AEOS IP Video Management

The true alternative in video surveillance.

In today's security management, video surveillance is taking up a more prominent role each year. It provides an extra measure of safety and security, allows for easy gathering of information and gives security managers a good tool to monitor what is happening in and around buildings. This has lead to an exploding video surveillance market, in which a few important developments can be distinguished.

From analog to digital IP

Probably the most important development is the move from analog to digital IP video surveillance. Thanks to IP technology, many types of applications can share the same network for communicating data, so any number of IP-based products, such as IP video cameras, can be placed anywhere on the network. Since no traditional dedicated cabling is required and many companies already have an IP network infrastructure in place for other applications, the installation of IP video surveillance can be done without significant cost for network infrastructure. The cameras can be directly connected to the existing network, making it possible for a network video system to easily grow with a company's needs. Another key benefit of an IP-based infrastructure is location independence. The possibility to manage video surveillance from one common user interface enables users to view and manage video images on any local or remote computer on the network.

The intense competition is driving down the price of IP hardware, while performance continues to improve. Today's IP network cameras offer many possibilities that analog cameras don't have and this will only be expanded further. They are able to capture video in much higher resolution, cover larger areas and offer superior digital zoom capabilities. This is essential to clearly capture an incident and identify persons or objects involved.

Embracing video camera standards

One of the challenges in using IP-camera's has been the massive bandwidth necessary to stream digital video formats over the network. By using sophisticated compression techniques, video cameras are nowadays able to deliver high quality images while significantly reducing the network load. Most camera manufacturers support the major video formats like MPEG4, MJPEG and H.264. The latter is expected to become the video standard of choice in the coming years. This is because it has the highest compression rate without compromising image quality. The MJPEG format however is very well suited for retrieving high quality still images from a video sequence and therefore highly appreciated by security specialists.

A very important additional development has been the introduction of the ONVIF protocol for camera control. This protocol allows for standardized camera control without the necessity of camera specific drivers. Consequently, the ONVIF specification offers customers more flexibility at lower cost, as they can choose the most suitable combination of conformant IP camera products regardless of manufacturer.

Intelligence at the edge

Another important development is that intelligence is being pushed to the edge. Through the use of Video Content Analysis (VCA), IP cameras are becoming more intelligent. They cannot only just detect motion, but also identify and track objects. The software used for this, is no longer running on a server attached to a camera, but is placed on a processor inside the camera itself. This means that the camera is developing towards becoming an intelligent device itself, capable of triggering alarms and making decisions. VCA used in combination with intrusion detection and access control offers fewer false alarms and more security. An additional benefit of this built-in intelligence is that video feeds initially stay in the camera; only the relevant video footage is sent to the server for storage. This reduces the network load significantly. Another advantage of this distributed intelligence is that the system can operate without the intervention of the server; this guarantees the optimum reliability of the system.

System convergence

The last development that can be seen is that video surveillance is used more and more as an addition to intrusion detection and access control; an increasing share

of the images used in video surveillance is related to events generated in the access control system. When an alarm is generated, video images can provide more information and support the operator or guard in taking the right measures. By integrating video surveillance, intrusion detection and access control in one system, security can be improved significantly. This, however, regularly results in the procurement of large security software packages which apparently 'do it all'. These software systems are usually client-server based and require the use of client software on each viewing station. Often it turns out that most of the functionality offered and being paid for, is not used at all. That's why Nedap has developed a revolutionary new integrated video solution: AEOS IP Video Management.

AEOS IP Video Management

As digital video and AEOS are both IP-based, Nedap has been able to fully integrate video surveillance in its security management system AEOS. With this feature it is possible to handle video surveillance directly in AEOS without intervention of any third party software or DVR. AEOS IP Video Management is web-based; it can be used from any workstation with a standard web browser and Java runtime and doesn't need the installation of client software. As events and camera images are connected to each other in AEOS, they can be retrieved from one user interface, making it easier for system users to handle alarms quickly and effectively. With an encoder, also analog video systems can make use of AEOS IP Video Management.

Integration at controller level

One of the distinguishing features of AEOS IP Video Management is the integration at controller level. Together with other security disciplines like access control and intrusion detection, video surveillance can be realized using the same controller and the same server. This significantly reduces the investment in hardware and requires less maintenance, for example when an update needs to be done. In addition, it opens the route to a gradual implementation of video surveillance. One camera today can grow into a multi-site video surveillance system by just connecting them to the controllers that already form the critical security infrastructure. No need any more for high investments at start up and finally a solution that can be tailored according to the actual need.

Choice of camera

Contrary to most dedicated video systems that require the use of specific camera drivers, AEOS IP Video Management offers maximum freedom of camera choice, as it can handle all IP cameras that support MJPEG and H.264. Furthermore, AEOS IP Video Management complies with the ONVIF specifications for the exchange of information between network devices, meaning that there is no requirement for specific drivers either.

Choice of video storage

The storage architecture for video systems can be typically categorized as either centralized or distributed. With AEOS IP Video Management, on the other hand, administrators are completely free to decide where they want to store the video images. This can be done centrally on the server, locally on an AEpu (AEOS controller) attached USB hard disk or on any other network storage device (NAS/SAN) that carries a virtual AEpu. Users are not dependent on expensive proprietary storage devices, such as DVRs and NVRs.
The choice of storage has an immediate effect on the network load. Video is known to take up a lot of bandwidth, which can be a problem if the locations under surveillance are dispersed over a large area. But if a security manager decides to store the video images locally on the AEpu, the burden on the network is reduced considerably. He can even decide to record locally during the day and to send the images to the server at night, when the network load is down to a minimum.

Scalability

AEOS IP Video Management has been designed in a modular fashion, allowing for maximum scalability with respect to desired system size and functionality. This means that the system can be built up to meet a company's exact requirements by using standard components. If the situation changes, the system can be adjusted or expanded immediately and without any problems, for example if additional cameras are needed.

Video Viewer

All issues related to video surveillance can be handled in a graphical, web-based interface, called the Video Viewer. In this dedicated AEOS (user)face, stored video images can be viewed with a time slider based on an event and time indication. But also live video images can be viewed here. Furthermore, all cameras connected to the network can be operated from the AEOS face. The AEOS face is freely configurable in terms of the number of windows to be shown, the size of the windows, which camera images to be shown, rotation between the cameras, and much more.

As can be seen from the above, AEOS IP Video Management is a worthy alternative for the video solutions on the market today, thanks to its unique possibilities of openness and scalability.

Features & Benefits

- ONVIF compliancy
- No DVRs necessary
- Web-based
- Free choice of camera
- Free choice of video storage
- Integration at controller level
- Graphical interface

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