DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[Docket No. USCG-2024-0331]

Cooperative Research and Development Agreement (CRADA) – "Shoreside and Shipboard Open-Source Software Defined Radio (SDR) Technology"

AGENCY: Coast Guard, Department of Homeland Security.

ACTION: Notice of intent; request for comments.

SUMMARY: The Coast Guard is announcing its intent to enter into a Cooperative Research and Development Agreement (CRADA) with General Dynamics Mission Systems (GDMS) to evaluate the suitability of implementing open-source-based SDR technologies on shore-side and shipboard environments. The effort would include evaluating the utility of a P25 Telecommunications Industry Association (TIA)-compliant interface for software defined radios (SDRs). This CRADA would leverage Coast Guard network infrastructure and shipboard IT communications systems to evaluate open-source SDR technologies and determine how they can be implemented to support multiple Coast Guard core mission areas for shore-side and shipboard use under a variety of scenarios. Technology researched, tested, and prototyped will adhere to all active Coast Guard, Federal Communications Commission (FCC), and National Telecommunications and Information Administration (NTIA) standards and regulations. While the Coast Guard is currently considering partnering with GDMS, we are soliciting public comment on the possible nature of and participation of other parties in the proposed CRADA. In addition, the Coast Guard invites other potential participants, who have interest and capability, to consider submitting proposals for consideration in similar CRADAs.

DATES: Your comments and related material must reach the Coast Guard on or before 30 days after the date of publication in the Federal Register.

ADDRESSES: You may submit comments identified by docket number USCG-2024-0331 using the Federal portal at http//www.regulations.gov. See the "Public Participation and Request for Comments" portion of the **SUPPLEMENTARY INFORMATION** section for further instructions on submitting comments.

FOR FURTHER INFORMATION CONTACT: If you have questions about this notice of intent, or wish to submit proposals for future CRADAs, contact Mr. David Cote, GS-13 CIV, Project Official, IT and Network Branch, U.S. Coast Guard Research and Development Center, 1 Chelsea Street, New London, CT 06320, telephone 860-271-2693, david.e.cote@uscg.mil.

SUPPLEMENTARY INFORMATION:

I. Background and Purpose

The U.S. Coast Guard (USCG) is investigating technologies to facilitate transition from traditional radio systems, which are typically implemented using hardware-based solutions, to open-source, SDR technology. The USCG uses multiple radio frequencies (RF), within multiple frequency bands, operating over multiple radio hardware solutions. Current infrastructure creates challenges in flexibility, cost-efficiency, upgradability, adaptability, and interoperability of USCG field operators and command and control center personnel. The USCG has initiated a push of some RF systems into cloud-based environments, like Rescue-21 servers, and wish to continue examining how to move additional RF environments into open-source, cloud-based service platforms. The USCG strives to move to a multi-user, multi-mission RF environment to exploit the RF spectrum and make it more user-friendly.

The USCG desires to take advantage of evolving "open source" SDR technologies to enable enhancements to its communications operations within its eleven mission areas. This CRADA intends to examine technology that improves RF environment scalability, reduces maintenance costs, deploys agile SDR systems with open application programming interfaces (API), provides 24/7 remote operability and configurability, and supports simple technology

updates and interoperability. Our desire is to identify non-federal partners that can successfully configure an open source SDR across multiple waveforms.

II. Public Participation and Request for Comments

We request public comments on this notice. Although we do not plan to respond to comments in the *Federal Register*, we will respond directly to commenters and may modify our proposal in response to received comments.

Comments should be marked with docket number USCG-2024-0331 and should provide a reason for each suggestion or recommendation. You should provide personal contact information so that we can contact you if we have questions regarding your comments; please note that all comments will be posted to the online docket without change and that any personal information you include can be searchable online (see DHS's eRulemaking System of Records notice, 85 FR 14226, March 11, 2020). We also accept anonymous comments.

We encourage you to submit comments in response to this notice of inquiry through the Federal Decision-Making Portal at https://www.regulations.gov. If your material cannot be submitted using *http://www.regulations.gov,* contact the Coast Guard (see **FOR FURTHER INFORMATION CONTACT**). Documents mentioned in this notice and all public comments are in our online docket at *http://www.regulations.gov* and can be viewed by following the website's instructions.

We accept anonymous comments. Comments we post to https://www.regulations.gov will include any personal information you have provided. For more about privacy and submissions in response to this document, see DHS's eRulemaking System of Records notice (85 FR 14226, March 11, 2020).

III. Discussion

CRADAs are authorized under 15 U.S.C. 3710a.[1] A CRADA promotes the transfer of technology to the private sector for commercial use, as well as specified research or development efforts that are consistent with the mission of the Federal parties to the CRADA. The Federal party or parties agree with one or more non-Federal parties to share research resources, but the Federal party does not contribute funding.

CRADAs are not procurement contracts. Care is taken to ensure that CRADAs are not used to circumvent the contracting process. CRADAs have a specific purpose and should not be confused with procurement contracts, grants, and other type of agreements.

Under the proposed CRADA, the USCG Research and Development Center (RDC) will collaborate with one or more non-Federal participants. Together, the USCG RDC and the non-Federal participant will evaluate the suitability of open-source software defined radio technology in a shore-side and shipboard environment to conduct USCG missions.

We anticipate that the USCG's contributions under the proposed CRADA will include the following:

1. Provide appropriate staff with pertinent expertise to take the lead in accomplishing the required tasks; collaborate with selected non-Federal participants to evaluate the suitability of open-source software defined radio technologies;

2. Provide information regarding the USCG's interest in the open-source software designed radio technology needed for creating the test plan, and co-design specific operational test scenarios, bringing in real-world maritime expertise;

3. Obtain, transport, and provide all of the ensemble items to be used during the testing;

4. Provide personnel support to non-Federal participant to assist with setting up and execute testing in accordance with the agreed upon test plan;

[1] The statute confers this authority on the head of each Federal agency. The Secretary of DHS's authority is delegated to the Coast Guard and other DHS organizational elements by DHS Delegation No. 0160.1, para. II.B.34.

5. Work with non-Federal participant to develop a final report, which will document the methodologies, findings, conclusions, and recommendations of this CRADA work.

We anticipate that the non-Federal participants' contributions under the CRADA will include the following:

1. Provide appropriate staff with pertinent expertise to support the above-mentioned tasks;

2. Provide all necessary facility resources needed to conduct open-source software designed radio technology demonstrations and testing;

3. Provide technical support for all technology demonstrations and proposed test plans;

4. Provide technical data for the equipment, software, and services to be utilized;

5. Provide shipment and delivery of any equipment required to conduct evaluations, demonstrations, and test events as described in the CRADA;

6. Provide travel and associated personnel and other expenses, as required, for subject work;

7. Provide test data upon completion of testing.

The Coast Guard reserves the right to select for CRADA participants all, some, or no proposals submitted for this CRADA. The Coast Guard will provide no funding for reimbursement of proposal development costs. Proposals and any other material submitted in response to this notice will not be returned. Proposals submitted are expected to be unclassified and have no more than five single-sided pages (excluding cover page, DD 1494, JF-12, etc.).

The Coast Guard will select proposals at its sole discretion based on:

1. How well they communicate an understanding of, and ability to meet, the proposed CRADA's goal; and

2. How well they address the following criteria:

a. Technical capability to support the non-Federal party contributions described; and

b. Resources available for supporting the non-Federal party contributions described.

Currently, the Coast Guard is considering GDMS, for participation in this CRADA. This consideration is based on GDMS briefings to the USCG's Command, Control, Communication,

Computer, Cyber and Intelligence Service Center (C5ISC) on its open-source software defined radio technology plans and availability of appropriate facilities to execute demonstrations and test scenarios. However, we do not wish to exclude other viable participants from this or future similar CRADAs.

This is a technology suitability effort. The goal of this CRADA is to evaluate the suitability of implementing open-source SDR technologies on shore-side and shipboard environments. Special consideration will be given to small business firms/consortia, and preference will be given to business units located in the U.S. This notice is issued under the authority of 5 U.S.C 552(a).

Captain M. P. Chien,
Commanding Officer,
U.S. Coast Guard Research and Development Center.

[FR Doc. 2024-10553 Filed: 5/14/2024 8:45 am; Publication Date: 5/15/2024]