Powering Up Your Networks for IP Surveillance Systems

IP surveillance systems allow businesses to protect their critical assets and keep their personnel safe. To enhance operational efficiency, industrial applications are also adopting IP surveillance systems to monitor remote sites from the control center in real-time. For example, many transportation applications are adopting IP surveillance systems to improve the visibility of traffic conditions. By doing this, the traffic control centers can have up-to-date and reliable information, which will allow them to increase the efficiency of transportation as well as enhance safety for road users. To achieve these goals, IP surveillance systems require not only robust IP cameras that can withstand outdoor environments but must also be deployed on a powerful network to ensure seamless video data transmission from the remote site to the control center.

Scenarios That IP Surveillance System Engineers Frequently Encounter

Deploying IP surveillance systems for transportation applications usually requires installing industrial IP cameras in outdoor environments that are located far away from the control center. Under such circumstances, installing IP cameras and networking devices can be difficult for system engineers. Furthermore, the system requires a robust and reliable network to continuously transmit video streams to the control center. To simplify the installation process and enable these communications, one possible solution is to use PoE injectors to provide both power supply and network communication over Ethernet interfaces. However, some system engineers who currently use PoE injectors have noted they sometimes experience difficulties when performing daily operations.

First, PoE injectors lack flexibility when used at field sites. Most PoE injectors can only connect with one powered device (PD) at a time. Therefore, when your IP surveillance systems are required to connect to more than one PD, using a PoE injector is not a feasible option.

Second, PoE injectors are invisible on surveillance networks and therefore cannot be managed. Some traffic control centers oversee numerous cameras from multiple remote sites. Without sufficient device visibility and network management capabilities, it can be challenging for system engineers to efficiently manage the status of both IP cameras and PoE injectors to ensure smooth video data transmissions.

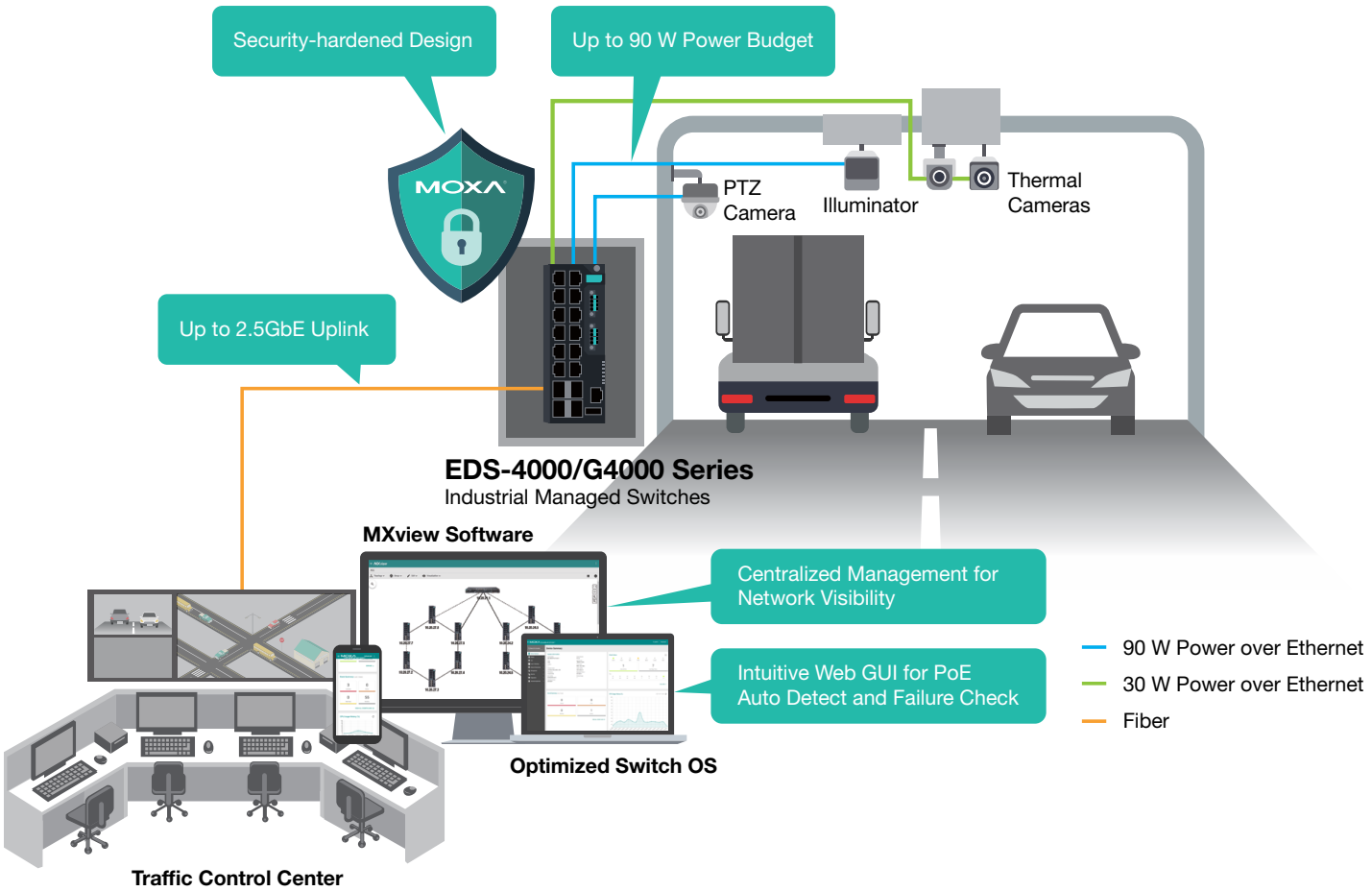
Third, PoE injectors lack efficient tools for remote monitoring and troubleshooting. When system engineers at the control center are unable to receive video data, they have no choice but to check the system status directly at the remote site. This situation can significantly increase the amount of time required to get surveillance networks back up and running again.

IP Surveillance System Engineers' Expectations

After considering the previous scenarios that were encountered by system engineers, using PoE managed switches can be a better option as they offer more installation options and increase the efficiency of operations. Compared with PoE injectors, PoE managed switches have more Ethernet ports, which will provide you with greater flexibility when installing at field sites as well as if you need to expand your operations in the future. In addition, PoE managed switches that support network management tools can visualize the status of networking devices for system engineers. Some PoE managed switches provide advanced functions that allow system engineers to better monitor and maintain networking devices for IP surveillance systems at the traffic control center. This way, system engineers can operate IP surveillance systems with greater efficiency in any transportation application.

Build a Smarter and Securer Surveillance Network With 802.3bt PoE Managed Switches

High-performance PoE managed switches are not only the solution for challenges that system engineers might face when using PoE injectors, but can also provide additional benefits for IP surveillance systems. With over 35 years of experience in industrial networking, Moxa has honed our expertise in developing high-performance PoE managed switches that deliver three main benefits to help industry innovators build smarter and securer surveillance networks.



Benefit 1: Ensure Sufficient Bandwidth and Power Supply for Surveillance Networks

Even though modern industrial IP cameras can provide high-quality video footage, they also require large amounts of bandwidth. In addition, to ensure that high-quality video footage can be delivered clearly, cameras usually support some of the following advanced power-hungry features: heater, wiper, infrared, thermal optics, and object detection technology. In order to run these power-hungry features efficiently, you must allocate a high-power budget to ensure that they function as intended. Therefore, we suggest that those within the industry who need to deploy IP surveillance systems with advanced IP cameras use our PoE managed switches that support 2.5GbE ports and IEEE 802.3bt standards with up to 90 W power budget, ensuring sufficient bandwidth and power supply for your surveillance systems.

Advanced IP cameras require advanced surveillance networks to ensure smooth network communications. Make sure your networks support high bandwidth and a high-power supply for seamless video data transmissions.

Benefit 2: Manage and Maintain Surveillance Networks Efficiently

Our PoE managed switches support network management software and advanced functions that industry innovators can benefit from. The network management software visualizes the status of our PoE managed switches, giving system engineers more visibility over entire surveillance networks. In addition, our PoE managed switches support advanced functions that allow system engineers to view the PoE connection status and manage PoE ports remotely. When an error occurs, our PoE managed switches perform failure checks and automatically reboot PDs that are located remotely, helping system engineers to eliminate problems remotely and get their network working again as quickly as possible.

Remote monitoring and troubleshooting can be done easily at the traffic control center if you utilize the right solution. Using PoE managed switches that include features that enhance network visibility and allow you to troubleshoot remotely can significantly improve efficiency.

Benefit 3: Enhance Network Security to Minimize the Risk of Unauthorized Access

PoE managed switches should have sufficient protection to be able to withstand the latest cybersecurity threats. A recommended approach is to use secure-by-design building blocks that can help establish a secure network infrastructure. Our PoE managed switches are equipped with security features such as HTTPS/SSL, SSH, RADIUS, and TACACS+, which will significantly enhance network security for industry innovators. Furthermore, we have a proper vulnerability management process, which means that when vulnerabilities are reported, there will be appropriate mitigations and communication to ensure surveillance networks can remain secure throughout the duration of their deployment.

Don’t overlook the importance of network security. Connected IP surveillance systems can be exposed to cyberthreats. Deploying your networks with secure-by-design networking devices can help you enhance network security.

See What an Industry Innovator Has to Say

> Moxa's EDS-G4000 Series not only makes it possible to visualize the whole surveillance network and perform advanced diagnostics remotely, but also encounters zero compatibility problems when connecting to our 802.3bt PoE++ camera.
>
> Lester Miyasaki
> Sales Director, WTI

Conclusion

One of the best ways to develop a powerful network is to use a game-changing and industry-proven PoE managed switch. Our EDS-4000/G4000 Series PoE managed switches feature up to 8 IEEE 802.3bt PoE ports with up to 90 W output per port, and up to 2.5GbE bandwidth to ensure your surveillance networks have a sufficient power supply and bandwidth for smooth video data transmissions. Furthermore, to simplify your daily operations and maintenance, our PoE managed switches support MXview network management software, which helps you to easily visualize your networking devices' status on surveillance networks. In addition, the easy-to-use web GUI comes with smart managed functions such as auto PoE detection and failure check functions that can help you easily set up and maintain surveillance networks. Last, our IEC 62443-4-2 certified EDS-4000/G4000 Series PoE managed switches enhance network security for your surveillance networks. The combination of a high-performance design, easy-to-use GUI, and network security features ensure our PoE managed switches can power up your networks for IP surveillance systems. Visit our microsite to learn more about what our Ethernet switches can do for your industrial applications.

EDS-4008 Series

8-port managed Ethernet switches with options of 4 802.3bt PoE ports or 4 Gigabit uplink ports

EDS-4012 Series

8+4G-port managed Ethernet switches with an 8 802.3bt PoE port option

EDS-G4012 Series

12G-port full Gigabit managed Ethernet switches with an 8 802.3bt PoE port option