



Special Notice N00014-18-R-S008
Special Program Announcement for 2018 Office of Naval Research
Research Opportunity:
“ER-DIFAR”

I. INTRODUCTION

This announcement describes a research thrust, entitled “ER-DIFAR,” or Extended Range Directional Frequency Analysis and Recording, to be launched under the N00014-18-S-B001, Long Range Broad Agency Announcement (BAA) 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 III A of the Ocean Battlespace Sensing S&T Department (Code 32). The submission of proposals, their evaluation and the placement of research contracts will be carried out as described in that BAA.

The purpose of this announcement is to focus attention of the scientific community on 1) the area to be studied, and 2) the planned timetable for the submission of white papers and proposals.

II. TOPIC DESCRIPTION

The Office of Naval Research Ocean Battlespace Sensing Department is seeking new technologies to develop an advanced passive sonobuoy, known currently and stated above as the Extended Range Directional Frequency Analysis and Recording (ER-DIFAR) to address new quiet threat submarine targets. Requirements are for a replacement A-size sonobuoy (5.25-inch diameter, 36-inch length and maximum weight of 39 Lbs.), that achieves passive detection at tactically significant ranges against extremely quiet targets.

Background:

The selected applicant will work as part of a team comprised of Government, academic and Industry performers. A Government conceptual hydrophone array design will serve as the basis for maturing the sonobuoy design, development of prototype units and demonstration of (1) deployment from the A-size form factor package, (2) automatic, precise localization of hydrophone elements on the array and (3) in-buoy processing for beam-forming and communication of the data to a receiving system. Included in design elements to be provided by the contractor will be upper float and associated electronics which includes communications and GPS receiver, surface suspension for motion isolation of the upper assembly from the array. A lower electronics section will consist of power for the array, telemetry, beamforming and signal processing hardware with sufficient processing power to run software developed and provided by the Government. A contractor proposed system for array element location will be required to enable accurate beamforming at the frequencies of interest. The contractor will be responsible for integrating components into an A-size sonobuoy and demonstrating ability to achieve air launch certification, water entry and array deployment. As part of the effort, the contractor will build prototypes for use in an at-sea demonstration funded by the Government. The contractor will support program progress meetings, annual project reviews, testing and an at-sea final demonstration.

Objective:

Cost of manufacturing the sonobuoy in small numbers is a key objective. Sonobuoy unit costs must not exceed \$10K in low rate production. The size constraints of an A-size sonobuoy impose severe restriction on the size of hydrophones and the schedule of the project imposes the necessity that proposed hydrophones be non-developmental with low self-noise (< 58 dB ref $\mu\text{Pa}/\sqrt{\text{Hz}}$ at 100 Hz and < 16 dB ref $\mu\text{Pa}/\sqrt{\text{Hz}}$ at 15kHz), capable of being calibrated with ± 0.3 dB in amplitude, and capable of being calibrated in relative phase within ± 2 degrees when assembled in groups of up to 150. Array packaging and in-water deployment are technical challenges that will be addressed in this project.

Cleared applicant with a demonstrated and documented sonobuoy design and manufacturing experience are encouraged to submit CLASSIFIED white papers following the guidance provided in the Office of Naval Research FY18 Long Range Broad Area Announcement for Navy and Marine Corps Science and Technology, N00014-18-S-B001. The white paper submission should demonstrate the contractor's understanding of the technical challenges of array packaging involving multiple vertical staves with up to 150 hydrophones, array element localization techniques and software/hardware development when constrained by sonobuoy size, operating environment, storage environment, and airborne delivery impacts. White papers must also identify the existence of adequate resources that include: (1) facilities and personnel to undertake high speed development and production of prototype ER-DIFAR sonobuoys in quantities sufficient for demonstrating Technical Readiness Level 7, and (2) follow-on testing and qualifications involving limited rate production, initially on the order of 100 units.

Additional classified detail will be provided to cleared contractors upon request. Contractors requesting classified material will be issued a temporary DD-254 by ONR security specifically for the purpose of submitting a white paper and/or proposal for ER-DIFAR

III. WHITE PAPER SUBMISSION

Each white paper will be evaluated by the Government to determine whether the technology advancement proposed appears to be of particular value to the Department of the Navy (DoN). Initial Government evaluations and feedback will be issued via e-mail notification from the technical point of contact. The white paper appraisal is intended to give entities a sense of whether their concept is likely to be funded.

Detailed full proposals (technical and cost volumes) will be subsequently encouraged from those offerors whose proposed technologies have been identified through the above referenced e-mail as being of “particular value” to the Government. However, any such encouragement does not assure a subsequent award. Full proposals may also be submitted by any offeror whose white paper was not identified as being of particular value to the Government.

For white papers that propose efforts that are considered of particular value to the Navy, but either exceed available budgets or contain certain tasks or applications that are not desired by the Navy, ONR may suggest a full proposal with reduced effort to fit within expected available budgets or an effort that refocuses the tasks or application of the technology to maximize the benefit to the Navy.

White papers should not exceed 4 single-sided pages, exclusive of cover page and resume of principal investigator, and should be in 12-point Times New Roman font with margins not less than one inch. White papers shall be in Adobe PDF format (preferred) or in Microsoft Word format compatible with MS Office 2007.

The cover page should be labeled “White Paper for ONR 2018 Research Opportunity: ER-DIFAR” and include the following information: title of the proposed effort, technical point of contact, telephone number, fax numbers, and e-mail address.

The 4-page body of the white paper should include the following information:

- (1) Principal Investigator;
- (2) Relevance of the proposed effort to the research areas described in section II;
- (3) Technical objective of the proposed effort;
- (4) Technical approach that will be pursued to meet the objective;
- (5) A summary of recent relevant technical breakthroughs; and
- (6) A funding plan showing requested funding per fiscal year.

A resume of the principal investigator, not to exceed 1 page, should also be included after the 4-page body of the white paper.

To ensure full, timely consideration for funding, white papers should be submitted **no later than 1 November 2018**. White papers received after that date will be considered as time and availability of funding permit.

The planned date for completing the review of white papers and notifying contractors who will be encouraged to submit full proposals is **1 December 2018**.

IV. FULL PROPOSAL SUBMISSION AND AWARD INFORMATION

Full proposals should be submitted under N00014-18-S-B001 or successor BAA by **1 February 2019**. Full Proposals received after that date will be considered as time and availability of funding permit.

ONR anticipates that one (1) contract will be awarded for this effort.

Full proposals for this contract should be submitted in accordance with the instructions at section IV, application and submission information, item 2.b, full proposals and item 6, submission of full proposals for contracts, cooperative agreements, and other transactions. The technical proposal/content shall be single spaced and not exceed **10** pages. The cover page, resumes, bibliographies, and table of contents are excluded in the page count. For contract proposal submission, (2) hardcopies and one (1) electronic submission on CD-ROM are requested.

ONR plans to fund **one (1)** award with a contract value of **\$22M – \$25M** for the base period, using research funds. However, lower and higher cost proposals will be considered. The estimated award date for the ER-DIFAR effort is **1 September 2019**. The period of performance for this award is **a three (3) year base with one (1) option year**.

Although ONR expects the above described ER-DIFAR plan to be executed, ONR reserves the right to make changes.

Special Instructions for Classified Responses.

White papers and proposals submitted under this notice may be unclassified or classified. If classified, white papers and proposals are permitted up to GENSER SECRET. If a classified white paper or proposal is submitted and selected for award, the resultant award may/may not be classified.

Classified white papers and 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 classified white paper or proposal shall be addressed to the attention of the cognizant Technical Point of Contact (TPOC), ONR Code 321, and marked in the following manner:

INNER ENVELOPE

(stamped with the overall classification of the material)

Program Name: ER-DIFAR
Office of Naval Research
ATTN: Dr. David H. Johnson
ONR Code: 321
875 North Randolph Street
Arlington, VA 22203-1995

All response submissions will be protected from unauthorized disclosure in accordance with FAR Subpart 15.207, applicable law, and DoD/DoN regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information.

In either case of an unclassified or classified proposal submission, it is the responsibility of the submitting individual to ensure he/she receives an email confirming receipt from the TPOC (listed below).

V. SIGNIFICANT DATES AND TIMES

| Event | Date | Time |
|---|-------------------------|-------------------------------|
| Recommended White Paper Submission Date | 1 November 2018 | 2:00 PM Eastern Standard Time |
| Notification of White Paper Evaluation* | 1 December 2018 | 2:00 PM Eastern Standard Time |
| Recommended Full Proposal Submission | 1 December 2018 | 2:00 PM Eastern Standard Time |
| Notification of Selection: Full Proposals * | 1 April 2019 | N/A |
| Awards * | 1 September 2019 | N/A |

Note: * These are approximate dates.

VI. 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:

All UNCLASSIFIED communications shall be submitted via e-mail. All **technical** questions of an UNCLASSIFIED nature to the Technical POC shall be sent via e-mail with a copy to the designated Business POC.

Technical Point of Contact:
Name: Dr. David H. Johnson
Title: Program Officer

Code: Ocean Battlespace Sensing, Code 321
Address: Office of Naval Research
875 North Randolph Street
Arlington, VA 22203-1995
Email Address: dave.h.johnson@navy.mil

Business Point of Contact:
Name: Mr. Shawn Ryan
Title: Contracting Officer
Division: ONR Code 252
Address: Office of Naval Research
875 North Randolph Street
Arlington, VA 22203-1995
Email Address: shawn.ryan@navy.mil

Questions of a **security** nature should be submitted to:

Security Point of Contact:

Name: Ms. Torri Woodfolk
Title: Industrial Security Specialist
Code: Security Department, Code 43
Address: Office of Naval Research
875 North Randolph Street
Arlington, VA 22203-1995
Email Address: Torri.Powell@navy.mil

(please note that the e-mail address does differ from the POC's name)

VII. ADDRESS FOR THE SUBMISSION OF WHITE PAPERS AND FULL PROPOSALS FOR CONTRACTS

White papers and full proposals should be submitted electronically to the program technical point of contact, Dr. David H. Johnson. Classified white papers and proposals should be submitted in accordance with the 'Special Instructions for Classified Responses' addressed above. Files exceeding 10MB in size should not be emailed, but instead transmitted via a file transfer service, for example AMRDEC Safesite, <https://safe.amrde.army.mil>, or mailed on CD-ROM or DVD.

The DVD or CD-ROM of the white paper and full proposal including all supporting documentation should be sent to the Office of Naval Research at the address below. Classified DVDs or CD-ROMs should be submitted in accordance with the 'Special Instructions for Classified Responses' addressed above.

| Primary Point of Contact | Secondary Point of Contact |
|---|---|
| Office of Naval Research Attn: Dr. David H. Johnson ONR Department Code 32 ASW 875 North Randolph Street Arlington, VA 22203-1995 | Office of Naval Research Attn: Michael Vaccaro ONR Department Code 321 875 North Randolph Street Arlington, VA 22203-1995 |

VIII. SUBMISSION OF QUESTIONS

Any questions regarding this announcement must be provided to the Technical POC and/or the Business POC 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 **white papers or full proposals** should be submitted NLT two weeks before the dates recommended for receipt of white papers and full proposals. Questions after these dates 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.