



## MONOC: Transforming emergency medical communications in the Garden State

**To see the future of mobile networking for public safety agencies, look no further than New Jersey's MONOC Mobile Health Services.** MONOC's fleet is equipped with the latest technologies that provide data communications for crews at the scene with unparalleled reliability, and allow headquarters staff to manage communications, fleet operations and medication inventories in real time.

MONOC Mobile Health Services is the largest ambulance service in New Jersey, providing advanced and basic life support and other medical transport for 2.8 million residents in eight counties. MONOC's fleet of more than 100 vehicles makes 165,000 calls each year.

MONOC is a recognized leader in the use of technology to deliver pre-hospital care, and it is the first agency in New Jersey to be accredited by the Commission on Accreditation of Ambulance Services (CAAS), the industry gold standard. In 2008, MONOC began searching for a mobile wireless solution to improve management and control over operations and assets, and to achieve greater communications reliability.

### The Challenge

MONOC required reliable connectivity across its 1,800-square-mile service area. Although Verizon, Sprint and AT&T serve eastern New Jersey, coverage by any one carrier was not uniform or reliable. MONOC needed the flexibility to use different air cards based on cellular coverage around each station. And they needed the ability to change and replace air cards easily and cost effectively. In rural areas where coverage is especially spotty, MONOC needed the ability to roam across networks.

Ease of use was also critical. Like medics elsewhere, MONOC crews frequently complained of the distractions created by complicated, unreliable communications devices. MONOC needed a communications technology that allowed crews to focus on patient care and transport.

MONOC also needed the ability to monitor medications. For years, emergency medical providers have studied the impact of exposure to environmental extremes on the safety and efficacy of medications. Although drug manufacturers generally recommend medication storage between 59°F to 86°F, vehicles are routinely exposed to more extreme temperatures. MONOC was committed to deploying a technology that would enable remote temperature monitoring inside ambulance medicine cabinets and alert staff of potential hazards.

### The Solution

In 2008, MONOC's IT staff identified Vancouver-based [In Motion Technology](#), an innovator in reliable, secure wireless networking solutions. In Motion is an end-to-end communications and asset management solution that is relied on by mission critical organizations across North America, and it appeared to meet MONOC's stringent requirements.

In Motion's onBoard Mobile Gateway is a rugged, GPS-enabled mobile router that turns emergency vehicles into rolling extensions of the local ER. At the heart of the Gateway is the company's mobile wireless hotspot system, which provides seamless connectivity for a variety of wired and wireless devices in and around the vehicle—including laptops, PDAs, ECG machines and handheld scanners. Because the Gateway sends and receives information over a variety of networks, it ensures that emergency communications are reliable, even when cellular coverage isn't.

InMotion also offers an exclusive integrated suite of management tools. The onBoard Mobility Manager scans and collects information from Gateway-equipped vehicles, allowing headquarters staff to manage, track and troubleshoot all mobile assets, including vehicles, networks and devices. Dispatch and fleet management staff can track the location, direction and speed of vehicles and monitor engine diagnostics in real time. IT staff can "reach through" to access laptops and other devices in the vehicle, and monitor the communications network's vital signs. All of this information is organized and analyzed through a Web-based, 3-D virtual dashboard that can be securely accessed from any location with Internet access.

After a month-long trial, "the results were phenomenal," said Joe Acciavatti, MONOC director of operations and communications.

### Coverage Maps

During the trial, MONOC equipped several vehicles with onBoard Mobile Gateways to travel around the state and generate detailed cellular coverage maps. This information enabled MONOC to pinpoint the best air card—or air cards—for installation in each vehicle.

After the trial period, MONOC deployed In Motion Technology throughout its fleet of advanced life support ambulances.

## Results

Today, In Motion's onBoard Mobile Gateway allows MONOC paramedics to send and receive patient care records, e-mails, ECGs, dispatches and other critical information from anywhere in the state with unmatched reliability. Gateways in some MONOC vehicles are equipped to roam across networks for uninterrupted emergency communications, even in remote areas.

"In Motion Technology has enabled us to achieve mobile connectivity greater than 95%," Acciavatti said. "It works so seamlessly our staff doesn't even know it's there, but we rely on it for every advanced life-support call."

At headquarters, MONOC has powerful new management tools that have helped reduce response times, prevent breakdowns and track assets.

## Monitoring Medications

MONOC is currently testing using the Gateway to track medications, alert command staff when controlled substances are removed from a vehicle, and pinpoint a medication's last known location in the event that a drug goes missing. Using onBoard temperature sensors, the Gateway can also e-mail alerts instantaneously if the safety or efficacy of a medication is jeopardized.

"The Gateway is our silent workhorse," Acciavatti said. "Prior to In Motion Technology, our medics spent too much time struggling with our mobile communications gear. Now they don't even realize it exists."

"Installation went smoothly and customer support has been excellent," he added. "In addition to improving our mobile communications, In Motion Technology has freed our IT staff to work on other initiatives."

## Future Applications

By providing a high-bandwidth pipe to each MONOC ambulance, In Motion Technology enables the deployment of other applications that improve operations and patient care. Live video can be streamed from the vehicle, giving operations commanders a new level of control and coordination. MONOC is also considering use of the Gateway to transmit Voice over Internet Protocol (VoIP), improving the reliability of voice communications, reducing costs and providing new tools to document calls.

"MONOC helps set standards and best practices for ambulance services nationwide, and we are proud to earn their trust," said Leonard Hordyk, CEO of In Motion Technology. "Although there are many mobile wireless solutions on the market today, In Motion Technology provides a unique and powerful combination of highly reliable and secure communications, real-time fleet management, and remote asset tracking and monitoring. We are pleased to partner with MONOC to serve the people of New Jersey."

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