

San Francisco Muni

Deploys Mobile DVRs on Light Rail Fleet



Automated Wireless Download A Key Capability

Efficiency is a way of life at San Francisco Municipal Railway (Muni). Each day, the public transit authority is responsible for the safe and on-time transport of more than half a million people, and the operation of a 1,000 vehicle fleet that includes light rail vehicles, electric trolley buses, diesel buses, historic streetcars and the city's world-famous cable cars.

Muni staff are always looking for ways to work smarter and save time. That's why they put an automated wireless video download capability high on their list of requirements when it came time to retrofit their light rail vehicles with new, onboard DVR systems.



"All of our fleets are equipped with DVRs," explains Robert Hertan, director of security programs with Muni's governing organization, the San Francisco Municipal Transportation Agency (MTA), "but, prior to the installation of the March Networks™ mobile DVRs, none of them had any wireless capability.

"Wireless just makes life much easier," he continues. "What we have to do now when incidents occur is send people out all over the city to pull data packs from specific vehicles to ensure we have the video records. With the wireless download, we can simply set the system to automatically download the

video clips we need when the vehicles come into our central yard for the night."

As San Francisco MTA video surveillance coordinator Emily Kretz explains, the automated download capability also allows her to reduce the number of overnight shifts employees must work.

"In some cases, we might wait until after a vehicle has come in for the night to pull the

The video evidence also helps Muni's internal claims investigators verify information and address claims, such as passenger falls or vehicle accidents, accurately and more efficiently.

video, but then you have to have someone there to physically remove the data pack. The automated download eliminates that. And the fewer overnight shifts the better, because those hours aren't ideal for anyone," she says.

Evaluation

Muni staff researched several competitive DVR systems before selecting the ruggedized March Networks 5308 Mobile DVR (MDVR) and software. They spoke with different vendors, viewed numerous tabletop demonstrations and piloted three systems in an operational light rail vehicle.

According to Hugh Reynolds, Muni's mobile division video maintenance supervisor, not only was the March Networks MDVR the only system that could deliver the wireless video download capability, it also met a range of other criteria.

"A manageable file size was a major requirement," Reynolds says. "Each month, our team reviews one minute of video from every vehicle in the fleet as part of a preventative maintenance program. We check for things like proper camera position, stickers or graffiti that might be blocking camera views, and so on.

"Because of the brief period of time a vehicle dwells in the yard, and the number of vehicles we inspect each day, we needed to be able to stream at least one minute of video

off a vehicle in one minute of time. The March Networks Mobile DVR exceeded that, so now we're upping it to two minutes of video in a minute over the wireless network."

Reynolds says a two-channel audio recording capability was also critical to ensure interactions between vehicle operators and passengers are captured. With one high-quality microphone mounted at each end of the double-ended vehicles, conversations can

be clearly distinguished from background noise and, when necessary, reviewed with the associated video to help resolve disputes.

The complexity of the user software was a consideration as well, adds Kretz.

"We wanted software that was not only easy for our staff to use, but also simple for the police or district attorney's office when they need to view a recorded incident from us. With the March Networks software, they just put a CD into their computer, select the autorun file and it plays the video clip automatically.

"Having that video data has been very helpful, especially with passenger assault," she continues. "We've been working very closely with our police department to identify assailants and provide the video evidence that will help take them to court."

Claims

Kretz says the video evidence also helps Muni's internal claims investigators verify information and address claims, such as passenger falls or vehicle accidents, accurately and more efficiently.

"We're only pulling the video when there's an incident," she points out. "We're not reviewing the recorded video regularly just to watch people riding on a train or bus."





San Francisco Muni

The San Francisco Municipal Railway (Muni) is the seventh-largest public transit system in the United States, with approximately 700,000 boardings on an average weekday. Its fleet of about 1,000 vehicles, over half of which are electric, consists of subway-surface light-rail vehicles, electric trolley buses, diesel buses, world-famous cable cars and a unique collection of historic streetcars. The first publicly owned streetcar system in a major American city, Muni has been taking the people of San Francisco where they want to go since 1912. www.sfmuni.com

Each of Muni's equipped light rail vehicles includes one March Networks 5308 MDVR mounted underneath a passenger seat. The unit records video from six cameras at four frames per second or more, and audio from the two microphones.

Built to withstand vibration, shock, dust, water and electromagnetic interference, the ruggedized MDVR meets international IP65 and J1455 design standards for harsh environments. Its modular docking station architecture, removable power and wiring box, and built-in camera power make the system easy to service, while its embedded Linux operating system, intelligent hardware/software watchdog circuitry and internal battery backup ensure reliability.

While there is agreement at Muni that the systems will deliver a return on investment through increased efficiencies and protection from false claims, definitive numbers are difficult to calculate, says Hertan.

The most important thing, he says, is that the video systems help enhance overall passenger and staff safety.

"The March Networks video systems provide our riders, as well as our operators, with a degree of safety and confidence. And everyone who works to ensure a safe and secure environment appreciates having them in place."

Ted Unaegbu, MTA technology, resources and infrastructure manager, agrees.

"You can't measure 1:1 the dividends you get from the systems, but we know that having visible cameras on our vehicles and using readily available video information in prosecutions are effective criminal deterrents."

Standardizing

Muni is currently trialing the March Networks MDVR system in its bus fleet and, according to Unaegbu, is also discussing the idea of standardizing on common security systems in the passenger stations it shares with the Bay Area Rapid Transit (BART) authority.

"That meeting was just the first of many we will be having with BART. But the long-range implications of having common wiring, cabling, cameras and security systems is very positive." ✨



Wireless antennas mounted in Muni's light rail vehicle yard transmit video data from onboard March Networks 5308 MDVRs to a central server.



A Muni employee downloads video data from a 5308 MDVR mounted in a light rail vehicle

Viscom Products

Viscom Products, Inc. has been providing security and communications systems to the mass transit and public safety markets for more than 14 years. San Francisco Muni selected the integrator to help design, deploy and service its complete, onboard video and audio surveillance system for its light rail fleet in 2004.

According to Emily Kretz, San Francisco MTA video surveillance coordinator, Muni's experience with Viscom Products has been excellent.

"Viscom has been extremely responsive to our requests. Whenever we've said there's a problem, they have addressed it almost before we finish telling them about it."

Viscom Products is a division of Diversified Security Solutions (www.dssi-hq.com), a technology-based electronic security systems, services, and emergency preparedness consultant with more than 50 years of experience working with enterprises and government agencies. DVS' integration subsidiary, Henry Bros. Electronics, Inc. has offices in California, Texas, Arizona and New Jersey.

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