Hitachi group. HHTC have developed a brand-new business model called “Smart Factory”, in which multiple Japanese-owned small and medium-sized enterprises (SMEs) share a factory overseas. When HHTC built its first Smart Factory in Thailand, a reliable and high-performing solution was required.

Challenge

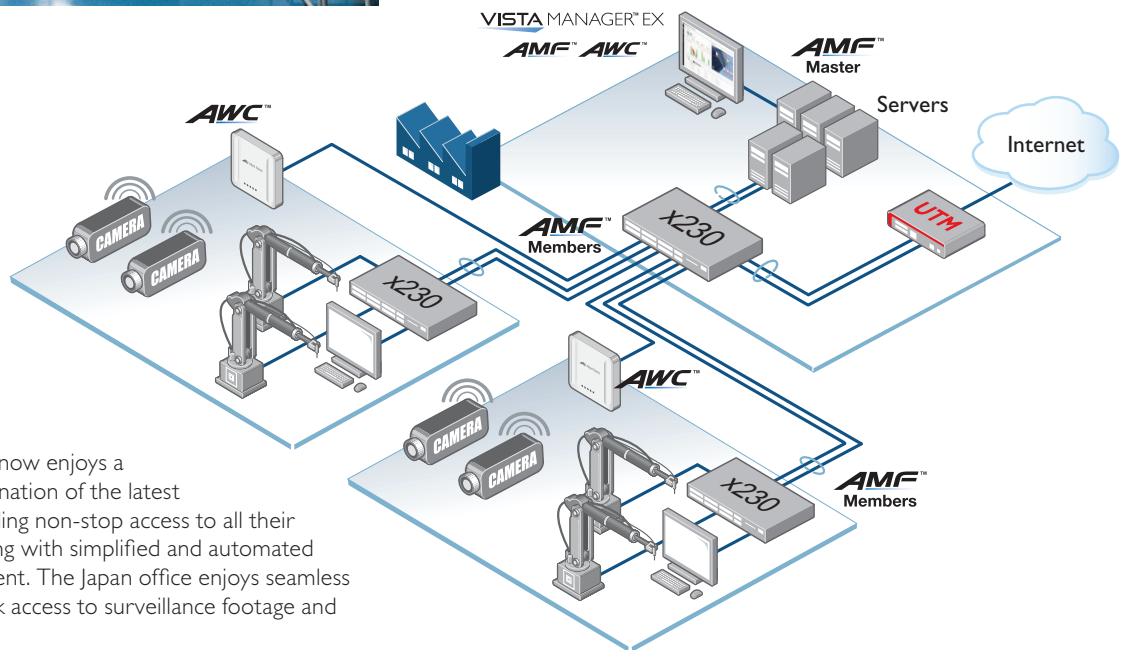
HHTC needed to record production status via multiple cameras and sensors, and required comprehensive real-time camera surveillance to monitor and support the Thailand factory in the Japanese office.



The Smart Factory needed a network infrastructure that could support both wireless connectivity for the camera surveillance system, and a wired network for monitoring displays and industrial machinery. It had to be extremely reliable—providing non-stop production and monitoring—and very high-performing to support the numerous technologies required for a Smart Factory. In addition, the entire wired and wireless network infrastructure had to have centralized management, to enable support staff to easily monitor the network, and manage the switches, firewalls, wireless APs, cameras and other devices that make up this converged IT solution.

Solution

Allied Telesis designed and implemented a brand-new network for the Smart Factory, with advanced switches and wireless APs for seamless connectivity, and a Unified Threat Management (UTM) firewall that enables secure Internet access, while protecting against cyber threats. The new network features Allied Telesis Autonomous Management Framework™ (AMF) and Autonomous Wave Control (AWC), for centralized management and automation of their wired and wireless devices.



Success

The Smart Factory now enjoys a cutting-edge combination of the latest technologies providing non-stop access to all their online systems, along with simplified and automated network management. The Japan office enjoys seamless and secure network access to surveillance footage and monitoring data.

About Allied Telesis

For nearly 30 years, Allied Telesis has been delivering reliable, intelligent connectivity for everything from enterprise organizations to complex, critical infrastructure projects around the globe.

In a world moving toward Smart Cities and the Internet of Things, networks must evolve rapidly to meet new challenges. Allied Telesis smart technologies, such as Allied Telesis Autonomous Management Framework™ (AMF) and Enterprise SDN, ensure that network evolution can keep pace, and deliver efficient and secure solutions for people, organizations, and “things”—both now and into the future.

Allied Telesis is recognized for innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.

Visit us online at alliedtelesis.com



NETWORK SMARTER

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