

Case Study

In-vehicle computers on the job at agencies

By Tim Burke

For police officers in Idaho and Ohio, heat and cold once affected the ability to consistently capture video. Dealing with a rugged environment was an ongoing dilemma. Officers out on patrol couldn't get pre-event video. Officers wasted precious time post-shift searching through hours and hours of tape. It was taxing and inefficient for both officers and supervisors. To top it off, hard media storage was becoming an ever-increasing problem.

Enter Hub-Data911, based in Alameda, CA, maker of the M6 Mobile Digital Computer (MDC) system and state-of-the-art technology with its Mobile Digital Video (MDV) system. These two systems use a car stereo approach, giving a built-in fit and feel. The M6, the newest in the line of in-vehicle computers, debuted last summer with a three-piece design made up of a sunlight-visible touchscreen display, modular CPU and illuminated keyboard. Similar to your desktop, the CPU can be placed in the glove compartment. Company technicians installed the systems directly into the vehicle and provided com-



Capt. Douglas Merry of the Zanesville, OH PD. Photo taken by Det. Don Bates of Zanesville, OH Evidence Dept.

plete training for the agency's installers.

Sergeant Rick Viola, Mountain Home, ID Police Department's IT officer, was looking to stay ahead of the power curve on technology. He was looking for cost-effective solutions for his department of 29 sworn officers, including detectives and patrol officers, who serve a community of 11,000 residents.

"Being a smaller agency, we had to be careful how we spent our money," Viola said. "In 2007, Hub-Data911 came to us with a real innovative product. Their systems were reliable in capturing events

and stood up under rough conditions. The audio and video was just phenomenal."

His agency purchased both components, the MDC and the MDV. Viola said the MDC in and of itself was a great stand-alone piece as it was basically a desktop computer that installed right in the vehicle. "You might have noticed that I didn't say mounted," he pointed out. "Once installed, it appears to be a factory-installed component. It's easy to use."

At Mountain Home PD, the MDC is used for records checks using a state interface and/or a CAD Client for computer-aided dispatch. This allows a dispatch center to send calls for service or critical information out to the officer while generating a case number, to which the officer refers, thus completing the report. Since it is a PC, agencies can install any of their managed

"Video is downloaded via the network right to evidence computers. Officers can then go look at the data. In the chain of evidence, the less people handling that evidence, the better for the courts."

—CAPTAIN DOUGLAS MERRY
ZANESVILLE, OH POLICE

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software for the completion of accident reports or other data or information they may require. "Using most CAD clients, an agency could easily incorporate GPS tracking, which is huge in officer safety, especially in larger populated areas where you may have single officer units patrolling," Viola added.

Keyboarding is easy on the MDC system, Viola said. Officers can remove the keyboard and prop it up on the steering wheel to type reports if they want. It is rugged and spill-proof. "Being able to view



Hub-Data911's Mobile Digital Video (MDV) system.

your video on a computer-size screen in your vehicle rather than a small display was something we didn't think was possible—but it is," Viola said. With this system, Mountain Home PD had the flexibility to switch from a view that included the front and rear cameras to either the front or rear camera just by double tapping the pane on the display. "In the review side of things," he said, "you may view the video in the full screen mode or in the player mode...all of this just by tapping on the screen. Having both pieces integrated makes your mobile office complete as an officer."

According to Viola, the officers love the touchscreen. With a tap of the finger, they can review events right on the screen, front or rear cameras at the same time. And as

they are viewing, they can double-tap the key to go to full screen.

The MDV includes both hardware and software for the in-vehicle solution. The system encompasses the Mobile Digital Video Recorder (or MDVR), dash-mounted camera, passenger compartment camera, wireless microphone system and software.

The MDVR, which resides as a small box in the trunk of the vehicle, is the hardware component, which encodes the video and audio and stores it onto a compact flash drive. It has eight triggers to automatically start recording. It records when the wireless microphone is activated; when the vehicle lightbar is activated; when the gun lock is unlocked; and when the built-in accelerometer detects a collision. This is when the pre-event recording comes in handy because the MDVR records up to four minutes of video before any trigger. With this technology, officers can see what led to a collision or gave the officer probable cause to stop a vehicle.

"When officers are done with their shift," Viola explained, "they can go into the station, get on a computer, and call up the video and audio." They then use that data for report writing. Officers can store and review data back to September of last year, and that data can be archived on disc.

Viola's department has 1.5 terabyte on the server and purchased a robotic disc-burner to automatically burn data to a disc. This archival ability is important as he pointed out examples of DUI cases where records retention needs three to five years. The system will archive automatically, which saves tremendous



The monitor mounts directly to the dash with Hub-Data911's Mobile Digital Computer (MDC).

amounts of time not having to wait for video to copy.

Supervisors can also pull up data for review and training. There are system-wide updates available, and a package update can be pushed to all units through the server.

Viola took us through how an officer would start the shift: "The officer opens a CAD client, signs in to the MobileVid application, and is on the desktop. The officer activates the MDV system and signs on under his name. The officer tests the front and rear cameras and tests the audio." The system package includes the front camera and the optional rear camera, which his department purchased for all of its units. The system has a remote mic the officer wears and a second mic wired for the backseat.

MobileVid software can be loaded onto the M6 or other types of in-vehicle computers, as well. The software was designed to take advantage of touchscreen functionality. The operator can view live video on the computer, review recorded video and audio, add bookmarks, create snapshots, manually start and stop a recording, use the instant replay feature, and control the forward-facing camera. There is even an auto-zoom feature so the operator only has to touch the

screen once to zoom into a license plate long enough to capture the characters, and then automatically zoom back out to a default view.

"The screen changes from blue to red when the system is recording," Viola said, "to show the officer it is in record state. It kicks in automatically due to the triggers to start the system recording data."

Reliability is the big solution for Mountain Home PD. Viola said, "I don't have to wonder if I'm getting audio or video. I've had no real maintenance issues in two years. Our officers depend on it. Hub-Data911 installed the first two systems and showed me how to do it. Anyone can install these systems. When you are done, they look like they came from the factory."

When his department purchased the in-vehicle systems, "nobody was offering a solution like this," Viola said. "The integration of audio, video and CAD client was the key, and this wasn't taxing on the CPU. They really did a great job of marrying technology."



Sgt. Rick Viola of the Mountain Home, ID PD, which uses Hub-Data911's MDC and MDV systems.

Mountain Home PD wasn't the only agency benefiting from the in-vehicle systems, just ask Captain Douglas Merry at the Zanesville, OH Police Department. "Dispatch calls appear right on screen," Merry said.

The clarity, full color and zoom power of the video system made it a perfect fit for Zanesville PD.

"We've never had anything like this," he said. "We've seen black-and-white video that is grainy, but this system is clear and makes it easy for officers to write their reports."

The monitor mounts to the dash and is airbag compliant. "Our officers were concerned about safety,"



Hub-Data911's Central Processing Unit (CPU) can be popped out of the glove compartment if necessary.

Merry said. "This system has components so you can remove one unit to replace. We installed six of the MDC and MDV systems in December of 2008 and have ordered eight more since. They say the video is the best they've ever seen."

Zanesville PD officers, who serve a community of 35,000 people located 55 miles east of Columbus, receive dispatch calls right on the screen, and that method of getting information solves a growing identity safety issue. Dispatchers can look on screen, see where units are located, then send the closest vehicle to an event for faster response.

"Video is downloaded via the network right to evidence computers," Merry said. "Officers can then go look at the data. In the chain of evidence, the less people handling that evidence, the better for the courts."

Merry is the IT officer for Zanesville PD. "I am the department," he said with a chuckle, "and

I am learning as I go. I can call the Hub-Data911 staff and troubleshoot with them. They can do an upgrade remotely. They are able to work right on the cruiser while I sit in the car and watch the monitor. They are a big help."

Bret Hubbard is president of Hub-Data911, a family-owned company in business since 1983. It was first founded by his father, Don. They started in the hardware equipment business and in 1989 did mobile messaging for public safety. The latest product, the M6, is the sixth generation. Today, the firm has 600 U.S. customers, plus European, Australian and Canadian customers, all in law enforcement.

"We specialize in the in-vehicle environment needs of agencies," Hubbard said. "The Crown Vic, for instance, allows for certain size devices to fit, and our system is airbag compliant. Also our sunlight-visibility screen is important to cut down on glare."

Because the display and the CPU are separate, the IT officer can handle upgrades without breaking down an entire system. If the officer needs the hard drive taken out, he can still use the display and keyboard. Departments want systems they can take out if necessary. "There are really two worlds out there today. There's the Robo-car world; that's the in-car, ready-to-go-any-time-the-officer-needs-it scenario. The other world is the handheld radio and netbook world."

Mountain Home PD and Zanesville PD are two of the agencies that use both the MDC and the MDV systems. When IT folks started leaning toward laptops, Hubbard's firm offered the removable hard drive. It was small and came right out to fit today's need for easy-

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access components that can be quickly and simply switched out.

"Our systems are hot and ready to go in the police cruiser, but our CPU can be popped out of the glove compartment," he said, indicating that public service agencies needed to have an in-vehicle system that was ready when their officer was. Netbooks were used for report writing, Hubbard said, but the MDV was the ready-system for in-pursuit situations.

Although Hub-Data911 is a U.S. company, many of its competitors are based in Japan or the United

Kingdom. According to Scott Beisner, director of product development, "We have a family feel, and we are the specialists at computers for vehicles in public safety." He said the company's customers have given high marks to its system that can survive for 10 years. "Durability is the key. We use an Intel mobile processor that lasts." The company offers a warranty of 39 months and guarantees the parts for 10 years.

Rugged environments, safety, maintenance, audio and video quality, pre-event needs, report writing and media storage issues can be

made more efficient and manageable by these systems, which have helped put two agencies ahead of the technology curve. "In a future release, I will be able to dial up and get a particular unit and look at a pursuit while it is happening!" Viola exclaimed. This in-vehicle technology is allowing today's officers to do their jobs better, more effectively, and safer than ever. ■

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