

Report: Forest Guide Procurement Process and Recommendation

Prepared by the Forest Guide RFP Review Committee
for the NG9-1-1 Interoperability Oversight Commission (NIOC)
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Document Purpose

This document provides an overview of the selection process for making a recommendation to operate the authoritative Forest Guide (FG) intended to provide coverage for the United States. No proprietary or competitive information has been included in this document.

Background

The i3 NGCS standard¹ implements various Location-to-Service Translation (LoST) and caller location standards originally promulgated by the IETF.² One of these specifications is for an element called the “Forest Guide”,³ which serves as an authoritative mapping of top-level LoST servers within a given coverage region. In NG9-1-1, the primary purpose of the Forest Guide is to promote 9-1-1 interoperability and improve 9-1-1 call routing by allowing one ESInet’s ECRF to automatically discover the ECRF for a different ESInet, such as during call transfer scenarios between distant jurisdictions or between countries. As a secondary purpose, the FG deployed under this effort is also intended to provide for service discovery (e.g., where to send a call) to entities outside of an ESInet, such as originating service providers.

The NENA Development Group (NDG) established a consensus information document describing requirements for a FG in 2014. NIOC was established, in part, to implement these recommendations. NIOC, in support of its mandate, requested that NENA staff conduct a competitive, sealed-bid RFP to select a vendor for the FG.

¹ See NENA STA-010 at https://www.nena.org/page/i3_Stage3

² E.g., see IETF 4119, GEOPRIV/PIDF at <https://tools.ietf.org/html/rfc4119> and [IETF 5222](https://tools.ietf.org/html/rfc5222), LoST protocol at <https://tools.ietf.org/html/rfc5222>, as well their descendants. Retrieved April 8 2021.

³ See IETF 5582 at <https://tools.ietf.org/html/rfc5582>. Retrieved April 8 2021.

Methodology

NENA staff drafted an RFP for NIOC approval and the RFP was published November 18, 2020. After multiple rounds of Q&A, the final RFP due date was ultimately extended to March 15, 2021.⁴ A volunteer selection committee was convened from public and private members of the 9-1-1 community. Members represented interests in both public and private employment, active contributors to standards, integrators and front-line personnel that had no material conflict of interest with the subject of the RFP. The panel met several times and drafted a final round of Q&A targeted to the vendors that had submitted proposals. Panelists included the following individuals:

- Brandon Abley, NENA
- Rick Blackwell, Greenville County, South Carolina and NIOC Chair (observing only)
- Steve McMurrer, Fairfax County, Virginia and NIOC Secretary
- Jason Horning, North Dakota Association of Counties
- Sharon Brady, City of Virginia Beach, Virginia
- Doug Cunningham, Lumen
- Liz Graeber, City of Phoenix, Arizona
- Brooks Shannon, RapidDeploy
- Kris Zuniga, King's County Sheriff's Office, California and NIOC member
- Jerry Eisner, Red Sky Technologies

The review panel reviewed and scored proposals independently, without viewing pricing information. The panel then convened, discussed scores, and drafted an additional round of Q&A. This round of Q&A was held in lieu of vendor interviews. After reviewing Q&A responses, scores were updated as the panel met to deliberate further. Technical proposal scores were then locked and pricing information was reviewed. Scores for pricing were assigned accordingly under multiple deployment scenarios to compare differences in proposed business models.

The panel notes that one vendor failed to respond to the final Q&A from the panel within the given deadline. The RFP coordinator contacted that vendor to inquire whether there was a clerical error or whether they intended to not respond to the request; the vendor reported a clerical error and provided responses within one business day, even after being informed the answers will be shared with the panel but may not be considered. Out of an abundance of caution, the panel discussed these answers. They determined that the answers would not have affected the panel's recommendation even had they been submitted on time. No scores were adjusted as a result.

⁴ A publicly-accessible ledger of NIOC communications and announcements with respect to this RFP is available at <https://ng911ioc.org/news/>. Retrieved April 8, 2021.

Vendor Summary

There were three complete proposals submitted that met all requirements of the RFP, representing a variety of individual vendors, including one or more proposals from a consortium of vendors and one or more proposals through a single vendor entity. Each of the vendors' proposals and the committee findings are below. All three proposals were generally strong and provided a different balance of strengths and weaknesses.

Vendor A

Vendor A provided a proposal that met all requirements but appeared to have a higher burden of time-to-production relative to other proposals. It was also unclear where the responsibility for certain tasks rested between different project principals. Finally, the mechanics of the business model were not clear to the panel. Once pricing was reviewed, the total 5-year cost to NIOC and the 9-1-1 community was competitive.

Vendor B

Vendor B had an impressive background in standards development and research through its principal individuals, and the committee found that its technical proposal showed a very high level of understanding of the needed technology. However, the offer had less actual relevant institutional business experience compared to other proposals in the needed areas and this represented a high level of risk. Once pricing was reviewed, the total 5-year cost to NIOC and the 9-1-1 community was not as competitive as the others.

Vendor C

Vendor C provided the strongest technical proposal, particularly after providing its responses under the final Q&A process. This offer also demonstrated a strong background and depth of institutional experience in delivering FG-like services and provided the most compelling business model. Finally, once pricing was revealed, while the 5-year total cost to NIOC and the 9-1-1 community was generally competitive, it presented the lowest financial exposure directly to NIOC relative to other options, reducing risk for NIOC individually.

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Scores

The original proposal instructions provided for a total of 100 points:

Criterion	Points
Technical quality of the proposed solution	20
Conformance with the Requirements of this RFP	15
Prior experience in operating NG9-1-1 core services, ESPECIALLY LoST/ECRF/LVF functions	15
Participation in relevant NENA and/or IETF standards development by project principals	10
Ability of the offeror to provide detailed plans for how interoperability with other FGs will be achieved	10
Total Cost ⁵	30
Optional Requirements	0

The review committee felt it prudent to slightly amend the scoring criteria in evaluating total cost, breaking its 30 points into two separate categories. This resulted in the following scoring criteria:

Criterion	Points
Technical quality of the proposed solution	20
Conformance with the Requirements of this RFP	15
Prior experience in operating NG9-1-1 core services, ESPECIALLY LoST/ECRF/LVF functions	15
Participation in relevant NENA and/or IETF standards development by project principals	10
Ability of the offeror to provide detailed plans for how interoperability with other FGs will be achieved	10
Pricing: Viability of the business model	20
Pricing: Cost of the proposal	10
Optional Requirements	0

⁵ As the FG has a revenue-neutral mandate, proposers were DISCOURAGED from proposals that generate excess revenue for NIOC and NENA; such proposals were scored lower.

Panelists were not allowed to see pricing information until technical proposal scores were final so as not to bias their review of the proposals themselves; a total of 30 points were withheld to be assigned on the basis of cost. These points were allocated to the viability of the proposed business model as well as the total cost of the proposal. Technical proposal scores were not allowed to be adjusted after pricing was revealed.

Scores (without attribution) per reviewer are in the table below. Please note that though there were 10 review committee members, NIOC Chair Mr. Rick Blackwell was observing and did not assign scores, and so the table indicates only 9 reviewers.

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Forest Guide RFP Review Committee Procurement Process and Recommendation

Table 1: Review Scores for Forest Guide RFP

	Tech. Quality	Conform- ance w/ RFP	Prior Experience	Partici- pation in Standards	Inter- operability	Subtotal
Reviewer 1						
Vendor A	15	10	8	8	8	49
Vendor B	15	13	10	10	10	58
Vendor C	18	12	12	10	8	60
Reviewer 2						
Vendor A	10	5	0	5	3	23
Vendor B	10	5	13	7	10	45
Vendor C	13	10	10	0	5	38
Reviewer 3						
Vendor A	17	9	15	8	7	56
Vendor B	18	15	5	8	10	56
Vendor C	18	14	15	7	8	62
Reviewer 4						
Vendor A	17	15	12	9	10	63
Vendor B	20	15	10	10	10	65
Vendor C	18	12	15	10	8	63
Reviewer 5						
Vendor A	15	14	13	8	8	58
Vendor B	15	14	10	5	8	52
Vendor C	17	15	14	9	9	64
Reviewer 6						
Vendor A	14	14	13	9	8	58
Vendor B	15	14	13	8	7	57
Vendor C	17	14	14	9	9	63
Reviewer 7						
Vendor A	17	13	15	10	5	60
Vendor B	19	14	12	8	8	61
Vendor C	18	13	14	10	8	63
Reviewer 8						
Vendor A	13	10	15	8	5	51
Vendor B	15	10	15	5	5	50
Vendor C	15	10	17	10	10	62
Reviewer 9						
Vendor A	15	10	13	8	8	54
Vendor B	15	13	10	5	7	50
Vendor C	18	12	10	8	9	57

Table 2: Overall Summary for Each Vendor for Forest Guide RFP, Technical Proposal

	Total	Avg
Vendor A	472	52
Vendor B	494	54
Vendor C	532	59

Cost

Cost was scored according to the viability of the proposer’s business model as well as a comparison of the total CAPEX and 5-year total cost of ownership to NIOC and the 9-1-1 community. The review committee went through two different scenarios, both one with 21 connections and 100 connections, off of the provided pre-connection rates, in order to equitably compare all three vendors under different deployment scenarios. Generally the proposals were competitive and within the same order of magnitude over 5 years. However, Vendor C provided substantially greater CAPEX value and direct exposure to NIOC itself.

Table 3: Points (out of 10) For CAPEX Cost to NIOC

	Vendor A	Vendor B	Vendor C
Cost Score CAPEX	1	1	10
5-Year Cost, 21 Trees	10	4	8
5-Year Cost, 100 Trees	8	7	10

Considering the relatively low impact of direct CAPEX exposure to NIOC compared to the much larger total cost of ownership the NG9-1-1 community, the panel declines to provide a single cost score, as it cannot be simply conveyed with a single number. Additionally, the panel had to make some assumptions to harmonize business proposals from all three vendors. However, the panel concluded that Vendor C provides the best overall value when accounting for both CAPEX, financial exposure to NIOC and the 5-year cost for the 9-1-1 community over different deployment scenarios.

Specific cost information for vendors is information proprietary to each submitter. However, the fee schedule for the production system shall be available at <https://ng911ioc.org/finances>.

Recommendation

The review panel recommends making an award to Vendor C. This recommendation is unanimous amongst panel members after executing the review described in this report. The table below shows the final total scores; Vendor C in both scenarios comes up ahead of the other two proposals in both scenarios.

Table 4: Final Scores

	Vendor A	Vendor B	Vendor C
Total Score, 21 Trees	64	61	77
Total Score, 100 Trees	62	63	79

The panel makes its recommendations based not just on the total scores, but also on the consensus of the group; the structured proposal and objective ranking clearly favors Vendor C, but the panelists also feel that it is the best proposal that mitigates risk and is the most likely to result in a successful Forest Guide program.

/s

Forest Guide Request for Proposals Review Committee

Appendix A: Q&A From Review Committee

A public ledger of vendor Q&A between NIOC and the vendor community is available at <https://ng911ioc.org/news>. However, the final round of vendor questions held in lieu of interviews was not published. Following is a list of questions that were sent to all vendors from the review committee:

1. Does the application to run the Forest Guide in production exist today (meaning, do you propose a production ready system)? If not, what development work needs to be completed before productive use?
2. What mechanism will be used to accept GIS data from authoritative sources on Day One of productive use?
3. What mechanism will be used to accept root level ECRF service mappings on Day One of productive use?
4. Without specifying any specific pricing data, describe the envisioned business model for interactions with the user community specified below:
 - a. PSAP
 - b. Authoritative GIS Data Provider
 - c. ESINet Operator
 - d. Originating Service Provider
 - e. Legacy 9-1-1 Service Provider
 - f. Enterprise
 - g. Other
5. Provide a list of exceptions to the described business model that would trigger unanticipated costs, e.g., too large a gap between maps.
6. Describe the envisioned contractual requirements for interactions with the user community specified below:
 - a. PSAP
 - b. Authoritative GIS Data Provider
 - c. ESINet Operator
 - d. Originating Service Provider
 - e. Legacy 9-1-1 Service Provider
 - f. Enterprise
 - g. Other
7. List which transactional events will be logged.
8. Describe where transactional events will be logged, who will have access to them, how the events will be accessed, and what controls will be in place to enforce any access controls.
9. Describe the anticipated process, including responsible parties, for data error conditions.
10. Define the severity levels of system troubles, their resolution times, and escalation procedures for events that exceed the SLA.
11. Please describe your experience with the various entities from end to end as detailed below:
 - a. PSAP
 - b. Authoritative GIS Data Provider

- c. ESINet Operator
- d. Originating Service Provider
- e. Legacy 9-1-1 Service Provider
- f. Enterprise
- g. Other

12. Please list which NENA Standards and relevant IETF standards that your solution complies with if not already indicated in the proposal.
13. If your proposal includes multiple companies, please describe the percentage of time devoted to the Forest Guide project in a table similar to the one below:

	Pre-production	Post Go-Live
Company A		
Company B		
Company C		
Other		

14. Please list the point of contact vendor for both pre-production and post go-live issues.
15. If using cloud hosting, please detail the geographic regions anticipated for the hosts, if not otherwise indicated in your proposal. Also, if not indicated in your proposal, please explain whether your proposed solution will use a service designated for government use and why or why not.