

**Before the
National Telecommunications and Information Administration
First Responder Network Authority
Reston, Virginia 20192**

In the Matter of)
)
First Responder Network Authority (FirstNet)) D15PS00295
Nationwide Public Safety Broadband Network)
(NPSBN) Special Notice)

**COMMENTS OF
THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL**

The National Public Safety Telecommunications Council (NPSTC) submits these Comments in response to the First Responder Network Authority’s Special Notice, i.e., the “Draft Request for Proposal” (Draft RFP) in the above-captioned proceeding.¹ In general, NPSTC compliments FirstNet on creating a substantial document to explain the proposed design and operation of the Nationwide Public Safety Broadband Network (NPSBN). The Draft RFP is extensive and covers many key areas that will be essential in attracting and choosing partner(s) to build out and operate the network.

In these comments, NPSTC provides its recommendations surrounding certain elements of the Draft RFP, especially some of the areas that most directly impact public safety operations. In NPSTC’s view, the biggest challenge is properly balancing specificity in the procurement process with the need for flexibility to adjust policies and operational requirements as experience is gained in actually using the network.

¹ First Responder Network Authority (FirstNet) Nationwide Public Safety Broadband Network (NPSBN) Special Notice, D15PS00295, released April 27, 2015.
https://www.fbo.gov/?s=opportunity&mode=form&tab=core&id=ced83f6c015257116af1efc70d4d9e90&_cvview=0

The National Public Safety Telecommunications Council

NPSTC is a federation of public safety organizations whose mission is to improve public safety communications and interoperability through collaborative leadership. NPSTC pursues the role of resource and advocate for public safety organizations in the United State on matters relating to public safety telecommunications. NPSTC has promoted implementation of the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores technologies and public policy involving public safety telecommunications, analyzes the ramifications of particular issues and submits comments to governmental bodies with the objective of furthering public safety telecommunications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications.

The following 16 organizations serve on NPSTC's Governing Board:

- American Association of State Highway and Transportation Officials
- American Radio Relay League
- Association of Fish and Wildlife Agencies
- Association of Public-Safety Communications Officials-International
- Forestry Conservation Communications Association
- International Association of Chiefs of Police
- International Association of Emergency Managers
- International Association of Fire Chiefs
- International Municipal Signal Association
- National Association of State Chief Information Officers
- National Association of State Emergency Medical Services Officials
- National Association of State Foresters
- National Association of State Technology Directors
- National Council of Statewide Interoperability Coordinators
- National Emergency Number Association
- National Sheriffs' Association

Several federal agencies are liaison members of NPSTC. These include the Department of

Homeland Security (the Federal Emergency Management Agency, the Office of Emergency Communications, the Office for Interoperability and Compatibility, and the SAFECOM Program); Department of Commerce (National Telecommunications and Information Administration); Department of the Interior; and the Department of Justice (National Institute of Justice, Communications Technology Program). Also, Public Safety Europe is a liaison member. NPSTC has relationships with associate members: the Canadian Interoperability Technology Interest Group (CITIG) and the Utilities Telecom Council (UTC), and affiliate members: the Alliance for Telecommunications Industry Solutions (ATIS), Open Mobile Alliance (OMA), Telecommunications Industry Association (TIA), and TETRA Critical Communications Association (TCCA).

NPSTC Comments

NPSTC appreciates the opportunity to submit these comments in response to the FirstNet Draft RFP. First, NPSTC congratulates FirstNet on its development of a relatively substantial and comprehensive document. While changes in specific areas may very well be made prior to release of the Final RFP, it is clear that the FirstNet staff gave a significant amount of thought to the development of the Draft RFP.

Appendix C3 of the Draft RFP lists “Recommended Minimum Technical Requirements” which includes 100 pages of information on public safety grade, priority and quality of service, user equipment, and device management. NPSTC also notes that this appendix is based on a 2012 report

from the Technical Advisory Board. NPSTC encourages FirstNet to update this appendix to include more recently published reports that better reflect the evolving requirements of public safety.

FirstNet leveraged a number of NPSTC Reports and documents in the Draft RFP, including documents on the Broadband Launch Statement of Requirements², Local Control³, Priority and Quality of Service⁴, and Public Safety Grade.⁵ NPSTC appreciates FirstNet's inclusion of these resources in its thought process to develop the Draft RFP. These NPSTC resources are developed with the involvement of numerous public safety stakeholders and input from communications industry representatives. In general, each document represents hundreds of hours of work and deliberation to arrive at the best recommendations possible. Further, NPSTC periodically updates key documents when needed. For example, NPSTC has been refreshing its documents on Priority and Quality of Service and Local Control, as discussed in these comments below.

From NPSTC's perspective, one of the biggest overall policy decisions FirstNet faces at this time is how best to balance the specificity needed for the Federal procurement process with the flexibility needed to make network adjustments as experience is gained and the network becomes more heavily used over time. In the procurement process, the degree of specificity incorporated into the Final RFP should help potential partners formulate their responses and also help FirstNet review those responses. However, from a public safety operational perspective, specifications should not be locked down so tightly that there is no flexibility to adjust policies, deployments, and various aspects

² NPSTC Public Safety Broadband High Level Launch Requirements, December 7, 2012

³ NPSTC Local Control in the Nationwide Public Safety Broadband Network, March 12, 2012

⁴ NPSTC Priority and QoS in the Nationwide Public Safety Broadband Network, April 17, 2012

⁵ NPSTC Public Safety Grade Systems and Facilities, May 22, 2014

of operation over time as real-world experience is gained and as the network becomes more heavily used.

NPSTC believes a review of the positive and negative experiences gained by states that have deployed statewide trunked Land Mobile Radio (LMR) voice systems may be of benefit to FirstNet. States that have implemented these systems have faced a number of similar issues, albeit on a smaller scale than that being faced by FirstNet.

These states have worked through various stages of the process, just as FirstNet will be called to do. For example, states can share their successes and challenges during the following stages of the process:

- Specifying requirements;
- Choosing a partner/vendor;
- Constructing the network;
- Establishing a governance structure;
- Operating in the early days with little pressure on network capacity;
- Marketing the network to additional potential users;
- Adjusting/expanding coverage over time and as user needs dictate;
- Adding features and/or applications per user needs;
- Highlighting existing user success stories;
- Developing additional capacity as the network becomes more fully utilized; and
- Making the operational transition to a fully utilized network.

While also not without challenges, some states that have implemented statewide trunked LMR voice networks have experienced an overall improvement in public safety communications and interoperability, a similar bottom-line goal to that of FirstNet. Therefore, as a general comment, NPSTC recommends that FirstNet expand its existing state consultation process to include a review of the implementation of statewide trunked systems. States can then point out what worked well in the process and what did not.

In addition, NPSTC offers its observations and recommendations for specific areas of the Draft RFP, including the proposed Quality Assurance Surveillance Plan, priority and quality of service (PQoS), elements of local control, description of coverage, training, deployable communications assets and end-to-end architecture.

Quality Assurance Surveillance Plan

As part of its Draft RFP, FirstNet includes a proposed Quality Assurance Surveillance Plan (QASP). The purpose of the QASP is to monitor and evaluate performance throughout the life of the RFP award(s). NPSTC believes a properly designed and executed QASP is an important step in transparency which can also help demonstrate to public safety that the NPSBN will be monitored on an ongoing basis to meet public safety needs.

Priority and Quality of Service

The draft RFP provides extensive documentation on how priority, preemption and quality of service may be managed. This includes statements in the Operational Architecture documentation (Appendix C7) and in the Use Case Appendix (C9). In its comments on the FirstNet Third Notice, NPSTC stated the following:

...NPSTC's study has found that a proper mechanism of priority and QoS should include both default prioritization established up front and dynamic prioritization needed to adjust priorities for a given incident. For example, what could be a lower priority operation at one incident may be an absolutely critical operation at another. Dynamic prioritization can allow the incident commander or his/her designee to customize the prioritization for use of the NPSBN to match specific public safety requirements for a given incident as needed.

NPSTC is pleased to see that FirstNet has included provisions for both default prioritization and dynamic prioritization as part of its Draft RFP. The challenge now is to determine the proper balance on when the levels of default prioritization are sufficient and when dynamic prioritization instead is needed. FirstNet has included a Use Case for "illustrative purposes" that speaks to a dispatcher making many manual adjustments to the network to control PQoS during a major incident.⁶

A mechanism to manage dynamic prioritization is certainly needed. At the same time, the existing workload and stress on dispatchers is significant, especially during a major incident, and the degree of any additional workload needs to be considered carefully. NPSTC has noted that manual adjustment of the PQoS settings is a complex task that can result in undesired consequences. NPSTC believes that once an incident commander or Communications Unit Leader (COML) decides to reprioritize resources at a scene, the PQoS functionality, i.e., the actual adjustments in the LTE network and devices, should be managed automatically to the fullest extent possible. The need for manual intervention by local agency personnel to adjust priority settings on the network or devices should be minimized to the degree possible, as noted in NPSTC recommendations to the FirstNet PSAC in March.

NPSTC is also concerned that a potential vendor partner will view the dispatcher use case in the RFP as an example of a preferred network architecture that requires manual adjustment of complex LTE settings. NPSTC therefore suggests that this section be modified when developing the final RFP document.

⁶ • Use Case 4 in Appendix C9, Section 4.10 "PQoS"

NPSTC has been refreshing its 2012 Priority and QoS Report and is also examining the impact of technological improvements that have occurred in the past 2 years. Work on the updated 2015 Priority and QoS document has just been completed and the report is scheduled for release in mid-August, 2015. The document will be sent to the FirstNet Public Safety Advisory Committee (PSAC) and will also be available on the NPSTC website (www.NPSTC.org). NPSTC believes this document will be of significant assistance to FirstNet and the PSAC in further addressing requirements regarding priority and QoS for the Final RFP.

Elements of Local Control

The Operational Architecture documents specific roles and functions among FirstNet, the contractor operating the network, and public safety entities.⁷ This list of roles and functions is expansive and shows that a great deal of effort went into its development. The Draft RFP contains more than 600 unique elements. This listing includes extensive documentation on what functions will be assigned for local public safety agency control and how the functions will work in an operational environment. This type of documentation is very important in adding to public safety's knowledge and awareness of how agencies will interface with the NPSBN. FirstNet asked for feedback on a variety of functions that were not initially assigned to FirstNet or Public Safety. NPSTC is not commenting on the assignment of specific functions but in general believes that:

- FirstNet must assume control of those functions that are necessary to manage the overall NPSBN.
- Local agencies need control over those functions that directly impact their ability to manage their devices, applications and services.

⁷ Operational Architecture (Appendix C7)

- The contractor must be granted sufficient control to meet their obligations to FirstNet and the public safety community, while being held accountable to a series of quality assurance and performance metrics.
- FirstNet is responsible for ultimately determining the correct “mix” of assignment of these functions to meet the overall needs of the NPSBN.

NPSTC is in the process of updating its document on recommendations regarding Local Control and expects the document update to be finalized in late summer, 2015. This report will be sent to the FirstNet PSAC and will be available on the NPSTC web site. NPSTC believes this updated report will be helpful to FirstNet and the PSAC as part of the process leading to a Final RFP.

Description of Coverage

Appendix C8 of the Draft RFP describes the Initial and Final Operating Condition (IOC and FOC) and documents the percentage of Band 14 coverage objectives that must be met.⁸ This section also includes objectives and coverage requirements to meet necessary “substantial rural milestones”. These definitions follow the FirstNet proposed interpretations of parts of The Middle Class Tax Relief and Job Creation Act of 2012:

- Non-Rural – As a city or area that has a population of greater than 20,000 inhabitants.
- Rural or Rural Area – As a city, town or incorporated area that has a population of less than 20,000 inhabitants.
- Substantial Rural Milestone – At least twenty percent (20%) of total covered area for each Band 14 IOC deployment phase must comprise areas defined as rural (coverage measured in square miles).

NPSTC notes that there are many variations in the character of rural and urban areas. A large metropolitan area typically includes a large city and clusters of “bedroom community” towns. A FirstNet contractor could meet the rural coverage buildout milestones by classifying these smaller

⁸ IOC-FOC (Appendix C8), Section 4.2.1, 4.3.1, 4.4.1, 4.5.1, 4.6.1

communities in the urban core as individual rural towns. While this approach would maximize the usage of network facilities constructed in the core area, it would result in less coverage buildout in the actual rural areas of a State. NPSTC believes such an approach would not meet the spirit or intent of the FirstNet mission. Therefore, NPSTC recommends that FirstNet articulate more fully how these rural coverage milestones can be met to prevent the network architecture from focusing strictly on municipal boundaries and thereby unintentionally disenfranchising an adjacent area.

Training:

Appendix C7, (Operational Architecture), Section A.2.1.5 requires training and certification for all users of local control capabilities, including Public Safety Entity (PSE) administrators, incident commanders, and COML. NPSTC believes that competency based training for all personnel to interact with the local control interface to FirstNet is essential to ensure proper system operation. Such training will allow a public safety entity to gain the most out of the NPSBN, and help prevent any disruption to the NPSBN service, which could impact other public safety entities as well. NPSTC recommends that FirstNet provide further clarification on how this training and certification process will work, including curriculum development. There are a number of NPSTC member organizations with experience in training program design, development and delivery.

Deployable Communications Assets:

Section A.3.8.2.6 of the Draft RFP includes a conversation about the use of deployable communications assets. This section appears to indicate that the NPSBN contractor is responsible for the operation of all deployable systems: Deployables Engineering, Section A.3.4.2.6.3, states:

Design and station deployable resources at optimal locations throughout the regional/national areas of the network to anticipate the need for such units. Provides guidance to deployment teams on how to best integrate units into the network. Assists with the preparation of deployable designs and creates guidelines for operational use.

There is no mention of local agency deployable assets in the operational architecture. NPSTC believes that local public safety agencies will need flexibility to operate various deployable systems through a coordinated process with FirstNet. Therefore, NPSTC recommends that FirstNet provide additional clarification on the management of Deployable Systems in the Final RFP.

End-to-End Architecture:

Section A.3.4.3 of the Draft RFP articulates a requirement for an “end-to-end architecture definition”. This section only speaks to those network components within the NPSBN system. It is logical for FirstNet to constrain this definition to include only those areas under FirstNet’s direct control. However, NPSTC has identified some scenarios in which a NPSBN user will need to communicate with a database or external system that exists on a different network. For example, the need for a first responder to send voice, video and data into a citywide IT network in order to reach a countywide Emergency Operations Center. .

In other cases, both the NPSBN and the commercial cellular/Public Switched Telephone systems may be congested when a first responder needs to place a phone call to an entity not using the NPSBN. For example, an incident commander may need to place a telephone call to the State EOC during a major wildland fire. In this circumstance, a first responder may need to invoke specialized priority access on the NPSBN and have some type of PQOS “flag” carry across to the external network to allow call completion. Conversely, there is a need for a call originating outside of

the NPSBN to be flagged with an appropriate priority tag and flow to an incident commander's FirstNet device. NPSTC recognizes that any extension of priority attributes beyond the NPSBN requires coordination with third party entities and may be problematic.

Conclusion

NPSTC thanks FirstNet for the opportunity to provide its views on issues covered in the Draft RFP. The Draft RFP is extensive, covers many important areas and shows that a significant level of thought went into its development. In these comments, NPSTC has offered its observations and recommendations for specific areas of the Draft RFP, including the proposed Quality Assurance Surveillance Plan, priority and quality of service (PQoS), elements of local control, description of coverage, training, deployable communications assets and end-to-end architecture. In addition, NPSTC has refreshed its 2012 report on Priority and Quality of Service, and expects the updated version to be released in mid-August, 2015. Similarly, an update of the NPSTC report on Local Control is underway and should be finalized in late summer, 2015. NPSTC believes these updated reports will be helpful to the PSAC and FirstNet.

From NPSTC's perspective, one of the biggest overall policy decisions FirstNet faces at this time is how best to balance the specificity needed for the Federal procurement process with the flexibility needed to make network adjustments as experience is gained and the network becomes more heavily used over time. NPSTC believes the experiences already gained by states that have deployed statewide trunked LMR voice systems could help in defining this balance. Therefore, NPSTC recommends FirstNet expand its existing state consultation process to include a review of

how specificity and flexibility have been balanced in the implementation of statewide trunked systems.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ralph A. Haller", with a long horizontal flourish extending to the right.

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