



Request for Information

for

Comprehensive Network Solution(s)

September 17, 2014

A. PURPOSE

This request for information (“RFI”),¹ which incorporates a draft statement of objectives (“SOO”), seeks input from interested parties regarding approaches to and objectives for establishing a nationwide interoperable public safety broadband network. Responses to this RFI will be used by the First Responder Network Authority (“FirstNet”) to better understand industry’s capabilities, evaluate best procurement approach(es), and determine how to best leverage existing capabilities and best practices to meet public safety needs.

B. BACKGROUND

In February 2012, Congress enacted the Middle Class Tax Relief and Job Creation Act of 2012 (the “Act”), containing landmark provisions to create an interoperable, nationwide public safety broadband network (“NPSBN”) for law enforcement, firefighters, emergency medical service professionals and other public safety entities. The Act outlined a governing framework for the deployment and operation of this network based on single, nationwide network architecture and the creation of the FirstNet, an independent authority within the National Telecommunications and Information Administration (“NTIA”). FirstNet holds the single public safety wireless spectrum license for the NPSBN, and is charged with taking all actions necessary to ensure the building, deployment, and operation of the network in consultation with federal, state, tribal and local public safety entities, the Director of the National Institute of Standards and Technology (“NIST”), the Federal Communications Commission (“FCC”), and a public safety advisory committee established under the Act.

C. PREVIOUS RFIs, VENDOR ENGAGEMENT AND MARKET RESEARCH

This RFI is the latest request in a series of RFIs, and incorporates feedback received from prior solicitations, including:

- a May 2013 RFI on devices;
- July 2013 RFIs on network partners, radio access network, the core network, and other items; and
- a November 2013 RFI on applications platforms.

Vendor engagements with a variety of interested parties have also been utilized to conduct market research. FirstNet has engaged in an extensive effort to gather information through its significant ongoing outreach and consultation process, which has included a series of regional workshops, state single point of contact (“SPOC”)² calls, onsite public safety interactions, public safety advisory committee (“PSAC”)³ meetings, and coincident with this RFI, a notice and

¹ Unless otherwise defined in the text, capitalized terms have the meaning provided in **Appendix A**.

² 47 U.S.C. 1426(c)(2)(B).

³ 47 U.S.C. 1425(a)(1).

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comment process. From these previous RFIs, vendor engagements, ongoing outreach, and consultations FirstNet has and will continue to obtain critical information on market needs and vendor capabilities to better define its acquisition goals, strategy and objectives.

B. ACQUISITION APPROACH

Building on the above activities, FirstNet's acquisition strategy centers on maximizing the network's value to public safety while meeting its financial sustainability obligations under the Act. FirstNet currently seeks to implement a performance-based acquisition strategy that will allow it to obtain comprehensive network solution(s) that will ensure the building, deployment and financially self-sustaining operation of the NPSBN. In the spirit of this performance-based approach, FirstNet does not seek to dictate the specific solution provided by potential offerors or the manner in which parties may or may not seek to align themselves through partnerships, joint ventures, or other alliances in order to produce an offer in response to our solicitation. Rather, FirstNet has outlined program objectives that encourage innovative solutions to meet and exceed public safety's needs and FirstNet's statutory obligations. In this regard, FirstNet encourages marketplace collaboration to ensure the best solution for public safety entities in all states, territories, and tribal lands.

FirstNet's current approach is based upon the premise that FirstNet will seek proposals for a network solution or solutions allowing it to control and operate a nationwide Core network, Radio Access Networks in Opt-in States, as well as for devices, deployable capabilities, applications, integration, and maintenance and operational services required to fully function as an operational wireless standards-based LTE network nationwide. In addition, FirstNet seeks solutions that would include in-kind or monetary value provided by offerors in consideration for secondary use of FirstNet's excess network capacity pursuant to Covered Leasing Agreements. FirstNet also seeks in-kind or monetary value for innovative business solutions enabled by the NPSBN. This acquisition may consider the services provided to public safety, the value provided for excess network capacity, time to market, and rural coverage, among other evaluation criteria.

D. INFORMATION REQUESTED

Our draft SOO is attached as **Appendix B**. The SOO includes, among other things, draft program objectives that will form a critical component of the RFP. Through these objectives, FirstNet seeks to provide a performance-based framework through which interested parties may offer detailed proposals in response to the RFP. To do this, FirstNet requests industry comments on the following:

- all aspects of the draft SOO, including proposed changes to the draft program objectives and recommendations for any new ones; and
- answers to questions, provided in Section E below, which are related to the acquisition approach and several of the SOO program objectives.

E. QUESTIONS RELATED TO THE ACQUISITION APPROACH AND CERTAIN PROGRAM OBJECTIVES

ACQUISITION APPROACH

FirstNet is weighing the speed of deployment, services, functionality, cost, and implementation and operational risks and benefits of seeking proposals for a nationwide comprehensive solution versus more disaggregated network solutions. Factors we are considering include:

- a. the economies of scale and scope, including the synergy value and speed of deployment associated with leveraging existing commercial mobile provider infrastructure;
- b. the value of leasing excess network capacity on a national scale or on a market or state-by-state basis, and combining such leasing with the contract for building-out and operating the network;
- c. the trade-offs between spectrum availability for public safety use and the value created (ultimately for public safety's benefit) through leasing excess network capacity to third parties;
- d. the advantages and disadvantages, including with regard to execution risk and redundancy, of having a single party or several parties responsible for implementation and operation of the network (nationwide or by market);
- e. the technical, operational, cost, and speed of deployment considerations related to integrating disparate RANs with multiple vendor technologies and varying standards compliance;
- f. the technical, operational, cost, and temporal considerations related to contracting for, gaining access to, and using potentially thousands of public and private sites and other infrastructure with different owners, lessors, requirements, and equipment;
- g. providing certainty to offerors in the procurement process in order to get the best price in light of the right of States to subsequently opt out of FirstNet RAN construction and operation;
- h. the limits imposed by FirstNet Resources and Federal government hiring process, contracting, and operating rules and regulations;
- i. the duration of FirstNet's spectrum license and legislated program lifespan pending Commission and Congressional action;
- j. compliance with complex provisions of the Act; and
- k. the effect of all of the above factors, among others, on the value FirstNet can bring to public safety entities.

FirstNet seeks comment on the appropriate balancing of the above and other factors related to our acquisition approach, including the following questions and those

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further below regarding specific program objectives. In answering questions 1-4, below, please discuss how your company and/or your suggested solution would address each of the factors in 1.a-k above.

1. Should FirstNet (a) seek proposals for a comprehensive, nationwide solution, (b) act as integrator and seek proposals for equipment and services to custom assemble a nationwide network, or (c) something there-between? Please provide detailed responses with the pros and cons of each.
2. At what stage(s) in the acquisition and deployment process should FirstNet consider the economic desirability of leveraging each type of existing infrastructure as required by the Act? What will be the effect on deployment speed, implementation risk, and cost of your recommended approach?

BUILD, DEPLOY, OPERATE AND MAINTAIN THE NPSBN (*refer to Program Objective 1*)

3. Describe the feasibility of providing nationwide coverage (on a geographic basis) in all States and territories to meet public safety coverage needs in light of limited FirstNet Resources. Discuss the cost-benefit tradeoffs of providing the types of such coverage (e.g., in-building, outdoor, satellite-based, local self-organized) across all topologies (e.g., urban, suburban, rural, wilderness), including in terms of network functionality and capacity, cost implications of implementation, population coverage, and high-incident or high-risk geography coverage. Please include any technical or architectural information required to answer this question, including any regulatory hurdles that may impact this objective and recommendations thereon.
4. Should FirstNet combine across all geographies the procurement of the Core, RAN, and the leasing of excess spectrum capacity? If not, what are the implications of your alternative combinations in terms of implementation costs, deployment timing, economies of scale and scope, and other risk factors? How should the possibility of Opt-out States be handled in your proposed process?

FINANCIAL SUSTAINABILITY (*refer to Program Objective 2*)

5. Based on the tradeoffs discussed in response to question 4, how can FirstNet minimize costs and expenditures to build, deploy, operate, and maintain (including recapitalization) the NPSBN? Describe any innovative business solutions and revenue sharing structures you believe FirstNet should consider in order to maximize the utilization and monetization of FirstNet assets. Please describe the risks associated with your business solution suggestions as well as implementation timelines.

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6. How should FirstNet maximize the value of Covered Leasing Agreements, including the optimal unit of transaction for excess network capacity, in terms of geography, time, and bandwidth? For example, in terms of geography, network capacity could entail nationwide geographic units, a grouping based on a pre-existing FCC definition (e.g. regional economic area groupings, economic areas, or partial economic areas), States, or a categorization created by FirstNet. In terms of time, network capacity could entail units that range from minutes to years. Lastly, in terms of bandwidth, measurements could include LTE resource blocks, gigabits, megahertz or another unit.
7. What sustainability and transition strategies should FirstNet pursue to enable NPSBN service to continue beyond the 15 year initial term provided in the Act (assuming Congressional support)?

COMPELLING AND COMPETITIVE PRICING PACKAGES (*refer to Program Objective 3*)

8. Describe the optimal prices and features to drive adoption. What, if any, traffic usage-tiered pricing should be considered to ensure sustainability? Describe any innovative solutions that will assist in keeping costs low to enable compelling pricing.
9. If not answered with respect to another question, what measures should be taken by FirstNet to ensure that the cost basis of the network does not require unreasonably high user and Core fees? What, if any, operational policies should be put in place to make the network sustainable over the long term?

ACCELERATE SPEED TO MARKET (*refer to Program Objective 6*)

10. Describe recommended technical and deployment milestones (e.g., IOC 1, IOC 2, IOC 3, FOC) to achieve operational capabilities, including provision of initial broadband capabilities, Band 14 capabilities, devices, applications and app environments, and significant public safety subscribership, of the NPSBN.
11. Describe the rural milestones that should be included to fulfill FirstNet's statutory obligation to include substantial rural coverage milestones as part of each construction and deployment phase. Include a milestone chart starting from the anticipated award date reflecting your responses to the above.

SYSTEM HARDENING (*refer to Program Objective 7*)

12. Describe how FirstNet should address unique environmental hardening objectives of regions across the country and the tradeoffs between hardening and costs.

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13. How should FirstNet balance disparate hardening and resiliency solutions during proposal evaluations to obtain the best value solution for public safety entities?
14. How should FirstNet address special considerations for areas or regions with unique homeland security or national security needs? How should these costs be weighed against other cost factors?

PRIORITY AND PREEMPTION: (*refer to Program Objective 8*)

15. Describe your innovative approaches and ideas that will allow priority and preemption for all NPSBN users, including under local control. Describe any operational policies that will help this succeed in implementation. Describe how such approaches will be implemented in opt-out States and when leveraging existing infrastructure. How should FirstNet measure prioritization and network preemption during times of emergency? Describe how tribal, local, State, and Federal public safety agencies would best implement priority in the context of multi-level public safety responses.

OPT-OUT RAN INTEGRATION (*refer to Program Objective 9*)

16. What technical and other integration issues should be addressed at all IOC milestones between State Opt-out RANs and the NPSBN (e.g., initial construction, testing, software upgrades, ongoing testing)?
17. What technical and other integration issues and costs would have to be addressed when an Opt-out state requests to enter into a Covered Leasing Agreement with a third party, where the effectiveness of such Covered Leasing Agreement depends on material modifications to the Core functionality of the NPSBN?

INTEGRATION OF RANs AND INFRASTRUCTURE ON A COST-REIMBURSEMENT BASIS (*refer to Program Objective 10*)

18. Describe specifically how and when your approach would facilitate FirstNet's determination of whether it is economically desirable to:
 - a. leverage existing commercial wireless infrastructure to speed deployment of the network;
 - b. include partnerships with existing commercial mobile providers to utilize cost-effective opportunities to speed deployment in rural areas; and
 - c. enter into agreements to utilize existing commercial or other communications, Federal, state, tribal, or local infrastructure.
19. Assuming FirstNet determines it is economically desirable, describe how your approach would leverage and accommodate FirstNet's entrance into agreements,

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and otherwise integrate into the NPSBN the above infrastructure and providers. Please describe any requirements, costs, or other limitations that would be imposed if FirstNet requests such efforts. What technical standards, specifications, and restrictions would be required to ensure seamless integration with such infrastructure and providers? For example, would standardized traffic aggregation points be needed? Under what circumstances would the costs of such arrangements outweigh the benefits, and what types of agreements would be needed?

SYSTEM RELIABILITY AND RESTORATION (*refer to Program Objective 11*)

20. Describe technical approaches FirstNet should consider to meet program reliability and restoration objectives, including disaster zone areas covered in the objective.
21. Provide feedback on the stated metrics and any additional service metrics FirstNet should consider.

LIFECYCLE INNOVATION (*refer to Program Objective 12*)

22. How should FirstNet evaluate proposals to ensure the network incorporates ongoing technology enhancements? What network policies should FirstNet establish with regard to how specifically Opt-out states will keep pace with such enhancements of the NPSBN to ensure interoperability? How should this be enforced to ensure nationwide interoperability?

CUSTOMER CARE AND MARKETING (*refer to Program Objective 14*)

23. Describe solutions that would optimize go-to-market, and sales/distribution activities, including pre-sales, sales, and post-sales activities for FirstNet-branded products and services. Describe mitigation strategies FirstNet should consider to address conflicts within your internal and/or external operations channels if applicable.
24. Describe strategies FirstNet should consider for transitioning existing public safety customers onto your NPSBN solution if applicable.
25. Describe the levels and specific methods of control FirstNet should consider in creating, marketing, pricing, and deploying products and services. What levels of adoption and barriers to such adoption do you expect and why?

FACILITATE FIRSTNET'S COMPLIANCE WITH THE ACT AND OTHER LAWS (*refer to Program Objective 15*)

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26. How should the awardee of the final RFP facilitate FirstNet's overall program compliance with FirstNet's requirements in the Act, such as its self-funding, annual fee approval, consultation, and State plan presentation requirements?
27. How should the awardee of the final RFP facilitate FirstNet's overall program compliance with FirstNet's requirements under other laws, such as with respect to NEPA and NHPA requirements?

ADDITIONAL INFORMATION

28. Provide feedback on all aspects of the draft SOO, including proposed changes to existing program objectives and recommendations for any new objectives.
29. For each of FirstNet's stated program objectives, provide specific feedback and ideas concerning the evaluation criteria that FirstNet should utilize to assess offers and form a basis for selection.
30. Provide any additional information that FirstNet should consider related to your response.

F. GUIDANCE FOR RESPONDING TO THE RFI

In accordance with FAR 15.201(e), responses to this RFI are not offers and cannot be accepted by the Government for the basis of forming a binding contract. This RFI is being issued solely for the purpose of gathering information for planning purposes. It does not constitute an RFP or a promise to issue an RFP in the future. This RFI does not commit the Government to a contract for any supply or service whatsoever. Furthermore, the Government is not at this time seeking proposals and will not accept unsolicited proposals. Respondents are advised that the Government will not reimburse interested parties or any other organizations for any information or administrative costs incurred in response to this RFI. All costs associated with responding to this RFI will be solely at the interested parties' expense. Any information submitted to the government in response to the RFI will not be returned to the respondent. A formal pre-solicitation synopsis will be published should FirstNet decide to issue an RFP.

Interested parties (specifically small businesses) are encouraged to respond to this RFI. If the scope of this RFI is too large or there are aspects to which your company does not wish to provide a response, please feel free to provide partial/limited feedback in the areas of your specific expertise. FirstNet hopes to receive information from all interested parties on any aspects of this RFI that could be of benefit to the Government.

When responding to this RFI, clearly label all proprietary information and any other limitations on disclosure. Please refer to specific RFI questions or specific SOO items by number in all responses. Please limit your specific narrative response to 75 pages inclusive of attachments,

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Times New Roman or Calibri 12-point font, single-spaced, single-sided pages with 1 inch margins.

The group reviewing the responses may seek further clarification from respondents. This clarification may be requested in the form of brief verbal communication by telephone, written communication, or electronic communication. In addition, RFI respondents may be invited to present their responses to the reviewing group. The purpose of this presentation would be to seek clarification of information contained within the response.

It is not the intent of FirstNet to publicly disclose vendor proprietary information obtained during this market research effort. To the fullest extent consistent with FirstNet's legal obligations, information identified by a respondent as "Proprietary or Confidential" will be kept confidential.⁴ Information submitted by interested parties in response to this RFI, including information marked as limited rights data, as restricted computer software, as being subject to limited rights, and/or as being subject to restricted rights, will be shared by the Government with current and future support contractors hired to assist FirstNet. FirstNet's support contractors that have been, or that will be hired, are required to sign non-disclosure agreements restricting them from unauthorized use and disclosure of information that may be proprietary to third party companies. By submitting information in response to this RFI, vendors are agreeing to voluntarily allow the Government to share the information they submit with FirstNet's support contractors who are, or will be, covered by a non-disclosure agreement.

⁴ Note that FirstNet is not subject to the requirements of the Freedom of Information Act.

APPENDIX A

When responding to this RFI, please refer to the glossary of terms below to ensure consistent use of relevant terms. The terms marked with an asterisk (“*”) are contained in the Act and are the subject of FirstNet’s preliminary legal interpretations in a public notice at [pending publication in the Federal Register, available on FirstNet’s website at www.firstnet.gov] (the “Notice”) that is a companion to this RFI. For purposes of responding to this RFI, respondents are strongly encouraged to review the Notice for a detailed discussion of these interpretations and to participate in both processes. We note that the Notice is designed to elicit comments that could result in FirstNet modifying, potentially substantially, these interpretations. We intend to incorporate any such changes in a draft or the ultimate RFP.

Core* – as defined in the Act and discussed in the Notice.

Covered Leasing Agreements* – as defined in the Act and discussed in the Notice.

FirstNet Resources – means funds available to FirstNet under the Act and user and other fee revenues under the Act, including lease fees (cash or in-kind) related to Covered Leasing Agreements.

Opt-in State – means a State that does not elect to conduct its own deployment of a RAN in such State in accordance with 47 U.S.C. 1442(e)(2)(A).

Opt-out State – means a State that elects to conduct its own deployment of a RAN in such State in accordance with 47 U.S.C. 1442(e)(2)(B).

Prime Contractor- Is a person or organization entering into a contract directly with the United States. (FAR 3.502-1) This term is synonymous with Contractor.

Public Safety Entity* – as defined in the Act and discussed in the Notice.

Radio Access Network or RAN* – as defined in the Act and discussed in the Notice.

State – as defined in the Act.

Interoperability Board Report – as issued by the FCC.⁵

Technical Requirements – means, at a minimum, those requirements provided in section 1.3 of the Interoperability Board Report and those network policies established by FirstNet under 47 U.S.C. 1426(c)(1).

⁵ Section 6203 of the Act established the Technical Advisory Board for First Responder Interoperability (“Interoperability Board”) and directed it to develop minimum technical requirements to ensure the interoperability of the NPSBN. 47 U.S.C. 1423. On May 22, 2012, the Interoperability Board, in accordance with the Act, submitted its recommendations to the Commission in a report. See Technical Advisory Board, *Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network* (“Interoperability Board Report”) (May 22, 2012), available at <http://apps.fcc.gov/ecfs/document/view?id=7021919873>. On June 21, 2012, the Commission completed its review of the Interoperability Board’s final report and approved it for transmittal to FirstNet. See FCC Order of Transmittal, *Recommendations of the Technical Advisory Board for First Responder Interoperability*, PS Dkt. No. 12-74, FCC 12-68 (rel. June 21, 2012), available at https://apps.fcc.gov/edocs_public/attachmatch/FCC-12-68A1.pdf.

APPENDIX B – DRAFT STATEMENT OF OBJECTIVES (SOO)

I. Purpose & Background

A. Introduction

In February 2012, Congress enacted the Middle Class Tax Relief and Job Creation Act of 2012 (the “Act”), containing landmark provisions to create an interoperable, nationwide public safety broadband network (“NPSBN”) for law enforcement, firefighters, emergency medical service professionals and other public safety entities. The Act outlined a governing framework for the deployment and operation of this network based on single, nationwide network architecture and the creation of the First Responder Network Authority (“FirstNet”), an independent authority within the National Telecommunications and Information Administration (“NTIA”).

B. Statement of Need

FirstNet is seeking comprehensive network solutions covering all states, territories, and tribal nations. These comprehensive network solutions include: the provisioning of (or integration with) a national Core; all radio access network (RAN) components; backhaul, aggregation and national transport networks and datacenters; devices; network infrastructure; deployable capabilities; operational and business support systems; applications and network services; and integration, maintenance, and operational services required to fully function as an operational wireless Third Generation Partnership Program (3GPP) Long Term Evolution (LTE) NPSBN. FirstNet’s objective is to maximize the network’s value to public safety while meeting its financial sustainability obligations under the Act. This solution would potentially include (1) "in kind" and/or monetary value provided by offerors in consideration for secondary use of FirstNet's excess network capacity, and (2) various partnerships business arrangements that monetize new public safety market offerings via applications and other value added benefits and services that enhance the customer user experience.

This acquisition considers the value provided for excess network capacity, time to market, public safety program objectives, and rural coverage, among many other factors. FirstNet does not seek to dictate the deployment strategy of potential offerors or the manner in which parties may or may not seek to align themselves through partnerships, joint ventures or other vehicles to produce an offer in response to this solicitation. Rather, FirstNet seeks to outline broad objectives that must be accomplished by offerors and encourage innovative solutions that will meet and exceed both the program and public safety’s needs.

FirstNet must create the wireless NPSBN within the financial parameters outlined in the Act and ensure its financial sustainability through federal funding, user fees, and agreements with partners that will leverage the value of excess network capacity. In addition, FirstNet must

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provide services at competitive prices, given constrained state, local and federal budgets. In undertaking this task, FirstNet must leverage to the extent economically desirable existing infrastructure, obtain optimal value for excess network capacity and optimize its pricing structure so that FirstNet can deliver a high-quality, affordable broadband network to the nation's public safety communities.

FirstNet will bring to the public safety community a dedicated and interoperable NPSBN with quality of service, priority usage, and preemption. In addition, the network will be "hardened" as needed from the physical perspective, and will be resilient, secure and highly reliable from the network perspective. Furthermore, the network will provide both national and local control over prioritization, preemption, provisioning, device features and reporting to public safety agencies.

The NPSBN and associated devices will be branded as "FirstNet." While FirstNet has a congressional mandate to address customer care functions, and FirstNet will oversee the strategy of these functions, it is expected that these functions will be implemented by a winning Prime Contractor(s)⁶ who will be responsible for executing the marketing, product management, sales, distribution, and customer care functions under a service level agreement. FirstNet will oversee outreach, communications, strategic partnering and network architecture evolution while these functions may be executed by a Prime.

II. Scope of Work

Public safety requires a national interoperable broadband network covering urban, suburban, rural, and wilderness service territories and designed to meet the information and communications technology needs associated with their missions. Through this acquisition, FirstNet seeks to obtain comprehensive solutions encompassing the necessary elements (including a national core network; radio access networks; backhaul, aggregation and national transport networks and data centers; devices; network infrastructure; deployable capabilities; operational and business support systems; customer care including marketing, product management, sales, distribution; network architecture evolution; applications and network services; and integration, maintenance, and operational services) to meet this critical need. This acquisition includes the business (distribution of services and devices), technical, financial, operational, logistical, and program management components for this solution. The acquisition expects continual upgrade and innovation of the system throughout the lifecycle of the contract as LTE and beyond (5G, 6G) standards evolve, public safety needs expand and new capabilities and technologies become commercially acceptable and available.

⁶ A Prime Contractor a person or organization entering into a contract directly with the United States. (FAR 3.502-1) This term is synonymous with CONTRACTOR.

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The NPSBN, and therefore the offeror's operational management of the NPSBN, will support the operational needs of public safety ranging from routine law enforcement, fire, rescue, emergency response and similar operations through major natural and manmade disasters, and homeland security/homeland defense missions.

III. Program Objectives

1. **BUILD, DEPLOY, OPERATE AND MAINTAIN THE NPSBN:** Provide a nationwide interoperable public safety broadband network that ensures network coverage 24/7, 365 days a year and complies with the Technical Requirements.
2. **FINANCIAL SUSTAINABILITY:** Perform all program objectives while minimizing risk and use of FirstNet Resources to build, deploy, operate, and maintain the NPSBN.
3. **COMPELLING AND COMPETITIVE PRICING PACKAGES:** Establish pricing structures to support services packages that include data, voice, messaging, streaming, and location services, and that promote optimum public safety subscribership while maintaining financial sustainability.
4. **END USER DEVICES:** Provide 3GPP-compliant Band 14 devices that operate seamlessly on the NPSBN, roam onto partner networks (including non-band 14 networks), and interoperate with FirstNet's application ecosystem.
5. **APPLICATION ECOSYSTEM:** Establish an application ecosystem that provides public safety-relevant capabilities and services.
6. **ACCELERATE SPEED TO MARKET:** Achieve operational capabilities that include the provision of initial broadband capabilities, Band 14 capabilities, significant subscribership to the NPSBN, and substantial rural coverage milestones as part of each construction and deployment phase (including initial operational capabilities (IOCs) and final operational capability (FOC)).
7. **SYSTEM HARDENING:** Provide a public safety broadband network infrastructure hardened to withstand environmental, cyber and other threats. The NPSBN must comply with Federal Certified Intrusion and Protection System standards, Federal Information Processing Standard 140-2, and other federal hardening and cyber security standards.
8. **PRIORITY AND PREEMPTION:** Provide a solution that allows priority and preemption for all NPSBN users under tiered, national, regional, and local control.

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9. INTEGRATION OF OPT-OUT STATE RANs: Integrate with the NPSBN Opt-out state RANs that meet the Technical Requirements so that users operate without service interruptions, including when crossing Opt-out/Opt-in RAN service area boundaries.
10. INTEGRATION OF RANs AND INFRASTRUCTURE ON A COST-REIMBURSEMENT BASIS: Facilitate FirstNet's determination of the economic desirability of using or otherwise leveraging commercial, FirstNet, or other public RANs and commercial, FirstNet, or other public infrastructure. When requested by FirstNet and to the extent they meet the Technical Requirements, use or otherwise leverage such RANs and infrastructure with the NPSBN on a cost-reimbursement basis.
11. SYSTEM RELIABILITY AND RESTORATION: Maintain NPSBN reliability of at least 99.99%, including providing user access with a session setup time <1s, success rate >=99%, abnormal session releases <1%, throughput >256kbps > 95% of time, and latency <60ms > 95% of time. End-to-end availability, from device-to-applications and device-to-public safety enterprise networks, should exceed 99%. Operate during natural and man-made disasters with restoration of services to the NPSBN as quickly as possible. Provide special consideration to all disaster prone areas designated by the United States Department of Agriculture, Federal Emergency Management Agency, and the National Electric Reliability Council on the No Discharge Zone maps and terrorist target zones on the United States National Security Agency databases.
12. LIFECYCLE INNOVATION: Evolve the NPSBN solution, including products, services and the incorporation of 3GPP Long Term Evolution (LTE) standards as they are released throughout the life of the contract, in accordance with the TAB Report and the Act.
13. PROGRAM AND BUSINESS MANAGEMENT: Provide program management for the NPSBN solution in accordance with the Project Management Institute (PMI) standards and the Government Accountability Office (GAO) Cost Guidelines. Provide operational and other reporting information to FirstNet sufficient for FirstNet to ensure its compliance with the Act.
14. CUSTOMER CARE AND MARKETING: Market NPSBN products and services to all states, territories, tribal lands and users throughout each FirstNet service area. Provide responsive and timely customer acquisition, service and customer care, including a pipeline of new devices and an ecosystem that meets the needs of FirstNet and FirstNet users. Provide life cycle service and support to all users.
15. FACILITATE FIRSTNET'S COMPLIANCE WITH THE ACT AND OTHER LAWS: Perform all objectives in a manner, and provide information and services, to facilitate FirstNet's

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compliance with its statutory requirements under the Act and other laws applicable to FirstNet.

IV. Constraints, Limitations and Assumptions

1. The NPSBN solution must comply with Federal Acquisition Regulations (FAR), the Act and any other applicable laws, rules and regulations, including Federal, state, and local environmental and historic preservation laws, rules, and regulations.
2. The NPSBN solution should anticipate construction of the NPSBN on tribal lands and engagement with tribal nations.

V. Place and Period of Performance

Base Period: Award is through 2022, with options for extension.