# LawEnforcement
TECHNOLOGY

Instantly there

RealityVision transmits an officer's live video to headquarters and then back out to other team members in the field.
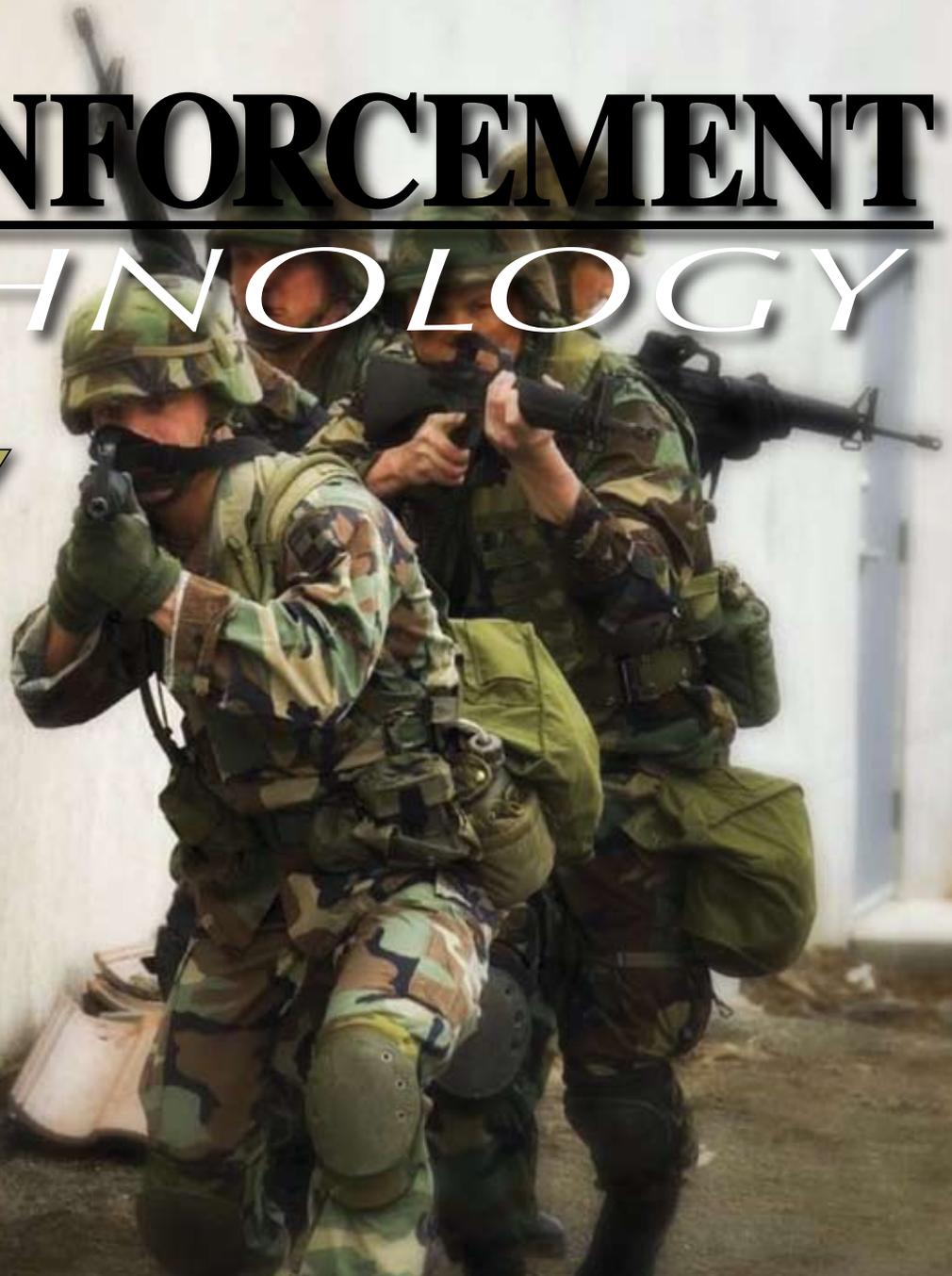
By Jonathan Kozlowski

The old cliché is to simply say, "A picture is worth a thousand words." For law enforcement in the field, those thousand words can amount to the difference between a conviction and risking the safety of the public or first responders.

A verbal description of an event, suspect movements or identification can become muddled in the communication transfer from the field. An image or picture, however, sends clear and concise information with much-needed precision for an appropriate response. This imagery plays a major role in law enforcement situational awareness.

Reality Mobile's RealityVision software broadcasts video and/or images from connected officers in its system to decision makers at headquarters and to law enforcement team members instantly wherever and whenever called for.

"What we want to do is stretch vital information knowledge to everyone who needs it," says Brian Geoghegan, vice president of products for Reality Mobile, a Herndon, Virginia-based company.

With a single installation of the RealityVision enterprise edition, this information can be disseminated to up to 100 users, and in turn, these 100 users also can transmit live video and other data simultaneously.

"The system can grow with the number of users, giving everyone the opportunity to create and share live video and other crucial information wherever they're located as long as they've got a connection," he continues.

A plan of action

RealityVision began its video venture with the intent to replace clipboards and other paper products in the field with an electronic device. Through many dialogues with local and federal law enforcement agencies, the company focused its product on two themes, to:

(1) take advantage of available products and services to lessen the emphasis on custom development, and

(2) provide better information to and from officers in the field to assist in the decision-making process.
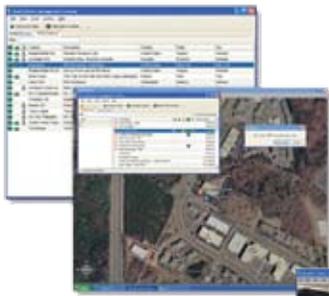
The Management Console software overlays location on map-based GoogleEarth.

Recorded video can be viewed with a computer screen and mobile technologies.

Live or archived video can be viewed simultaneously with its location.

To accomplish this self-appointed task, RealityVision's system provides officers with:

■ Live video streaming. With a single press of a button, an officer can immediately transmit streaming video from a supported mobile phone in real-time as events unfold.

■ Video sharing. The live video can be viewed simultaneously by any other user in the system with his cellular phone or a computer connected into the system.

■ Video control. On touch commands allow users to remotely view and control fixed camera feeds as well, if authorized.

■ Data delivery. Through the software's Management Console application, an agency can receive and share live and archived video instantly. The application also can cause devices to automatically display a text message, photo, map or other data, and create image/video data-sharing groups.

■ Tracking. The console application gathers the mobile device's geospatial coordinates for law enforcement to know what is happening and where. It also provides law enforcement the ability to view the video and team coordinates superimposed over satellite imagery.

■ Personal alarm. With the push of a button, an officer's connected mobile device can send a silent alarm for immediate assistance. The connected camera automatically begins to stream video to the server.

■ Command and control. The Management Console application has the ability to assume control over the mobile devices in the system

and command these devices with actions for the purpose of remotely influencing events.

■ Rapid deployment. The mobile device software can be downloaded to any commercial-off-the-shelf (COTS)-supported device. The software currently runs on the Palm OS, Palm Treo line of smart phones and Microsoft Windows Mobile 5.0 and Mobile 6.0. A desktop version is available for laptops and other hardware.

According to Reality Mobile, its software does not require additional infrastructure investment.

Ready... set...

In February 2006, RealityVision was deployed to assist security at the Super Bowl in Detroit, Michigan.

The official-in-charge of FBI security at the 2006 Super Bowl considers RealityVision a force multiplier. "The software allowed us to communicate directly with teams and then appropriately respond depending on what we saw," he says.

Acting as an intelligence gathering tool, the software allows law enforcement to handle issues they previously were unable to, he adds. The potential for in-field identification arose through the use of integrated technologies, such as facial recognition software, that would analyze the transmitted still image or video for suspects. If the software identified a suspect, law enforcement would then be able to take appropriate action based on more informed decisions.

RealityVision's software begins behind an agency's firewall. Installed software couples the agency's server to a cellular phone or computer. Video from the phone or computer device, such as a USB Web cam, is transmitted back to the server enabling the live feed.

"RealityVision takes advantage of whatever 'pipe' is available for the user," says Geoghegan. Data can be transmitted through an officer's phone or laptop via a wired or wireless Internet connection. "Reality Mobile didn't build RealityVision to a particular device, but built it to the instrument's operating system."

For example, he explains, an officer in a hotel room in Idaho can view the live feed from New York with the broadband speed of the hotel's wireless. RealityVision also can be viewed via any cellular Internet network. "If an officer is on a commercial cellular network with our software, he can view the live feed," Geoghegan adds.

As with any wireless-based communication connection, bandwidth will affect the speed of data transmission. Higher bandwidth technologies, such as wired computers or WiFi networks, would better receive a live-video stream. Lower bandwidth technologies, such

as phones, would more likely receive images at a slower rate. Geoghegan explains that "we're generally seeing video transmission speeds of one to three frames per second over commercial cellular networks, depending on the particular device and the network. WiFi hotspots are great when available, but we also wanted to leverage the ubiquity of the cellular networks to provide cost-effective, global coverage."

> *"If an officer is on a commercial cellular network with our client, he can view the live feed."*
>
> *— Brian Geoghegan, Reality Mobile*

The security agents in the 2006 Super Bowl utilized Reality Mobile's software to its full extent within Detroit's dome. As well as having the capability to view live video feed from cellular phones and other IP computer-based devices, the software also can utilize fixed security cameras. RealityVision allows law enforcement to view a variety of happenings in one place, says the FBI official.

Play-by-play management

To manage the flow of information from the field, the Management Console provides agencies control over the incoming data apart from viewing video. The console application can create groups to share video or image feeds and to collect various types of data.

Using COTS products, a tracking position can be displayed onto a visual map on a computer screen. With this capability, law enforcement not only sees the action as it is happening but also where.

"RealityVision is a proven means to communicate voice, imagery and location data from the field to a central operations center, or to communicate this information between field elements," says Kurt Snapper, chief technology officer of ManTech International Corp., a technology partner of Reality Mobile located in Fairfax, Virginia.

Technology will never replace the dedicated agencies and personnel of law enforcement — it can only help. "Since we want to detect and disrupt attacks with limited resources, there is no substitute for field imagery communicating a situation and managing response," says Snapper.

Breaking through the muddle and avoiding potential miscommunication, one officer's visual information can instantly transport other officers and decision makers to the scene.

Reality Mobile's RealityVision provides decision makers the information to return the knowledge back to first responders in the field, saving time and manpower in the field and on the street. ■