

# Maryland Transit Takes Wireless to the Next Level



## Transportation Administration Envisions Integration with Homeland Security Portal

Retrieving video from mobile video surveillance systems on the Maryland Transit Administration's (MTA) fleet of fixed route buses is a lot less resource intensive than it used to be since the Baltimore-based multi-modal transportation authority began standardizing on March Networks Mobile Digital Video Recording systems (MDVRs).

Video from buses equipped with state-of-the-art March Networks® MDVRs is downloaded automatically as soon as a vehicle is in range of a wireless hot spot at one of the transit authority's four depots, but MTA operations staff still have to board buses and physically remove datapacs to retrieve video evidence from their legacy recorders.

Downloading video at the end of a run is a giant step forward for the MTA, but it pales in comparison with the agency's much more ambitious vision for the application of wireless technology.

"The next phase is to be able to pull real-time video from the buses while they're in service," said Tammi Bolden, the MTA's Manager of Systems and Equipment. "A pilot is currently under way, and by the end of next year, we should have some recommendations on the technology we'll be using — be it WiMax or Mesh."

Real-time access to video would enable MTA security staff to monitor activity if they are aware of problems on a given route at a particular time of day, said Bolden.

The vision also extends to equipping MTA police cruisers with the ability to access live video from a bus while in pursuit.

"As an agency, we always seek the most advanced, maintainable and proven technologies," said Vern Hartsock, Deputy Director, Engineering and Construction. "We're the first agency in the United States to deploy a full-scale analytical video sur-

"The State of Maryland and the Maryland Department of Transportation in particular are working to leverage all of the technology assets of the various agencies in such a way that the video is shareable and manageable across divisional boundaries," said Hartsock.

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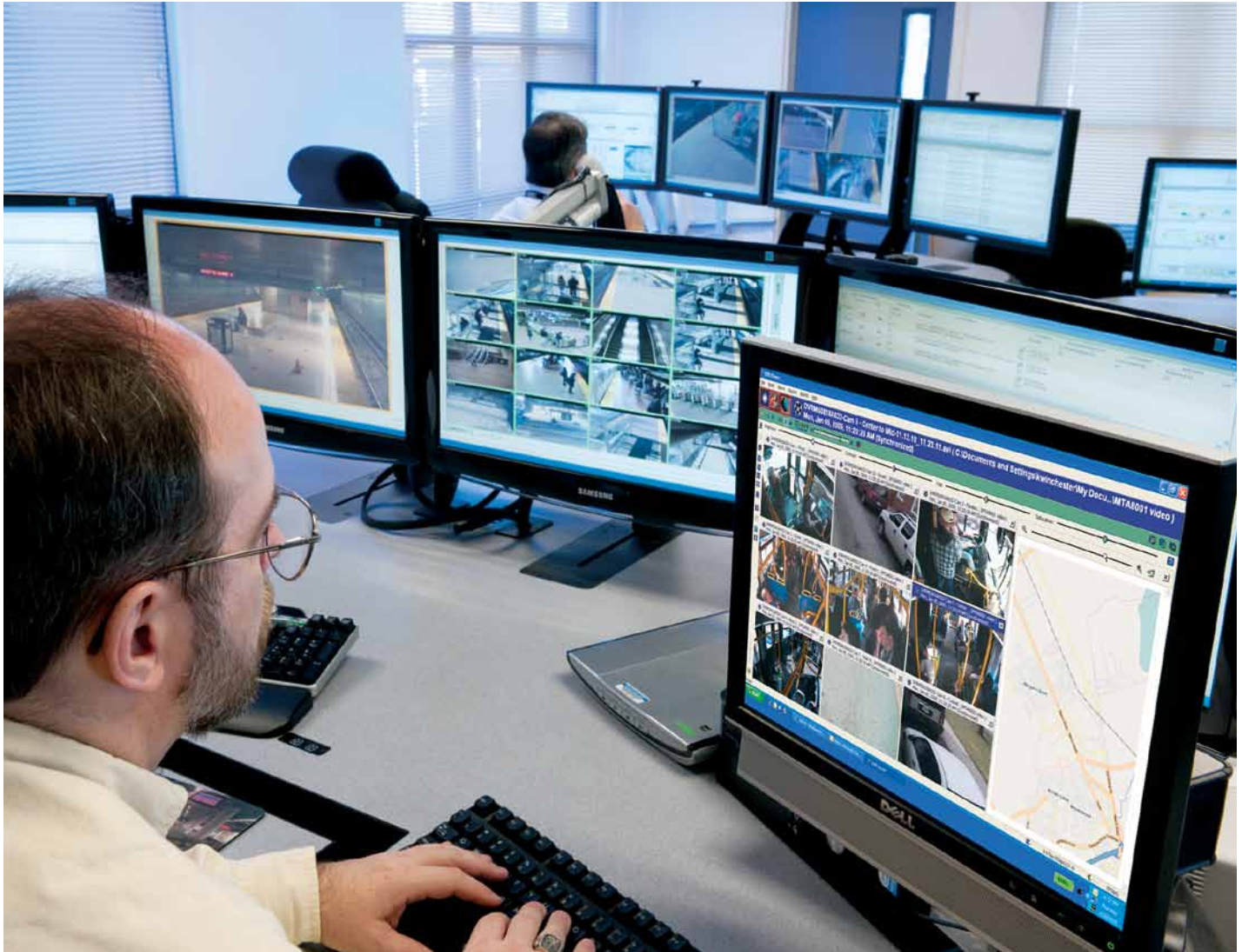
— Vern Hartsock,  
Deputy Director, Engineering and Construction, Maryland Transit Administration

veillance system at our passenger stations and we'll be the first to have a metro-wide capability of acquiring real-time video using state-of-the-art wireless networks."

Not too far off in the future is the integration of the MTA's March Networks video recording system with a Homeland Security portal, which would allow security personnel to use the agency's buses as mobile video recording platforms in the event of a security threat.

The MTA spent two years looking for a new video recording system for its fleet of 669 fixed route buses.

"We researched the market to identify the state-of-the-art products used in North American transit applications. This was followed by interviews with end users to ascertain how the products performed in comparison with their sales literature and specifications as well as their maintainability," said Hartsock. "The results indicated that



## The Maryland Transit Administration (MTA)

The Maryland Transit Administration is a state agency under the Maryland Department of Transportation. The MTA operates a multi-modal mass transit service consisting of municipal, intercity and paratransit buses, the Metro Subway, Maryland Area Regional Commuter train lines and a Light Rail service. Its fixed route bus service for the city of Baltimore consists of a fleet of 669 buses and serves close to 250,000 passengers daily.

[www.mtmaryland.com](http://www.mtmaryland.com)



▲ Pictured here aboard an MTA bus are (left to right) Vern Hartsok, Deputy Director, Engineering and Construction, MTA; Keith Winchester, Sales & Business Development Director, North America Mobile Solutions, March Networks; and Tammi Bolden, Manager of Systems and Equipment, MTA.



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The MTA looked at “about a dozen systems deployed throughout North American bus fleets,” said Bolden.

“We did a requirements matrix and looked at who met all of the requirements we identified. We looked at who had the reliability, who had the state-of-the-art technology, who could meet our wireless requirement and who had the best shutdown capability, to name just a few of our requirements. We also needed to be able to vary the frame recording rate from low to high resolution during an alarm to maximize the granularity of the evidentiary record without compromising storage space.”

MTA personnel discovered similarities among transit authorities in West Palm Beach and Miami that have made the switch to March Networks video surveillance technology.

“Both of them had the same system we had previously and selected March Networks based on similar requirements,” said Bolden.

Reliability and ease of maintenance figured prominently on the MTA’s list of requirements.

“One of the problems with the system we had was our inability to maintain it,” said Hartssock. “There were a number of times we relied on the system for video evidence and discovered that something had failed. It didn’t have very good diagnostics to let us know there was a problem.

“Our objective was to be proactive in terms of maintenance. We want to know immediately if a failure occurs, so we can respond and repair the system and return it to service before we have a need for it. This gives us a greater comfort that we’re providing optimum security for our passengers and employees.”

March Networks Enterprise Service Manager software improves system uptime by centralizing the realtime management of the health status of video platforms, hard-drives, cameras and the overall network. Alert notifications are sent directly to the Administrator Console if video devices fall short of preset performance thresholds, and can be sent automatically via email to designated addresses. It also provides remote diagnostic and upgrade tools, including the ability to schedule upgrades automatically during offpeak network times.



The 5412 MDVRs record video from 10 cameras on each MTA bus and store it for 30 days, as mandated by the state. The transit authority’s legacy system only provided a maximum of seven days of onboard storage.

The video compression technology used by March Networks is largely responsible for its industry-leading wireless capability. In exhaustive tests by the MTA, the March Networks system consistently downloaded 700 MB of video (one hour of video from 10 cameras) in less than five minutes. March Networks technology is also unique in that

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Manager, Systems and Equipment,  
Maryland Transit Administration

it allows for the recording of video at frame rates as high as 30 frames per second and the streaming of the same video at lower frame rates on a per camera basis for live viewing over a wireless network.

The MTA made its decision in favor of March Networks technology in 2008 just in time to have it installed on 30 new articulated buses that went into service in February 2009. March Networks 5412 MDVRs are also being installed on another 100 new buses, and a retrofit program is under way.

“The objective is to equip the MTA’s entire bus fleet with March Networks technology by March 2011,” said Bolden.

Plans are also in the works to upgrade video surveillance on some of the other

transportation systems operated by the MTA, including a Light Rail system linking Baltimore-Washington International Airport, Penn Station and suburban Hunt Valley.

In deciding on a new system for its Light Rail service, the MTA “will seek the commensurate capabilities and technology that we have found success with on our bus fleet,” said Hartssock.

The MTA also operates Baltimore’s Metro Subway, an intercity bus service, a paratransit fleet and the Maryland Area Regional Commuter train lines, or MARC, linking Baltimore, Washington D.C. and suburban communities in Maryland and West Virginia.

The March Networks video surveillance systems are used to investigate accidents, assaults and incidents of vandalism.

“One of the most frequent users of the system is our transit insurance group,” said Hartssock. “When there is a claim, the applicable images are retrieved and evaluated as part of the case. Video surveillance has saved the State of Maryland a lot of money in claims.

“Video surveillance also gives our passengers a greater comfort level and acts as a deterrent to activity that would be a threat to them.”

In its search for a video surveillance supplier, one important requirement was the capability of providing post-sales support and meeting the transit agency’s growing needs in the future. The MTA considered March Networks’ track record among satisfied users, its global footprint and its vision for the future in meeting that requirement.

“We are very pleased with the after sales support and co-operation we have received from March Networks,” said Bolden. “Whenever there was a problem, March Networks was always there to walk us through it and resolve issues quickly.”