



# OPERATION: EFFICIENT



## Onboard mobile networking increases productivity & lowers operating costs

In today's economy, the phrase "less is more" has become the modus operandi for many municipalities facing budget issues never before seen. Departments have been forced to trim back personnel and find new ways to make remaining officers more efficient. Advances in technology have provided officers with myriad tools (e.g., license plate recognition (LPR), onboard MCT's with biometrics, e-ticketing) that have

vastly increased their operations envelope. With so many electronic options, the need to integrate them into a seamless operating system has become even more paramount, because technology that can't talk to one another or work together can end up working against the officer in the field.

In Motion technology has introduced onboard mobile networking technologies that do just that. This Canadian company has developed

several networking platforms that allow full integration of multiple technologies. Each offers a different piece of the technology puzzle for a full-spectrum solution to onboard and systems integration.

### onBoard Mobile Gateway (oMG)

According to In Motion, the onBoard Mobile Gateway (oMG) securely connects vehicles to wireless wide area networks (WAN). This enables laptops, LPR, e-ticketing, dispatch, video sur-

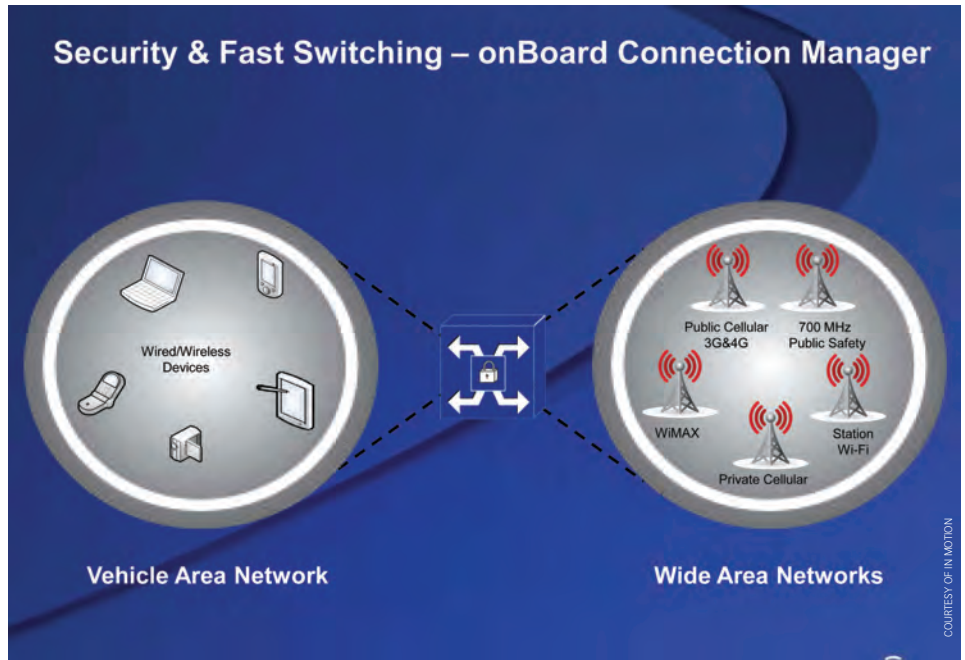


veillance and other devices to connect reliably and securely—effectively turning the vehicle into a mobile hotspot. The oMG senses and selects the best available network, and seamlessly switches between networks and extends the enterprise network and management to the fleet, ensuring reliable network access to mobile users in the field.

The oMG is a purpose-built communications processor that functions as a multi-radio mobile router and broadband access point. As a standards-based mobile router, the oMG connects computing devices in and around the vehicle, using wired and wireless technology. All local area network (LAN) connected devices are able to share wide area network assets, reducing the proliferation of radio modems, antennas and wireless accounts otherwise required. Multiple wireless modems configured within the unit provide access to a combination of cellular data, 802.11a/b/g/n Wi-Fi, 4.9 GHz broadband, carrier WiMAX and other broadband network services. The unit is field upgradable as network services evolve.

The system automatically senses, assesses and selects the best available network to ensure a back-up network is available if the primary network is lost. Wi-Fi links are protected using the latest security standards and an embedded virtual private network (VPN) capability can secure communications across wide area connections.

The benefits of using oMG are numerous. First, the GPS-equipped oMG allows HQ staff to know the location, direction and speed of every vehicle and improve the accuracy and effectiveness of dispatches. Live video can also be enabled to view activity in and around the vehicle, enhancing officer safety. Second, efficiency is increased as the system supports LPR, e-ticketing, biometrics and



**An in-car mobile gateway that can securely use multi-radio and broadband connections to feed and receive information to and from officers in the field is a boon to operations. This technology not only makes officers more efficient, it also makes them safer.**

voice without the need for additional IT infrastructure.

Third, operating costs are reduced as oMG transmits data over any wireless network, so police departments can choose and change carriers based on coverage, wireless plans and price. The oMG will support new 4G, 700-MHz and public safety broadband networks by simply inserting new data cards.

Any vehicle maintenance issues can be remotely monitored, with vehicle operations and diagnostics performed to improve efficiency and prevent breakdowns. This also allows the troubleshooting of onboard systems and devices without taking vehicles off the road. Fifth, radio-frequency identification (RFID) can be used for asset tracking. Finally, department IT personnel can manage, track and troubleshoot all devices and networks to keep officers connected and productive. System updates and upgrades can be done remotely over-the-air. In total, the oMG allows for multiple pathways for in-car technology integration.

#### onBoard Mobility Manager (oMM)

If you consider the oMG to be a team, then the oMM is the wellness coach. The oMM collects and analyzes information from oMG-equipped vehicles to provide managers with a virtual dashboard of information to track, manage and troubleshoot all mobile resources. In essence, it tracks the performance of the network and gateways to ensure it remains healthy for the network, which is important when you consider that officers are counting on that network for productivity and safety.

The oMM has several noteworthy features. One allows IT staff to remotely and securely reach-through to access devices connected to oMGs. IT Teams are alerted of problems and can resolve issues without taking vehicles and people off the road. This enables fleet managers to monitor vehicle diagnostics and operations information, including gas mileage, operating hours, idle times, speed and more. The oMM also tracks GPS information from vehicle oMGs to enable IT staff and



dispatchers to track a unit's position, direction and speed in realtime on a three-dimensional map display.

**onBoard Connection Manager (oCM)**

If the oMG is the manager and the oMM is the wellness coach, then the oCM is the 170-lb. Rottweiler lying by the door. The fact is with so much data flying through the air, there has to be some way of making sure it doesn't end up in the wrong place or wrong hands. According to In Motion, security for mobile LE officers is much more complex because they're traveling fast and changing networks as the environment dictates. The hand-off between networks must happen quickly, transparently and securely.

The oCM is a mobile-optimized VPN server, providing secure IP mobility and sub-second switching in a multi-network environment. The oCM provides security for all connected devices and applications in the oMG's vehicle area network. In addition, oCM secures all the wireless WAN links and is able to switch tunnels and connections in less than one second. Features enable the oMG to establish a secure tunnel over any available wireless network, and as the vehicle moves and network access changes, the oMG can move the tunnel to the next best available network. This happens automatically, transparently and without disruption to the end-user's applications.

The oMG is constantly monitoring all networks to determine if connections can be made and if data can be successfully transmitted. oCM works with oMGs and oMM and simplifies the deployment of those secure mobile communications. Because security is provided in both the LAN and WAN environments, and licensing is per oMG, client software isn't required on devices such as laptops, tablets or Smartphones. This can significantly reduce IT costs.

**Case Study: The Tempe (Ariz.) PD**

The Tempe PD recently deployed In Motion Technology's oMG and oMM into their fleet. The department, located next to Phoenix, Ariz., consists of 320 officers protecting 170,000 residents across 42 square miles. The department responds



COURTESY OF IN MOTION

**In Motion's gateway system is rugged and compact: Once mounted in a patrol vehicle, officers have access to secure connections nearly anywhere they will go.**

to more than 115,000 calls each year. Prior to implementation, the department relied on a land mobile radio system for all their communications. Although this provided reliable voice communications, it severely limited the police force's mobile data capabilities.

To obtain information about vehicles or suspects, officers in the field needed

to radio a dispatcher and wait for a response—a process that was time-consuming, inefficient and labor intensive. Officers could communicate with one another using a basic, analog text function on their laptops, but were discouraged from doing so because it tied up network resources and cluttered the screens of all officers on duty.



COURTESY OF TEMPE/ARIZ POLICE DEPARTMENT

**The Tempe (Ariz.) Police Department has used the In Motion gateway system with great success. Information about vehicles and suspects now arrives almost instantly. Plus, officers can send short messages freely.**

In response, Tempe began searching for a new mobile communications solution that would enable them to provide officers with greater access to information in the field and deploy state of the art applications such as dispatch, e-ticketing and other systems in their fleet. Security, reliability and manageability were paramount. Also, they were looking for a solution that offered the flexibility to allow the department to communicate using a variety of wireless networks, including commercial 3G, station-based Wi-Fi and, when available, the city-wide municipal wireless network.

Initially, Tempe performed a trial with a mobile VPN product running on laptops. This solution performed poorly during the trial and failed to meet the city's standards. Increased mobile PC support became a significant concern as Tempe's IT staff would be responsible for communications integrity and lacked the tools to effectively manage this extension of their IT network.

Tempe's search for a new communications solution, spearheaded by Dave Heck, Deputy CIO for the city, led them to try the In Motion system. Tempe initiated a trial by installing oMG's in four patrol cars. Results were evident right away. Officers conducting the trial in the field were able to file reports, send emails and access data with the ease and simplicity as if they were in the station. And because the oMG provides wireless coverage in and around the vehicle, officers had the flexibility to remove their laptops from the vehicle and stay connected.

"Our officers were very enthusiastic," Heck said. "After a week of trials, it was clear that the overall reliability of the In Motion Technology system could transform our communications and operations."

Tempe deployed gateways throughout its police fleet. "We had gateways (oMG's) up and running in 180 vehicles in less than three weeks, without any problems," according to Heck. Based on this success, City of Tempe officials are looking to deploy In Motion Technology solutions in other city fleets to improve operations and reduce costs.

### In Sum

Mobile networking solutions allow departments to maximize the performance of data systems in patrol vehicles while allowing for overall lower operating costs, improved efficiency and a better "office" for your officers. Today's economy demands

For more information, call 604/523-2371 or visit [www.inmotiontechnology.com](http://www.inmotiontechnology.com).

that we do more with less, so every step taken toward maximizing the productivity of the technology in our police vehicles is a step in the right direction. **LOM**

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