



IP communications leads to innovation in physical access control

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The open standards of IP technology have given forward-thinking manufacturers opportunities to develop security and surveillance solutions that can leverage the full power of the network. Qualified integrators can bring these technologies together for greater performance and accessibility in both residential and commercial buildings.

In 1996, Swedish company Axis Communications was the first manufacturer to launch an IP-based surveillance camera. An IP surveillance system allows the user to take advantage of the latest network technology. Digital video signals are carried over a superior structured cabling system of Cat 5e - Cat 6 copper through routers and switches to scalable DVR systems. Power over Ethernet (PoE) to the camera units eliminates the need to build out electrical outlets any time a camera is added to the system.

Digital IP surveillance cameras can record video that complies with the Society of Motion Picture and Television Engineers HDTV standards in resolution, color representation and frame rate. Progressive scan HD imagery allows for exceptional quality still shots of fast moving objects without shutter-blind artifacts or motion blur. Digital zoom and auto focus facilitate clear viewing of objects as small as the print on an ID card in areas where great image detail is required.

Conventional access control systems have evolved into the IP landscape as well. Well-known door hardware such as card readers, biometric controls, and call boxes are available as endpoints on the IP network. Thousands of entry points can be controlled and centrally managed using the same network technology that delivers voice and video communications throughout an organization. Controller solutions can be implemented that allow several devices to be added to the network without the need to add Ethernet ports.

Systems such as Cisco's Unified Communications Manager provide the basis for a fully integrated video surveillance and access control solution over the IP network. Through an intelligently architected solution, all visual and physical controls are distributed to one common endpoint - the IP phone.

For a visitor, the process to gain entry into a building is unchanged. He or she presses the button on a door call box to initiate voice communication with the tenant while the event is captured on video. On the tenant end; however, integration of the physical access control system with the Unified Communications Manager provides an enhanced and more user-friendly experience. Rather than streaming video to just one centrally located terminal, access control can be handled at any IP phone throughout the building.

How does it work? Surveillance cameras positioned at entrances and around the building are connected to the Cisco network switch, which provides voice, data, and video services. The switch can provide power for pan, tilt, and zoom (PTZ) on cameras that are specified for Power over

Ethernet (PoE). Through an intermediary solution, the IP surveillance video signal is presented to the IP phone or endpoint. When the call box button is depressed, a direct call is launched to the tenant phone. The system can be programmed to ring all handsets within a residence or business. Once the tenant picks up the call, the video signal from the entrance can be displayed on the handset's LCD screen in the form of a live video stream or a JPEG still frame capture. Still images can be refreshed by touching a soft key on the phone's LCD display. An "Open" soft key can be depressed to grant building access. The use of soft keys can reduce the possibility of security lapses due to entering an improper numeric code that results in the wrong door being unintentionally opened.

The age of the converged network has given us almost limitless possibilities in the advancement of building technology. Integrating a Cisco Unified Communications system with IP surveillance and physical access control is one solution that provides cost savings, efficiency, and ease of use.

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