Modern trains in harsh environments need innovative safety solutions.

ATrain secures and optimizes its rail service with Axis network cameras and laser-based perimeter control from Embsec.

Organization:
ATrain AB – Arlanda Express

Location:
Stockholm, Sweden

Industry segment:
Transportation

Application:
Safety and security

Axis partner:
Nokas, Embsec

Mission

ATrain AB owns and operates rail services between Stockholm and Arlanda Airport. The trains, which are more commonly known by the name Arlanda Express, operate on the Arlanda Line, one of few privately operated railroad lines in Sweden. ATrain currently owns seven trains and one train workshop. The company decided in the summer of 2015 to install a camera solution at train stations and depots to prevent crime and vandalism and to enable the management of operative tasks, such as monitoring flows of travelers, checking signs, elevators and escalators, and making sure that the ticket machines are working.

Solution

Arlanda Express trains operate in a relatively harsh environment used frequently by a lot of people. The challenge was to find good locations for the cameras and make sure that these locations actually covered all the areas that needed to be monitored.

Another challenge to overcome was the lighting conditions, which would require high-quality cameras. The solution chosen was a combination of Axis network cameras and Embsec's laser-based perimeter control, VFence.

Result

ATrain has zero tolerance when it comes to graffiti and vandalism. Besides the high costs for cleaning the trains, there is also a considerable risk of injury to the perpetrators of these crimes, as there are high-voltage power lines in the areas around the tracks and depots which could easily lead to hazardous situations. After the cameras and VFence were installed, only two incidents have occurred and both of these could be averted in time without vandalism or accident.

AXIS COMMUNICATIONS

66653/EN/R1/1603

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Zero tolerance for graffiti and vandalism

ATrain has 180 employees, including train drivers, train attendants and operations management personnel. Seven Arlanda Express trains operate on the Arlanda Line between Arlanda Airport and Stockholm Central Station. ATrain is responsible for safety and security at four stations – three at the airport and one at Stockholm Central Station. There is also a dispatch center at Stockholm Central Station, where up to six people perform real-time surveillance of the camera monitors that oversee the stations and depot.

In addition to enhancing safety and security for passengers and staff, the aim of installing the cameras was to prevent graffiti and vandalism to the trains. This has been a problem, particularly at night when the trains are at the depot.

"Cleaning vandalized trains is a huge expense, and having graffitied trains operating on the route is damaging to our brand. We are proud of our trains, which have a high standard and award-winning design," says Jimmy Ahl, Safety and Security Director at ATrain.

ATrain has a zero-tolerance policy for these types of occurrences. They simply must not be allowed to occur.

Cameras in combination with laser-based perimeter control

Axis partner NOKAS was contracted to investigate how technology could help achieve this zero-tolerance vision. The solution that proved to meet all of the requirements was a combination of Axis network cameras and Embsec's VFence F-501 laser-based perimeter control. The system monitors stretches along the train routes that need perimeter control, but where physical protection could not be set up.

The solution is simple, powerful and fully automated. The laser-based perimeter control sensor VFence F-501 detects passing people and objects at a distance of up to 500 meters. The laser sensor functions without reflections and detects both static and moving objects, regardless of lighting conditions.

The laser sensor is connected to Axis cameras and an alarm is sent directly to the camera when a laser beam is broken or a reference point changes. The moving camera is aimed at the occurrence, recording begins and action can be quickly taken.

"The components in this system are really top of the line. They meet the stringent requirements of this harsh and sometimes dangerous environment. With this modern technology, we feel very confident that we are giving our passengers and our employees the security and service they expect, says" Jimmy Ahl, Safety and Security Director at ATrain.

"In an environment like this, high precision and reliability are everything. We cannot accept too many false alarms," says Johan Elliott, Key Account Manager at NOKAS.

Complicated lighting conditions and requirements for easy installation

Axis cameras must also be able to handle the complicated lighting conditions, backlighting and light/dark parts of the screen that are common scenarios at a station. In these cases, an AXIS Q6045 Network Camera with Wide Dynamic Range is used. In addition to perimeter control, the camera can also be zoomed and controlled to check that signs, ticket machines, elevators and escalators are functioning correctly. "This helps us provide even better service to our passengers," says Jimmy Ahl.

"Installation was very simple. It always is with Axis cameras – hardly any adjustment is ever needed. It is right the first time – not after ten attempts, which can be the case with other types of cameras," says Johan Elliott. "At the same time, maintenance on this type of product is not easy. Operation and maintenance are demanding and costly, and that defines what technology we use. It has to be reliable," he continues.

Two incidents have been averted since the solution was implemented in summer 2015. ATrain plans to expand the system and feels that their zero-tolerance vision has already become a reality.

Photos: Niklas Alm

NOKAS

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