



The Nationwide Public Safety Broadband Network FAQs for Technical Personnel

The Middle Class Tax Relief and Job Creation Act of 2012 (the Act), specifically Title VI entitled *Public Safety Communications and Electromagnetic Spectrum Auctions*, authorizes the deployment of the Nationwide Public Safety Broadband Network (NPSBN). The NPSBN will be a wireless, interoperable nationwide communications network that will allow the public safety community to securely and reliably gain and share information with their counterparts in other locations and agencies. The law also establishes the First Responder Network Authority (FirstNet) as an independent body that will govern the NPSBN; sets aside \$7 billion for network development, deployment, and operation; and assigns the use of the 700 MHz D Block to FirstNet for the public safety community. As envisioned, the network will incorporate open, commercial wireless technology standards.

NATIONWIDE NETWORK OVERVIEW

What is FirstNet and what will it do? FirstNet is an independent authority within the Department of Commerce's National Telecommunications and Information Administration (NTIA) that will develop and design the network architecture and gather network requirements. FirstNet will also develop a plan for network deployment for each State; and work with State, local, and tribal governments to create an interoperable, nationwide network; and hold the spectrum license for the NPSBN. FirstNet is led by a Board composed of 15 members to include the Secretary of Homeland Security, the Attorney General, the Director of the Office of Management and Budget, and 12 experts—named by the Secretary of Commerce on August 20, 2012—each with experience in the public safety, technical, network, or financial fields. Per the Act, at least three Board members must represent the collective interests of States, local, tribes and territories. At least three Board members must have served as public safety professionals.

When will the NPSBN be deployed? Will deployments vary across the country? There is no defined timeline for the deployment of and transition to the NPSBN. FirstNet

must first engage in a consultation process before crafting its nationwide network architecture, which will serve as the basis for requests for proposal (RFPs). FirstNet will provide each State with a proposed network build-out plan and State-specific funding allocation, as determined by NTIA. It is projected that deployments will vary by State based on existing infrastructure and geography; however, the way in which deployments will vary will not be known until FirstNet develops the plan for each State.

What entities are included in the term “public safety”?

The Act defines a public safety entity as a provider of public safety services and defines public safety services and emergency response providers by the definitions included in the Communications Act of 1934 and the Homeland Security Act of 2002, respectively. Section 337(f) of the Communications Act defines public safety services as the sole or principal purpose of which is to “protect the safety of life, health, or property; that are provided by State or local government entities; or by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services; and that are not made commercially available to the public by the provider.” Section

2 of the Homeland Security Act of 2002 defines emergency response providers as including “Federal, State, and local governmental and nongovernmental emergency public safety, fire, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities.”

What is the timeline for my State to opt-out of the NPSBN?

Within 90 days of a State receiving the FirstNet plan for the NPSBN, the governor of each State must decide whether to participate in the FirstNet recommended nationwide network build-out or opt-out and deploy a State-specific Radio Access Network (RAN) that connects to the nationwide network. If the governor elects to opt-out, the governor must develop and complete requests for proposals for the construction, maintenance, and operation of the RAN within 180 days of notifying FirstNet, NTIA, and the Federal Communications Commission (FCC) of its decision. The State must submit to the FCC an alternative plan for RAN construction and operation that meets the minimum technical interoperability requirements developed by the Technical Advisory Board for First Responder Interoperability and interoperates with the NPSBN. The State must also apply for spectrum through the NTIA and pay user fees for the shared elements of the network core. The State may also apply to NTIA for a grant to build its portion of the RAN. If the FCC disapproves the State’s plan, network build-out within the State will proceed under the FirstNet plan.

COMMUNICATIONS TECHNOLOGY

What is the difference between Land Mobile Radio (LMR) and broadband networks, in particular Long Term Evolution (LTE) networks?

LMR is a terrestrially-based wireless narrowband communications system commonly used by Federal, State, and local emergency responders, public works companies, and even the military to support voice and low-speed data communications. LTE is the next evolution of commercial broadband wireless communications technology, which was developed to address the demand for high-speed, data intensive communications, such as situational awareness, advanced analytics, database queries, photographs, and video applications. LTE promises higher data transmission rates and capacity than the current 3rd generation (3G) commercial service offerings. Unlike LMR, LTE does not currently support mission

critical public safety grade voice communications; priority access for public safety users; or have the push-to-talk, multi-broadcast, or “talk around” capabilities required by the public safety community.

FirstNet has yet to determine the nationwide network architecture and technical requirements; therefore, many questions are yet to be defined:

- How will the NPSBN intersect/interact with the Commercial Mobile Alert System (CMAS)?
- What is the ratio of sites needed to provide data coverage (in comparison to the tower sites needed for voice coverage)?
- How will the NPSBN be secured? Will the same level of security standards be required nationwide?
- What is the current stage of development for broadband devices? When will the devices be available for public safety use?
- Who will provide and maintain devices for the network? How and where will user agencies acquire these devices? What options will we have? Will there be cooperative purchasing opportunities? How do we participate?
- How will individual jurisdictions maintain and provide access to their applications and data, while restricting access to outside users?
- What capabilities can we expect if we indeed roam to a commercial network?

Will broadband replace LMR? For the foreseeable future, broadband will supplement, but not replace LMR. At this time, the available broadband technologies do not adequately support voice communications capabilities as required by public safety personnel; therefore, it will be necessary to continue to invest in LMR networks as an integral part of first responder communications. Voice over LTE (VoLTE) standards are under development and emerging, and in time will provide standardized voice capabilities as an adjunct to public safety LMR services. These VoLTE services may be similar to telephony services and capabilities now offered on commercial 3G systems. While VoLTE is expected to support standardized voice traffic over LTE, the way in which critical LMR voice capabilities can be delivered in the NPSBN in the future will only be determined once the architecture is defined; technical standards are drafted and accepted; devices are built, tested, and certified; and the public safety community begins the migration to these new services and capabilities.

Will broadband data access be ubiquitous across the country? Depending on many technical factors and the deployment methodology selected, the final architecture of the NPSBN should provide coverage for public safety operations in most areas. However, achieving universal coverage immediately may not be technically or financially possible. The Act includes direction to leverage existing assets and capabilities of government and commercial entities, which may provide and enhance robust network coverage.

How will the NPSBN be different than Project 25 (P25)? The envisioned NPSBN will embrace commercial LTE technology, which is the next evolutionary step in the Third Generation Partnership Program (3GPP) technical standard for Global System for Mobile Communications. LTE builds upon the previous generations of cellular communications technology and is being implemented worldwide by many commercial wireless carriers. Project 25 is a public safety communications standard dedicated to ensuring voice interoperability for public safety LMR communications. It is designed to provide a common operating platform for public safety LMR communications. The envisioned NPSBN will have a single, nationwide network architecture, in contrast to the multiple P25 and non-P25 public safety LMR systems that are deployed consistent with local, county, State, and Federal jurisdictions.

Will the NPSBN make all public safety agencies interoperable? On their own, the standardized technological attributes of the NPSBN will not make an agency interoperable. SAFECOM developed an Interoperability Continuum, which is a guiding framework for interoperability planning. The Continuum identifies governance, standard operating procedures, technology, training and exercise, and usage as critical elements of interoperable solutions for both LMR and broadband communications. The creation of standard operating procedures that dictate the use and capabilities of the network will be of significant importance to ensure both operability and interoperability of the NPSBN.

Who has priority on my State's system when outside users come into our State? Is there a standard priority system? The nationwide network architecture and technical requirements have not yet been established. FirstNet, in consultation with the States, localities, tribes, and territories will determine how

user priorities will be established throughout the network.

How will the commercial wireless companies interact with States? Will we have public safety priority? Under the law, FirstNet is to enter into agreements, as appropriate, with commercial network providers for public safety communications roaming and prioritization on commercial networks during emergencies. The FCC may adopt rules to improve the ability of public safety network users to roam onto commercial networks and gain priority access to commercial networks in an emergency.

Will there be a standard for hardening the system to public safety standards? Who will approve and pay for that? The nationwide network architecture and technical requirements, specific to robustness and resiliency of systems, have not yet been defined. FirstNet, in consultation with the States, localities, tribes, and territories will determine the appropriate hardening and resiliency needs of the network.

How will other States' networks identify and allow access for my State's equipment? The public safety broadband network will be based on a single, nationwide network architecture and will utilize a shared core, which will include authentication of end user devices.

A commercial vendor approached me to sell LTE infrastructure, do I need to purchase this equipment now? No, you do not need to purchase, and in some cases should not purchase, LTE infrastructure and devices from commercial vendors at this time. Because the network architecture has not been designed or deployed, it is impossible to know what infrastructure and devices each State, region, or jurisdiction may need. Any entity making such purchases now risks buying infrastructure and equipment that may not be interoperable with the future NPSBN.

GOVERNANCE

Who is responsible for coordinating all the State and local assets and working with the FirstNet Board? The Act requires each State to designate a single State officer or governmental body that will be the point of contact for consultations with FirstNet. States must also designate a single officer or governmental body to coordinate the implementation of any grant funding the State receives under the State and Local

Implementation Grant Program. These decisions will be made by each State's governor.

FirstNet has yet to determine the nationwide network architecture and technical requirements; therefore, many questions are yet to be defined:

- If the entire State is not covered by the NPSBN, how will coverage gaps be addressed?
- How will the NPSBN standard operating procedures be developed?
- What basic applications/access will the network and operators/providers give or be required to provide to visiting authorized users entering their jurisdictions?
- Who will be responsible for user equipment applications development allowing access to the various information sources?

Many States have a Statewide Interoperability Coordinator and a Statewide Interoperability Governing Body to implement the statewide plans for enhancing interoperable communications. These individuals and structures should be leveraged to support NPSBN implementation.

How does a State that chooses to opt-out of the FirstNet deployment obtain spectrum? The Act allocates 20 MHz of public safety broadband spectrum to FirstNet and FirstNet will hold the spectrum license for the NPSBN. If a State has received approval for its alternate plan from the FCC as outlined above, it may seek authority to lease the public safety broadband spectrum from NTIA. To receive approval, the State must demonstrate that it has the technical capabilities to operate and the funding to support the State RAN, the ability to maintain ongoing interoperability with the NPSBN, and the ability to complete the project within its specified timelines.

FUNDING

How will the network be funded? The Act authorizes the creation of the Public Safety Trust Fund (PSTF), in which revenue collected from the spectrum auctions will be deposited, to fund FirstNet's activities as

it designs, deploys, operates, and maintains the network. FirstNet also will collect user fees and fees from leasing its spectrum, and is also authorized to accept other financing, such as through grants and gifts.

Is grant funding available to develop a network in my State?

Will this funding pay for planning only, or also for equipment or services? While grant programs and funding have been identified, currently there is no structure to apply for and receive funding. In the future, NTIA will provide guidance regarding how to apply for funds from the State and Local Implementation Grant Program, define the scope of eligible grant activities, and prioritize grants for activities that ensure both rural and urban coverage.

Should I continue to spend money on public safety

communications systems? Public safety's use of LMR systems will continue for the foreseeable future as there is no defined timeframe when LTE broadband technology may provide the same level of mission-critical voice services that are available today. Therefore, it will be necessary to continue investments for existing and new LMR voice systems, while allocating new funding to the development and deployment of the NPSBN.

How will costs associated with roaming to commercial networks be dealt with? Under the law, FirstNet is to enter into agreements, as appropriate, with commercial network providers for public safety roaming and prioritization on commercial networks during emergencies. The FCC may adopt rules to improve the ability of public safety networks to roam onto commercial networks and gain priority access to commercial networks in an emergency if:

- Public safety entity equipment is technically compatible with the commercial network;
- The commercial network is reasonably compensated for use; and
- Such access does not preempt or otherwise terminate or degrade all existing voice conversations or data sessions.

FOR ADDITIONAL INFORMATION

Please contact OEC@dhs.gov or visit www.dhs.gov (keyword OEC).