

Safer travel with Axis network cameras.

25% reduction in crime at subway stations in the city center.



Organization:

SL - Storstockholms
Lokaltrafik

Location:

Sweden

Industry segment:

Transportation

Application:

Safety and security

Axis partner:

Milestone Systems,
Caverion

Photo: Storstockholms Lokaltrafik

Mission

Storstockholms Lokaltrafik (SL), Greater Stockholm Local Transit Company, needed to update its existing system of security cameras. SL wanted to maintain a high level of safety and security for passengers and staff, combat crime such as theft, robbery and vandalism, and have cameras that support its staff in daily operations and emergency response operations.

SL also wanted to ensure that it had had a good video surveillance system which was able to provide good image material to investigate accidents, perform better analyses for accident prevention and better assist the police with images for criminal investigations.

Solution

With about 22,000 cameras, SL has the largest installation of security cameras in Northern Europe. The update involves replacement of about 4,000 network cameras, a large percentage of which are from the AXIS P32 and AXIS P33 series, together with XProtect® software from Milestone Systems.

The security cameras are reliable, durable, easy to install, can handle very severe lighting conditions. Due to advanced technology within the Axis cameras and their policy of an open API, they were able to reduce the system's bandwidth requirements and provide a solution that was both cutting-edge and future-proof.

Result

Safety and security have increased for both travelers and SL workers. SL has security cameras at all of its subway stations. According to a research report from Stockholm University*, it is estimated that crime had been reduced by 25% at the subway stations in central Stockholm that are equipped with security cameras. Incidents of pickpocketing and theft in particular have decreased. The cameras prevent vandalism and graffiti, and are an aid to SL's staff in tasks such as monitoring traffic in daily operations and during evacuations.



Total solution for complicated light conditions

Storstockholms Lokaltrafik (SL) transports about 790,000 passengers each day. Frequent travelers are familiar with the signs on the platforms indicating where to call in order to report incidents and suspected crime. The number goes to SL's Security Center (Trygghetscentral), part of SL's total security solution, which helps people travel safely and securely on public transport.

With more than 22,000 network cameras on buses, subways, commuter trains, local trains, trams, platforms, and other parts of the stations, SL has the largest installation of security cameras in Northern Europe. SL needs to upgrade its security solution. A major challenge is the complicated light conditions:

- > In addition to the large light differences between day and night, the light varies greatly depending on the time of year
- > The light varies greatly depending on where the sun is located in the sky; when the sun is low in the winter, the rays can shine directly into the camera lenses
- > Inside, the platform floors can reflect the light
- > A single image can contain both bright light and dark and shadowy areas
- > There can be a lot of backlight

Another challenge is that the cameras are exposed to tampering, dirt, vibrations and extreme temperature variations. The cameras must be easy to clean and able to withstand a high-pressure washer.

Yet another challenge is the amount of information generated. Due to the large number of cameras on the network, an enormous amount of data is generated, which requires processing and storage. Further challenges include the infrastructure and bandwidth. It is also difficult to have comprehensive and complete control of all cameras simultaneously. The cameras must be easy to control and managed centrally.

The cameras must provide a good overview of large areas and provide forensic detail.

They must be capable of capturing and reproducing close-ups of people moving quickly, e.g. running, even when the people are moving between the images of different cameras. Operational reliability is another key requirement.

"Everything has to work 24 hours a day 365 days a year," says Kicki Roos, Administration Director for IT at the Public Transport Administration (Trafikförvaltningen) of Storstockholms Lokaltrafik. "The cameras also have to be easy to install, scalable, based on an open standard, future proof, and capable of being adapted to future technology."

Intelligent security solution for exacting requirements

The areas covered by the cameras are the ticket halls, escalators, intersections, and the inside of buses, subway cars, tram cars, local train cars and commuter train cars. They also cover platforms – benches, areas where travelers stand and wait, platform edges, and tunnels.

All permanently installed cameras in the subway and commuter train stations are connected to SL's Security Center (Trygghetscentral), which is staffed with operators who monitor video footage in real time around the clock.

The cameras installed are primarily network cameras from the AXIS P32 and AXIS P33 series that work together with Milestone Systems' XProtect® Corporate software, which is specially designed for large security installations. These are seamlessly and effectively integrated with the existing security system and other elements of the IT infrastructure.





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**Arne Grundberg,
Administration Director at the
Public Transport
Administration
(Trafikförvaltningen) of
Storstockholms Lokaltrafik.**

The cameras are very light sensitive, have HDTV quality, and enable wide dynamic range, which means they can reproduce sharp images even when there are severe variations in light conditions. The network cameras also deliver recordings with a very high frame rate.

To overcome the challenge of bandwidth, the cameras are equipped with Axis Zipstream technology, which reduces the bandwidth and storage requirements by at least 50 percent in video surveillance applications.

Zipstream technology is fully compatible with the H.264 standard, wide dynamic range – forensic capture, and Axis Lightfinder technology. Zipstream is available in the new generation of Axis network cameras.

The intelligent security solution from Axis makes different types of analyses and smart applications possible, such as recognizing movement patterns and analyzing aggressive behavior. About 200 incidents are reported each day.

Less crime and safer travel

The amount of crime has decreased sharply since the security cameras were introduced. A research report from Stockholm University shows that crime decreased by about 25% at subway stations in the city center. The incidence of pickpocketing and theft in particular has decreased significantly. According to the survey “The Effects of Surveillance Cameras on Crime: Evidence from the Stockholm Subway”, travelers taking public transport feel safer.

“We are very pleased with the Axis security cameras. They have good image quality and are durable, reliable and easy to handle. The cameras have provided great support in our efforts to combat crime and vandalism, says Arne Grundberg, Administration Director at the Public Transport Administration (Trafikförvaltningen) of Storstockholms Lokaltrafik.

The installation is continuously updated with the latest technologies and innovations. The cameras provide SL staff a lot of support in their daily work with regard to traffic control and for different types of emergency response operations. During evacuations, the cameras provide visual support for announcements and instructions given via the PA system.

It is also easier for the police to gather evidence in the form of images from the cameras, thereby facilitating their work.



Caverion

About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,100 dedicated employees in more than 50 countries around the world, supported by a global network of over 80,000 partners. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.