

A means of transportation that really counts.

Quito among the first using people counting for improved municipal bus system.



Organization:
Quito Metropolitan
Passenger Transportation
Authority (QMPTA)

Location:
Quito, Ecuador

Industry segment:
Transportation

Application:
People counting, safety
and security

Axis partners:
BT Security, ISS

Mission

In the capital city of Ecuador over 100 trolley buses move through the streets where modern skyscrapers share space with churches and other colonial-era architectural gems. The Trolleybus public transportation fleet – overseen and operated by the Quito Metropolitan Passenger Transportation Authority (QMPTA) – mobilizes a ridership of 250,000 passengers daily. The population's reliance on the bus system required a security solution that could guarantee total control over a service that runs 24 hours around the clock, 365 days a year.

Solution

Under this premise it was necessary to implement a video surveillance system that would allow for the monitoring of bus stops and terminals as well as manage people counting. The system installed consists of 142 AXIS P1344-E; AXIS P1343 and AXIS P5522-E Network Cameras set up by systems integrator BT Security, an Axis partner in Ecuador, and managed using Intelligent Security Systems' (ISS) SecurOS software.

Result

Implementation of a system-wide video surveillance solution has enabled centralized monitoring by the Collection and Operations department, thus providing a tool that has contributed to achieving improved transportation service to the communities throughout Quito and its neighboring municipalities. Advantages derived from the installation of the system include prior notification of events that could affect operations, and the compilation of legal evidence in the event of incidents.



Making history

The QMPTA provides uninterrupted service all year round. Its urban transportation network consists of interconnecting lines between intermediate transfer hubs and designated stops, making it possible for passengers to design their own routes and reach any area of the city for just one single fare.

The system consists of main lines operating in dedicated lanes with large-capacity buses that travel between the majority of stops and stations.

In order to provide a high-resolution security system, Axis partner and systems integrator BT Security installed 92 AXIS P1344-E Network Cameras at stops and terminals, all streaming HD-quality video. "The objective was to provide coverage of the areas of monetary exchange and around the stops, with the goals of improving collections performance and user access to stations, as well as bolstering security within the facilities and increasing availability of buses during peak hours", explained Andres Dueñas, Director of Integration & Automation Solutions at BT Security.

According to Dueñas, "An alternative solution was required that would be capable of incorporating times and dates scattered throughout our own internal systems into the new system, which was necessary for us to carry over our headcount data." The project put in place consisted of five cameras with each one running people-counting video analytics technology provided by ISS. However, overcoming the obstacles to implementing such an innovative solution was not achieved overnight.

"Tracking headcounts in the vicinity of open-air transportation stations was a real challenge, in terms of dealing with issues such as shadows, contrasts, elevated groups of people and areas that include permanent security personnel", affirmed Daniel Mariño, ISS regional director. The major difficulties encountered centered on the effects caused by direct sunlight casting shadows within headcount zones – solved with the use of polarized glass in the vicinity of stations along with careful positioning of the AXIS P1344 cameras.

"With the right engineering and careful camera selection, this is today a reality", recounted Mariño.

The system integrator also installed 23 AXIS P1343 Network Cameras in areas of monetary exchange and customer service for improved security throughout these sites. "And to complete the project we have installed 21 AXIS P5522-E Network Cameras in terminals and at selected stops with the objective of improving the availability of transportation as well as the perimeter security of the chosen sites," said Andres Dueñas.





Incidents resolved

On average, around 30 lost items per month are found by service personnel, conductors and security guards at the stops and inside stations and buses. It's a job that requires the aid of technology.

The video surveillance network is administered, monitored and managed through the ISS SecurOS system, supported by five servers with an archival recording capacity of 20 days. It runs on a multi-server architecture, managed as one unified command and control system from the headquarters of the QMPTA, allowing for the management of live streaming and recorded video, panic buttons and motion detectors during unscheduled hours aided by the automatic display of alarms before operators so they can react immediately.

"It has become a reliable, low-maintenance solution seeing that the platform itself maintains its systems and databases without the need for human intervention", detailed Mariño. In addition, a team of seven operators monitors the system in a 7x18 format in order to be able to attend to any alarms triggered and anticipate events. All components integrated into the system are of premium quality, such as Category 6A structured cabling.

For Franklin Caranqui, QMPTA Technology Coordinator, another advantage of the system is to be able to access video that allows the community to identify and resolve incidents or events arising during the use of the public transportation system.

Once the project was up and running, an impressive capacity to withstand varied conditions was observed in the cameras, resulting in benefits to the use of video analytics that demand a zero failure rate while maintaining the continuity of a service that's heavily relied upon by the population 365 days a year.

"The solution has led to improved transportation system security, supporting operations through provisioning of the fleet and warnings given before events that could affect the operation and safety of transportation corridors."

Franklin Caranqui, Technology Coordinator for the Quito Metropolitan Passenger Transportation Authority.



About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global 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 its customers and carried 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 1,600 dedicated employees in more than 40 countries around the world, supported by a network of over 65,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ OMX Stockholm under the ticker AXIS.

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