

REQUEST FOR INFORMATION: Digital Mobile Radio Communication System

INTRODUCTION:

The State of Florida, Department of Transportation (“Department”), is issuing a Request for Information (“RFI”) seeking information from interested parties relating to a digital mobile radio (DMR) communications system. The intent of this RFI is for the Department to gather information from companies who are qualified and experienced in providing such services utilizing new technology, while promoting innovative practices. Companies are encouraged to provide information on a solution that is scalable in nature.

BACKGROUND:

The Department is seeking information from vendors regarding the design and implementation of a two channel (minimum) public safety radio system operating in the upper very high frequency (VHF) band of 150-162 MHz (high band) for Land Mobile Radio. The primary use of these radios will be for the Road Ranger Service Patrol (RRSP) program as well as Maintenance personnel.

The Department has 14 self-support tower sites throughout the region, many of which are located within the I-10 right-of-way. These tower sites are equipped with climate-controlled communications shelters and are available for use for implementing the regional VHF high band radio system. Attached for your organization’s convenience is a map depicting the approximate location of these tower relative to I-10. See Exhibit A.

SPECIFIC INFORMATION REQUESTED:

A. Design

Please describe your organization’s capabilities to provide high-level and detailed design of a regional VHF high band Digital Mobile Radio (DMR) simulcast communications system including, but not limited to: coverage analysis, frequency coordination for FDOT-owned frequencies and/or spectrum leasing, radio frequency interference analysis, FCC licensing, and structural analysis of self-support towers.

Please explain how your organization would accomplish each of these tasks and whether it would be handled by your organization or a third-party vendor or subcontractor

B. System Requirements

Please describe how your organization would insure the following communications system requirements were met:

- must operate in VHF high band frequency spectrum (150-162 MHz),
- must use dual-slot TDMA channel pair (or equivalent), provide two digital voice channels (minimum) over multiple tower sites simultaneously,
- must also support analog communications,
- must support minimum channel capacity of 200,
- must support minimum zone capacity of 50, provide real-time automatic vehicle location (AVL) data,
- must be capable of transmitting/transferring data such as images and status/text messaging from the field during emergencies and special events in real time,

- must be compatible with existing FDOT-owned VHF radios such as Hytera DMR “G” Series high band radios,
- must provide full coverage along I-10 from the Alabama/Florida State line (mile marker 0) to the Jefferson/Madison County line (approximately mile marker 235),
- system must be expandable to incorporate additional simulcast sites,
- base stations/repeaters must be capable of operating on -48 VDC with RF output power up to 100 Watts,
- mobile radio must operate on +12 VDC with RF output power up to 50 Watts, and
- portable radio RF output power up to 5 Watts.

Please explain how your organization would address each of these requirements and what solution(s) you would propose to do so.

C. Addition System Capabilities

The Department may desire additional capabilities with the communications system. Please describe how your organization would insure the following communications system requirements were met:

- provide IP addressable dispatch consoles,
- provide system expansion capabilities via IP-based connections such as fiber optic cable or digital microwave backhaul communications,
- capable of over-the-air rekeying (OTAR) radio programming,
- mobile radios and portable radios equipped with built-in GPS modules,
- provide “man down” location capabilities in real-time that share the location of a potentially injured/distressed individual, and
- capable of transmitting/transferring video
- provide a list of any other system capabilities your organization may offer that is not listed previously

D. Common Part and Accessories

The Department may desire additional parts and accessories to support the communications system. Please provide a list of any common parts and accessories that your organization offers, including the following but not limited to:

- antenna system with stand-off,
- 7/8” (minimum) low-loss coaxial transmission line with connectors, surge protectors, and mounting and grounding hardware,
- transmission line jumpers (antenna end and radio end),
- rack-mounted filter/duplexer,
- microphone,
- vehicle charger,
- portable charging station, and
- belt cases

Please explain how your organization would provide each of the items listed above and whether it would be manufactured by your organization or a third-party vendor or subcontractor.

E. Implementation

Please describe the ability of your organization to implement a regional VHF high band Digital Mobile Radio (DMR) simulcast communications system including, but not limited to:

- site utilization for staging, installation, and clean up,
- Temporary Traffic Control/Maintenance of Traffic,
- best installation practices,
- tower climbing safety (certifications, crew communications, etc.),
- tower structural modifications (if needed),
- antenna and transmission line installation,
- transmission line testing procedures,
- portable radio configuration and testing, and
- system-wide coverage testing.

Please explain how your organization would accomplish each of these tasks and whether it would be handled by your organization or a third-party vendor or subcontractor. Also, please describe the ability of your organization to provide in-person user training at a Department facility, as well as computer-based training that can be hosted on the Department's Learning Management System.

F. Schedule

Please describe the timeframe or schedule commonly used in your organization to design and implement a VHF High Band DMR simulcast radio system. Please explain how your organization manages a user-imposed timeline.

G. Sample

Please provide examples of similar communications systems that your organization has completed and identify whether this experience is related to design, implementation, or both.

H. State Term Contract

Please identify if your organization is on any of the State of Florida's state term contract list.

Responses to this RFI will be reviewed by the Department for informational purposes and will not be considered ad offers to be accepted by the Department to form a binding contract.

Information obtained by the Department in response to this RFI is subject to Chapter 119, Florida Statutes. Further, in accordance with Section 287.057, Florida Statutes, information obtained in response to this RFI may be used to develop scope and solicitation documents for future procurement at the discretion of the Department. Respondents to this RFI are not excluded from participating in any resulting solicitation.

Any addendums to the RFI or any future competitive solicitations will be posted on the Florida Vendor Bid System.

CONTACT FOR QUESTIONS OR CLARIFICATION:

Kenneth Shiver, Arterial Management Specialist at Kenneth.Shiver@dot.state.fl.us
Subject: Digital Mobile Radio Communication System

The requested information must be received by 4:00 pm (CST) on **October 28, 2019**

Send Response To: Florida Department of Transportation
Attn: Kenneth Shiver
1074 Highway 90
Chipley, Florida 32428

Or

Email: Kenneth.Shiver@dot.state.fl.us
Subject: Digital Mobile Radio Communications System