

How to Be Ready for FirstNet When FirstNet Is Ready for Us

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Ramping up to be [FirstNet](#) ready certainly sounds like a good idea, but how and when should fire departments begin making investments in the technology that will be able to leverage FirstNet? [Mesa Fire/Medical Department](#) has already started to lay the groundwork to be ready for FirstNet when FirstNet is ready for us. By taking advantage of opportunities in our ongoing cycle replacement of connected devices and proactively working with the [City of Mesa's Information Technology Department](#) well ahead of any political or departmental mandates, we have already purchased and installed some of the hardware needed to utilize [FirstNet](#) on our front-line fire apparatus.

Current Use of Data Tools

All heavy Mesa Fire/Medical apparatus (engines, ladders and squads) are equipped with a global positioning system (GPS) tracking device, mobile computer terminal (MCT) and tablet computers. When I am responding to events as Division Chief, which you can see in the video below, I rely on both the MCT and my radio. Running on an aircard, the MCT provides dispatch information in a narrative format, along with a map layer as my visual and routing tool. [Mesa Fire/Medical](#) currently embeds detailed images into the map for fire preplanning purposes and also accesses a PDF directory (loaded locally) for additional on-site information. Our medical teams have also transitioned to using tablets for patient care reporting.

The MCT provides access to the Internet from the field, but the connection is rather slow, making the live footage from the city's traffic cameras essentially unavailable. Ideally, my MCT will eventually connect to FirstNet's network, which means I will not have to compete for bandwidth with the general public and it can be decoupled from our current private network provider. The change to FirstNet will substantially improve my ability to stream video and view images (attachments from dispatch) on the Internet or through the computer-aided dispatch (CAD) mobile application. With more information at my fingertips, my situational awareness will be greatly improved.

Getting FirstNet Ready

Mesa Fire/Medical is not just looking forward to the speed and priority of the FirstNet network, we are actively preparing for the network to come online while looking for cost saving opportunities within our department. With an aircard needed for the MCT and each of the two tablet computers used in medical [response units](#) , Mesa Fire/Medical Department was paying for three data plans per apparatus. That large number of data plans was eating into our telecommunications budget and was far from fiscally sustainable.

Recently the department's GPS units were at the end of their life cycle. Rather than simply replacing the GPS units with like-for-like, Mesa Fire/Medical opted to invest in Band 14-compatible modems, which would not only provide GPS but also convert each fire apparatus into a rolling Wi-Fi hotspot. The MCT would be connected via ethernet to the modem, and the tablets connect via Wi-Fi, eventually saving our department two-thirds of the ongoing aircard costs. This savings will not only allow us to recoup our initial investment in the modems within the first 12 months, but also provide ongoing telecommunications budget savings.

Mesa Fire/Medical also recently purchased six new heavy fire apparatus that came equipped with modems straight from the factory; we include all technology into our apparatus specifications to leverage bond dollars rather than operations and maintenance dollars. We now have nine fire apparatus that are equipped with Band 14-compatible devices, which decreases the number of new modems we will need to purchase to up-fit the rest of our fleet by nine (a significant savings).

More to Think About

As with any new technology, however, there are challenges with implementation. The network that allows our fire apparatus to connect to our CAD system on the MCT must be modified to allow the MCT to connect by virtual private network (VPN) to CAD, while also allowing our tablets to utilize a more open Internet connection via the new modems. Our CAD system is currently shared with a single municipal police department and a regional fire consortium. Our MCTs currently traverse a private network connection to a security utility. We considered both of these levels of security to be unnecessary and are moving to eliminate the private network but keep the security utility application.

This project has taken far more time than we had hoped, but we anticipate this problem will be solved in the next few months, allowing us to fully activate the existing modems and experiment with our tablets on Wi-Fi.

By thinking and planning ahead, departments can avoid a long delay between FirstNet's deployment and making the equipment, systems, governance and training changes that will allow agencies to fully and effectively make use of the FirstNet network. One of the primary steps is to open the lines of [communication](#) between fire personnel and information technology personnel within a jurisdiction to ensure the information technology divisions truly understand fire department needs. As with many challenges in emergency communications, the disconnect can be more of a people problem than a technology problem.

There has been a lot of emphasis on how the FirstNet network will be built—and I am among the many who are excited to see it come online—but there needs to be more emphasis among public safety entities in investing in and planning for the equipment and policy changes that will make the network work. The time for that work to be done is now.