

Special Notice N00014-18-R-SN08
Special Program Announcement for 2018 Office of Naval Research
Research Opportunity:
“Tactical Data Dissemination initiative (TDDi) Waveform”

I. INTRODUCTION

This announcement describes a research thrust, entitled “Tactical Data Dissemination initiative (TDDi) Waveform” to be launched under the N00014-18/19-S-B001, Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology which can be found at <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>.

The research opportunity described in this announcement specifically falls under numbered paragraph B, “Electronics, Sensors, and Network Research” of the Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (Code 31) subsection. The submission of proposals, their evaluation and the placement of contracts will be carried out as described in that Broad Agency Announcement.

The purpose of this announcement is to focus attention of the scientific community on (1) the area to be studied, (2) the planned timetable for the submission of proposals, and (3) provide instructions for requesting Government Furnished Information, Key TDDi Waveform Performance Metrics, see section IV for more information.

II. TOPIC DESCRIPTION

Background and Objective:

The Navy Tactical Data Dissemination Initiative (TDDi) is supporting a rapid approach to quickly deliver improved netted sensing and integrated fire control capabilities to the fleet. A key aspect of TDDi is the definition of a new radio frequency (RF) communications waveform to support these capabilities during contested operations against a peer adversary.

The Office of Naval Research (ONR), in partnership with Program Executive Office (PEO) Integrated Warfare Systems (IWS), is interested in proposals on next-generation, radio frequency (RF) tactical data link waveforms to be rapidly prototyped and evaluated for their technical maturity, suitability for naval operations, and suitability for contested operations.

An objective is to meet desired warfighting performance while minimizing the impact and cost for integration of this new waveform into air, surface, and other naval platforms. In evaluating proposals, the Government anticipates evaluating naval relevance and contribution to mission more favorably to the extent that a waveform’s implementation will not be limited by data rights restrictions. Therefore, the Government desires Government Purpose Rights at a minimum.

Approach:

ONR Code 31, in partnership with PEO IWS 6.0, seeks proposals for a three-phase rapid evaluation activity. Phase I (Base) will be laboratory-based testing and evaluation, so candidate waveform technologies and techniques should be at a minimum of Technology Readiness Level (TRL) 5. Phase II (1st Option) and Phase III (2nd Option) will be over-the-air testing and evaluation in progressively more realistic environments. These periods include active testing activities and Government data analysis.

Phase I (Base) - Laboratory Waveform Assessment

Anticipated period of performance: 4 months

In the Phase I, laboratory-based testing and analysis of candidate waveform technologies will be executed with Government test facilities and procedures using prototype RF communication hardware provided by the Offeror. The Offeror is asked to provide detailed waveform and protocol specifications as part of the assessment phase and provide input to Government analysis activities. The Offeror should plan for up to two weeks of laboratory test support at Naval Research Laboratory in Washington, DC facilities. Tests will be conducted with up to three prototype units to include testing of RF channel multiple access needed to support networked operations. As noted below, a Classified Annex document, “Key TDDi Waveform Performance Metrics”, which is available upon request provides additional details for guiding the Offeror response to this special notice.

Phase I Deliverables

- Monthly Progress Reports: Technical and financial progress and status [*CDRL A001*];
- Waveform Description: Report describing the waveform characteristics and expected communication performance including network operations, scalability, etc. Characteristics include modulation type, bandwidth, operating frequencies, supporting data rate(s), and additional details as described in the Classified Annex. [*CDRL A002*];
- Test Support Description: Report describing items required to support lab testing, including operating instructions, interface specifications, and any hardware requirements (e.g., clock reference, time synchronization, etc.) [*CDRL A003*];
- Waveform Implementation Requirements: Report describing waveform and network protocol hardware implementation requirements (e.g., processing including general purpose processor and/or Field Programmable Gate Array (FPGA) resource requirements, timing and/or synchronization requirements, expected RF distribution requirements, etc.) Additional details for this deliverable are described in the Classified Annex. [*CDRL A004*];
- Waveform Specification: Report with a detailed waveform and network protocol interoperability and performance specifications. MIL-STD-6016 for the link 16 waveform may be used as an exemplar for the waveform specification. Additional details for this deliverable are described in the Classified Annex. [*CDRL A005*];
- Lessons Learned: Report with lessons learned from the lab-testing [*CDRL A006*]; and

- Over-the-Air Test Information: Report describing RF equipment and interface requirements for supporting Phase II and Phase III over-the-air testing, performance expectations, and RF spectrum management information needed for authorization to conduct over-the-air testing (i.e., everything required for a DD 1494 form) [CDRL A008].

Phase II (1st Option) - Initial Over-the-Air Testing

Anticipated period of performance: 6 months

In Phase II, initial over-the-air testing with up to three RF network nodes will be conducted. The nodes are expected to be ground-based, but may be static or mobile. The over-the-air testing will be conducted at Government field test facilities to be identified at contract award. The field test activities are expected to be conducted over two weeks with one week of preparatory field activities and a week of communications testing.

Phase II Deliverables:

- Monthly Progress Reports: Technical and financial progress and status [CDRL A001]; and
- Lessons Learned: Report with lessons learned from the Phase II over-the-air testing [CDRL A006].

Phase III (2nd Option) - Expanded Over-the-Air Testing

Anticipated period of performance: 8 months

In Phase III, additional over-the-air and network tests, with mobile platforms, will be conducted at a Government field test site facility. This testing will be conducted with up to five RF network nodes at multiple communication ranges and topologies under different communication conditions. This expanded over-the-air testing will include two different test events, each with a week of preparatory field activities and a week of active communications testing. During this Phase, the Government also plans to begin waveform modeling activities to evaluate specific implementation options. The Offeror is expected to provide input on specification refinement (as needed) and initial model design. The government will also begin to assess the requirements of candidate waveform technologies and the feasibility of implementing the proposed waveform, or a subset of it, within existing naval radios. Therefore, the Offeror shall provide information on their waveform and its potential implementations, to inform the Government's implementation assessment.

Phase III Deliverables:

- Monthly Progress Reports: Technical and financial progress and status [CDRL A001];
- Lessons Learned: Report with lessons learned from the Phase II over-the-air testing [CDRL A006]; and
- Waveform Implementation Recommendations: Report with recommended waveform and network protocol specification refinements, proposed implementation strategy for Naval platforms, and recommendations on how to implement the waveform specification within Government emulation-based models [CDRL A007].

Special Notice N00014-18-R-SN08

CDRLs

The Government has prepared a set of draft CDRLs to facilitate the rapid strategy and streamline proposals, but contractors are free to propose alternative structure of deliverables. See attached DRAFT CDRLs (Attachment #1)

IV. DISTRIBUTION OF GOVERNMENT FURNISHED INFORMATION:

Prior to submitting a proposal, potential offerors should review a classified document, Key TDDi Waveform Performance Metrics, which is available upon request.

The request shall be on company letterhead and shall include company name, company cage code, company classified mailing address, a current DoD contract number along with the government Point of Contact (POC) for that contract and the contact information for your Joint Certification Program POC. The ONR will use this information to verify eligibility to receive classified information.

The request shall be sent to Mr. Stephen Hughes at Stephen.t.hughes@navy.mil with a copy to Ms. Elizabeth Bray at elizabeth.bray@navy.mil

The deadline to request the Government Furnished Information (GFI) is 28 September 2018 at 2PM Daylight Savings Time (DST). The classified material should be destroyed by 15 November 2018, with notification of the destruction of the material sent to Mr. Hughes and a copy to Ms. Bray.

V. FULL PROPOSAL SUBMISSION AND AWARD INFORMATION

Full proposals should be submitted under N00014-18/19-S-B001 by 15 October 2018. Proposals submitted after 01 October 2018, shall be submitted under N00014-19-S-B001. Proposals received after the due date will be considered as time and availability of funding permit.

ONR anticipates only contracts will be issued for this effort given the required technical maturity. OTA's will be considered on a case-by-case basis.

Full proposals for contracts/OTA's should be submitted in accordance with the instructions at Section II, Application and Submission Information, item II.D. Requests for electronic submission of proposals shall be sent to both Stephen.t.hughes@navy.mil and santanu.das@navy.mil.

The unclassified Technical Proposal/Content shall be single spaced and should not exceed 30 pages. The cover page, resumes, bibliographies, and table of contents are excluded from the page

count. For contract proposal submission, (2) hardcopies and one (1) electronic submission on CD-ROM are requested.

A classified addendum for the Technical proposal will be required to fully explain the expected performance of the proposed waveform. The classified addendum shall be single spaced, appropriately marked, and not exceed 30 pages (which does not count towards the page limit for the unclassified Technical Proposal). Include the classified addendum on a separate CD-ROM that is appropriately marked for the classification of the addendum.

Classified proposals shall be submitted directly to the attention of ONR's Document Control Unit at the following address and marked in the following manner:

OUTSIDE ENVELOPE – (no classification marking):

Office of Naval Research
Attn: Document Control Unit
ONR Code 43
875 North Randolph Street
Arlington, VA 22203-1995

The inner wrapper of the full proposal should be addressed to the attention of Dr. Santanu Das, ONR Code 311, and marked in the following manner:

INNER ENVELOPE – (stamped with the overall classification of the material)

TDDi Waveform
Office of Naval Research
Attn: Dr. Santanu Das
ONR Code 311
875 North Randolph Street – Suite 1115
Arlington, VA 22203-1995

Offerors shall submit a detailed Full Proposal (Technical and Cost volumes) and those identified as being of "particular value" to the Government, as defined in the criteria in N00014-18/19-S-B001, will be selected for contract award.

ONR plans to fund three to six awards, depending on their size and availability of funding, on fixed-price contracts.

The Period of Performance for projects, inclusive of options, may be up to eighteen (18) months from award.

Funding decisions should be made by 1 November 2018. Selected projects will have an estimated award date of 15 December 2018.

VI. SIGNIFICANT DATES AND TIMES

Event	Date	Time
Full Proposal Submission	15 October 2018	13:30
Notification of Selection*	1 November 2018	
Awards *	15 December 2018	

Note: * These are approximate dates.

VII. POINTS OF CONTACT

In addition to the points of contact listed in N00014-18-S-B001, the specific points of contact for this announcement are listed below:

Physical Address: 875 North Randolph Street, Arlington, VA 22203-1995

Business Point of Contact

Name: Stephen Hughes

Title: Contracting Officer

Division: ONR Code 251

Email: Stephen.t.hughes@navy.mil

Technical Points of Contact:

Name: CDR Rich Duldulao

Title: TDDi Program Officer

Division: PEO IWS 6.0

Email: rich.duldulao@navy.mil

Name: Dr. Santanu Das

Title: Program Officer

Division: ONR Code 311

Email: santanu.das@navy.mil

Security Point of Contract:

Name: Torri Woodfolk

Title: Industrial Security Specialist

Division: Security Department, Code 43

Special Notice N00014-18-R-SN08

Email: Torri.powell@navy.mil

VIII. SUBMISSION OF QUESTIONS

Any questions regarding this announcement must be provided to the Technical Points of Contact and/or the Business Point of Contact listed above. All questions shall be submitted in writing by electronic mail.

Answers to questions submitted in response to this Special Notice will be addressed in the form of an Amendment and will be posted to the following web pages:

- Federal Business Opportunities (FEDBIZOPPS) Webpage – <https://www.fbo.gov/>
- ONR Special Notice Webpage - <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Special-Notices.aspx>

Questions regarding **Full Proposals** should be submitted NLT two weeks before the dates recommended for receipt of Full Proposals. Questions after this date may not be answered.

Classified questions shall be handled through the ONR Security POC. Specifically, any entity wanting to ask a **classified** question shall send an **unclassified** email to the ONR Security POC with a copy to both the Technical POC and the Business POC stating that the entity would like to ask a **classified** question. **Do not email any classified questions.** The Security POC will contact the entity and arrange for the **classified** question to be asked through a secure method of communication.