

STENTOFON BUILDING AND SITE SECURITY



when communication is critical

BUILDING AND SITE SECURITY

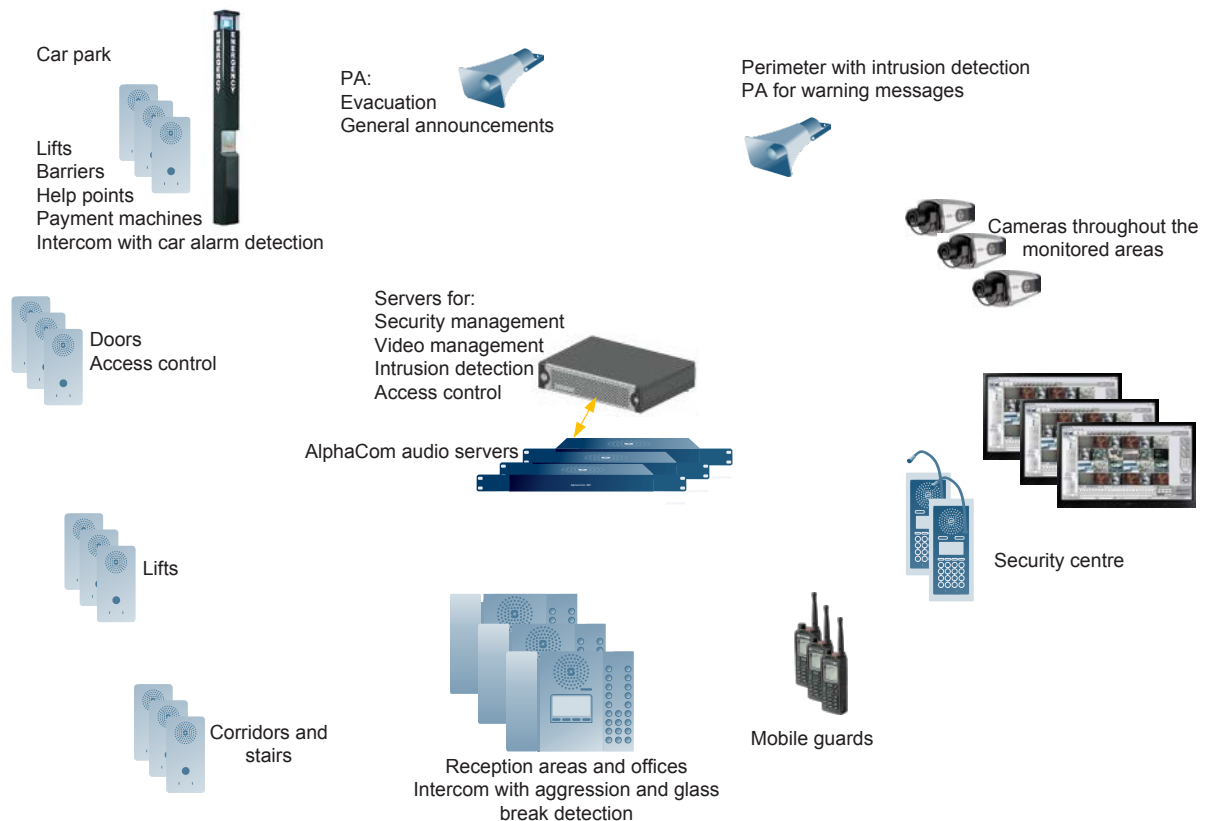
Introduction

Rising crime, vandalism and abuse figures make investments in building and site security systems a necessity. CCTV, access control and intrusion detection are a natural part of such a system but a communications system providing clear audio and fast call setup is also a vital part of the overall solution as the primary need of people in threatening or distressing situation is the need to communicate.

The communications system must be easy to use and self-explanatory such that in an emergency it is immediately clear which button to press to get the help which is needed. During the design phase it is important to keep in mind that the system will be used by both people using the building and who are used to the system but also by visitors. Therefore the parts of the system which will be used by visitors should be intuitive.

STENTOFON intercom stations can be connected to the same physical IP-network as CCTV cameras or other IP-connected security system items, making deployment of the total security system very easy.

COMMUNICATION REQUIREMENTS



Communications are needed for the following areas:

- At the doors to support the access control system
- Staff and visitor car parks
- PA as part of the evacuation system and for general messages
- Security control room
- Security guards with radios

Communications

The communication needs vary a lot depending on the type of building or site which needs to be protected. Buildings where a lot of visitors are expected need a very different approach, as the building should be open and inviting. Buildings which are mainly used by staff and where visitors are rare can have locked doors at the entrance which makes intrusion a lot more difficult immediately. Also the size of the building and site which needs to be protected has a very large influence on the security needs, a university campus is very different from a small office block..

Many locations are equipped with CCTV cameras. This enables security personnel to see when there is a disturbance and dispatch manpower to resolve the situation. The system can be made more efficient if the personnel in the control room can have a direct 2 way communication with people in the area of the disturbance which will give the possibility to defuse the situation by trying to engage in a reasonable conversation. An advanced option through integration of an STENTOFON solution is that the system 'knows' which area is being viewed on a particular monitor. A specific button or icon is dynamically reprogrammed such that the security guard can always press this same button or icon to get connected to the with that camera associated intercom. A PTZ-camera can even be associated with multiple intercom stations.

The communication points shall have a call button, such that anybody in distress can also call for help in case of a medical or other emergency, which has not yet been spotted by the personnel watching the monitors. To further enhance the system, audio picked up by intercom stations shall be processed by an analytics system which automatically detects aggression and gunshots. The output of such a system is then used to alert security personnel. The system can be expanded to detect breaking glass, to further protect the building against break-ins. Audio recording, including the audio of the 30 seconds before the event can help during the evaluation process.

Customer contact

Unfortunately, personnel who have direct contact with the general public can be subjected to verbal or even physical abuse. For these people it is very important that they are able to call for help from police or security personnel when the need arises. Reception areas or other locations where workers are behind counters can especially benefit from an intercom system which itself is able to detect when personnel is subjected to an aggressive way of talking and sends out alerts to security.

Car parks

Car parks can cause a headache due to crime. Communications requirements for car parks can be split into 2 parts, convenience and security. Entry and exit barriers must have an intercom in case the machine or the barrier does not operate. Help points must be available for people to be able to call for help when they feel threatened. All these intercom stations can also be used for automatic detection of car alarms, immediately alerting staff when an alarm goes off.

Many car parks have 1 or more lifts. In most countries every lift must have an intercom which can be used when the lift gets stuck between floors. In many countries there are strict regulations about call signaling and handling when a passenger calls for help in such a case.

At some locations there may be separate car parks for staff and car parks for the general public. These only differ in the absence or presence of payment machines, which also need an intercom in case the machine does not work. All other requirements for communications are the same.

Special features

Some intercom units may be placed in a noisy area, for instance at the entrance or exit to the car park. These units shall be equipped with active noise cancelling. This will reduce the environmental noise by up to 30dB, making the conversation clear for both parties.

Visually impaired visitors can benefit from a system where a button on a help-point can be pressed after which a spoken message gives the location of that help-point.

Glossary

- Audio analytics – a set of algorithms run on an audio data stream to detect events. There are different algorithms available
- Aggression detection – detects changes in speech patterns which indicate aggressive behaviour of the speaker
- Gunshot detection – fire arms produce a very specific sound pattern when fired
- Glass break detection – the intercom unit detects the specific sound pattern associated with breaking glass; Glass can be of different thicknesses, can be wired or laminated

- Audio detection – detects the presence of audio above a certain level; this is a much wider detection than the more specific algorithms listed above and can be used in those circumstances where the type of audio to be detected cannot be categorised easily – examples for its use are for instance children or psychiatric wards at night

Active noise cancelling is a DSP (Digital Signal Processor) based algorithm which measures the environmental noise continuously and subtracts that signal from the audio picked up by the microphone. The result is clear speech. The principal is the same as used in some high-end headsets which are sold to let people enjoy a quiet journey in a noisy aircraft.

Benefits

Integrated communications with interfacing to security management systems

- adds additional detection capabilities to the overall system through audio analytics
- can be used to defuse a threatening situation even before security guards are on the scene
- helps to provide more security and safety to buildings and sites