Geographic Information System (GIS) Standardization Project

ACTIVE
Contract Opportunity
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693JJ921R000012
Related Notice
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Department/Ind. Agency
TRANSPORTATION, DEPARTMENT OF
Sub-tier
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Office
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General Information View Changes

- **Contract Opportunity Type:** Solicitation (Updated)
- **All Dates/Times are:** (UTC-04:00) EASTERN STANDARD TIME, NEW YORK, USA
- **Updated Published Date:** Jul 01, 2021 04:48 pm EDT
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- **Inactive Policy:** Manual
- **Updated Inactive Date:** Sep 30, 2021
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- **Initiative:**
    - None

Classification

- **Original Set Aside:**
-
- **Product Service Code:** R410 - SUPPORT- PROFESSIONAL: PROGRAM EVALUATION/REVIEW/DEVELOPMENT
- **NAICS Code:** 511210 - Software Publishers
- **Place of Performance:**

  Washington , DC 20590

  USA

Description

The National 911 Program is housed within NHTSA's Office of Emergency Medical Services (EMS). It is responsible for achieving the following tasks:

1. Improving coordination and communication among Federal, State and local emergency communication systems, emergency personnel, public safety organizations, telecommunication carriers, and telecommunications equipment manufacturers and vendors.
2. Developing, collecting and disseminating information and resources concerning best practices, procedures and technology used in implementation and operation of 911 services, and
3. Administering a grant program specifically for the benefit of 911 Public Safety Answering Points (PSAPs).

A Geographic Information System (GIS) is a framework for gathering, managing, and analyzing geographical data. While GIS data is used for many different purposes in both the private sector and in public safety, the application of GIS technologies is very specific to providing 911 services. As the nation's 911 system migrates from existing, legacy systems to Next Generation 911 (NG911), all calls will be routed to the appropriate 911 call center, based on the geographic location of the caller, and their exact location will be automatically conveyed as part of their call. In the NG911 model, the 911 call will essentially "find" the appropriate 911 Public Safety Answering Point (PSAP), as opposed to the PSAP being required to "find" the 911 caller, as often happens with the existing legacy 911 system. Emergency Responders will be assigned a response, based on location data, and responders will depend on GIS data to find the caller.

To date, the thousands of 911 call centers in the U.S. have not developed a nationally uniform, consistent GIS system or a mechanism for sharing GIS data. As NG911 continues to be deployed and calls are transferred from one jurisdiction to another, this lack of GIS consistency will pose multiple inter-operational problems for 911 call takers and emergency responders. There are likely a number of technical and nontechnical challenges to standardizing and/or sharing GIS data and achieving truly interoperable 911 GIS data use among 911 agencies.

In the existing legacy 911 system, location database systems performed three main functions that have remained mostly unchanged for decades:

1. Validation of the 911 caller's location to a valid street address contained in a Master Street Address Guide (MSAG)

2. Assignment of Emergency Service Number (ESN) for emergency call routing and selective call transfers
3. Automatic delivery of location information associated with the telephone number calling 911 (Automatic Location Information or ALI).

In this legacy system, as the 911 Public Safety Answering Point (PSAP) receives a 911 call, the PSAP must “find” the 911 caller, using these technologies.

NG911 utilizes GIS data for 911 Emergency Call Routing Functions (ECRF) and Location Validation Functions (LVF). Using NG911 technology, the 911 call “finds” the appropriate PSAP – and does so faster. The Emergency Call Routing Function (ECRF) accurately routes 911 calls to the appropriate PSAP based on the caller’s location and in a NG911 system, the ECRF along with the Location Validation Function (LVF) replaces the current Master Street Address Guide (MSAG). Geospatial call routing enables more accurate call routing than traditional E911 systems and can reduce the number of 911 call transfers due to misrouted 911 calls. This in turn can help reduce emergency response times and save more lives and property. In addition to being used when routing 911 calls, NG911 systems use GIS data before a 911 call is placed to see if the address is valid for 911.

The NG911 Roadmap (Roadmap), published in early 2019, was a collaborative effort between the National 911 Program and 911 stakeholders from both the public and private sectors. It focuses on what needs to be done at the national level—by all members of the 911 community—to achieve a nationwide NG911 system of systems. The Roadmap identifies technical and nontechnical tasks that must be completed at the national level, to achieve a seamless, nationwide 911 system; and organizes these tasks into five groups of goals. The Technology (Tech) Goal seeks to stimulate adoption and enable implementation of NG911 technology by promulgating NG911 open standards and establishing means by which emerging technologies can be validated for compliance and security. This goal includes a task to “Design, implement, and operate a nationwide GIS data store” as a means to create and adopt technical and operational requirements for nationwide interconnection components will need to be defined and explored for feasibility. The Roadmap" developed by 911 stakeholders, calls for the "design, implementation, and operation of a nationwide GIS store;" and the "development of standards, requirements, and best practices for handling GIS data."

The Strategic Plan for 911 Data and Information Sharing, also published in early 2019, developed a collaborative effort between the National 911 Program and 911 stakeholders from both the public and private sectors. This document was produced in response to a formal recommendation made by the Federal Communications Commission’s (FCC) Task Force on Optimal PSAP [Public Safety Answering Point] Architecture (TFOPA), in its report

which recommended the “establishment of a national system that would enable the collection and analysis of standardized 911 administrative, operational, cost and computer-aided dispatch (CAD) data.” Data uniformity, including GIS data uniformity, are mentioned several times as an essential element of a truly interoperable, seamlessly connected national 911 system.

GIS is one of the basic building blocks of NG911 and many jurisdictions are replacing their MSAG databases with GIS. As the U.S. looks forward to a nationally interconnected, seamless 911 system of systems, what are some of the issues that will have to be overcome, in order for 911 calls and data to be successfully transferred among different jurisdictions? While standards for 911 GIS exist, how has their actual implementation resulted in variances that could cause problems when location data is transferred? A number of companies currently provide services to support 911 systems, and more than one national GIS organization exists, with differing perspectives on GIS deployment. How should these differences be addressed? Is data uniformity advisable, or are data exchange and data interface mechanisms a better solution? In order to achieve to a nationally interconnected, seamless 911 system of systems, these questions should be answered.

Attachments/Links

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Attachments

Document	File Size	Access	Updated Date
693JJ921R000012 Questions and NHTSA Response.pdf (opens in new window)	142 KB	Public	Jul 01, 2021
PR019 RFP 693JJ921R000012 NLT 07192021 2PM ET.pdf (opens in new window)	698 KB	Public	Jun 17, 2021
J.1 PAST PERFORMANCE QUESTIONNAIRE.docx (opens in new window)	22 KB	Public	Jun 17, 2021
J.2 Cost Proposal Template CPFF.xlsx (opens in new window)	16 KB	Public	Jun 17, 2021
J.3 SFLLL_1_2-V1.2.pdf (opens in new window)	109 KB	Public	Jun 17, 2021

Document	File Size	Access	Updated Date
J.4 Travel Cost Breakdown Spreadsheet.xlsx (opens in new window)	13 KB	Public	Jun 17, 2021
J.5 Other Direct Cost Breakdown Spreadsheet.xlsx (opens in new window)	11 KB	Public	Jun 17, 2021
J.6 SUBCONTRACTING CHECKLIST.docx (opens in new window)	17 KB	Public	Jun 17, 2021
SFLLL_1_2_P-V1.2.pdf (opens in new window)	302 KB	Public	Jun 17, 2021

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