Ultra-Rugged, Mission Critical LTE Handsets:
BUILT FOR PUBLIC SAFETY

In February 2012, Congress enacted The Middle Class Tax Relief and Job Creation Act of 2012, containing landmark provisions to create a much-needed nationwide interoperable broadband network that will help police, firefighters, emergency medical service professionals and other public safety officials stay safe and better perform their jobs. The law's governing framework for the deployment and operation of this network, which is to be based on a single, nationwide network architecture, is the new "First Responder Network Authority" or FirstNet. FirstNet is an independent authority within the National Telecommunications and Information Administration (NTIA). FirstNet holds the spectrum license for the network, and is charged with taking "all actions necessary" to build, deploy, and operate the network, in consultation with Federal, State, tribal and local public safety entities, and other key stakeholders.

Introduction

From FirstNet to the commercial network, Sonim has created a vision of a truly mission critical communications platform for public safety. Since 1997, Sonim has been in the wireless industry, and in 2008, they launched their first ultra-rugged handset. Sonim devices were created for the most extreme outdoor environments, the handsets proved themselves many times over by increasing worker productivity, efficiency as well as improving safety. So why not apply the same ultra-rugged communications solution to public safety?
Enter FirstNet. The impending rollout of the FirstNet Band Class 14 network as outlined above was the direct result of tragic events such as the Oklahoma City bombing, the World Trade Center attack, the Columbine shooting, Hurricane Katrina, and many other man-made and natural events that put first responders in harm's way. It became clear to Sonim that standard smartphones were unable to meet the mission critical standards that public safety community required of their communication tools. The lack of a hardened, standards-based and mission critical-grade LTE handset drove the company in a whole new direction, leading to the creation of Sonim's Public Safety Division in 2014.

At the outset, Sonim's leadership spent thousands of hours gathering feedback from first responders in the field and at the operations level to help address their specific needs. As a result of this extensive research, Sonim's mission critical XP family of handsets was developed.
Today, Sonim is partnering with technology leaders to develop a robust communications solution for public safety. Sonim combines purpose-built LTE handsets and ultra-rugged accessories with customized applications and services to increase first responder effectiveness and safety.

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The Challenges

If you walk into any public safety department, you'll see an assortment of Land Mobile Radios (LMRs). These devices are workforce critical, and are purpose-built to the highest military standards around. They are also hardened devices, so they need no case to shield the device from work hazards like fluids, extreme temperatures, or drops.

Nowadays, you'll probably also see an assortment of smartphones and feature phones in a public safety agency. The problem with these devices is that, even when protected with a case, they simply cannot stand up to the on-the-job rigors of a public safety professional. Just because a phone is put in the hands of public safety doesn't mean the technology is mission critical-grade.

As FirstNet Implements a B14 Class LTE network, there are multiple layers of new complexities surrounding what is or will be mission critical. If you address all the complexities, but do not have a mission critical handset to support them, the entire LTE public safety model breaks on the standards of Network-Application-Equipment.

As agencies move to adopt public and private LTE-based platforms for data communications, they expect the same level of ruggedness, durability and reliability out of their LTE handsets as they do out of their LMR devices. The Sonim XP7 was designed to meet or exceed the most exacting of public safety standards.

Interoperability

With new technology comes the challenge of interoperability for the public safety industry. Sonim had to address this issue in the design and operability of the XP family of handsets. A dedicated PTT button was built into the handset to mimic the applicability of an LMR device and was designed to work with multiple PTT applications.

Since not all agencies operate the same way, it was important that the PTT feature was designed to be programmed on the XP platform today and to be operational in the future for mission critical voice as standards are adopted and evolve. Interoperability does not end with voice, but also should address video, data and applications. Sonim has designed the XP7 to integrate with many applications, accessories and networks so it functions the way the first responders require and deserve.

The Common Differentiator

For public safety, the most important issue that needs to be addressed at the scene of an incident is what resources need to be staged to offer the safest, most effective and efficient response at the least amount of risk to the first responders. Sonim has taken on this challenge by working with multiple vendor applications and commercial and private network operators to ensure the company continues to innovate as the FirstNet network and our handsets evolve. Sonim's technology has also been tried and tested in demonstrations and real, life deployments.

Since 2015, every Early Builder jurisdiction, along with more than 100 federal, state and local agencies have tested Sonim Technologies at large public events where public safety professionals were able to leverage Band Class 14 spectrum. This allowed Sonim to work closely with public safety to validate the design and capabilities of our XP7. As a result of these demonstrations, first responders deployed mission critical LTE communications technology for the first time and reaped the benefits of an ultra-rugged device that greatly improved productivity and response times.

Sonim is committed to ensuring that its mission critical handsets and accessories are ready and enabled for first responders now and into the future.

Make it Easy and Affordable

There are many criteria involved in determining the right technology solution needed for any agency. First, there's total cost of ownership. P25 devices today are costly and cannot deliver the function and feature sets for Public Safety required now and into the Future. The use of consumer smartphones today by Public safety, makes an iPhone or Android smartphone an attractive solution. However, these devices break easily in the field and the replacement rate ultimately outweighs the money saved on the original purchase. Sonim's 3-year comprehensive warranty means zero replacement cost for repairs, which can save agencies thousands of dollars over the course of a year. Sonim also designs and manufacturers its handsets to keep costs down while delivering high quality product. Sonim recognizes these issues and is committed to keeping its products affordable for all types of agencies now and in the future.

Second, public safety agencies must be able to purchase the right technology solution without a lot of difficulty. Sonim is creating partnerships by working with multiple network vendors and public safety distributors to be able to make the devices readily accessible to the public safety market.

The Emerging Network Factor

The P25 standard of communications has fulfilled our current capabilities up until now. As this concept of a new, secure public safety network is adopted, the value FirstNet brings becomes clear and is driving the industry into the digital age. It also becomes apparent that public safety communications technology is evolving by enabling new capabilities including situational awareness, data analytics and predictive policing.

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While broadband has been a supplement to public safety communications, FirstNet will provide the infrastructure needed to enable and foster technology innovation while providing secure communications within agencies and across agencies at the local, state and federal levels.

The Sonim Difference

Sonim is the first and only Tier One smartphone manufacturer to release a commercially available mission critical platform that enables first responders to get broadband access on both the FirstNet Band Class 14 spectrum and on commercial mobile networks. The XP7's key strengths include its 4,800-milliamp battery, which enables up to 40 hours of LTE-based talk time, and extreme durability in hot, dusty and wet environments, visibility under direct sunlight, and support for a wide range of Android applications.

A National Vision

Sonim recognizes the first responder who works on the edge and whose life depends on reliable, mission critical communications technology. That's why it's vital to ask if a consumer smartphone will be reliable enough and provide the capabilities required to keep our everyday heroes safe while on the job. Reliability and confidence in the handset of the first responder is more important than anything in the Band 14 network. You can have the network, you can have the application, but everything fails if you do not have the reliability of ultra-rugged mission critical handset.

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Sonim has created a handset with the capabilities that unites all of the communication resources required for public safety. For the first time, this unification of resources will propel those charged with protecting life and property from both the public and private sectors onto a nationwide interoperable network. Sonim understands the technology and what is required to allow first responders the most secure and interoperable device on the market. Sonim has been working in conjunction with FirstNet and infrastructure providers to successfully demonstrate operations on multiple FirstNet licensed networks such as with the Early Builders as well other trials and demos throughout the U.S. More importantly, Sonim bridges IP broadband communications from FirstNet Network to other terrestrial and wireless networks as well as current operating P25 systems.

Sonim in Action Today

Sonim has engaged in well over 100 public safety related trials and demos, which involved multiple public safety agencies and vendors. The Sonim XP7 leveraged multiple LTE networks while also integrating many different types of solutions. Sonim's involvement was critical not only for public safety, but also for Sonim. It has now allowed the company to capture information and better design products that will better serve the public safety community. Sonim will continue as the FirstNet rollout occurs to create the best devices it can for public safety.

Papal Visit Oct. 12, 2015 – Sonim equipped Pennsylvania state police, New Jersey state police and the New Jersey Office of Homeland Security and Preparedness with XP7 ultra-rugged LTE Android handsets during Pope Francis's visit to Philadelphia, Sept. 26-27.

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Sonim delivered seamless communications between the different public safety agencies involved in the event, the Sonim XP7 handsets integrated software applications developed by multiple technologies, which allowed the XP7 to serve as the interoperable communications device on multiple platforms, enabling secure, real-time sharing of radio, voice, text, video, data and location information between public safety agencies. The XP7 bridged disparate systems so that all parties responding to any emergency could communicate and collaborate in real time.

New Mexico Oct. 13, 2015 – Sonim supplied personnel from Albuquerque Police, Fire, and EMS, the State of New Mexico Department of Public Safety, the State of New Mexico Department of Homeland Security and Emergency Services and State Fair and Balloon Fiesta Security with XP7 LTE Android handsets.

New Mexico is one five of states in the country that have received federal grants to begin early deployments of a public safety LTE broadband network utilizing the FirstNet-allocated LTE Band Class 14 wireless spectrum. The XP7, running the Intrepid Networks (STING) application corrects this problem by creating a digital Common Operating Picture that visually communicates descriptions, multimedia and locations between operators and commanders who are now fully coordinated and informed.

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Arizona Department of Administration and the Hualapai Nation
Dec. 2016 – In 2016, the Arizona Department of Administration implemented an outreach program that was intended to inform members of the public safety community on the capabilities of the Nationwide Public Safety Broadband Network being implemented under the auspices of the First Responder Network Authority. The Hualapai Nation volunteered to host the Arizona PSBN Tribal FSE. The exercise was conducted on the grounds of the airport that serves Grand Canyon West, a tourist area located along the west rim of the canyon.
Though the scenario was a mass-casualty incident, the focus of the exercise was on technology and not the rescue response capabilities. The exercise was intended to demonstrate the application of emerging technologies that are intended to enhance emergency response operations including: video conferencing; streaming video from body-worn cameras, vehicle cameras, and drones; Telemedicine to coordinate the treatment of victims; land mobile radio (LMR) to PSBN LTE interoperability; and personnel tracking.

Sonim provided:

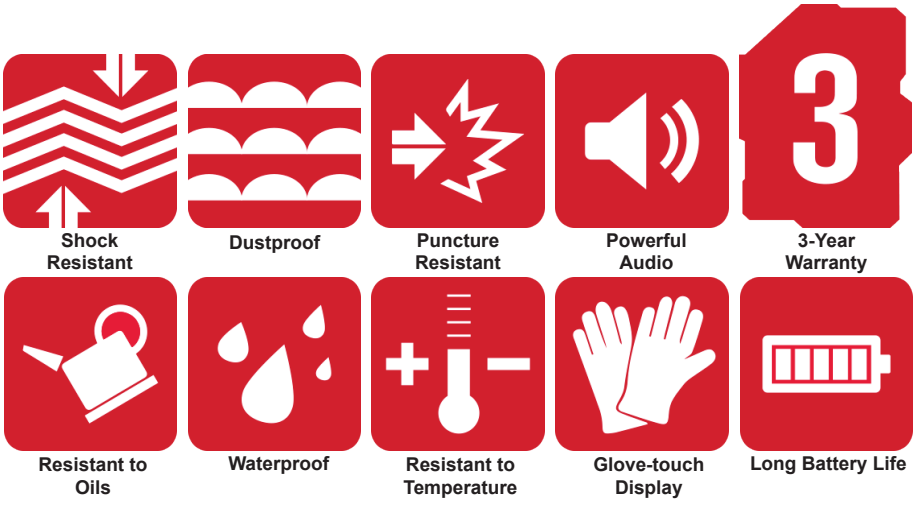
- Enhanced situational awareness for all first responder players
- Ability to broadcast imagery in real-time to the Mohave County and Arizona Department of Emergency and Military Affairs EOCs
- Ability to share patient-condition information with hospitals via the telemedicine network
- Enhanced first responder safety by providing the ability to track individual resources (i.e., personnel, vehicles, equipment)

Conclusion

LMR remains mission critical and first responders still rely on it today. Years of fine tuning has provided coverage and a dependable network, which has allowed public safety to evolve slowly in augmented commercial broadband. However, thanks to FirstNet, the stage is set to take the next steps for public safety communications. In this transition, there will be a place for LMR Mission Critical Voice as FirstNet is deployed. This will be a multi-year evolution. In the coming years, the demand for public safety wireless broadband applications, voice, data and video will incrementally expand to new levels improving first responders' ability to save and protect their communities.

The Sonim solution will allow for a successful migration path between LMR and LTE networks. It will allow a firefighter access to details on the toxic waste stored before they enter a burning warehouse. It will enable an EMT to stream video to an ER doctor. It will provide a patrol officer with real time video and situational awareness when responding to a call for help.

Sonim has created a powerful technology platform that will launch mission critical communications into the 21st century and make it more effective and efficient – with an ultra-rugged, mission critical-grade LTE handset built to the same standards that first responders have come to expect out of their communications tools.



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