



PUBLIC TRANSPORT SAFETY

The increased threat of attacks reduces confidence in the safety of public transport

David Lenot explains how new developments in video surveillance help transport agencies keep passengers safe as security concerns remain a priority

Cities everywhere want more people to use public transportation. That's because increasing ridership on buses, trains and subways helps reduce energy consumption, greenhouse gases and other pollutants. It's also an affordable and efficient means for more people to move through cities as the steady rise in urbanisation continues around the globe.

According to a report by the University of California and the Institute for Transportation and Development Policy, ditching cars for buses, bikes or walking in cities can reduce pollution by 40 percent by 2050 and save \$100 trillion in public and private spending. The report also indicates that cleaning up the traffic jams in the world's cities offers the "least pain and the most gain" to become greener.

However, convincing residents and visitors to opt for public transit over cars can be challenging. In recent years, news of terrorist attacks targeting city infrastructure has seemed constant. While the more recent incidents in London and Brussels stand out, cities everywhere are at risk. According to research conducted by Mineta Transportation Institute (MTI), worldwide attacks with 25 or more fatalities on buses, trains (and passenger ferries) grew from only four between 1975-1985 to 39 between 2005-2015. Coupled with the increased convenience of ride-share apps, these heightened concerns of terrorist attacks can dissuade potential riders from mass transit options.

Whether travelling to work on a Monday morning or to a concert on a Saturday afternoon, city dwellers want to know their journey will be uninterrupted and easy. More than that, they want to know that they will be safe. For mass transit agencies, this means doing more than regularly servicing and maintaining vehicles. It means ensuring commuters have a strong sense of security as they wait in terminals and board fleets.

Therefore, many mass transit agencies are turning to new technological advancements. Specifically, they are looking at video surveillance systems and how they can expand on existing investments to promote security and improve services. This article will highlight key developments in video surveillance that are helping mass transit agencies to enhance passenger safety and increase confidence in the process.

Below are three developments in surveillance that are helping mass transit agencies tackle everything from customer complaints to major incidents.

UNIFYING SECURITY SYSTEMS TO SPEED UP RESPONSE

Now more than ever, mass transit agencies are using many different technologies to secure terminals, depots and fleets. For instance, while x-ray machines and metal detectors were once reserved for airport security, they are now being added to major train terminals across Europe. Transit agencies and cities are also implementing systems ranging from access control to perimeter detection to keep infrastructure and their vehicles safe from wrongdoers.

With all these new sensors, a vast amount of information is streaming into the control room and operators need to remain efficient. It's the reason why many cities are upgrading disparate technologies to a unified security platform. Through a single pane of glass, operators can access data from many different systems. All alarms are automatically synched to video so operators can quickly make informed decisions in response to whatever is happening.

Advanced platforms even offer mission-critical features that guide operators through response procedures. This ensures they always adhere to processes and policies when handling unplanned or stressful situations.

FEDERATING VIDEO SYSTEMS TO ENHANCE COLLABORATION

Securing mass transit is no longer the sole responsibility of one agency. It is becoming more and more common for mass transit departments to work closely with law enforcement and other public and

private entities to keep passengers secure. This is partly due to the smart city movement. As more cities expand their network infrastructure, public and private entities are upgrading legacy analogue video surveillance technology to IP. These new systems provide greater connectivity and access to new capabilities, which foster collaboration.

For instance, mass transit agencies are adding more cameras and expanding video monitoring from terminals and maintenance facilities to onboard buses and trains. They are also tapping into new capabilities such as Federation to bring video from terminals, maintenance depots and fleets back to a central monitoring station. This provides a global view of operations at a central head-end while still providing autonomy to teams at each site. This centralised view helps speed up incident response and investigations because operators can easily view or retrieve video files without leaving their desk.

Federation also allows transit departments to securely share video with law enforcement,

IMPLEMENTING NEW TECHNOLOGIES HELPS AUTHORITIES IDENTIFY AND RESPOND TO THREATS

dispatchers and first responders. Whether it's securing a major city event or handling an unplanned incident, everyone involved can see what is happening and if required, coordinate the fastest and most effective response to any situation.

USING VIDEO ANALYTICS TO BOLSTER INFRASTRUCTURE AND PASSENGER SAFETY

Since some terminals, storage sites and maintenance depots can span city blocks, mass transit agencies are looking for tools to simplify the operators' jobs. It's why video analytics often come up in conversations with mass transit agencies when discussing security upgrades.

Within the mass transit industry, video analytics can encompass many applications. The simplest one would be to protect the infrastructure or vehicles. For example, perimeter or cross-line detection analytics can help operators detect if someone unlawfully enters a bus depot. For passenger safety, video analytics help to alert operators to potential threats or circumstance that require immediate intervention. This can include identifying suspect bags lying around in a terminal or if someone gets too close to the edge of a subway or train platform.

Agencies can also use analytics to better understand terminal usage and how people navigate stations. People counting, for instance, can help mass transit agencies identify what the busiest times of the day are for a new station or which stations are most frequented on weekends. This provides insight into operations, which can lead to future service improvements.

While there are many city agencies upgrading to the latest advancement in video surveillance, the

Massachusetts Bay Transportation Authority (MBTA) is an impressive example. MBTA operates a massive fleet of sophisticated vehicles including buses, subways, commuter rails and ferries in the greater Boston, Massachusetts area in the United States. The entire mass transit system accommodates over 1.3 million passengers each weekday, ranking the MBTA as the nation's fifth largest mass transit system.

After receiving a grant from the Department of Homeland Security, MBTA set out to improve the security on over 1,100 buses, which serve 180 routes throughout the city. MBTA implemented the Omnicast video surveillance system by Genetec Inc. on board its buses.

Today, each bus has a monitor that displays a live camera feed to passengers, acting as a public advisory of video monitoring as well as a deterrent against criminal activities. Two departments within the MBTA have live access to the system from their own control rooms, including OCC operations and the MBTA police dispatch. In the event of an incident, dispatchers and analysts can view video from the bus through a cellular Verizon 4G LTE connection, facilitating both real-time emergencies and investigations.

Operators can also send a request to the surveillance system for a specific instance of video. Once the bus is back at the terminal, the system will automatically transfer the video to the central archiver through a wireless network and notify the user via email once the transfer is complete.

"We do a significant amount of forensic video analysis for other agencies such as the Boston Police and State Police, and pull events that happen at intersections, bus stations or anywhere around the buses. It's really a benefit to the whole metropolitan

Boston area," said Jonathan Wing, Video Analyst, Criminal Investigation Unit.

A GPS integration is linked to the master OCC system and Google maps, letting operators know exactly where buses are within the city. In the event of an emergency, officers in police cruisers can also find buses and pull video from mobile data terminals. Furthermore, bus drivers can alert OCC operators of distress on board the bus through the integration of a panic button alarm.

According to Adam Peters, Transit Security Projects Administrator at MBTA: "Customer and driver feedback shows that they feel safer. Being able to keep people safe by deterring various types of incidents or to extract evidence – it's invaluable."

With an increasing concern of threats and an environmental need to get more people out of cars

VIDEO ANALYTICS HELP TO ALERT OPERATORS TO THREATS THAT REQUIRE IMMEDIATE INTERVENTION

and on to buses, subways and trains, transportation agencies are implementing new technologies that help their teams identify and respond to threats faster than before. Some of the most common upgrades include moving from disparate technologies to a unified platform, federating systems to improve collaboration both within the department and outside agencies, and using video analytics to spot immediate threats. It's with these new technologies that more mass transit agencies can extend greater peace of mind to passengers and keep their terminals and fleets safe ●

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Video surveillance is increasingly common on trains and buses



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