

## Transit Police Go **Wireless** for Next Wave of Safety

### Executive Summary

#### Background

Police for Northern California's Bay Area Rapid Transit (BART) train system were employing the newest wireless video technology to provide additional safety for the transit system's police force and BART patrons.

#### Issue

BART wanted to employ the 'next wave' in police work – a secure remote IP wireless video access to a legacy video surveillance system. It would provide officers with much more than a description of a situation from dispatch, they could view live video of a location as they are responding.

#### Solution

Wide Area Management Services (WAMS), a Cisco partner with Silver level certification, installed a high security system with 24/7 access to live video. The system uses Cisco Airpoint 350 series wireless access bridges to transmit video images within the coverage area to Panasonic Toughbooks and Compaq Ipaqs configured with Cisco 802.11 wireless network interface cards.

#### Results

Police officers at BART's Oakland Coliseum station have access 24/7 to live video. They can see exactly what's happening at a situation to which they're responding, and dispatch sees live video of all station areas via 32 cameras. BART plans to install the system at two more stations, and WAMS is working on a hand-held portable video unit officers can carry with them. There are also plans to use a facial recognition feature that will tell officers if a person at a scene has had police incidents before and provide intelligence on that person via a database.

**The Bay Area Rapid Transit (BART) train system connects San Francisco to surrounding Bay Area communities with 39 stations and nearly 100 miles of track. BART police wanted to use the newest wireless technology to fulfill its mission of ensuring the safety and security of the transit district's patrons, employees, and their property, as well as preventing criminal activity through highly visible presence at BART stations.**

Wide Area Management Services, Inc. (WAMS), a Cisco partner with silver certification, partnered with BART police and its IT department to design and deploy a system that would provide field officers with secure remote IP wireless video access to a legacy video surveillance system. With the new wireless system in place, BART Police Commander Wade Gomes says his department is ahead of the next curve of policing; enabling officers to view live video of a location as they are responding to a police call. For WAMS, the project is a prototype for future wireless IP video applications.

### Transit Department Adopts Wireless Video for Newest in Safety

Commander Gomes saw a model of wireless video used in police work in southern California, and wanted a similar system in place for BART stations and BART police.

"This is really the next wave in police work," said Gomes. "I'm aware of other agencies in northern California looking seriously at wireless video. Wireless technology and intelligent video systems can offer law enforcement a powerful tool to use against criminals."

The next step was for Gomes to find a network expert he could partner with. WAMS is a network systems integration firm specializing in wireless and network security consulting. WAMS brings to the table a track record of many successful wireless deployments, expertise in security, and the ability to demonstrate the system's capabilities before deployment. WAMS knew it had the expertise necessary for the high security system, and the ability to build options into the BART system. With its engineering lab, WAMS can simulate customer network environments, conducting independent testing and analysis of networks, create complex networks for training purposes and test network designs through a 'proof of concept' methodology. Gomes conducted a competitive bidding process and awarded the contract to WAMS.



“This BART system was a good match with our expertise,” said Tom Shaw, president and CEO of WAMS. “We could build options into the system which was important to BART, and it offered a prototype of an area we wanted to go into. Commander Gomes had clearly defined objectives and his department knew what it needed. He was looking for a network communications expert to provide the integration piece, security parameters, and pure execution within time and budget constraints.”

### **The Unexpected Brings Challenges and Good News**

As commander of the bureau for special operations, Gomes knew that the wireless technology he wanted place at BART’s Oakland Coliseum station would enhance the safety of BART workers and riders. “The sooner we got the technology on board, the safer the station would be,” he said. “I wanted to make it as safe as we could as quickly as we could. So we were under a time constraint, but it was self-imposed.”

Shaw knew from experience that getting the IT infrastructure in place and working would take a cooperative effort among the BART police, the BART IT group and WAMS. An important piece of the new wireless system was integrating it with an existing closed circuit television system. “We needed to extend the capability of the legacy video system to handle wireless IP, including converting between analog and digital networks.”

“Justifiably so, they were concerned about the security of the overall BART train system and any interference from this new wireless access,” said Shaw. “This required us to accomplish a high level of security. Shaw reports that security is the number-one perceived issue in wireless networking. “It needs to be addressed with process,” Shaw says. “The technology is there and solid, but software has to address correct security parameters—and this will continue to improve.”

“While this was a major challenge in the project, WAMS met every requirement and stayed within the budget,” reports Gomes. And the unexpected brought good news as well: WAMS discovered that the wireless network got a larger coverage area than they anticipated.

Our site survey determined we needed to place specific products for the necessary coverage,” said Shaw. “There was a lot of ‘noise’ in the area: a local utility substation and three other wireless carriers in the same vicinity. We were pleased to find out that we easily had one-quarter of a mile of coverage and this handily exceeded our original plans for the coverage area.” Shaw and the WAMS team also learned how a wireless system for police work requires different testing than a system for traditional business use.



“BART is using innovative tools in an innovative way and is way ahead of the curve.”

— Tom Shaw, President and CEO of WAMS

#### **Together, BART and WAMS Ride the Wave of the Future in Police Work**

“We needed to test how the video screens were mounted on in each car,” said Shaw. “It’s a physical issue—you have to work within the environment of the police car and understand the ergonomic requirements of the officers. We had to find the best way to present the information so that the officers can do their job. It goes beyond the ‘gee whiz’ factor to ‘but can people really use it?’

The beat officer, backup officer and sergeant supervisor at BART’s Oakland Coliseum station have secure wireless access 24/7 to live video. The officers know exactly the situation they’re responding to, and police dispatch also sees live video of all areas of the station.

And Commander Gomes isn’t content now that the wireless video system is in place, he already has plans to install the system at two more stations. And since situations can change from the time the officer leaves the patrol car and physically gets to the problem area of the station, WAMS also implemented a hand-held portable unit that officer can carry with them and have live data right up until they walk onto the scene. Gomes and his team also plan to use the facial recognition feature that can be added to the system. If the person causing trouble at a BART station has had police incidents before, or even if he’s a known terrorist, the system can match the face to a database giving the officers instant intelligence on the person.

“BART is using innovative tools in an innovative way and is way ahead of the curve,” says Shaw. “Other departments will follow in the footsteps of what Commander Gomes has done with BART.”



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