Transportation Agency Centralizes Video Surveillance

Transport for Greater Manchester is replacing stations' standalone systems with centralized Cisco Video Surveillance Manager.

EXECUTIVE SUMMARY

TRANSPORT FOR GREATER MANCHESTER

- Transportation
- Manchester, United Kingdom
- 600 employees
- Partner: Cisco Physical Security ATP Partner—Interactive Distribution Limited (IDL), Reading, UK.

CHALLENGE

- Enhance passenger safety and security
- Minimize equipment and operational costs
- Prepare for future safety and security technologies

SOLUTION

- Replaced analog cameras with Cisco Video Surveillance 4300 Series High-Definition IP Cameras and centralized Cisco Video Surveillance Manager servers at TfGM data centers for recording and archiving
- Deployed Cisco Video Surveillance Manager, for management of the video servers over the network, from any web browser

RESULTS

- Collected evidentiary quality video
- Prepared for video analytics to accelerate event detection and improve customer service
- Will eliminate the need for storage and monitoring software at individual stations
- A structure maintenance and support service arrangement for preventative and reactive service restoration of the video surveillance

Challenge

A public agency, Transport for Greater Manchester (TfGM) is responsible for overseeing public transport services throughout Greater Manchester in North West England. It also owns Greater Manchester bus stations, funds essential bus and train services, and owns the successful Metrolink tram network.

Passenger safety and security are major priorities, and TfGM funds video surveillance systems for each station in multiple boroughs. Visible cameras can help to deter crime, and bus shelter vandalism in Greater Manchester dropped by almost 20 percent the year after TfGM first installed video surveillance cameras.

Previously, each transport terminal establishment project selected its own video surveillance solution. "We now have at least 30 different CCTV [closed-circuit television] islands, each managed and maintained separately," says Rohan Mendis, telecommunications strategy manager, TfGM. Security personnel and local police could only view video from a single console at the station, attached directly to the digital video recorder.

When TfGM began planning upgrades to the Altrincham Interchange and Park & Ride Facility at the Navigation Road Metrolink Stop, the Information System Directorate influenced the projects to deploy a centralized video surveillance system that could later potentially be extended to the other transport terminals, as well. "Using our multiservice IP network for surveillance video in addition to data and voice would reduce costs and give us enhanced capabilities," says Mendis. TfGM decided to implement an IP-based system, for the following reasons:

- **Lower network costs:** Stations would be able to connect cameras to their existing Multi Service IP network instead of a separate video network.
- **Anywhere access to video:** Authorized personnel, including police and local borough councils, would be able to view video over the network from any location with a web browser. This capability would facilitate collaboration with other public safety and stakeholder organizations.

- **Integration with other physical security systems:** In the future, TfGM would be able to integrate an IP-based video surveillance solution with its passenger help points, building access controls, digital signage, and other IP-based physical security solutions.
- **Choice of support vendors:** A solution built on open standards would give TfGM the flexibility to choose from many support organizations.

Network Solution

TfGM met all of its requirements with a Cisco® Video Surveillance Solution. “We already use our Cisco network as the platform for voice, and adding video surveillance on the same platform would simplify IT,” says John Wharton, computer operations manager, TfGM.

At Altrincham Interchange, 32 Cisco Video Surveillance 4300 Series High-Definition IP Cameras continuously record at all areas of the bus station, including bus stands, the interchange building, a ticket office, and pedestrian crossings.

Cisco Video Surveillance Manager software provides a web-based interface that personnel use to securely log in, control pan-tilt-zoom cameras, view real-time and archived video, save individual video images, and even search for video containing motion. Personnel can use the software from any location with a web browser, and do not necessarily have to be in the station.

TfGM integrated a third-party mapping application with Cisco Video Surveillance Manager to make it easy to select different camera feeds for viewing. “An operator who receives an alert about an event can just click the camera icon on the station map to view the video feed in real time,” says Mendis.

> “Using our multiservice IP network for surveillance video, in addition to data and voice, would reduce costs and give us enhanced capabilities.”
> **— Rohan Mendis, Telecommunications Strategy Manager, Greater Manchester Public Transportation Executive**

Results

Enhanced Safety and Security

“We expect the video cameras to continue to encourage good behavior and act as a crime deterrent,” says Mendis. And when incidents do occur, TfGM can securely share stored images with Greater Manchester Police or British Transport Police. Just a few days after the system became operational, the TfGM captured video of several youths disturbing the peace. The image clarity from the Cisco Video Surveillance 4300 Series HD IP Cameras was sufficient for the local police department to identify the individuals of interest. The bus station’s original analog video surveillance cameras would not have provided the necessary image quality.

Cost Savings

Centralized storage and management means that TfGM will no longer need to purchase and maintain video surveillance storage and management servers at each station, reducing equipment costs and power consumption. The only technology that each station needs are cameras and a web browser. TfGM saved more money, because Cisco Video Surveillance 4300 Series IP Cameras receive power over Ethernet, from the station’s Cisco Catalyst® Switch. This feature eliminated the expense of bringing power cables to each of the cameras.

PRODUCT LIST

Network Systems

- Cisco Catalyst 3560G-24TS-24 Ethernet 10/100/1000 ports with PoE and 4 Small Form-Factor Pluggable (SFP)-based Gigabit Ethernet ports; 1 rack unit (1RU)
- Cisco Catalyst 3560G-24PS-24, 24 Ethernet 10/100 ports with PoE and 2 SFP ports
- Cisco Catalyst 3750E-24PD-24, 24 Ethernet 10/100/1000 ports with PoE and 2 X2 10 Gigabit Ethernet uplinks

Physical Security

- Cisco Video Surveillance Manager
- Cisco Video Surveillance 4300 Series High-Definition IP Cameras

Cisco Video Surveillance 2421 IP Dome

Ease of Operations

Authorized station personnel and police can view video from any camera, from any web browser. “The web-based interface for Cisco Video Surveillance Manager enables us to view video from any location, not just the station, and saves the cost of client software for each station,” Wharton says. Operations personnel at the station were able to begin using the Cisco Video Surveillance Solution with minimal formal training, using the intuitive interface to view real-time and archived video from different cameras.

Next Steps

TfGM plans to extend the value of its Cisco Video Surveillance Solution in the following ways:

- **Connecting more stations:** TfGM has announced that it will progressively replace the existing analog CCTV systems with IP cameras. Eventually TfGM plans to add up to 1000 cameras in existing and new transport modal interchanges, bus stations, tram stops, Park & Rides, and bus shelters. The cameras will connect over the Cisco IP network to the video servers at the TfGM data centers.
- **Using video analytics software to automate event detection and improve customer service:** “We want to automate event detection, because a human operator can miss an event when monitoring video streams from many cameras,” says Mendis. Third-party video analytics software can examine the video streams from designated areas of the transport terminal for activity and notify operational personnel or other applications when they detect specified conditions, such as human activity in prohibited areas, or more than a defined number of people in a ticket line. When lines are long, station personnel will receive an alert, prompting them to check that machines are operating properly.
- **Integrating with network-connected digital signage to direct passengers to ticket machines with the shortest lines.** The message will come directly from the Cisco Video Surveillance Solution, increasing passenger service without additional personnel.
- **Integrating with emergency and help call points throughout the station:** When a passenger presses the call button at an emergency and help call point, designated personnel will receive a video stream from a nearby camera, sent to their PC, laptop, or smartphone. Receiving video along with the alert improves situational awareness.
- **Integrating with building access controls.** When personnel swipe an access card, for example, the system can capture the video image and forward to building access security staff so that they can validate the cardholder’s identity either live or historically.

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