



Responses to Questions

96 through 282

*Special Notice D15PS00295 – Nationwide Public
Safety Broadband Network (NPSBN)*

6/18/2015

Overview

This document contains answers to questions submitted to either the Contract Officer or to specialnoticequestions@firstnet.gov. This document does not represent all questions. Subsequent documents may be released to respond to additional questions.

Responses to Questions 96 through 282

96. 47 U.S.C. 1422(b)(2)) RAN...shall be developed...taking into account plans developed in the...planning...program (Section 6302(a).

Given the State opt out option, any proposal to FirstNet is really a proposal to the states. Will FirstNet share the unedited feedback gained from State and Tribal consultations so that a bidder might be aligned with those 'customer' interests?

Document Reference: General

Answer:

FirstNet is still in the process of determining the best acquisition approach and strategy taking into consideration the potential for States to opt out and assume RAN responsibilities. This includes any determination regarding the extent to which and process for how any feedback received by FirstNet from the States or tribes may be “shared” with potential offerors and/or potential awardee(s). FirstNet may include information addressing this issue in the subsequent RFP as appropriate.

97. How will FirstNet assess compliance with coverage requirements if a bidder meets coverage and building penetration with a mobile (not fixed) solution where public safety vehicles are equipped with eNodeBs with Band 14 access points?

Document Reference: C-3 FCC Tab Section / Paragraph: 4.06.02

Answer:

The Statement of Objectives (SOO) Appendix C-1, Baseline Coverage Objective Maps, contains maps that define the minimum persistent coverage areas and areas where deployables may be appropriate. The subsequent RFP will define FirstNet's criteria for how an offeror's proposed solutions may be evaluated for persistent and deployable requirements.

98. What are the specific interfaces by FirstNet? Are these different from standard 3GPP defined interfaces? We need to be specific and make it clear early in the process to eliminate any confusion.

Document Reference: C-3 FCC Tab Page 10 Section / Paragraph: section 1.3.3 part [20]:

Answer:

Please see the following SOO Appendices: Appendix C-3, Recommended Technical Minimum Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network; Appendix C-4, System and Standard Views (SV-1 and StdV-1), and Appendix C-5, FirstNet FOC – Features Standards Forecast (StdV-2) with regard to interfaces.

99. What are the FirstNet performance testing for individual interfaces they referred to? Are these specific industry standard tests or FirstNet has its own procedures? Need the details.

Document Reference: C-3 FCC Tab Page 13 Section / Paragraph: section 1.4.3 part [17]:

Answer:

Please see SOO Appendix C-3, Recommended Technical Minimum Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network, Section 1.4.3 ((17).) The performance testing will leverage the industry standard tests. Additionally, please refer to SOO Appendix C-6, Quality Assurance Surveillance Plan (QASP), Section 4, for details on required KPI reports. FirstNet intends to provide additional metrics in the subsequent RFP as well as any additional information that may pertain to performance testing.

100. Methodology and Assumptions: FirstNet specifically considering 3GPP Release 9 as the standard for initial deployment. Considering available product and road map for different vendors there is no specific date for Release 9 product availability. Is FirstNet considering Release 8 as a viable solution?

Document Reference: C-3 FCC Tab Page 24 Section / Paragraph: section 3.3

Answer:

Third Generation Partnership Program (3GPP) Release 9 or a future release is required. FirstNet's requirements are governed, in part, by the FCC's recommendations set forth in SOO Appendix C-3, Recommended Technical Minimum Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network, Section 1.3, which states **"In all cases where these recommendations reference specific 3GPP standards (e.g. 3GPP TS 36.101), the intended meaning is that the standard to be applied is contained in Release 9 of the 3GPP standards, or the future evolved equivalent of that standard that applies to future releases."**

101. Does the FN program and platform design envision dedicated Network Security Operations Centers (NSOC) and operations to support uniform and compliant security for all FN Networks and Data over the network?

Document Reference: General Page 1

Answer:

Security requirements will be defined in SOO Appendix C-10, Cyber Hardness Requirements.

102. We believe that a systems integrator would ensure maximized network availability for the broadest variety of devices and provide a public safety advantage through technology neutral device certification on any network. Is this the desired end-state for FirstNet?

Document Reference: Special Notice Page 4 Section / Paragraph: 4.1.3.2

Answer:

FirstNet seeks feedback on its proposed acquisition approach and welcomes recommendations discussing the advantages and disadvantages of alternatives as well as submission of a capabilities statement, demonstrating the capability with regard to the alternative approach, as stated in the Special Notice.

103. Currently, the existing list of functions does not address the need to ensure that all functions work together towards an increased public safety mission value. Would FirstNet consider adding a 10th high level function called “Mission Interoperability” for this purpose?

Document Reference: Special Notice Page 5 Section / Paragraph: 4.2/1

Answer:

FirstNet seeks feedback on the approach indicated in the Special Notice and welcomes recommendations discussing the advantages and disadvantages of alternatives.

104. We believe that the concepts and interfaces outlined in Appendices C-4 and C-5 should apply regardless of whether or not an offeror proposes Category 1 or another acquisition approach. Does FirstNet concur?

Document Reference: Special Notice Page 6 Section / Paragraph: 4.4/1

Answer:

Yes, Appendices C-4 and C-5 apply to all segments of the network for opt-in states and opt-out states under both Category One and Category Two solutions.

105. The FirstNet Terms of Reference do not provide a definition for the word ‘provider(s)’ although it is used several time throughout section C7. Can FirstNet provide clarification as to whether or not ‘provider(s)’ is referencing a prime contractor(s) or some other entity?

Document Reference: C-7 Operational Architecture Page 1 Section / Paragraph: A.1/2

Answer:

Throughout the documents, the terms “provider”, “offeror”, “vendor”, or “contractor” can be assumed to mean the entity proposing a solution to FirstNet in response to a request for proposal, unless otherwise indicated.

106. We are concerned that some offerors may view the language of Section 5.2 as an expanded definition of a “commercial item”. If the government procures an item as COTS and becomes dependent on an item lacking robust commercial sales, the government could be forced to invest in maintaining the availability of the item without the protection of other mechanisms found in the FAR. FAR 2.101 contains a robust, proven definition of the term “Commercial item”. DRFP Section 5.2 Sentence 5 states “The following items may also meet the commercial items definition:” and goes on to list seven attributes not included in FAR 2.101. To ensure readily available items at commercial prices, would FirstNet consider sentence 5 from Section 5.2?

Document Reference: Special Notice Page 9 Section / Paragraph: 5.2 / 4

Answer:

The bulleted list of seven categories of commercial items found in Section 5.2 are simply restatements from the definition of “commercial item” found in Federal Acquisition Regulations (FAR) 2.101. The government will determine whether the services it will acquire are a “commercial item” in compliance with the FAR. As noted in section 5.2 of the Special Notice, the government seeks input from respondents on whether they consider the services described in the Special Notice and draft RFP documents, to be a “commercial item”.

107. Based on the magnitude and complex nature of this FirstNet effort, we have assumed that any small business subcontracting plans required in the final RFP will have goals based as a percentage of subcontracted value. Can FirstNet confirm this assumption?

Document Reference: Special Notice Page 1 Section / Paragraph: 2/2

Answer:

Yes, a small business subcontracting plan will be required as part of the submission for the subsequent RFP, in accordance with FAR Subpart 19.7, for large businesses. The small business subcontracting goals

identified relate to the Department of Commerce's (DoC) overall total acquisitions. These are the overall goals for all acquisitions awarded for/by DoC for the current fiscal year and are not intended to be goals for a subsequent award only.

108. In order to support the most innovative solutions and maximize affordability, industry will likely seek contractual protections to minimize unforeseen liability issues from third parties that result from potential NPSBN outages. What guidance will FirstNet provide regarding its expectations in this regard?

Document Reference: Special Notice Page 2 Section / Paragraph: 3/1

Answer:

FirstNet anticipates that potential offerors will develop a robust business case that would include mitigation of potential liabilities. Also, the subsequent RFP will contain clauses and/or provision with respect to any terms and conditions pertaining to indemnification which may arise out of, relate to, or result from any act and/or omission concerning any third party part of FirstNet's NPSBN.

109. What contract vehicle(s) does FirstNet anticipate for the design, build, deployment and operations of the NPSBN? Will FirstNet contract separately to collect revenues from excess network capacity and user fees using a covered leasing agreement with one more offerors?

Document Reference: Special Notice Page 9 Section / Paragraph: 5.2 /1

Answer:

Based on market research to date, the determination has been made that there is not an existing vehicle (i.e. GSA Federal Supply Schedule Contract, Government-wide Acquisition Contracts and/or Multi-Agency Contracts) that will satisfy all of the objectives pertaining to the NPSBN acquisition. Additionally, with regard to this matter, the process required in accordance with the Office of Management and Budget memorandum dated September 29, 2011, for "Development, Review and Approval of Business Cases for Certain Interagency and Agency-Specific Acquisitions", will be followed and posted accordingly.

The Special Notice presented FirstNet's conceptual model for becoming financially sustainable. In addition to up to \$6.5 billion in allocated Government funding, the contractor(s) could receive revenue from public safety user fees as well as any revenue obtained from using excess network capacity to provide service to non-public safety users, depending on whether the offeror proposed under Category One or Category Two. In exchange, FirstNet requests that offerors propose solutions to meet FirstNet's stated objectives and fixed payments to FirstNet to support ongoing program costs.

110. It would be more beneficial, given the uncertainties of where technology will be in 10 years, to have a large integrator that has the ability to design, build, operate and maintain any type of technological infrastructure for FirstNet. An integrator will provide an evolutionary delivery of capability, and an unbiased approach to determining capability to deploy to the first responder community. An integrator/broker will leverage the best capability available regardless from which company it comes. An integrator/broker will ensure that these technology solutions are competed throughout the lifecycle of the program. FirstNet will not be locked into limited options or consistent rate increases for older technology year and year as they would if a single large telecommunication company led the effort.

Ultimately, we believe that a single carrier will not bring the full array of offerings in as a fully integrated solution without having a business bias towards its own offerings first.

Would FirstNet consider publishing an updated acquisition approach that reflects an integrator/broker model versus a large telecommunication carrier?

We recommend that the government make it clear which model it prefers as these two approaches are distinctly different.

Document Reference: Special Notice Page 5 Section / Paragraph: 4.3

Answer:

The purpose of the Special Notice is to obtain feedback in order to better understand industry’s capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. Therefore, if, from a potential offeror’s perspective, a system integrator approach should be considered as a viable solution, information and/or a capabilities statement should be provided demonstrating the “conceptual” approach relating to an integrator/broker model. FirstNet is seeking feedback and information, to include capabilities statements, in order to make a determination regarding the best acquisition approach.

111. FirstNet’s statutory obligation to achieve financial sustainability, while simultaneously expediting the delivery of a nationwide public safety broadband network are both critically important but may not be best enabled by a single nationwide entity or a regional consortium. Even if a state were identified as deciding to opt-in to FirstNet at or around the time of a contract award, there would still be a need to refine the unique requirements of public safety on a state or regional basis. This decision would also need to be aligned with an offeror(s) proposed solutions to enable a sustainable financial and network solution. An ideal offeror must consider how best to maximize the value of FirstNet’s excess capacity through one or more Covered Lease Agreements (CLAs), while also meeting the needs of public safety with world-class network solutions in parallel. Prematurely entering into nationwide CLA agreements could negatively impact alternative public-private partnerships at the regional or state level that may have more valuable socio-economic advantages for a state. In an effort to ensure that parallel nationwide, regional and state partnerships will always be mutually exclusive, complimentary and result in maximized public safety value, would FirstNet consider refining the SOO #14 description to include the concept of an ‘independent, technology neutral systems integrator’, who would be accountable for de-conflicting these potential challenges throughout the program lifecycle?

Document Reference: C - SOO Page 5 Section / Paragraph: C.5 /14

Answer:

The purpose of the Special Notice is to obtain feedback in order to better understand industry’s capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. Therefore, if, in a potential offeror’s perspective, a system integrator approach should be considered as a viable solution, information and/or a capabilities statement should be provided demonstrating the “conceptual” approach relating to an “independent, technology neutral systems integrator” model. FirstNet is seeking feedback and information, to include capabilities statements, in order to make a determination regarding the best acquisition approach.

112. A phased deployment plan is a wise one when building a new program from scratch. When there is no comparable effort, we recommend that the government maximize user feedback and maximize the opportunities for lessons learned after portions of the program have been deployed. A single nationwide deployment could be viewed as non-successful if one of any of these factors become issues; Surpassing the estimated expenses; users are not getting the service and capability needed; technical difficulties negatively impacting the public safety mission; delay in schedule, or a breach in security. To minimize these potential issues, we recommend that FirstNet consider a phased deployment schedule focusing on several large regions initially, while simultaneously building nationwide solution components. This would allow FirstNet to obtain and incorporate user feedback, to incorporate lessons learned, work out any technical difficulties or collaborative difficulties in the deployment, and address updated cost and technology offerings. Would FirstNet consider updating the current deployment plan to reflect a phased deployment schedule?

Document Reference: C-8 IOC / FOC Page 4 Section / Paragraph: Target Timeline / 1 /

Answer:

FirstNet seeks feedback on its proposed acquisition approach and welcomes recommendations discussing the advantages and disadvantages of alternatives as well as submission of a capabilities statement, demonstrating the capability with regard to the alternative approach, as stated in the Special Notice.

113. Interference Hunting and Interference Monitoring: The spectrum can be interfered any time by accident or to harm the network especially during major events. Will the functions require remote spectrum monitoring, remote spectrum and appropriate teams to mitigate the external interference?

Document Reference: C-7 Operational Architecture Section / Paragraph: A.1.3.2 , A.1.13.3, A.3.8.2.3.6

Answer:

The NPSBN must be resilient to adverse planned or unplanned network outages including external interference. This may require the use of various troubleshooting teams to repair any outages as well as complementary network services to maintain service continuity. FirstNet expects that an offeror's proposed solution would address the possibility for interference as noted in the Operations (A.3.8.2.3) section of SOO Appendix C-7, Operational Architecture Functional Descriptions. FirstNet is seeking feedback on the Operational Architecture. Additionally, proposed solutions should consider the possibilities with regard to monitoring in order to ensure service continuity and any required resolution in the event of an interference.

114. The installation of Network Elements and the operation of the network are covered in separate functions. Which function addresses integration and Acceptance Testing of new base stations prior to handing over a new base station to Operation? Usually there are strict KPIs to be met before operations includes new base stations in every day life.

Document Reference: C-7 Operational Architecture Section / Paragraph: A.3.2; A.3.8.2

Answer:

The functions are currently outlined in Section A.3.8.2.4.5 of SOO Appendix C-7, Operational Architecture Functional Descriptions, with additional information in the forthcoming "Test Strategy" document to be released in the subsequent RFP. Through the Special Notice, FirstNet seeks feedback and comments, and this type of information is welcome.

115. What contract type (s) is the Government considering? Within the managed services construct, will there be a mix of contract types allowed for in the CLIN structure?

Document Reference: General

Answer:

No decision and/or determination regarding contract type(s) has been made yet. The purpose of the Special Notice is to obtain feedback in order to better understand industry's capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. This includes a determination with regard to the pricing concepts identified as it relates to either Category One or Category Two, and/or any other viable approaches. Therefore, FirstNet is interested in feedback with regard to any CLIN structure as it relates to the information contained in the Special Notice and/or other industry best practices as it correlates to the NPSBN acquisition and potential strategy.

116. We understand from your response at Industry Day, that the subsequent RFP will define the small business subcontracting goals and objectives. Will there be any exclusion for Telecom providers or other subcontractor types?

Document Reference: Special Notice Page 3 Section / Paragraph: 4.1.2

Answer:

A small business subcontracting plan will be required as part of the submission for the subsequent RFP, in accordance with FAR Subpart 19.7. The small business subcontracting goals identified relate to the Department of Commerce's (DoC) overall total acquisitions. These are the overall goals, for all acquisitions awarded for/by DoC for the current fiscal year and are not intended to be goals for a

subsequent award only. The small business subcontracting goals are not tied to “subcontractor type” from the perspective identified within this question, i.e. telecom provider.

117. Has an Organizational Conflict of Interest guidance been established for contractors? If so, can it be shared now?

Document Reference: Special Notice Page 3 Section / Paragraph: 4.1.2

Answer:

The subsequent RFP will contain terms and conditions as it relates to “guidance” regarding organizational conflict of interest. An example of such guidance follows:

“The Contractor warrants that, to the best of its knowledge and belief, it does not have any organizational conflict of interest as defined below.

The term "organizational conflict of interest" means a situation where a Contractor has interests, either due to its other activities or its relationships with FirstNet, which place it in a position that may be unsatisfactory or unfavorable from the Government's standpoint in being able to secure an impartial, technically sound, objective review and recommendations.

The Contractor agrees that if it discovers an organizational conflict of interest with respect to this solicitation and/or resultant contract, the Contractor shall make an immediate and full disclosure in writing to the Contracting Officer that shall include a description of the action that the Contractor has taken or proposes to take to avoid, eliminate or neutralize the conflict. After award, FirstNet may, however, terminate this contract for the convenience of the Government if termination is in the best interest of the Government.

If the Contractor was aware of an organizational conflict of interest before award and intentionally did not disclose the conflict to the Contracting Officer, FirstNet may terminate this award at no cost to the Government.”

118. In this paragraph, when FirstNet refers to a demonstration of capabilities, is what is being referenced a physical, formal demonstration, and if so, through what mechanism will these demonstrations be arranged?

Document Reference: Special Notice Page 4 Section / Paragraph: 4.1.3.2

Answer:

At this stage, capabilities should be demonstrated, and outlined in the Capabilities Statements, by noting current product offerings and past performance in written form. Actual product demonstrations may or may not be required as part of the response to the subsequent RFP.

119. In Category 2 approach, where does the one common National core network come from and who has ownership and responsibility for it?

Document Reference: Special Notice Page 6 Section / Paragraph: Section 4.3/ Figure 1

Answer:

The Special Notice provides for a Category One awardee as the provider of all aspects of the network including the nationwide Core with the exception of any regional/statewide RAN solution(s) awarded to Category Two offerors.

120. How will FirstNet acquire the Nationwide Core Network outside of a Category 1 award? What about a scenario where there are no acceptable Category 1 proposals?

Document Reference: Special Notice Page 6 Section / Paragraph: Section 4.3 (2)

Answer:

The purpose of the Special Notice is to obtain feedback in order to better understand industry’s capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. Based on market research, FirstNet anticipates multiple Category One proposals.

121. The NSPBN has mission critical requirements above standard commercial services. As long as the offeror is meeting FirstNet’s subscribership requirements, will FirstNet eliminate the “Most Favored Pricing Requirement”?

Document Reference: Special Notice Page 7 Section / Paragraph: Section 4.5.1

Answer:

FirstNet desires the most cost effective, best value solution in order to achieve the “nationwide” objectives in order to meet public safety needs throughout the life of any subsequent contract. The purpose of the “Most Favored Pricing Requirement” is to ensure the public safety subscribers are being offered the best possible pricing for the services being provided.

122. How will the QASP be amended or be implemented in conjunction with SLAs?

Document Reference: Special Notice Page 7 Section / Paragraph: paragraph 4.6

Answer:

Quality Assurance Surveillance Plans (QASPs) lay out the methods and metrics by which the government may assess and monitor contractor performance and determine whether the supplies or services provided by the contractor conform to contract performance requirements. QASPs specify the work

requiring surveillance and the method of surveillance, while Service Level Agreements (SLAs) identify the process and requirements, in accordance with the Act, with regard to the states that may opt-out.

123. Reference the comment in the second paragraph, "Coverage is defined as having a minimum of 768 Kbps downlink and 256 Kbps uplink at the cell edge with 50% loading" and Table 1 Coverage. Does it account for the growth of bandwidth hogging applications, such as video in the future?

Document Reference: C-1 Coverage Objective Maps Page 1

Answer:

Coverage requirements are based on FirstNet's FOC projections. The coverage objective noted in the question above is independent of the applications in use. As outlined in SOO Objective 8 regarding service capacity, user demand is expected to increase over time and offerors should propose a solution to meet or exceed this demand as it grows in the future.

124. Other than Capacity requirements, will additional KPIs related to Availability, Accessibility, Retainability, Integrity, Mobility, and Usage be provided for Design (and operational purposes)?

Document Reference: C-1 Coverage Objective Maps Page 4 Section / Paragraph: 4

Answer:

The complete QASP (Quality Assurance Surveillance Plan) will include a broad set of metrics that demonstrate the performance of both the network and FirstNet as a service to the public safety community. The QASP, in the draft that was released, was limited to a representative set of functions. The offeror may be required to include a QCP (Quality Control Plan) that addresses the metrics in the QASP, as part of its offer. Any requirements for submission of the plan will be identified in a subsequent RFP. Moreover, FirstNet seeks feedback and welcomes recommendations discussing any advantages and disadvantages with regard to metrics.

125. Since the FIRSTNET core IP network that connects the national and regional EPCs considered a National Mission Critical Infrastructure, does its architecture require a private MPLS core backbone providing low latency and high availability and reliability similar to other existing national networks?

Document Reference: C-3 FCC Tab Page 31 Section / Paragraph: 4.1.5.7

Answer:

The FirstNet NPSBN Core backbone network provides connectivity among the EPC network elements in the national and regional data centers, packet routing equipment and the radio access network. The

Core backbone network also provides connectivity to the public Internet, Public Switch Telephone Network, Public Safety Enterprise Networks, and possibly other commercial networks. The Core backbone network must provide low latency, high availability, and reliability. FirstNet does not restrict the offeror to provide a Core backbone network to be private or shared, as long as the proposed solutions demonstrates the objectives are met.

126. This GoS (Grade of Service) requirement appears to be for the radio coverage only, whereas the availability of user services also involves the reliability of the backhaul and processing services. Will the final requirement also include the reliability of backhaul and processing services as a component of overall availability in GoS Tiers?

Document Reference: C-3 FCC Tab Page 71 Section / Paragraph: 4.6.2

Answer:

No, it is not FirstNet’s intent, at this time, to redefine GoS at the Tier level.

127. The text at the bottom of page three says that the section covers “opt-in,” but section 2.1 appears to be entirely about “opt-out,” and section 2.2 appears to be about both. It seems that “opt-out” should require business systems and management interfaces not required in “opt-in.” Are the two interfaces the same? Please clarify text appropriately.

There is no corresponding figure for State Opt-In. Is the Opt-In interface the same (as implied by Figure 1) or different? If different, should it have a distinct designation in Figure 1? If the same, titling of the figure and section should be modified for clarity.

Document Reference: C-4 SV-1 and StdV-1 Page 2 Section / Paragraph: 2

Answer:

The interfaces between the Core and the RAN are the same for both an opt-in state and a state that chooses to take responsibility to build, operate and maintain a RAN network. The language will be updated in a subsequent RFP.

128. Table 1 refers to several interfaces that do not appear in Figure 2, and several interfaces identified in Figure 2 do not appear in Table 1. Please clarify.

Document Reference: C-4 SV-1 and StdV-1 Page 4 Section / Paragraph: 2.2 Table 1

Answer:

FirstNet intends to update SV-1 in the SOO Appendix C-4, System and Standard Views (SV-1 and StdV-1) to align table mapping and figure legends accordingly (Figure 2 and Table 1). The X2, S1-MME/U,

Microwave and Fiber Ethernet currently align correctly. VPN technologies such as E-Line/L2VPN and MPLS-VPN should utilize industry best practices, and FirstNet intends to update the table with language to that effect. In Table 1, FirstNet intends to remove LTE-Uu and Voice Service and replace Performance and Audit Monitoring with SNMPv3 and SFTP and provide appropriate IETF standards references. In Figure 2, FirstNet intends to add S1-U and S1-MME security/encryption, based on 3GPP standards on Network Domain IP security and authentication, to the Security Plane Interface. Additionally, FirstNet intends to add SNMPv3, SFTP, LTE measurement and performance metrics, and Timing Interface to the Management Plane Interface. Finally, FirstNet intends to add Location Services to the Control Plane Interface.

129. It's not clear how an interface would support federated access to local databases by visiting users. This seems to be a requirement on the PSE itself. Please clarify.

Document Reference: C-4 SV-1 and StdV-1 Page 13 Section / Paragraph: 5.2.2 paragraph 1 sentence 3

Answer:

As outlined in the SOO Section C.5, Objective 1, FirstNet is seeking solutions for a nationwide, interoperable network. One aspect of interoperability is the capability for a local PSE administrator to authorize access to authenticated visiting users from agencies providing mutual aid. The parenthetical phrase "under the control of the local administrator" is intended to indicate the PSE administrator will need the ability to control who has access to what. ICAM defines a shared, or federated, "authentication" process, but the PSE administrator retains "authorization" to resources within their control.

130. The requirement is confusing. We believe it means "The Contractor shall provide web interfaces, as noted below, to allow PSE to provision users, manage devices and applications, view billing information and monitor the performance of the local network." Please clarify if this is meant to say provide versus utilize.

Document Reference: C-4 SV-1 and StdV-1 Page 14 Section / Paragraph: 5.2.4 paragraph 1 sentence 1

Answer:

The wording as stated, "The Contractor shall provide web interfaces, as noted below, to allow PSE to provision users, manage devices and applications, view billing information and monitor the performance of the local network." is correct. However, this may be further clarified in a subsequent update to SOO Appendix C-4, Systems and Standard Views (SV-1 and StdV-1).

131. Clarify the following statement and explain its context as it relates to GCSE.

“IP Multimedia Subsystems (IMS) and OMA-XML Document Management Group services related to presence, voice over LTE (VoLTE) and other radio communications services for group are available at the 3GPP specification.”

Document Reference: C-5 StdV-2 Page 4 Section / Paragraph: Section 4, para 3

Answer:

Among the IMS applications, there are services related to Group Communication. The IMS technology enables session management for Public Safety Group Communication. Also, there are use cases for multimedia Group Communication integrated with value-added services through the OMA enablers. The statement addresses the fact that different layers can be involved in supporting Group Communication service for Public Safety.

132. What standards are required for ICAM and at which milestones in the IOC / FOC timeline? Table 4 Identity Management Mandatory Standards states “Some of the evolving standards on ICAM are shown below” and lists 11 different items.

Document Reference: C-5 StdV-2 Page 9 Section / Paragraph: Section 7, Table 4

Answer:

As defined in SOO Appendix C-8, IOC/FOC Target Timeline, FirstNet has defined 3 phases of ICAM functionality roll-out in IOCs 1-3. FirstNet expects an offeror to submit detailed proposed solutions to provide the ICAM functionality in each of these IOC releases that leverage ICAM standards. FirstNet requests feedback regarding the milestones proposed in the Special Notice.

133. The table shows Q-OPS ID to start at ID #4, then #12, #21, #25 & #29. Is this the complete table or are there additional items # 1 to 3, 13 to 20...to be included in the table?

Document Reference: C-6 QASP Page 0 Section / Paragraph: Table 5, Q-OPS

Answer:

The table, as referenced, is the complete table that was released and contains representative performance metrics/standards for each of the technical areas identified.

134. Will the # objectives provided in the final RFP be the final list of objectives in the awarded contract?

Document Reference: C-6 QASP Page 0 Section / Paragraph: Table 5, Q-OPS

Answer:

FirstNet has currently identified all of the objectives for the NPSBN acquisition. However, feedback will be considered with respect to the current objectives identified as well as any input as a result of ongoing outreach and consultation. If the determination is made to make any changes after issuance of the RFP, prior to award, an official amendment will be issued. While the awarded contract will be reflective of the objectives found in the SOO, the SOO will not become part of a contract. The SOO will be replaced by a performance work statement at the time of award as a result of the proposed solution, as negotiated if necessary.

135. Does 99.99% availability apply to the entire ecosystem to include third party service providers (i.e. for redundant links to data centers)? Does this apply to availability of the best effort OTP applications?

Document Reference: C-6 QASP Page 0 Section / Paragraph: Table 7

Answer:

FirstNet's objectives for availability are covered in the overall system availability objective outlined in SOO Section C.5.7, User Service Availability. The 99.9% referenced in the SOO is correct; the 99.99% referenced in SOO Appendix C-6 is incorrect and will be updated to be consistent with the 99.9% SOO reference. As noted, this availability objective includes the reliability effects of all network components (e.g., Core, gateways, eNodeBs, and backhaul) as well as the environmental survivability of the infrastructure and the benefits derived from deployable units. Also, as noted, network services have been included in the definition.

136. Will guidelines for installation standards and codes be provided from FirstNet or will this be left up to responder discretion?

Document Reference: C-7 Operational Architecture Page 24 Section / Paragraph: A3.2.1

Answer:

FirstNet expects offerors to provide information with regard to installation standards that they plan to follow as part of their capabilities statement and subsequent responses to the RFP.

137. Will any additional information be provided for Multimedia and Hi-definition requirements for the device ecosystem, to include machine based sensors?

Document Reference: C-7 Operational Architecture Page 75 Section / Paragraph: A7.2.3.1

Answer:

Specific requirements will be one of the outputs of the offeror's proposed solution with regard to the product management process that would be incorporated into the subsequent award.

138. What is the size/ number of devices that would be considered to make up the system?

Document Reference: C-7 Operational Architecture Page 75 Section / Paragraph: A7.2.3.1

Answer:

FirstNet expects offerors to work with device providers to ensure that a rich and diverse device portfolio is available with devices ranging from those similar to commercially available consumer grade to highly specialized public safety focused devices.

139. The opening sentences for each of the IOC phases 2, 3, 4, and 5 (paragraphs 4.2, 4.3, 4.5, and 5) state that each of these phases start X years after the completion of the prior phase. However, Figure 1 and the table in paragraph 2 imply that all phases are months after award, and FOC language (paragraph 6) also states target completion dates in time after contract award. This would make a difference of several years for when FOC is targeted (60 months versus 126 months). Our interpretation based on Industry Day discussion is that FOC is achieved at the end of Year 5 following contract award. Please clarify.

Document Reference: C-8 IOC / FOC Page 6

Answer:

The information contained in the SOO Appendix C-8, IOC/FOC Target Timeline, Table and Figure 1, IOC/FOC Timeline, is correct, all phases are months after award. The initial sentence in each section stating "this phase will begin x years after the completion of" the previous IOC is incorrect. The information issued in a subsequent RFP will be updated to reflect this correction.

140. Reference is made to "Operations.4, Network Management" use case, which is not in the document. Should this reference be to "Operations.1, Network Management" as identified in Section 4.28 on page 47?

Document Reference: C-9 Use Cases Page 14 Section / Paragraph: 4.8.3

Answer:

Yes, Section 4.8.3 9. of SOO Appendix C-9, Nationwide Public Safety Broadband Network (NPSBN) Use Case Definitions, will be amended so that "Operations.4, Network Management" is replaced with "Operations.1, Network Management" in the subsequent RFP."

141. Please clarify what is meant by an “agency branded B14 device?”

Document Reference: C-9 Use Cases Page 46 Section / Paragraph: 4.25.6

Answer:

SOO Appendix C-9, Nationwide Public Safety Broadband Network (NPSBN) Use Case Definitions, should have stated “FirstNet branded B14 device” rather than “agency branded B14 device”. This will be corrected in the subsequent RFP.

142. In the SOO document, Availability is required to be 99.9%. In the QASP table, it is set at 99.99%. Can you please clarify?

Document Reference: C - SOO Page 0 Section / Paragraph: C.5 #7 and C-6, section 6 Table 7

Answer:

As noted in the SOO Section C.5 Objective 7, User Service Availability, the service availability figure “includes the reliability effects of all network components (Core, gateways, eNodeBs, and backhaul) as well as the environmental survivability of the infrastructure and the benefits derived from deployable units.”

As of the release of the draft RFP, the SOO reliability figure of 99.9% is correct; based upon comments the government receives, the draft RFP is subject to change.

143. There is adequate qualified businesses to support a FAR Part 15 procurement. Has a decision been made on contract type?

Answer:

A decision and/or determination regarding contract type has not yet been made.

144. You have requested industry consider providing FirstNet with Capabilities Statements. Can you tell us what FirstNet intends to use the capabilities statements for? Is it to simply enquire to determine interested parties and general FirstNet related capabilities available across industry much like a RFI or sources sought notice might achieve, or is it to down select?

Document Reference: Special Notice Page 0 Section / Paragraph: 4.1.3-4

Answer:

The capabilities statements submitted as a result of the Special Notice are not being utilized as a “down select” mechanism at this stage in the NPSBN acquisition process. As stated in the Special Notice, the purpose of the capabilities statements is to obtain feedback in order to better understand industry’s

capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. This will also assist in the determination of acquisition strategy and approach in order to enhance competition.

145. In this section you reference Appendix C-10 FirstNet Cyber Hardness Requirements. Do have an anticipated release date for this document?

Document Reference: C-SOO Page 4 Section / Paragraph: C5.9

Answer:

FirstNet does not have an anticipated release date for this document. However, it will be included in the subsequent RFP.

146. In this section you reference Appendix C-2 Service Level Agreement for Radio Access Network (RAN) Integration. Do have an anticipated release date for this document?

Document Reference: C-SOO Page 4 Section / Paragraph: C5.1.1

Answer:

FirstNet does not have an anticipated release date for this document. However, it will be included in the subsequent RFP. Also, FirstNet welcomes comments regarding the appropriate service levels necessary for RAN Integration. FirstNet does not have an anticipated release date for this document. It will be included in the subsequent RFP.

147. In your high level IOC Timeline Chart you show IOC-1 Launch 6 months from award. We did not see in your time line any up front requirements definition development of the Statement of objective and the process to take those requirements definition to a design review process prior to IOC. (ie PDR, CDR, etc). Is it FirstNet's plan to have the contractor build this engineering rigor that allows the government to approve what the contractor proposes to build prior to the contractor actually building? Can this be added into the IOC/FOC schedule?

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: Fig 1

Answer:

The purpose of the Special Notice is to obtain feedback in order to better understand industry's capabilities, analyze the recommendations and alternative approaches, and determine how to best leverage existing capabilities and best practices in order to meet public safety needs. Therefore, FirstNet seeks comments on the milestones included in the Special Notice.

148. In figure 1 IOC/FOC timeline it appears each IOC period after IOC-1 is 6 months to get to IOC-2 then 1 year increments for all remaining IOC's. In your stated words describing IOC 2-5 you state IOC-2 is targeted to begin 1 after the completion of IOC-1, IOC-3 is targeted to begin 2 years after the completion of IOC-2, IOC- 4 is targeted to begin 3 years after the completion of IOC-3 and IOC-5 is targeted to begin 5 years after the completion of IOC-4. Is this accurate or should the periods mentioned above be after contract award rather than after completion of the prior IOC?

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: Fig 1, 4-5.6 and 6

Answer:

The information contained in the SOO Appendix C-8, IOC/FOC Target Timeline, Table and Figure 1, IOC/FOC Timeline, is correct, all phases are months after award. The initial sentence in each section stating "this phase will begin x years after the completion of" the previous IOC is incorrect. The information issued in a subsequent RFP will be updated to reflect this correction.

149. This document lays out the functional area descriptions and ties back to the spreadsheet and Visio where responsibilities are assigned to Public Safety or FirstNet with areas left open for comments on which party should be responsible for a specific functional area. It is our understanding that FirstNet desires that we assign ownership to all functions that were initially left unassigned from the set (Contractor, FirstNet, Shared, Public Safety, and Out of Scope). It is our further understanding that FirstNet desires comments on those functions that have been provisionally assigned to either FirstNet or Public Safety. Please confirm.

Document Reference: C-7 Operational Architecture Page 0

Answer:

Your understanding is correct, FirstNet is requesting feedback regarding ownership of all functions that were initially left unassigned (Contractor, FirstNet, Shared, Public Safety, and Out of Scope). Also, as stated in the Special Notice, FirstNet is seeking comments on those functions that have been provisionally assigned to either FirstNet or Public Safety.

150. You reference the Core consisting of the Public Safety gateway. Did you mean the P-GW and S-GW.

Document Reference: C-7 Operational Architecture Page 29 Section / Paragraph: A3.4.2.4

Answer:

Yes, the Public Safety gateway referred to in Section A3.4.2.4 of the SOO Appendix C-7, Operational Architecture Functional Descriptions, is made up of P-GW and S-GW EPC entities.

151. Does SDP (Service Delivery Platform) have Local control of PCRF policies and prioritization for users in addition to user control?

Answer:

The SDP is envisioned as an enabling platform that provides abstract interfaces to information and functionality within the network. As such, the SDP does not itself contain any functionality related to the PCRF or user control. FirstNet also envisions a local control system that provides PSEs the ability to manage their users, devices, services, and applications. See SOO Appendix C-9, Use Cases, Section 4.8.3, Table 3, for a detailed definition of local control. This definition includes local management of policies and priorities.

152. “The NPSBN SHALL support IPv4, IPv6, and IPv4/v6 PDN types defined in 3GPP TS 23.401” Will the Government amend the RFP to clarify, which specific methods are preferred or if all methods are required?

Document Reference: C-3 FCC Tab Page 8 Section / Paragraph: 1.3.1.7

Answer:

FirstNet requires that the NPSBN shall support IPv4, IPv6, and IPv4/v6. There are still many IPv4 hosts, network, and services currently deployed and the NPSBN may need to interwork with them. Since IPv4 and IPv6 are not interoperable, both protocols will need to be supported in the NPSBN during the transition period from IPv4 to IPv6.

153. “The NPSBN SHALL support IPv4 and/or IPv6 transport for the EPS interfaces enumerated in Table 1: Minimum Interoperable Interfaces, consistent with the FirstNet design” Assuming this is related to IPv4/IPv4 capable transport.” Will the Government amend the RFP to clarify if tunneling and/or NAT are required as options?

Document Reference: C-3 FCC Tab Page 8 Section / Paragraph: 1.3.1.8

Answer:

FirstNet requires that the NPSBN shall support IPv4 and IPv6 for the EPS interfaces. FirstNet does not anticipate restricting the mechanisms the offeror(s) would use for the IPv4 to IPv6 transition. Dual IPv4/IPv6 protocol stacks implementation is commonly used for all EPC nodes and routers. FirstNet does not restrict other transition approaches, such as NAT and tunneling.

154. “Prior to operational deployment on the NPSBN, infrastructure equipment SHALL have passed FirstNet required Interoperability Testing at a system level as per the specific IOT requirements for the NPSBN.” Will the Government amend the RFP to clarify if there is an anticipated test-plan format that can be reviewed? Q.22 below cites area of document for external site test-plans only?

Document Reference: C-3 FCC Tab Page 9 Section / Paragraph: 1.3.3.21

Answer:

The test-plan format will be further clarified as part of the subsequent RFP.

155. The equipment comprising the NPSBN SHALL provide backwards compatibility of interfaces, from time of deprecation, for a minimum of two full major release/upgrades of the network. This requirement may be waived (i.e., interface obsolescence accelerated) if FirstNet can ascertain from the user community that there are no dependencies on a given interface.” Will the Government amend the RFP to clarify what mechanisms will be used as inter-connection points between NPSBN segments where multiple providers are involved in compliance

Document Reference: C-3 FCC Tab Page 9 Section / Paragraph: 1.3.4.23

Answer:

The mechanisms used are a design deliverable. Offerors should include in their proposed solutions interfaces and protocols between network elements to interconnect the NPSBN with every external network element.

156. “The NPSBN SHALL support the use of mobile VPN technology to support mobility between the NPSBN and other networks”. It is assumed this will User Devices (UE) centric. Will the Government amend the RFP to clarify if the other networks are NPSBN defined or does this need to remain open for inclusion of future expansion?

Document Reference: C-3 FCC Tab Page 9 Section / Paragraph: 1.3.5.29

Answer:

A Mobile Virtual Private Network solution ensuring that FirstNet network performance meets the expectations (fast handover, security, QoS, high capacity back-ends, etc.) is essential for a successful NPSBN, especially in scenarios such as outbound roaming on non-NPSBN networks. Also, FirstNet is seeking feedback on all draft RFP documents with regard to these topics in accordance with the Special Notice.

157. “The NPSBN SHALL implement a nationwide scheme for assigning Access Classes to public safety users and secondary users following the 3GPP recommendations in TS 22.011, Section 4.2.” Section 4.2 appears to describe a set of nested Access Class options with related QoS parameters. Will the Government amend the RFP to confirm, if priority users can be members of multiple priority access classes and if their application sets can also within these classes require different levels of prioritization?

Document Reference: C-3 FCC Tab Page 10 Section / Paragraph: 1.3.6.35

Answer:

The statement quoted from the Interoperability Board Report found in Appendix C-3 Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network only refers to access class barring users trying to access the network and does not imply any prioritization of a users' applications once on the network.

158. “The NPSBN SHALL support the use of industry standard VPN and MVPN technology, while providing priority and Quality of Service for encapsulated applications. “ Per [Question 157] above nested option may require multiple tunnel sequences?

Document Reference: C-3 FCC Tab Page 10 Section / Paragraph: 1.3.6.37

Answer:

The Mobile Virtual Private Network (MVPN) may render different Quality of Service (QoS) levels indistinguishable, which negates the benefits of QoS management. The MVPN Network must promote QoS levels external to the tunnel and make them visible to the LTE network, since the bundled data will be treated by the LTE network as having the same QoS level.

159. “In order to ensure secure and interoperable interfaces between the NPSBN and external elements (e.g. all SGi, Rx and Srvs services as shown in Figure 2), these interfaces SHALL be protected with a FirstNet-approved security mechanism.” Will the Government amend the RFP to clarify if there is a preliminary schema describing the FirstNet-approved security mechanisms?

Document Reference: C-3 FCC Tab Page 10 Section / Paragraph: 1.3.7.43

Answer:

Appendix C-10 FirstNet Cyber Hardness Requirements has not been included in the Special Notice as it is still being developed in consultation with states, tribes, territories, public safety stakeholders, and market participants, and will be included in the subsequent RFP.

160. “The NPSBN SHOULD support existing Public Safety applications, deployed regionally or within agencies.” Will the Government amend the RFP to clarify if there is a preliminary application set list for review?

Document Reference: C-3 FCC Tab Page 11 Section / Paragraph: 1.4.1.3

Answer:

FirstNet has no plans to include in the RFP a specific set list of existing public safety applications that are to be supported. FirstNet expects that the proposed solutions, provided by the offerors, should support the ability for users to access and use their existing regionally and locally deployed applications as called for in the Interoperability Board Report. Please see SOO Section C.5, Objective 5 Application Ecosystem.

161. “Prior to operational deployment on the NPSBN, infrastructure equipment SHOULD have passed FirstNet required Performance Testing of individual interfaces, nodes and overall system as per the specific performance requirements of the NPSBN”. Per [Question 154] above, in a multi-vendor environment, will the Government amend the RFP to clarify if there is a targeted test-plan layout for review?

Document Reference: C-3 FCC Tab Page 12 Section / Paragraph: 1.4.3.17

Answer:

FirstNet anticipates publishing test strategy documentation as part of the subsequent RFP. Through the Special Notice, FirstNet seeks feedback on what test strategy should be considered, in accordance with the Special Notice.

162. “The NPSBN SHOULD be constructed and evolved in adherence to a multi-year roadmap” Will the Government amend the RFP to clarify if the roadmap element will be developed and maintained by the vendors supporting the NPSBN and FirstNet or Vendors only?

Document Reference: C-3 FCC Tab Page 12 Section / Paragraph: 1.4.4.20

Answer:

Roadmap development is outlined in Appendix C-7 Operational Architecture Functional Descriptions in sections A.2.3.3, A.3.3.3, A.3.4.1, A.3.8.2.3.3, A.3.4.1, A.7.1, and A.7.4. FirstNet seeks feedback on all aspects of the Operational Architecture including recommended ownership of each task in accordance with the Special Notice.

163. “A set of default QoS profile templates SHOULD be defined for each responder function (e.g. police, fire, EMS) supported by the NPSBN.” Will the Government amend the RFP to clarify if these responder functions will be defined individually or be grouped into a priority access class level?

Document Reference: C-3 FCC Tab Page 13 Section / Paragraph: 1.4.7.37

Answer:

As noted in the question, the Interoperability Board Report found in Appendix C-3 Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network Section 1.4.7 (37) calls for QoS templates for each of the responder functions as a minimum requirement. The next Interoperability Board Report requirement following this one (1.4.7 (38)), specifies that each profile should have default values for several parameters, including Access Class. FirstNet anticipates offeror’s proposed solutions will allow flexibility in the definition of QoS profiles for different types of responders in both static and dynamic operational situations.

164. “Since the NPSBN could also support secondary users, default QoS profile templates SHOULD be defined for public safety and secondary users.” Per [Question 163] above, QoS policies will need to be developed in a nested fashion for hierarchical treatment of users within each class i.e. public safety and secondary?

Document Reference: C-3 FCC Tab Page 13 Section / Paragraph: 1.4.7.39

Answer:

FirstNet does envision profiles and user assignment to such profiles that support prioritization and QoS. FirstNet may request offerors to propose the techniques and/or methodologies, and implementation details for achieving this requirement.

165. “The NPSBN security implementation SHOULD include pre-planned bypass mechanisms that have defined security and interoperability implications.” Will the Government amend the RFP to clarify, if bypass should be interpreted as complete “fail-open” on a per criticality basis?

Document Reference: C-3 FCC Tab Page 13 Section / Paragraph: 1.4.8.43

Answer:

Appendix C-10 FirstNet Cyber Hardness Requirements has not been included in the Special Notice as it is still being developed in consultation with states, tribes, territories, public safety stakeholders, and market participants, and will be included in the subsequent RFP.

166. “The developed security mechanisms SHOULD permit local entities to hide the topologies and address spaces of their networks.” Will the Government amend the RFP to clarify if NAT testing will need to validate the impact on the application set? If tunneling, what security parameters are set at endpoints?

Document Reference: C-3 FCC Tab Page 14 Section / Paragraph: 1.4.8.49

Answer:

The NPSBN will provide various security mechanisms to protect the network. These may include encryption, integrity protection, authentication, monitoring, intrusion detection/prevention, and topology and address hiding. If an offeror’s proposed solution includes NAT and tunneling, testing of these mechanisms will be required to validate their effectiveness and impact on the network performance. Offerors are encouraged to provide feedback regarding test cases for the security testing as part of any response to the Special Notice via comments, which are due to FirstNet July 27th, 2015.

167. “The agency, organization or entity that utilizes the NPSBN Identity Management framework SHOULD be responsible for enforcing authorization constraints on access to information as per their own security policy. “ Will the Government amend the RFP to clarify, if the NPSBN needs to providing logs to responsible entities above in order to compliment enforcement?

Document Reference: C-3 FCC Tab Page 14 Section / Paragraph: 1.4.8.55

Answer:

FirstNet expects major functional capabilities such as Identity Management, the offeror(s) will provide operational metrics, logs, and reports that enable FirstNet's monitoring and oversight, and where appropriate, PSE compliance. FirstNet anticipates including a detailed set of deliverables and data requirements in the subsequent RFP.

168. “Several different organizations such as the Multi Service Forum (www.msforum.org) and the Network Vendors Interoperability Test Forum (www.nviot-forum.org) provide a framework for system level IOT on LTE systems and can be leveraged for use by FirstNet to engage in this type of testing.” Can it be assumed that these test-bed examples are a generally applicable sample set of what will be used by FirstNet? Will the Government amend the RFP to clarify this assumption?

Document Reference: C-3 FCC Tab Page 49 Section / Paragraph: 4.3.3.2

Answer:

The system level interoperability tests (IOT) will be further clarified as part of the subsequent RFP.

169. To track the evolution of the network, a roadmap for introducing functions into the network is required. The roadmap should track feature availability from vendors, integration testing across vendors, planned market deployment and general availability across the network. The roadmap is used to show services available to endusers in the near term and is used to show need to vendors for longer term items. An open roadmapping process allows both network users and vendors to understand the current high level plan for the network. A key continuing output of the governance of the network is maintenance of a roadmap.” Will the Government amend the RFP to clarify if the Roadmap functionality will be a collaboration between FirstNet and Vendors or Inter-Vendor only?

Document Reference: C-3 FCC Tab Page 53 Section / Paragraph: 4.4.5

Answer:

Roadmap development is outlined in Appendix C-7 Operational Architecture Functional Descriptions in sections A.2.3.3, A.3.3.3, A.3.4.1, A.3.8.2.3.3, A.3.4.1, A.7.1, and A.7.4. FirstNet seeks feedback on all aspects of Appendix C-7 Operational Architecture Functional Descriptions including recommended ownership of each task in accordance with the Special Notice.

170. The equipment in the NPSBN SHOULD support transport redundancy wherever economically feasible (i.e. connections to local switching equipment or WAN connectivity between sites or core locations). It is assumed that full high-availability should be designed into architecture and be eliminated only if cost-prohibitive. Will the Government amend the RFP to clarify the accuracy of the assumption?

Document Reference: C-3 FCC Tab Page 57 Section / Paragraph: 4.4.6.6

Answer:

FirstNet’s objectives for system availability are covered in the SOO, Section C.5 Objective 7, User Service Availability. The subsequent RFP may require that offerors propose a solution that meets FirstNet’s objectives.

171. Public Safety Entities could benefit greatly from a broker based approach to LTE Services. Will the Government amend the RFP to provide for a broker-based model for Public Safety LTE wireless services?

Document Reference: Special Notice Page 5 Section / Paragraph: 4.3

Answer:

FirstNet seeks feedback on a broker-based model for Public Safety LTE wireless services and encourages recommendations discussing its advantages and disadvantages.

172. Will the government amend the RFP to reflect the assumptions offerors should use in order to provide connectivity options and accurate costs to the opt-out states prior to receiving opt-out approval?

Document Reference: Pricing Appendix Page 5 Section / Paragraph: 2.1

Answer:

The subsequent RFP may require offerors to propose connectivity options based on meeting the traffic demand projections, meeting the stated objectives of the FirstNet system and enabling the opt-out states to connect seamlessly with the FirstNet Core.

173. The FirstNet NPSBN Special Notice describes a future where NextGen 911 systems that integrate with FirstNet support VOIP, text, and emails with attachments, which may range from photos to streaming content. At what level of the infrastructure will this content be inspected to ensure malicious payloads are not transmitted into FirstNet? Will this be national, regional, or local?

Answer:

The level at which packets will be inspected should be addressed and identified in the offerors' proposed solution. Note that all NG911 payloads must enter the network through a Public Safety Answer Point (PSAP) before being sent on to a NPSBN subscriber. The PSAP must ensure the validity of the payload before sending through the NPSBN.

174. Figure 1 shows IOC-2 as 12 months after contract award. Section 4.2 IOC-2 shows this phase as targeted to begin one (1) year after the completion of IOC-1 which is 18 months after contract award. Which representation is correct? This question is the same for IOC-3, IOC-4 and IOC-5. Please clarify timeline for all phases.

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: Figure 1

Answer:

The information contained in the SOO, Appendix C-8, IOC/FOC Target Timeline, table and Figure 1, IOC/FOC Timeline, is correct. The initial sentence in each section stating "this phase will begin x years after the completion of" the previous IOC is incorrect. The information issued in a subsequent RFP will be updated to reflect this correction.

175. The sections IOC 2-5 each begin with the sentence..."This phase is targeted to begin X years after the completion of IOC-Y (previous IOC #). To match the timeline shown in the graphic at the beginning of the document it looks as though sentences should be changed to "This phase is targeted to begin X years after award (using the number of years already specified). Correct?

Document Reference: C-8 IOC / FOC

Answer:

The information contained in the SOO, Appendix C-8, IOC/FOC Target Timeline, table and Figure 1, IOC/FOC Timeline, is correct. The initial sentence in each section stating "this phase will begin x years after the completion of" the previous IOC is incorrect. The information issued in a subsequent RFP will be updated to reflect this correction.

176. Where will the FirstNet Lab be located?

Document Reference: C-7 Operational Architecture Page 40 Section / Paragraph: A.3.8.2.1

Answer:

The planned FirstNet lab will be located at FirstNet Technology Headquarters in Boulder, CO.

177. How does FirstNet propose to provide roaming support / inter-carrier transfer between Band 14 covered (FirstNet service providers) and non-FirstNet areas?

Answer:

This is an objectives-based RFP. Therefore, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

178. How will continuity of Band 14 service be identified and addressed during roaming?

Answer:

This is an objectives-based RFP. Therefore, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

179. How will users be advised / notified they are leaving a FirstNet/Band 14 service area?

Answer:

This is an objectives-based RFP. Therefore, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

180. How will FirstNet subscribers administer their service requests on a local basis?

Answer:

Appendix C-7 Operational Architecture Functional Descriptions, included in the draft RFP documents, defines tasks that must be accomplished in order to make the NPSBN operational, and it defines who has ownership of each individual task. FirstNet has defined responsibility for a small number of these but is soliciting feedback as to the most efficient way to allocate responsibility and define processes associated with administering local service requests. FirstNet anticipates that local agencies will request access to systems to allow user provisioning.

181. Does NPSBN replace Wireless Priority Service (WPS)?

Answer:

FirstNet will provide priority access for Public Safety Users on the NPSBN. Any impact to WPS usage is unknown.

182. Will network trouble tickets be managed by FirstNet or by the bidder?

Answer:

As this is an objectives-based RFP, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

183. Who will own a network trouble ticket that arrives from a state level network command center?

Answer:

As this is an objectives-based RFP, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

184. Is the trouble ticket owner responsible to close the ticket and share its closure with the state network command center?

Answer:

As this is an objectives-based RFP, FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice.

185. Will the FirstNet Core file server be continuously updated by the bidder?

Answer:

The question is assumed to refer to the Home Subscriber Server (HSS) within the Evolved Packet Core (EPC) of an LTE system. There will be one, national EPC, that may be distributed geographically for reliability and resiliency, which will serve the RAN(s) collectively. The HSS stores subscription and provisioning related information to support other call control and session management entities, and it will be continually updated through the provisioning and subscriber management processes.

186. How will FirstNet manage coverage and feature changes once the NPSBN is deployed?

Answer:

FirstNet seeks feedback on the optimal operational architecture in accordance with the Special Notice. FirstNet anticipates that during the operational lifecycle phase of the NPSBN, changes and enhancements may be addressed in a systems engineering lifecycle type and approach and documented. Additional information pertaining to this document will be provided in the subsequent RFP.

187. How will the State Level Command Center interface with the bidder's service provider?

Answer:

FirstNet assumes the question refers to what type of technical interfaces will connect State Command Centers with the offeror's service. The RFP will require that offerors propose a solution in accordance with the guidelines referenced within the SOO and in Appendix C-7 Operational Architecture Functional Descriptions, sections A.3.5.1, A.3.4.2.1, and A.2.1.3.3.

188. In an emergency, how will the State Level Command Center disengage currently operating Band 14 commercial users and disallow further access / use during the incident?

Answer:

The subsequent RFP anticipates the offeror will demonstrate a proposed solution consistent with SOO Section C.5, objective 13.

189. Under incident command, how will the ComL activate a Band 14 device at an incident site? How will the ComL report lost devices?

Answer:

This is a local issue that requires local policies and procedures, which will be driven by adoption of Band 14 services for use at the local level. Implementation of those services and how those services are deployed will be up to local authorities.

190. If the RFP planning assumptions are changed how will these changes be cascaded through the RFP Appendixes?

Answer:

FirstNet will ensure all related RFP documents are updated as changes are made and executed via a formal amendment to the RFP after issuance prior to receipt of proposals.

191. Given the need for continuous upgrade and development of the network, what is the projected refresh cycle for user equipment and timetable for networking improvements?

Answer:

FirstNet anticipates offerors will propose a technology roadmap and network upgrade schedule that complies with the technical requirements referenced within the SOO. Additionally, the offeror's proposed solution should provide and maintain a 3GPP compliant Band 14 capable device portfolio that evolves with the 3GPP standards, and provides functionality and price points that meet the needs of the FirstNet customer base, driving substantial subscribership. Although a specific cycle cannot be specified at this time, features and functions are to be introduced in accordance with Appendix C-8 IOC / FOC Target Timeline, which will require annual major releases at a minimum. Software patches and minor revisions are expected to be required no more frequently than once per month which may be reflected in the subsequent RFP.

192. What security and data management requirements will offerors need to be aware of if they seek to develop and operate their own core? Would the placement of the FirstNet core in a contractor’s environment require additional oversight, conditions, or connectivity issues not mentioned in the RFP?

Answer:

FirstNet will have a dedicated Core that shall have adequate security protections. The offeror should propose a solution identifying the connectivity required to ensure that FirstNet’s stated objectives are met. Oversight will be determined based on the terms and conditions contained in the subsequent contract(s).

193. In the event multiple offerors are awarded regional solutions, what requirements does FirstNet suggest for data security and interoperability between multiple organizations?

Answer:

Appendix C-10 FirstNet Cyber Hardness Requirements has not been included in the Special Notice as it is still being developed in consultation with states, tribes, territories, public safety stakeholders, and market participants, and will be included in the subsequent RFP.

194. Approximately how many fixed-location LTE cores does FirstNet anticipate for the Nationwide Core Network? Given that the number of cores is a balance between reliability and complexity, this guidance may influence the submitted capabilities statements.

Document Reference: C-3 FCC Tab Section / Paragraph: 4.1.5.7

Answer:

Offerors should propose a Core network solution consistent with FirstNet’s objectives.

195. How will this definition evolve as LTE becomes more efficient?

Document Reference: C-1 Coverage Objective Maps Page 1

Answer:

The subsequent RFP may require that an offeror's solution address the issue of evolution and efficiency. FirstNet does not intend to specify design requirements, only the requirements for coverage, capacity, availability, and other specified parameters as contained in the SOO and its associated appendices.

196. What is the process of increasing these throughput values as LTE evolves and becomes more efficient?

Document Reference: C-1 Coverage Objective Maps Page 1 Section / Paragraph: Table 1

Answer:

FirstNet may provide a growth plan which includes LTE evolution efficiencies with timelines in the subsequent RFP.

197. Will coverage maps be required as part of the RFP process? If so, potential site locations would need to be provided as part of the RFP.

Document Reference: C-1 Coverage Objective Maps Page 1 Section / Paragraph: Para 2

Answer:

The subsequent RFP (Section L) will specify the offerors' submission requirements.

198. Our interpretation of 295_C-1 is that FirstNet will require the RAN provider for MVNO deployments to meet the coverage guarantees in 295_C-1 paragraph 2. If our interpretation is not correct, who is responsible for meeting coverage guarantees for an MVNO deployment?

Document Reference: C-8 IOC / FOC Page 4 Section / Paragraph: 4.1.1

Answer:

The intent of the documents included in the Special Notice is to show the option of deploying a MVNO solution quickly after contract award to speed initial deployment to Public Safety Users, including all of the potential interfaces that might be affected. The details should be included in the offeror's proposed solution demonstrating it meets FirstNet's objectives.

199. B14 coverage from fixed sites starts with IOC-2 in limited areas and continues to 95% coverage objectives met at the end of IOC-5. Is there a testing/validation criterion required at the end of each IOC?

Document Reference: C-8 IOC / FOC Page 6 Section / Paragraph: 4.2.1

Answer:

Appendix C-6 Quality Assurance Surveillance Plan (QASP), as agreed to between the government and the awardee, will identify and govern the validation process.

200. Would there be less IOT risk in locating the associated MME with the particular Opt-Out State RANs?

Document Reference: C-4 SV-1 and StdV-1 Page 3 Section / Paragraph: Figure 2

Answer:

Since there will be a single, nationwide Core that may be distributed geographically for reliability and resiliency, it is possible that distributed MME within that Core may physically reside in a State that undertakes the responsibility to build, deploy and operate the RAN within their state. Although that State will be responsible for its RAN, the Core and all MMEs within the Core will remain under the control of FirstNet, regardless of physical location. FirstNet expects no additional IOT risk to be posed by this arrangement; moreover, placing MMEs within local control would introduce additional complexity and thereby increase risk to ongoing interoperability. MME will remain part of the nationwide Core Network.

201. Which specific performance levels are important to exceed commercial device performance?

Document Reference: C-6 QASP Page 11 Section / Paragraph: Table 2

Answer:

FirstNet has not made any determination on performance levels. SOO section C-5 Objective 4, Device Eco-System, posits device hardening as one area where commercial levels of performance may not be sufficient for Public Safety Users. FirstNet seeks feedback in this area in accordance with the Special Notice.

202. Only 6 of the 29 use cases are presented in the defined format, and there is very little detail presented for the remaining 23 cases. Where can we obtain additional information?

Document Reference: C-9 Use Cases Section / Paragraph: Section 2

Answer:

Additional use cases may be included in the subsequent RFP.

203. Does FirstNet intend to backhaul all traffic to a single location?

Document Reference: C-3 FCC Tab Page 63 Section / Paragraph: 4.4.6.6

Answer:

The subsequent RFP will require offerors to propose a network design, solution demonstrating it meets FirstNet's objectives.

204. Do you have usage examples that FirstNet envisions for each first responder group (normal, incident response, MAMA)?

Document Reference: C-9 Use Cases Page 4 Section / Paragraph: 4.1-4.6

Answer:

As outlined in the Special Notice and draft RFP documents, the subsequent RFP may contain Use Cases that would include each example requested.

205. For the overall users (13m) implies that there are federal users. Will the federal users have priority over First responders?

Document Reference: Pricing Appendix Page 3 Section / Paragraph: 1.3

Answer:

There is no presupposition of priority based upon level of government. FirstNet continues to work with the Public Safety Advisory Committee and the Public Safety Communications Research Laboratory to determine technical and governance solutions to prioritization questions. As stated in Appendix to the Special Notice, Pricing Concepts,, the inclusion of eligible users is based upon the definitions provided in FirstNet's enabling legislation, which is inclusive of federal emergency response providers.

206. Does FN envision having backhaul redundancy at each end site in the LTE network?

Document Reference: Pricing Appendix Page 4 Section / Paragraph: 4.1.3

Answer:

FirstNet's objectives for system availability are covered in SOO Section C.5 Objective 7, User Service Availability. Offerors should propose a solution that demonstrates it meets FirstNet's objectives.

207. What actions are expected to be taken in the first five minutes of a severe issue response? Contractors are graded on this category.

Document Reference: C-6 QASP Page 29

Answer:

As described in the SOO, network availability is of critical importance. A contractor's ability to respond quickly in the event of any network impairment or Public Safety User demand spike, is therefore very important to FirstNet. It is the responsibility of the offeror to propose a network operations plan, including items such as effective notification of issues to impacted partners and users, appropriate updates of issue status, communication of resolution and after action reporting to highlight how the issue will be averted on a go-forward basis. The offeror's proposed solution should provide details regarding its methodology with respect to industry standards such as International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 20000 service management processes. This information may be included in the subsequent RFP.

208. What practical restrictions exist on the types of traffic that may or may not share the NPSBN with public safety traffic? (see also C4 below)

Document Reference: C - SOO Section / Paragraph: C-3

Answer:

The concept in the Special Notice has not limited the types of traffic, except for an offeror's proposed solution demonstrating it meets FirstNet's stated objectives.

209. Does FirstNet have a list of capabilities, technologies and standards they foresee needing to incorporate in the future? Are there any that solution providers should avoid? This question applies to application as well as network solutions.

Document Reference: C - SOO Section / Paragraph: C-4

Answer:

Appendix C-8 IOC/FOC Target Timeline outlines the major features and functionalities, services and systems FirstNet believes are essential to meet the needs of its customers, Public Safety Users. This target timeline is anchored by the latest 3GPP release schedule and is expected to be adjusted as the standards body work progresses. This list is not exhaustive, and FirstNet seeks feedback, ideas and proposed solutions on which products, features, functionalities, services and systems should and should not be included in the FirstNet product portfolio. FirstNet seeks a more detailed features and functionality availability timeline along with proposals and innovative ideas as to how the timeline can be met.

To implement and make these products available, FirstNet expects to use standards based solutions, and seeks to continue to do so for the IOC/FOC target timeline as well as for future products unanticipated at this time and beyond the FOC milestones. Standards are listed in Appendices C-4, System and Standard Views (SV-1 and StdV-1, and C-5, FirstNet FOC – Features Standards Forecast (StdV-2), outlining those required at IOC and FOC, respectively.

210. Item 2: Please include a reference for the Operational Architecture referred to?

Document Reference: C-9 Use Cases Section / Paragraph: 4.8.3

Answer:

When referenced throughout the draft RFP documents, Operational Architecture references are to Appendix C-7, Operational Architecture Functional Descriptions. The Operational Architecture document is included in Visio, Word, and Excel formats. FirstNet seeks feedback via the Excel document, as outlined in the Special Notice.

211. What arrangements will exist to ensure interoperability between regions, for example with a major flood episode on the Mississippi? Even if the networks are interoperable, what about interoperability for information exchange and application integration across the network?

Document Reference: Special Notice Section / Paragraph: 4.4

Answer:

SOO Section C.5 Objective 1 requests offerors to propose a solution to build a nationwide interoperable network. Therefore, network interoperability should be addressed by offerors in their proposed solutions with regard to information exchange and application integration across the network.

212. Can FirstNet confirm the purpose of this chart? Is this is only a functional breakdown? Is this intended to be the overall WBS? Is FirstNet interested in ideas to proposals to streamline this functional breakdown?

Can we assume that this chart is not an enforced org chart? And given that assumption:

Does the contractor have freedom to create the organization that discharges these functions, or will the client have requirements in that area?

Document Reference: C-7 Operational Architecture

Answer:

Appendix C-7, Operational Architecture Functional Descriptions, contains system and task level diagrams of all functions FirstNet has currently identified that is needed to deploy and operate the NPSBN. These are included in 3 documents: a Visio diagram, showing a detailed functional breakdown of necessary tasks; and both Word and Excel documents that include descriptions of each task noted in the Visio diagram. All of these are meant to be functional, and not organizational, representations. FirstNet

seeks feedback, as noted in the Special Notice, regarding the details of the Operational Architecture and associated recommendations as to recommended ownership of each task.

213. Is there any intended priority or hierarchy between these KPIs

Document Reference: C-6 QASP

Answer:

The QASP as set forth in Appendix 6 is representative; an offeror is expected to meet all KPIs and metrics agreed to in the QASP between FirstNet and awardee(s) as part of the subsequent contract(s).

214. On page 19, Q-BUS-4 (and some others) - this KPI is not solely under the control of the contractor. In cases where responsibility is not solely on the contractor, how will responsibility be apportioned?

Document Reference: C-6 QASP

Answer:

FirstNet envisions that a Category One offeror is responsible for sales and marketing of FirstNet services, and therefore assumes responsibility for meeting agreed upon targets. Also, FirstNet seeks feedback regarding the QASP in accordance with the Special Notice.

215. FirstNet wants open standards and also specifies "or industry-standard best practice software methods". Does FirstNet have criteria to determine when industry-standard can be used in place of Open Standards?

Document Reference: C-6 QASP

Answer:

FirstNet intends to rely upon open standards where such standards are defined. In cases where standards are not defined, industry best practices may prevail.

216. Can we assume that derived PIV-I credential will be allowable to obtain user's credentials in addition to the use of the physical PIV card?

Document Reference: C-5 StdV-2 Section / Paragraph: 8.2

Answer:

Yes. FirstNet seeks additional feedback in this area in accordance with the Special Notice.

217. Please clarify the meaning of the MVNO ‘box’ in Fig.1

Document Reference: C-4 SV-1 and StdV-1 Section / Paragraph: 1

Answer:

The intent of the documents included in the Special Notice is to show the option of deploying a MVNO solution quickly after contract award to speed initial deployment to Public Safety Users, and all of the potential interfaces that might be affected. The details should be included in the offeror’s proposed solution demonstrating it meets FirstNet’s objectives.

218. First sentence has the word “provider”. Should this word be “provide” instead?

Document Reference: C-4 SV-1 and StdV-1 Section / Paragraph: 4.2.8

Answer:

Yes, the word contained in the first sentence should be “provide”. This will be corrected in the subsequent RFP.

219. The text seems to indicate that the various functions under Local Control are performed by the Contractor (Private Partner). This is contradictory to all statements in C7/Section A.2.1.3.3.1 (Local Control) and A.3.4.1.1

Document Reference: C-4 SV-1 and StdV-1 Section / Paragraph: 5.2.4

Answer:

Appendix C-7, Operational Architecture Functional Descriptions, defines tasks needed to deploy and operate the NPSBN. As indicated in the Special Notice, FirstNet seeks feedback on the ownership of each noted task. Network capabilities listed in Appendix C-4 System and Standard Views (SV-1 and StdV-1), section 5.2.4 are expected to be included in the offeror’s proposed solution.

220. What is OV-5?

Document Reference: C-7 Operational Architecture Page 1

Answer:

The term “OV-5” is a term that was used which references the Operational Architecture. The term “OV-5” will not be referenced in the subsequent RFP. The term “OV-5” has been changed to “Operational Architecture” and will be corrected in the subsequent RFP.

221. Are these services in addition to VoLTE cellular voice service? If so, what is the use and expectation e.g. in terms of QoS?

Document Reference: C-7 Operational Architecture Section / Paragraph: A.7.2.5.1

Answer:

Yes, the FirstNet roadmap supports standards based Mission Critical Voice services including VoLTE, mission critical push to talk (PTT), Group Communication and Device to Device communication, and also other services such as data and video services. The use case of each service depends on the emergency situation. Each one of these services requires appropriate QoS requirements.

222. I assume this section is asking for E9-1-1, Text-to-9-1-1, and NG 9-1-1 support in the NPSBN. Correct?

Document Reference: C-7 Operational Architecture Section / Paragraph: A.7.2.5.2

Answer:

Yes, this section is referring to E9-1-1, Text-to-9-1-1, and NG 9-1-1 support in the NPSBN.

223. Time intervals between IOC phases are not consistent with Figure 1.

Document Reference: C-8 IOC / FOC Page 0

Answer:

The information contained in Appendix C-8, IOC/FOC Target Timeline, table and Figure 1, IOC/FOC Timeline, is correct. The initial sentence in each section stating “this phase will begin x years after the completion of” the previous IOC is incorrect. The information, issued in a subsequent RFP, will be updated to reflect this correction.

224. Availability of 99.9 does not match the QSAP Appendix 6 of 99.99. Which is the correct availability number?

Document Reference: C-6 QASP Section / Paragraph: Table 7

Answer:

As noted in SOO Section C.5 Objective 7 regarding User Service Availability, the service availability figure includes the reliability effects of all network components (core, gateways, eNodeBs, and backhaul) as well as the environmental survivability of the infrastructure and the benefits derived from deployable units.”

As of the release of the draft RFP documents, the SOO reliability figure of 99.9% is correct; based upon comments the government receives, the draft RFP documents are subject to change.

225. Use of both words “lower” and “below” together appears redundant. Should the word “lower” be omitted?

Document Reference: J-3 Terms of Reference

Answer:

Yes. Lower should be omitted and will be reflected in the subsequent RFP.

226. Will the PS Agencies be able to source their own mobile devices or will all devices be procured from the NPSBN operator?

Document Reference: Pricing Appendix Page 6

Answer:

SOO Section C.5 , Objective 4 regarding Device Ecosystem requests that offeror(s) propose solutions that provide a robust device ecosystem. FirstNet anticipates that Public Safety Users will acquire devices from multiple sources.

227. Given the need for continuous upgrade and development of the network, what is the projected refresh cycle for user equipment and timetable for networking improvement's?

Answer:

FirstNet anticipates the offerors will propose a technology roadmap and network upgrade schedule that complies with the technical requirements referenced within the SOO. Additionally, the offeror’s proposed solution should provide and maintain a 3GPP compliant Band 14 capable device portfolio that evolves with the 3GPP standards and provides functionality and price points that meet the needs of the FirstNet customer base, driving substantial subscribership. Although a specific cycle cannot be specified at this time, features and functions are to be introduced in accordance with Appendix C-8 IOC / FOC Target Timeline, which will require annual major releases at a minimum. Software patches and minor revisions are expected to be required no more frequently than once per month which may be reflected in the subsequent RFP.

228. What security and data management requirements will offerors need to be aware of if they seek to develop and operate their own core?

Answer:

The objective is to have a core that supports FirstNet solely. Federal, state and Local security protections would have to be in place to ensure it is a private core. It must support MVPN solutions and be in compliance with appropriate requirements from NIST, Criminal Justice Information Services (CJIS), and Internet Protocol security (IPsec). The offeror must determine the connectivity required to ensure public safety objectives are met as part of their proposed solution.

229. Would the placement of the FirstNet core in a contractor’s environment require additional oversight, conditions, or connectivity issues not mentioned in the RFP?

Answer:

Since this is an objectives-based RFP, the objective is to have a dedicated FirstNet core. Additional requirements may be included in a subsequent RFP, in particular, Appendix C-10 Cyber Hardness Requirements.

230. In the event multiple offerors are awarded regional solutions, what requirements does FirstNet suggest for data security and interoperability between multiple organizations?

Answer:

Additional information may be included in the subsequent RFP, in particular, Appendix C-10 Cyber Hardness Requirements. FirstNet seeks feedback on these topics in accordance with the Special Notice.

231. Please clarify the minimum operating requirements for transportable “MCU” devices. How long must they operate without refill/recharge? Under what conditions and in what environments (heat, cold, humidity, wind, terrain, etc.)? What are the minimum acceptable network speeds and bandwidth requirements for such units?

Answer:

The MCU is an in-vehicle communications support concept. It is intended to draw power from an appropriate vehicle battery/generator system, with or without backup capabilities. FirstNet is looking for offerors to provide design specifications and criteria to meet its primary objectives of being part of the first responder’s vehicle on a daily basis, maintaining FirstNet connectivity in a variety of ways and in remote locations, and supporting local/network communications from a FirstNet qualified device.

232. Is Q-DEV-8 too lenient regarding performance levels, considering the Interoperability and NPSTC reports?

Answer:

FirstNet seeks additional feedback in this area.

233. Are app containers acceptable or is the desire to have a dual persona on a mobile device?

Document Reference: C - SOO Page 3 Section / Paragraph: C5.4. d.

Answer:

FirstNet seeks to encourage a robust applications ecosystem to support public safety's unique needs, which may include the usage of container based solutions. FirstNet seeks further feedback in this area in accordance with the Special Notice.

234. It is possible to enable secure access to Web apps and other applications from mobile devices without a VPN. This would typically involve a custom app on the device and a gateway service that the device would connect through. Will it be acceptable, in some use cases, to provide secure mobile connectivity and access to apps without using traditional mobile VPNs?

Document Reference: C-3 FCC Tab Page 62 Section / Paragraph: 4.5.3.2

Answer:

FirstNet seeks to encourage a robust applications ecosystem to support public safety's unique needs. The associated use cases have to be examined case by case to determine the possibility of a custom app on the device securely connecting through a gateway service. FirstNet seeks further feedback in this area in accordance with the Special Notice.

235. Please define "campaigns".

Document Reference: C-9 Use Cases Page 20 Section / Paragraph: 4.8.9.

Answer:

"Campaign" is used with respect to Mobile Device Management (MDM) and includes the process where devices on the FirstNet system receive needed updates or changes to their configurations and settings. These updates and changes can affect items from mobility management parameters and security settings to the applications on the device. It is expected that MDM campaigns could be pushed to any numbers of devices and be orchestrated potentially by device OEMs, FirstNet, its partners, customers

and agencies. FirstNet seeks feedback and recommendations on how to best to allow for and implement the need to update mobile devices on its system.

236. Is the billing system described here part of the B/OSS? How (who) will build the B/OSS? How will it be managed going forward? Intent is to understand how application management should tie in to it.

Document Reference: C-9 Use Cases Page 16 Section / Paragraph: Section 4.8.6.2

Answer:

Yes, the billing system is to be proposed as part of a complete B/OSS solution.

237. Is there an existing system for managing users & groups (e.g.- AD)? Intent is to understand how to integrate policy management into it.

Document Reference: C-9 Use Cases Page 0 Section / Paragraph: Section 4.8.6.3

Answer:

FirstNet anticipates a standards-based approach to managing users and groups. No system exists today. FirstNet expects offerors to provide complete solutions that includes a system for managing users and groups.

238. Is the ordering system described here part of the B/OSS? Intent is to understand how to integrate into it for New User Provisioning.

Document Reference: C-9 Use Cases Page 17 Section / Paragraph: Section 4.8.6.4

Answer:

Yes, the ordering system is to be proposed as part of a complete B/OSS solution.

239. Does this use case include “insider threat” for those users on the PSEN that may abuse their access rights to perform such activities as sabotage and espionage?

Document Reference: C-9 Use Cases Page 47 Section / Paragraph: Section 4.27 Security

Answer:

Yes, it would include an insider threat for those users on the PSEN.

240. How will system acceptance be achieved? Will a further set of requirements be defined that constitute acceptance of network at each phase?

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: Target Timeline, 1

Answer:

FirstNet anticipates that the subsequent RFP will include a test strategy document that details the expectations. FirstNet seeks feedback in this area in accordance with the Special Notice.

241. Regarding MCU bullet, does this mean that deployables will not be generally available until this time, i.e., 36 mo. out?

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: Column IOC-4

Answer:

No, the MCU is a specific category of deployable which is meant to be part of the Public Safety User's vehicle on a daily basis. The concept requires innovative design and engineering to meet FirstNet's objectives, so its availability has been scheduled for later in the phases. Traditional deployables (e.g., SOW, COW, COLT) should be available earlier.

242. There are only six months between the roll out of a contractor's non-BC14 commercial service (IOC-1) and a BC14 service with FirstNet core (IOC-2). A concern that the effort to stand up the commercial service, from branding to billing, becomes a distraction and actually slows and complicates deployment of "true" BC14 service, given the short life span of IOC-1 service. Is FirstNet's intention to run IOC-1 service in parallel as IOC-2 and subsequent releases are phased in for different geographies?

Document Reference: C-8 IOC / FOC Page 0 Section / Paragraph: timeline, 4.2 IOC-2

Answer:

FirstNet seeks feedback on how to launch its services and systems to allow for public safety usage as quickly as possible while beginning to reach sustainability as soon as possible.

243. Who is responsible for the integration cost of the Category 2 Regional/State networks with the Category 1 National network and core?

Document Reference: Pricing Appendix Page 0 Section / Paragraph: 2.1

Answer:

At this time, in accordance with the Special Notice section 2.1.2, FirstNet proposes that the Category Two offeror is responsible for costs associated with integrating the Category Two solution into the

nationwide network. FirstNet seeks feedback on this topic, including the process for determining the costs and the appropriate responsible party.

244. Devices - What is the refresh cycle for replacing devices?

Answer:

In accordance with SOO Section C.5 Objectives 4 and 13, in their responses to the subsequent RFP, offerors would be expected to propose their solutions. FirstNet expects the device life cycle to be dependent on the device and its usage but anticipates that they will be similar to those seen in industry. FirstNet is seeking expected device life cycles to be included and discussed within the proposed solution and recommendations in association with the device ecosystem sections of the RFP.

245. Bandwidth/Spectrum - What is the excess capacity of the spectrum?

Answer:

Offerors may calculate excess capacity based on FirstNet requirements and assumptions incorporated into the offeror's proposed solution for the radio and network design.

246. Ongoing Support - Will FirstNet have a trouble ticketing system, or will this be the responsibility of the Carrier?

Answer:

As this is a SOO-based acquisition, FirstNet seeks feedback on the optimal operational architecture that would include the solution pertaining to a trouble ticketing system in accordance with the Special Notice.

247. Ongoing Support - How will trouble tickets be closed out?

Answer:

Offerors would propose a solution in accordance with SOO Section C.5 objective 15, Customer Care and Marketing. FirstNet also seeks feedback on the optimal operational architecture within this area in accordance with the Special Notice.

248. Final RFP - Will FirstNet prepare process flow charts to define operating procedures in the final RFP?

Answer:

The operational architecture diagram details functional responsibilities and allows respondents to suggest demarcation points between FirstNet and offerors. For responsibilities defined within the

offeror's scope, FirstNet will expect offerors to define operational procedure frameworks as appropriate. For responsibilities wholly owned by FirstNet, process frameworks, as appropriate, may be provided for informational purposes within the subsequent RFP. For offeror responsibilities that intersect with FirstNet responsibilities, FirstNet requests that offeror's proposed solutions identify both process flows in a combined manner for the offeror and FirstNet based on the offeror's specific operational model, existing processes and/or other operational systems. If there are responsibilities an offeror believes FirstNet should own that are not defined, or insufficiently detailed in the operational architecture, FirstNet anticipates that the offeror's proposed solution specify how FirstNet should define and structure those responsibilities to most effectively and efficiently align with the offeror's proposed operational framework. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

249. Will the Final RFP include specifications for interior coverage? If interior coverage requirements are mandatory, will the RFP identify buildings requiring coverage and specify the IOC/FOC milestone by which coverage must be provided?

Document Reference: C-1 Coverage Objective Maps

Answer:

As part of FirstNet's outreach effort, FirstNet is having a dialogue with stakeholders about coverage objectives. Specific in-building coverage requirements will be a part of that discussion and will lead FirstNet to the coverage objectives, and updated maps will be released as part of the RFP. Offerors will ensure in-building penetration losses are accounted for in their design or provide in-building solutions to achieve FirstNet's definition of coverage in areas requiring in-building coverage, consistent with the coverage objective maps, to be released as a part of the subsequent RFP and financial sustainability objective.

250. What does the term "operational support" mean?

Document Reference: C - SOO Page 2

Answer:

The term "operational support" does not appear in the SOO, but could be interpreted to mean all actions needed to operate and maintain the NPSBN.

251. Please clarify the FirstNet network uptime in terms of required network reliability.

Document Reference: C - SOO Page 3

Answer:

FirstNet’s objectives for availability are covered in the overall system availability objective outlined in SOO Section C.5 Objective 7, User Service Availability. As noted, this availability objective includes the reliability effects of all network components (e.g., Core, gateways, eNodeBs, and backhaul) as well as the environmental survivability of the infrastructure and the benefits derived from deployable units. Offerors are encouraged to respond with their solutions to accomplish these objectives as well as provide feedback on specific objectives in accordance with the Special Notice.

252. Does the primary RFP winner have to be able to provide Band 14 devices or simply work with device vendors to ensure there is a supply of devices?

Document Reference: C - SOO Page 4

Answer:

RFP respondents should explain how their offerings, and those of their partners, will meet FirstNet’s objectives for devices as stated in the SOO Section C .5, Objective 4, Device Ecosystem. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

253. Must the devices described be supplied by the RFP winner or via an agreement with device vendors?

Document Reference: C - SOO Page 4

Answer:

RFP respondents should explain how their offerings, and those of their partners, will meet FirstNet’s objectives for devices as stated in the SOO Section C.5, Objective 4, Device Ecosystem. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

254. As FirstNet upgrades the network, how long does an opt-out state have to upgrade to the same level?

Document Reference: C - SOO Page 5

Answer:

There will be change control processes in place for FirstNet and states that elect to take responsibility for building, operating and maintaining their own RAN. However, these states must also upgrade their networks on the same schedule as the NPSBN.

255. Are these exact interfaces required or can the vendor recommend changes that improve the overall standardization and integration of the network?

Document Reference: C-4 SV-1 and StdV-1 Page 4

Answer:

FirstNet seeks feedback on all aspects of the Special Notice and the Draft RFP. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

256. How will FirstNet/vendor handle roaming back and forth between multiple commercial networks and FirstNet?

Document Reference: C-4 SV-1 and StdV-1 Page 6

Answer:

FirstNet anticipates that an offeror may include roaming in their proposed solution in response to the subsequent RFP, in accordance with industry standards as outlined in Appendix C-4 System and Standard Views (SV-1 and StdV-1).

257. Is it the plan for FirstNet to use a roaming clearing house to provide roaming service settlements?

Document Reference: C-4 SV-1 and StdV-1 Page 6

Answer:

FirstNet anticipates that the offeror will be responsible for both the generation and collection of revenues associated with providing service, in addition to the operational costs of such service. Therefore, it would be the offeror's responsibility to enable roaming. Clearinghouses using industry standard data exchange and billing standards are assumed to be part of any roaming solution and should be specified within the proposed solution.

258. Is it the intent of FirstNet to make use of public Internet connections between these local control points and the NPSBN? If so, what level of data security is required?

Document Reference: C-4 SV-1 and StdV-1 Page 9 Section / Paragraph: 4.2.2

Answer:

Appendix C-10 FirstNet Cyber Hardness Requirements, has been not been included in this Special Notice, as it is still being developed in consultation with states, tribes, territories, public safety stakeholders, and market participants, and will be included in the subsequent RFP.

259. The stated connection between the NSPBN and the PSE appears to be IPv6, is this correct?

Document Reference: C-4 SV-1 and StdV-1 Page 13 Section / Paragraph: 5.2.1

Answer:

The desired connection between the NPSBN and the PSE is IPv6. FirstNet requires that the NPSBN shall support IPv4, IPv6, and IPv4/v6. There are still many IPv4 hosts, network, and services currently deployed and the NPSBN may need to interwork with them. Since IPv4 and IPv6 are not interoperable, both protocols will need to be supported in the NPSBN during the transition period from IPv4 to IPv6. See the Appendix C-3 Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network.

260. If this is the case, will IPv6 be consistent across the entire network?

Document Reference: C-4 SV-1 and StdV-1 Page 13 Section / Paragraph: 5.2.1

Answer:

Yes, FirstNet's objective is to have IPv6 consistent across the entire NPSBN.

261. How will the use of IPv6 impact roaming to commercial networks that do not, as yet, support IPv6?

Document Reference: C-4 SV-1 and StdV-1 Page 13 Section / Paragraph: 5.2.1

Answer:

FirstNet anticipates that eventually all commercial networks will deploy IPv6, and there will not be any interoperability issues. During the transition period, both IPv4 and IPv6 protocols should be supported in the solution provided by the offeror(s).

262. This section requires the bidder to make use of end-to-end encryption meeting Federal FIPS140-2 and multiple VPN paths. Is this intended for both private and public Internet?

Document Reference: C-4 SV-1 and StdV-1 Page 13 Section / Paragraph: 5.5.2

Answer:

Yes, this applies to both private and public Internet.

263. Is it the intent of FirstNet that the network partner/vendor will also procure devices for use on the network?

Document Reference: C-7 Operational Architecture Page 11 Section / Paragraph: A-2

Answer:

RFP respondents should explain how their offerings, and those of their partners, will meet FirstNet’s objectives for devices as stated in SOO Section C.5, Objective 4, Device Ecosystem. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

264. Does this include: Dial-Up voice? Administrative PTT? Mission-Critical PTT? Off-Network PTT? If so, what does FirstNet believe to be the true deployment time for each of these?

Document Reference: C-7 Operational Architecture Page 26 Section / Paragraph: A.3.4.2.2.5.1

Answer:

The information contained in the draft RFP documents is current data as of the Special Notice release. Appendix C-7, Operational Architecture Functional Descriptions, is specific to IMS implementations of VoLTE. The deployment timelines are specified in Appendix C-8, IOC/FOC Target Timeline. Any changes will be reflected in the subsequent RFP.

265. If a vendor has a different plan to provide the same results as site hardening, and that plan can be implemented so FirstNet and the Public Safety community are satisfied, will FirstNet accept this alternate method of securing network reliability?

Document Reference: C-7 Operational Architecture Page 33 Section / Paragraph: A.3.4.2.8

Answer:

FirstNet seeks feedback on all aspects of the Special Notice and Draft RFP. Additionally, FirstNet’s availability objective is stated in SOO Section C.5, Objective 7, User Service Availability. Offerors are encouraged to respond to the subsequent RFP with their proposed solution to accomplish these objectives as well as provide feedback on specific objectives in accordance with the Special Notice.

266. For how long and how often will network capacity tuning be required?

Document Reference: C-7 Operational Architecture Page 39 Section / Paragraph: A.3.6.3.3

Answer:

For as long as the NPSBN exists, there should be a network capacity tuning function, the frequency of which may be determined by any eventual arrangement between FirstNet and awardee(s) and in accordance with the QASP.

267. At present, ICS training courses are the purview of DHS-OES, is this a change in this long-standing policy?

Document Reference: C-7 Operational Architecture Page 41 Section / Paragraph: A.3.8.2.1.1

Answer:

There is no existing policy or policy change impacting other Federal Agencies. Training in the application of ICS principles to various missions, conditions and technologies is conducted by any number of agencies. Training in this instance is focused upon the application of FirstNet wireless broadband technologies under ICS-NIMS principles.

268. In March of 2012, the FCC established and ATIS approved the PLMN ID of 313-100. The APCO Broadband committee forwarded a nationwide numbering system to the Public Safety Advisory Council (PSAC) later in the same year. Please explain why this PLMN ID is not being accepted by FirstNet as the Public Safety PLMN ID?

Document Reference: C-7 Operational Architecture Page 42 Section / Paragraph: A.3.8.2.3.1.2

Answer:

The PLMN ID assigned by ATIS is being used by FirstNet.

269. Why, according to the chart on page 2, is FirstNet tying the development of the network to future LTE feature sets and 3GPP planned release dates?

Document Reference: C-8 IOC / FOC Page 2

Answer:

Each 3GPP release date includes requirements for new features and functionality that provide equipment manufacturers the information needed to begin product development. Several of FirstNet's new features are contingent upon their requirements being defined in 3GPP. FirstNet recognizes that these dates may change, and as such, available deployment dates for certain features may be dynamic.

270. Typical 3GPP release dates slip and features are not always included in releases for which they are presently scheduled. Does FirstNet intend to hold up the progress of the network build because of a missed feature or release date?

Document Reference: C-8 IOC / FOC Page 2

Answer:

No, FirstNet does not intend to hold up progress on the NPSBN deployment due to any change in a 3GPP release schedule.

271. IOC 4 calls for Mission-Critical network status to be achieved in 36 months. Does FirstNet believe the 3GPP Mission-Critical specifications will be released and vendors will have implemented these portions of the LTE standards in 36 months?

Document Reference: C-8 IOC / FOC Page 2

Answer:

Appendix C-8 IOC/FOC Target Timeline outlines the major features and functionalities, services and systems FirstNet considers are essential to meet Public Safety User needs. This list is not exhaustive and FirstNet seeks proposed solutions on which products, features, functionalities, services and systems should and should not be included in the FirstNet product portfolio. Proposed solutions, to the subsequent RFP, should include information with regard to a more detailed timeline of features and functionality availability, as well as innovative solutions as to how the timeline can be met.

To implement and make these products available, FirstNet anticipates to use standards-based solutions, and seeks to continue to do so for the target IOC/FOC target timeline as well as for future products unanticipated at this time and beyond the FOC milestones.

272. Please provide a more extensive definition of “coverage objectives met.”

Document Reference: C-8 IOC / FOC Page 10

Answer:

A one mile by one mile grid block will be deemed "covered" (coverage objectives met) if more than 50% of the area meets the definition of coverage. Further details will be provided in the subsequent RFP.

273. What is FirstNet willing to do or to assist the vendor in doing to help guarantee this timeline will be met?

Document Reference: C-8 IOC / FOC Page 10

Answer:

Appendix C-7, Operational Architecture Functional Descriptions, outlines and describes the various functions expected by FirstNet. FirstNet is seeking feedback, ideas, and proposed solutions as to the descriptions and ownerships of these functions along with additions or deletions as appropriate. Also, FirstNet seeks feedback within this area in accordance with the Special Notice.

274. What else can FirstNet do or provide to assist in the expeditious construction of the network?

Document Reference: C-8 IOC / FOC Page 10

Answer:

Appendix C-7, Operational Architecture Functional Descriptions, outlines and describes the various functions expected by FirstNet. FirstNet is seeking feedback, ideas and proposed solutions as to the descriptions and ownerships of these functions along with additions or deletions as appropriate to meet FirstNet's objectives.

275. Who will be manufacturing the radios/transceiver base stations for First Net? Will this system use existing infrastructure or will a new one be rolled out?

Answer:

Offerors should propose a solution to the subsequent RFP that meets FirstNet's objectives and that may or may not include existing infrastructure.

276. FirstNet maintains the 3GPP Release 9 baseline to be used for user equipment. As the RFP, procurement, build, test, and then launch processes will take time, commercial networks and systems will continue to move beyond the Release 9 baseline. How does FirstNet intend to maintain alignment with the latest commercial platforms and chipsets in light of the timing considerations. The commercial systems and platforms ultimately drive the volume, pricing, and availability aspects.

Document Reference: C-3 FCC Tab Section / Paragraph: 1.3.2

Answer:

3GPP Release 9 or a future release is required. FirstNet's requirements are governed, in part, by the Interoperability Board Report found in Appendix C-3, Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network. Section 1.3 states in all cases where these recommendations reference specific 3GPP standards (e.g., 3GPP TS 36.101), the intended meaning is that the standard to be applied is contained in 3GPP Release 9, or the future evolved equivalent of that standard that applies to future releases.

277. Device-to-Device (D2D) communications are not covered, is FirstNet following the commercial carriers and the 3GPP roadmap for D2D ?

Document Reference: C-3 FCC Tab

Answer:

As outlined in Appendix C-8, IOC/FOC Target Timeline, offeror’s proposed solutions are expected to support direct mode communications in compliance with the 3GPP standard release schedule, which includes D2D communications.

278. Under the IOC-1 Launch column states "commercially available voice and data services". Does this imply VoLTE for voice services?

Document Reference: C-8 IOC / FOC Page 2

Answer:

FirstNet expects IOC-1 to include both voice and data services.

279. High-Power UE support is mentioned. What types of User Equipment will be required to support this feature? Vehicle mounted devices for sure, but what about the other device types, such as handhelds ?

Document Reference: C-8 IOC / FOC Section / Paragraph: 4.1.1

Answer:

FirstNet expects this ability with In-Vehicle Routers and seeks further input on what type of device might also serve as a high power UE in accordance with the Special Notice.

280. In this section, the Draft RFI specification states that “In addition, there may be several public safety specific issues which need to be resolved in order to provide PSTN voice service via the NPSBN. Examples of these issues are...Selective logging of calls for evidentiary purposes.”

Is it FirstNet’s intent that this specification refers to signaling (“Billing Records”, per the NSA) media (Audio recording), or signaling only? How long would this data need to be retained? Is it “selective” because there are legal reasons not to keep this information for every call, or because it is perceived as too difficult?

Document Reference: C-3 FCC Tab Section / Paragraph: 4.1.10.1.6

Answer:

FirstNet seeks feedback on this, and all parts, of the Special Notice and Draft RFP documents. FirstNet has not established “call retention” policies at this time.

281. General question: The Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network specifications make reference to pre-deployment testing (e.g., unit testing, interop testing, FOA, etc.). Would FirstNet please elaborate on your anticipated post-deployment testing/validation processes?

Document Reference: C-3 FCC Tab

Answer:

The post FOC testing/validation process would include those items listed in the QASP as set forth in Appendix C-6, and further clarification may be given and included as part of the subsequent RFP.

282. Who owns the MCU?

Document Reference: C-5 StdV-2 Page 12

Answer:

FirstNet is looking for offerors to propose an appropriate business model as part of the subsequent RFP.