Broadband Bandwidth for the Mobile Office

Every day public safety agencies are expected to do more with less. Faced with budget cuts sometimes leading to personnel reduction, agencies are still expected to maintain a high level of performance and professionalism. It is a tremendous challenge that is sometimes overwhelming. A silver bullet does not exist. Public safety spending is normally a very large part of any state, county or municipal budget, but is a necessary expenditure.

Since the first police vehicle was used in 1899, vehicles have become the mobile office for law enforcement across the country. Daily, the mobile office becomes increasingly important to productivity and efficiency. There are many technology solutions available for the mobile office, however strong and persistent broadband connectivity is needed for many of the solutions and should be considered the office "backbone".

Mobile office technologies include land mobile radio, cellular voice communication, mobile data terminals with corresponding networks and software, in-vehicle video, body cameras, mobile ticketing, printing, license plate readers, vehicle telemetry and a variety of biometric tools. Not only is some type of wireless connection to the vehicles necessary, but so is the ability to prioritize the tools' access to the connection based on the agency's business practices. The tools available to law enforcement enables officers to have better communication combined with up-to-date and accurate information allowing the crime fighting process to be more effective and efficient.

Establishing a common operating environment is a must. In the past, officers went to roll call, gathered information on crime that occurred and persons who may be involved or wanted and went to work. Once in the field officers, supervisors and commanders have little to no access to common operating data. The only mobile tool besides the vehicle for decades was a radio and later, in some jurisdictions, a mobile data terminal. The mobile data terminal was limited to its connectivity which is still largely the case today. Until recently there was not a decent or sufficient internet/network connectivity solution for mobile offices for any public or private sector entity.

FirstNet Interoperability Solutions (FNIS) recently introduced a product line that solves the connectivity issues posed by the mobile environment. The flagship product is the FNG-104WR. The FNG-104WR is a cellular gateway with four (4) channels of LTE, Wi-Fi and it is encased in a rugged enclosure. The FNG-104WR is unique as it is the only known mobile cellular gateway that has the capability to run four (4) different SIM cards (or the same SIM cards or a combination of SIM cards) from different carriers simultaneously and "bond" the data stream to create greater bandwidth.

Proprietary software allows FNIS to bond the data streams or set a failover procedure depending on the needs of the end-user. Built into the software is auto-detection that maintains session persistence, even if a one of the carriers loaded on to the device does not

have a signal, the other carriers would still work. The device may be operated with a minimum of one (1) SIM card or any combination up to four (4) SIM cards.

The FNG-104WR has integrated Wi-Fi. The integrated Wi-Fi turns the mobile office into a Wi-Fi hotspot. Between the onboard RJ-45 ports and the integrated Wi-Fi, any device may be connected to the onboard vehicle hotspot. Two options for wireless connectivity are available, Wi-Fi and cellular broadband.

The FNG-104WR is FirstNet capable. In addition to working with any North American cellular carrier, the FNG-104WR is ready for the FirstNet Network (Band 14). Essentially, it is future proof as it is carrier agnostic and ready to be deployed with FirstNet when it becomes available.

The FNG-104WR has integrated GPS. For safety, fleeting tracking and/or improving operational efficiency, GPS is an important feature. The GPS may be used with a case mounted or remote antenna.

The FNG-104WR is scalable. Scalability ranges from one unit to 30,000 units in a single network. Through the network, SIM cards may be virtually assigned and reassigned to improve operational and cost efficiency.

The FNG-104WR is rugged. Its aluminum enclosure was designed to withstand the harsh environments associated with daily vehicle use. The rugged enclosure has built-in heat sinks to dissipate sink naturally doing away with the need for a mechanical heat reduction solution such as a fan.

The FNG-104WR is low maintenance. The ruggedized enclosure keeps the componets secure reducing maintenance requirements. The firmware and network may be managed remotely which allows fewer personnel to manage the system.

The Public Safety Mobile Office requires a strong, persistent wireless connection. Until now, existing networks and devices were unable to carry the heavy load. The FNG-104WR enables entities to utilize existing networks to deploy the wide variety of mobile office tools that are available and needed by law enforcement.