



IT'S GOOD TO TALK

Håkan Hansson explains how security guard call outs can be reduced by adding network audio to video surveillance

Security guards are highly trained professionals with the lightning reflexes and skills to diffuse potentially dangerous situations. However, at times, it can be a fairly tedious job – standing in a single location just in case something happens. What's more, organisations that require a security presence in multiple locations – for example airports, amusement parks or shopping centres – need to hire several trained personnel to stand around waiting to react to a situation, should it arise.

No matter how well trained security personnel are, they are still only human, with one pair of eyes

and ears, and cannot possibly hope to see and hear everything, everywhere, simultaneously. Minor incidents may draw their attention away from more serious situations, putting the public, workers and property in potential jeopardy in the process.

An increasingly popular security model that addresses the issues of single manned guards is the use of remote video surveillance monitoring combined with audio talk-down capabilities. Alarm monitoring services and security guard companies are increasingly substituting manned guards with video surveillance and centralised control centres, which is proving to be an effective and powerful combination that can not only reduce man power, but can also cut costs.

By monitoring the feeds, a security controller can identify potential incidents, which they can respond to through a connected microphone from a remote location – while on-the-ground backup is simultaneously deployed to deal with the scenario.

This is a highly effective way to intervene as soon as an incident emerges and begin to attempt to diffuse the situation, making it safer for trained security officers to resolve the issue with the minimum of fuss. In a university, for example, video surveillance cameras or perimeter detection devices could identify a breach of the perimeter after hours, or people loitering in a restricted area. An alarm message is immediately triggered and sent to the control centre alerting them to the potentially suspicious activity. This can either automatically trigger a pre-recorded audio message to be played back at the scene of the incident, or the operator can quickly assess the situation from video footage and live feed before responding themselves by speaking through a microphone. The operator can talk directly with the people at the scene of the incident, potentially de-escalating the situation before deciding to dispatch a security guard, or causing those with criminal intent to leave the scene.

By being able to speak directly to those that trigger an alarm or show suspicious behaviour, operators can be much more proactive at tackling the situation before it escalates out of control, rather than passively monitoring the actions on a screen. For instance, where a person has been injured, being able to remotely communicate with the victim and reassure them on the progress of the help that is coming to attend to them can greatly assist with managing the incident.

This approach reduces the cost compared with security guards patrolling customer premises. By adding network audio to video surveillance cameras, security guards are only deployed if and when needed, which also saves business owners money in terms of potential damages and unnecessary call outs. As well as the cost savings and de-escalation benefits, network audio can also be used to identify issues before they are spotted visually on camera.

As well as talking to potential perpetrators and victims, audio through a two-way microphone can also be used to identify the escalation of specific situations. For example, in a busy train station there are likely to

be a lot of security cameras that require monitoring. How does the operator prioritise which ones to look at? With so much visual activity – such as people running for trains – audio can play a significant part in alerting professionals to potential security issues. In one scenario, audio microphones placed near ticket booths can listen in on customers' interactions with ticket vendors to pick up on tone of voice and volume of speech.

If the system detects any signs of aggression, an alert can be sent to the central security office to flag that the ticket vendor may be in need of backup to deal with an irate customer. Central security can evaluate the situation and, if needed, deploy security as required. They can speak to the member of the public to ask them to calm down before law enforcement arrives, again addressing and diffusing the situation before it significantly escalates.

Audio talk-down is a function that is supported by

THE OPERATOR CAN ASSESS THE SITUATION FROM THE VIDEO FEED BEFORE RESPONDING

most video management software (VMS) solutions and packages. It works by allowing the operator to speak directly to the recipient by pressing a button in the video view or by automatically playing back pre-recorded audio messages on different previously defined triggers. Native VMS integration makes it easy to add audio talk-down to a video surveillance system, while many network cameras come equipped with onboard audio capability. If there is external power available, an amplifier and analogue speaker can also be connected to the audio output of the camera.

Using digital as opposed to analogue horn speakers to add network audio functionality to video surveillance systems is even easier. Network speakers are single units that can be easily bolted on to an existing system to provide a complete paging solution. With Power over Ethernet (PoE) technology, the unit receives power and connection

Talk-down tech has a number of security applications from ticket offices to sports arenas and universities

over a single network cable, in the same way as a regular network camera, eradicating the need for an external power supply or any additional equipment.

In a network audio system, every speaker is individually addressable, providing high levels of flexibility and scalability. The use of IP technology simplifies integration with other systems as speakers can be integrated directly into the VMS or into a standard Voice over IP (VoIP) phone system using session initiation protocol (SIP).

Intelligent network audio systems are designed to deliver high-quality sound. As a networked system, the speakers offer remote 'health monitoring' to make sure they are connected and are sounding as clear as they are supposed to. This is not possible with analogue speakers, as operators would not be sure an analogue speaker is operational at a given time or that it has sufficient volume or sound quality. Network speakers feature a built-in microphone and onboard analytics allowing for automatic self-checks to ensure the sound quality is always optimal. The microphone can also be used to listen in to the scene or for automatic intelligent detection of aggression, gun shots, explosions or vandalism.

While audio with video surveillance has a number of security applications, it can also benefit many other aspects of a business' operations. Take retail as an example – on the security side, audio can be used in anti-theft and personal security scenarios, but also consider how it can be utilised to benefit sales and customer experience. Through the use of networked audio and security systems, retailers can create 'zones' to address different groups in different parts of the store to direct different background music, live or pre-recorded announcements or control and change the volume for each unit individually and/or synchronise and pre-schedule music and announcements for different clusters.

Alongside video analytics, store managers can identify where there is a build up of queues and announce where there are less busy tills for customers to fulfil their purchases. Special offers and promotions can also be announced to alert customers to special offers and increase revenue through impulse purchases.

Retail is just one example – the use of audio that is connected to network cameras is applicable to most organisations; from private car parks where vehicle registration plates may not be recognised and intervention is needed, to schools for scheduling bells denoting the end of class in different parts of the campus, and even sports arenas that need to efficiently manage mass crowd control.

In addition, by implementing a system based on open standards, third-party developers can create applications that will further increase the functionality

TALK-DOWN TECHNOLOGY CAN NOT ONLY REDUCE MAN POWER, BUT IT CAN ALSO CUT COSTS

and adoption of intelligent network audio systems across many different types of businesses as they grow and their needs develop.

The addition, network speakers and audio to video surveillance systems can deliver benefits far beyond the cost of acquisition and installation. In security environments the more efficient use of personnel – and even a reduction in the number of guards needed – is an obvious return, while in other environments the improvement in the customer experience can result in significant increases in revenue. It's for these reasons that the ever-useful combination of video and audio should be on everyone's radar ●

Håkan Hansson, Global Product Manager Audio at Axis Communications, has been with the Company for two years and has been in the industry for more than 25. During that time he has held many roles, specialising in the design of complex audio systems.

Talk-down systems can de-escalate potentially volatile situations

