



Managed Mobile Video Surveillance & Security System for Mass Transit



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The Challenge

The Massachusetts Bay Transportation Authority (MBTA) operates a substantial fleet encompassing buses, subways, commuter rails, and ferries in the Boston area, catering to over 1.3 million daily riders, ranking it the nation's 5th largest mass transit system.

In 2013, MBTA secured a Department of Homeland Security grant to enhance fleet security, initiating a first-phase upgrade of video surveillance on 225 buses among their 1100-strong fleet servicing 180 routes. The older onboard surveillance systems suffered from limited video quality and complicated retrieval procedures.

Subsequently, MBTA opted for a comprehensive solution from Minuteman Security Technologies, integrating Genetec's Omnicast VMS with Minuteman's Transit Sentry vehicle management system. The Genetec StreamVault mobile NVR provided the requisite budgetary and technical capabilities.

Fast forward to 2023, Minuteman and Genetec have further advanced the solution to include Automatic License Plate Recognition (ALPR) for bus lane parking violations, enhancing MBTA's overall security and efficiency.

The Solution

The solution incorporated several key features:

- **Live video access from MBTA's Operations Control Center**
- **Automatic video archiving at terminals**
- **Police access to nearby bus systems through mobile terminals**
- **Real-time monitoring via mobile web browsers**

Over 1,000 systems have been deployed across the entire bus fleet, trains, subway cars, and commuter ferries. **Buses are equipped with 360-degree, high-resolution interior and exterior cameras, with continuous recording stored on Genetec StreamVault mobile video recorders** and periodically offloaded to central archivers. To ensure reliability, rail-grade Ethernet switches were used, offering network redundancy and integrated security. Onboard monitors display live camera feeds to passengers, serving as an innovative use of security technology to engage passengers in safety. Passengers can report incidents by scrolling over the video feed, which displays a "See something? Say something" message and an MBTA police phone number. An interactive app allows discreet and anonymous event reporting, empowering the community to contribute to city safety.



The MBTA has two departments with live system access: the Operations Control Center (OCC) and MBTA police dispatch, along with transportation executives. The unique dual-mode radio system provides both Wi-Fi and Verizon 4G LTE wireless connectivity, a crucial advantage. This versatility allows multiple ways to access video, enabling real-time emergency responses and investigations.

Video transfers are automated, facilitated by Video Trickleing, an Omnicast feature. When buses return to terminals, the system offloads video to the central archiver through a wireless network. Instant notifications are emailed to requesting operators upon transfer completion. This streamlines video retrieval, conserving bandwidth and storage space, ensuring MBTA security and operations teams retain only essential footage. This comprehensive system improves passenger safety, enhances law enforcement capabilities, and optimizes video management for MBTA.

The GPS integration is linked to the master OCC system and Google Maps, letting operators know exactly where buses are within the city. On the bus, a monitor displays a live camera feed to passengers, acting both as a public advisory of video monitoring and as an added deterrent against criminal activities.

Unique Applications Ensure Continuous Uptime and Enhance Bus Safety

Implementing the full solution was a massive team effort from the start. The MBTA security department, Jacobs Engineering Group, Minuteman Security Technologies and Genetec worked together to deliver the complete solution, combining engineering and development expertise to meet the very specific requirements. Everyone came together to push the technological boundaries of the chosen solutions for the MBTA implementation.

Another feature was specifically developed to help bus drivers alert OCC operators of distress onboard the bus through integration of a panic button alarm. The bus driver has control of the panic button which prompts an alarm at the OCC. Operators can then click on the alarm to automatically connect to video surveillance system to see what is going on.



Onboard Surveillance Leads to Greater Operational Efficiency and Safety

While all the technical details of the system were met, the most advantageous aspects of having video surveillance onboard MBTA buses are experienced day-to-day across all of our agencies. In the first five months of having this system implemented, the MBTA has had 500 cases that were facilitated by the video, leading to a significant organization-wide impact, from a police, legal and safety standpoint.

From a safety standpoint, the onboard system represents a constant reiteration of the following advantages:

- **Immediate access to video onboard buses in the event of an emergency**
- **Instant access to nearby buses for responding officers for better preparedness**
- **Quicker and easier investigations for criminal activity or claims**
- **Improved bus driver and passenger safety throughout the fleet**
- **Deterrence of vandalism and random acts of violence**
- **Enhance investigation abilities for increased city-wide safety**



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