

Converged Solutions Engage Security Personnel

Security equipment may work beautifully, but is useless without proper operation. *A&S* explores how public transit authorities interact with security for situational awareness.

BY LING-MEI WONG

Public transit security is about being prepared for the worst as well as preventing it. Each system will have different priorities, depending on the location's purpose and unique concerns.

Management concerns can be aided by technology. People counting in a metro station can be added to video, eliminating a tedious manual task. "You can gather statistics and business intelligence on the flow of people for different times of the day and days of the week and use this information to improve operations," said Zvika Ashani, CTO of Agent Video Intelligence, a video content analysis provider. "For example, you could modify the frequency of buses, change bus routes and look at traffic flow."

Designated monitoring zones can also tell operators where passengers are located. "For security, the most common application is looking to detect people in unauthorized areas, such as people on the train or subway tracks and in other areas where they're not supposed to be," Ashani said.

Real-time video gives operators a better idea of what's going on and how best to respond. "There is a big difference between handling violence or vandalism at a station, managing a response to pick pocketing or



other disorderly behavior onboard a bus or metro," said Patrik Anderson, Director of Business Development, Transportation for Axis Communications.

Network cameras are also useful for remote locations to intercept metal theft along the rail infrastructure, or detecting and preventing graffiti before a depot is defaced, Anderson said.

Management software can provide authorities with a record of what happened after an event. "The software provides automatic and on-demand downloading of video with access to status reports and event logs," said Rodell Notbohm, GM of Apollo Video Technology. "The software is customizable to the agency's retention requirements and allows for easy-to-use yet robust data management."

COMMUNICATIONS

Getting messages to the right people is crucial for public transit, particularly with large distribution and scores of passengers traveling at high speeds. "Recently, we had a fire on an Israeli train. It unfortunately happened while the train was in transit, so the driver didn't even know," said Udi Segall, Director of Product Marketing, Surveillance Division, Security Group, Nice Systems. "You need sensors and a means of communication to the control center, to know where it's happening and dispatch the relevant forces."

If the event is even more catastrophic, such as a coordinated terrorist strike rather than a fire on an isolated carriage, communication is paramount. For situational awareness in an event such as the 7/7 attack, remote management

should be available to security personnel. "If they cannot get into the control center, the security manager can manage the situation from his home office," Segall said.

A good management solution incorporates the transit authority's standard procedures. "From dispatching responders and communicating with field personnel to updating traffic signs and rerouting traffic to streaming real-time information and video to mobile devices, the VidSys physical security information management (PSIM) software manages the situation," said David Fowler, Senior VP of Marketing and Product Development.

PSIM reports also track for compliance and integrate data from multiple sources. This can range from dynamic message signs, signal controllers, road sensors, video cameras, ramp meters and more, Fowler said.

GETTING ALONG

Integration is straightforward in terms of technology. However, it gets more complicated with multiple stakeholders, who all require access to security but are reluctant to share resources. "The biggest issues we run into when integrating into a system isn't with the equipment, although it takes expertise to integrate in bus or rail car," said Craig Szmania, Mobile View Business Leader, UTC Fire & Security. "The biggest challenge is integrating into the networks, for wireless and computer

networks for transit authorities."

Security vendors must cooperate so third-party devices work as one unified system. "The public address system is often integrated with the camera, intercom, sensor and indication systems," said Kaz Shimizu, Product Marketing Manager, TOA.

The sprawling Shanghai Metro comprises different video protocols and brands. To enable operators to see video regardless of the manufacturer, Infinova integrated all the matrixes and DVRs, said Mark Wilson, VP of Marketing.

The lack of integration for video creates problems not just for vendors but for operators as well. IP video standards, such as ONVIF and PSIA, are welcome. "Everybody will prosper if they have an agreement to work together," Segall said.

A large distribution of equipment, both fixed and mobile, makes it difficult for operators to have a comprehensive view. "In the future, what they want is to have all those systems integrate together so the transit security force can access all their platforms and buses from one location," Szmania said. "The technology is there, but the will and the investment is still coming along. Different departments in the transit authority



Zvika Ashani,
CTO of Agent
Video Intelligence



Rodell
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are responsible for different parts of the business; getting them to talk together is a job."

Forming a solution requires identifying the relevant stakeholders. "If there's a fire in the metro station, it's not just a problem underground, but it involves the local police, the public transit authority and the mayor," Segall said. These parties must be able to share information for maximum benefit, such as video, audio recordings or messages received.

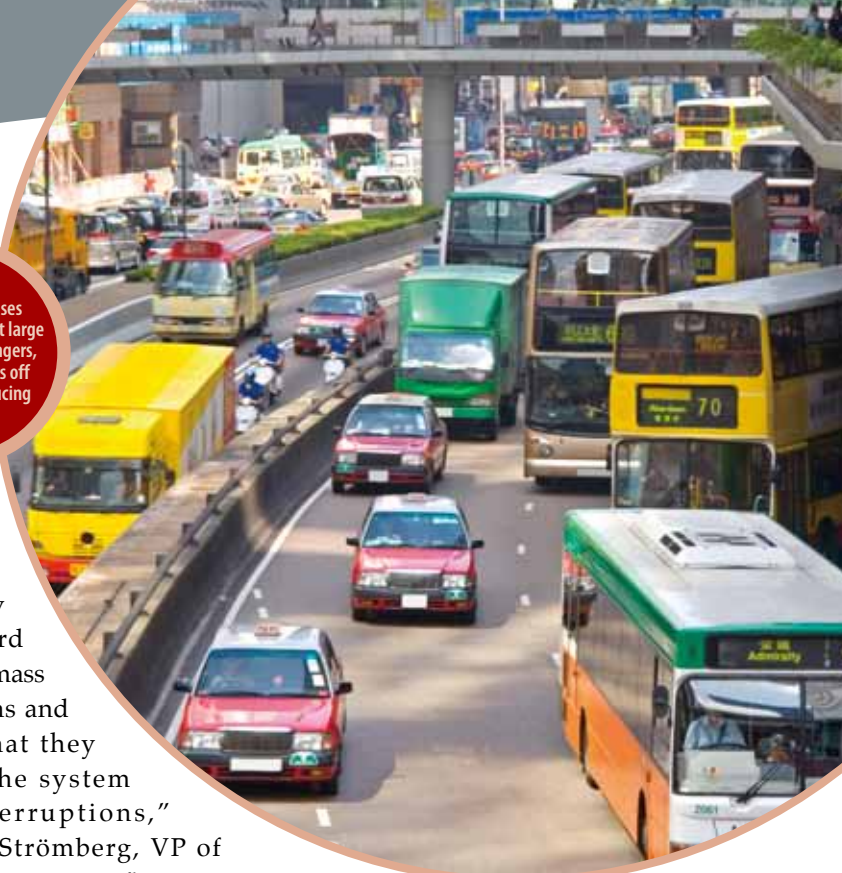
TECHNICAL ASSISTANCE

Maintaining public transit security usually falls to the system integrator who installed the system. "It is the responsibility of the system integrator to ensure the complete integration together with the customer approving it," Anderson said. "Typically several pilot tests are made and finally an acceptance test and sign-off in these kinds of larger surveillance system projects."

The integrator has to be on-call for mishaps such as failing cameras to full-blown crises. While the transit authority will have its own security force, equipment issues are generally handled by the installer. With such a range of situations, integrators need to have good communication skills for problems and challenges, Segall said.

Experience is a definite plus. "VidSys looks for integrators with physical security and IT industry expertise and demonstrated client engagements across vertical markets, a particular technology or industry niche," Fowler said.

Public-transit work is carried out by reliable system integrators, who are either global or local. "Through this cooperation we can guarantee



Public transit buses efficiently transport large numbers of passengers, keeping more cars off the road and reducing pollution.

the supply of reliable and high-quality ticket and card materials for mass transit systems and be certain that they operate in the system without interruptions," said Samuli Strömberg, VP of Marketing, RFID, UPM Raflatac.

While having a long resume helps, it must reflect positively on the integrator. The U.S. is UTC Fire & Security's main market for public transit, which is large but tight-knit. "The properties know what the other properties are doing," Szmania said. "They hear the good things and the bad things about the systems. Your reputation is extremely important to your business."

SPECIFYING SECURITY

As any number of things could disrupt mass transit, careful planning is a prerequisite. "Typically, the mass transit system, integrator and Infinova work together on the design of the system to ensure that the resulting solution meets the mass transit organization's expectations," Wilson said.

Newer technologies are seeing uptake, albeit slowly. Agent Vi has seen more requests for proposals specify analytics and has generated awareness by publishing case studies. "Offering case studies allows systems integrators and end users alike to read about our solutions and

determine whether they are suitable for their needs," Ashani said. "It's not a cutting-edge market; integrators and end users want to see results before they try it themselves."

Most vendors certify installers or contractors on how to deploy their solutions in a timely fashion. "The sales cycle is pretty long and the project size is quite large, so it is normal to have more parties involved," said Cosimo Malesci, VP of Channel Sales and Marketing, Fluidmesh Networks.

Because of the long sales cycle, as well as the extended product life span, scalability is a procurement consideration. "Purchasing a system with upward compatibility is important from the outset because it enables transit agencies to upgrade and enhance a system without having to purchase brand new equipment," Notbohm said. "Transit agencies should also investigate the vendor's product road map to ensure they can equip additional vehicles that are compatible with the rest of the fleet, as budgets allow."

Today security is factoring into station design long before they are built. "Security needs to have the infrastructure in place to support it," said Jamie Edgar, Global Director of Integrated Sensor Systems, Smiths Detection. "For metros built 20 years ago, it's costly to go in and provide retrofitted solutions. There's usually not enough space."

FUTURE CHALLENGES

Mass transit has evolved, with rolling stock vendors providing the security hardware for subway cars before they land on track. "They realize video surveillance manufacturers don't understand the hardware specifics to be installed on a train," Segall said. There is also a great diversity in the hardware specifications for onboard video equipment on subway cars and buses.

It is less expensive for end users to specify security for new vehicles, because they can design for wiring and power, Szmania said.

Retrofitting trains is more costly, as older trains are not designed for

video equipment. "The newer trains have the camera infrastructure built in," Edgar said. "We're having discussions with train manufacturers such as Bombardier to do advanced planning for video cameras and video communications in train cars."

GLOBAL STANDARDS

Public transit is covered by many rules, but most regulations are regional and rarely international. As they vary nationally and even regionally, solutions must meet all the requirements of the individual customer, Notbohm said.

A customized approach for every transit organization is time-consuming and inefficient. "There are currently no national standards for bus security in China," said Yingming Li, Product Director of Topshine Technology. "We are working with end customers and distributors for more uniform standards."

Presently, no single standard covers public transit.

"Certifications for FCC, CE, RoHS and ISO all must be passed to be

Bus monitoring offers transit authorities a live view on road conditions.



Samuli Strömberg, VP of Marketing, RFID, UPM Raflatac



James Tseng, Senior VP of Telexper

specified for transportation projects," said James Tseng, Senior VP of Telexper.

Public transit rules are detailed and country-specific. "In Europe, the mobile DVRs must operate from 30 degrees to 55 degrees Celsius," Tseng said. "In the Middle East, operating temperatures go up to 85 degrees Celsius."

A more universal standard is the Secur-ED consortium, which is striving for an EU solution. "All relevant stakeholders for equipment and operators are working together," Segall said. "We're working very closely with Bombardier, Siemens, Thales, Alstom and manufacturers of rolling stock."

For now, public transit rules remain highly detailed, with whole books dedicated to the subject. "It's a barrier to entry for many smaller companies," Szmania said. "When we go and bid on opportunities, all our departments are involved to make sure we do everything properly for New York City or Philadelphia."

A holistic approach will streamline public transit. "We talk about equipment, but ultimately, there are the personnel, processes and then the technology," Segall said. "A good solution is a good combination of the elements."

