

Special Notice N00014-21-S-SN11
Special Program Announcement for 2021 Office of Naval Research
Research Opportunity:
Communications and Networks Applied Research

I. INTRODUCTION

This announcement describes a research thrust, entitled “Communications and Networks Applied Research” to be launched under the N00014-21-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 the Office of Naval Research (ONR), in the Communications and Networks technology area (<https://www.onr.navy.mil/Science-Technology/Departments/Code-31/All-Programs/311-Mathematics-Computers-Research/communications-networking>). 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, and (2) the planned timetable for the submission of proposals.

II. TOPIC DESCRIPTION

A Design for Maritime Superiority (2018) describes an operational architecture for distributed maritime operations (DMO) that "... will provide accurate, timely, and analyzed information to units, warfighting groups, and fleets." A critical component of this architecture is the tactical grid to connect distributed units into groups and distributed groups into fleets. Communications and networking technologies that can provide seamless, robust, connectivity are key enablers for the tactical grid. These technologies will be deployed on a variety of platforms, both manned and unmanned, operating under challenging battlefield conditions (lack of infrastructure, mobility, spectrum limitations, interference, multipath, atmospheric, size/weight/power constraint, etc.) in different environments (land, maritime [includes both surface and undersea], and space). Successful Command and Control (C2) and decision making, at all levels of command, for DMO is critically dependent on these communications and networking technologies.

The goal of the Communications and Networking Program within the Office of Naval Research (ONR 311) is to support the Navy's Information Warfare vision by developing measurable advances in technology that can directly enable and enhance end-to-end connectivity and quality of-service for mission-critical information exchange among widely dispersed naval, joint, and coalition forces. The vision is to provide high throughput robust communications and networking to ensure all warfighters – from the operational command to the tactical edge – have access to information, knowledge, and decision-making necessary to perform their assigned tasks. White papers for potential FY22 Applied Research (Budget category 6.2) projects are sought under the following focus areas:

1. Next-generation receiver cancellation/excision/limiting/filtering and high-fidelity channelization techniques for element-level digital, phased-array systems capable of multi-beam, wide-band operation with high dynamic range, low noise and distortion performance. Consideration for multiple concurrent waveforms and/or functions in adjacent frequency bands and the presence of strong external interference signals;
2. Novel approaches and technologies for low probability of detect/intercept communications against advanced electronic threats;
3. Innovative techniques, layered for flexible and modular SW/HW implementation, to mitigate 5G standard/protocol exploits in tactical environment operations; and
4. Dynamic scheduling, routing and control mechanisms in wireless networks to efficiently and reliably deliver traffic with varying level of service requirements (e.g., latency, loss rate, priority), while resilient to uncertainty in network state awareness and imperfect coordination amongst distributed controllers.

The ONR is receptive to innovative ideas, which are not within the above focus areas, but nonetheless are important to the Navy/Marine Corps communications and networking, as otherwise described in this Topic Description.

III. SUBMISSION PROCESS

Offerors shall submit white papers and only those identified as being of "particular value" to the Government, as defined in the criteria in N00014-21-S-B001, will be selected for a subsequent

oral presentation, full proposal, and contract award. The submission process for Special Notice N00014-21-S-SN11 is:

- **White Papers:** The white paper shall be less than seven (7) pages and the due date for white papers is no later than 4:00 PM (EST) on 16 July 2021. The bulk of the main body of white paper should be devoted to the technical discussion and the innovation that is being proposed for this Applied Research program.
- **White Paper Evaluation/Notification:** The Government will issue selection notification via email on or about 23 July 2021. An expanded oral presentation will be subsequently requested from those Offerors whose proposed technologies have been identified as being of “particular value” to the Government. However, any such request does not assure a subsequent award. Any Offeror whose white paper technology was not identified as being of “particular value” to the Government is ineligible to make an oral presentation or to submit a full proposal under this BAA.
- **Oral Presentations:** An expanded oral presentation will be requested from those Offerors whose proposed technologies have been identified through the aforementioned email as being of "particular value" to the Government. However, a positive email response to the oral presentation does not assure a subsequent award. The purpose of the oral presentation is to better acquaint the Government with the Offeror's proposal, especially in its understanding of the technical approach and impact. The oral presentations are tentatively scheduled for 19 August 2021.

Offerors will be invited by email no less than ten (10) working days before the scheduled event. The email will also provide the detailed format for the presentation. Each presentation will be no longer than twenty five (25) minutes in duration. An additional five (5) minutes will be allowed for questions (if any) from the panel of Government reviewers.

- **Oral Presentation Evaluation/Notification:** The Government will issue selection notification via email on or about 10 September 2021. A full proposal will be requested from those Offerors whose proposed technologies have been identified through the aforementioned email as still being of “particular value” to the Government. Any Offeror whose oral presentation was not identified as being of “particular value” to the Government is ineligible to submit a full proposal under this Special Notice.
- **Full Proposals:** The due date for receipt of Full Proposals is 4:00 PM (EST) on 8 October 2021. It is anticipated that final selections will be made within one week after full proposal submission. As soon as the final full proposal evaluation process is completed, the Offerors will be notified via email of their project’s selection or non-selection for FY22 funding. Full proposals received after the published due date and time will not be considered for funding in FY22.

IV. EVALUATION PROCESS

In accordance with FAR 35.016(e), the primary basis for selecting proposals for acceptance shall be technical, importance to agency programs, and fund availability. Cost realism and

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reasonableness shall also be considered to the extent appropriate. Therefore, the following criteria will be used for evaluation:

1. **Overall scientific and technical merits** of the proposal and responsiveness to the topic, i.e., the degree of innovation, soundness of technical concept, Offeror's awareness of the state of the art and understanding of the scope of the problem, significance and originality of the technical approach and effort needed to address/solve the problem, and anticipated scientific impact within the field. The following areas will also be considered: (A) the Offeror's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives, and (B) the qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader and key personnel who are critical to achieving the proposal objectives. Since this Special Notice is for an Applied Research activity, the Offeror must adequately address the technical issues and approach, going to significant technical depth where needed to show what's new and novel – clearly and unambiguously – with the associated risks/payoffs.
2. **Potential Naval relevance** and contribution to the ONR and Department of Navy mission. Since this Special Notice is for an Applied Research activity, potential naval relevance means a clear path exists for the technology to move from the “Applied Research” phase to an "Advanced Technology Development" phase in a 'vertically integrated' sense, for subsequent acquisition by the fleet and use by the warfighter.
3. The **availability of funds**. The government plans to fund \$300,000 to \$500,000 per year per award using Applied Research funds (Budget Category 6.2). However, lower and higher cost proposals will be considered. The average funding level of past awards was approximately \$500,000 per year. The period of performance for projects may be from one (1) to three (3) years, with an estimated start date of 22 February 2021, subject to date of final award and availability of new fiscal year funds.

Criterion 1, 2, and 3 are of equal importance. The criterion will be given equal consideration, except that proposals lacking scientific merit or naval relevance are ineligible for award. Further, given the limited funds available, not all offers which might have naval relevance and scientific merit will receive an award.

V. PROPOSAL SUBMISSION AND AWARD INFORMATION

White papers should be submitted under N00014-21-S-B001 by 4:00 PM (EST) on 16 July 2021. Since this Special Notice is for an Applied Research program, the ONR anticipates contracts and grants will be issued for this effort.

- **White paper submission.** The white paper shall include a cover page with the Special Notice Number N00014-21-S-SN11, proposed title, technical points of contact, telephone number, and email address. The technical section of the white paper (not to exceed five (5) pages) can be structured as the Offeror sees fit. However, the Government expects the technical section to include: a description of the project objectives, problem being solved, technical approach, what's new, the concept of operation for the new capabilities to be

delivered, the expected operational performance improvements, a plan for demonstrating and evaluating the operational effectiveness of the Offeror's product in laboratory or simulated environment including evaluation metrics, transition potential to Navy communications networks, proprietary aspects of the project and any assertions of data rights applicable to the results of this effort. It should also clearly state the focus area in the Topic Description that is being addressed. Cost information is needed, although not at the level of detail as required with the full proposal. White paper submissions shall include a cost summary showing requested funding per year. The cost summary (not to exceed half a page) shall be segregated by both task and year (over the period of performance (i.e., 1, 2 or 3 years).

The submission shall include four (4) hard copies of the white paper with an electronic copy, in PDF format, on a CD. The only acceptable methods for submission of white papers to the primary technical point of contact (Dr. Santanu Das) are by the United States Postal Service (USPS) with delivery confirmation, or via a commercial carrier (FedEx, DHL, and UPS). Delivery of materials by USPS, even when sent as Express Mail, may take up to a week or more due to current security procedures in place to ensure the safety of U.S. mail to DoD activities. *NOTE: If an Offeror does not submit a white paper before the specified due date and time, it is not eligible to participate in the remaining Full Proposal submission process and is not eligible for funding. White Papers sent by email or fax will not be considered.*

- **Full proposal submission.** Upon receiving the government's request for a full proposal, use guidance in N00014-21-S-B001, Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology, to prepare a full proposal. The due date for receipt of the Full Proposals is anticipated to be 4:00 PM (EST) on 8 October 2021.

Unclassified white papers and proposals shall be mailed to the technical point of contact provided in Section VII.

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

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

Communications and Networks Applied Research Program
Office of Naval Research
Attn: Dr. Santanu Das
ONR Code 311
875 North Randolph Street – Suite 1115
Arlington, VA 22203-1995

VI. SIGNIFICANT DATES AND TIMES

Event	Date	Time (EST)
White Papers Due Date	16 July 2021	4 pm
Notification of Initial Navy Evaluations of White Papers*	23 July 2021	
Oral Presentation of White Papers*	19 August 2021	
Notification of Navy Evaluations of Oral Presentations*	10 September 2021	
Full Proposals Due Date	8 October 2021	4 pm
Notification of Selection for Award *	15 October 2021	
Awards*	25 February 2022	

Note: * These are approximate dates.

VII. POINTS OF CONTACT

The specific points of contact for this announcement are listed below:

Questions of a **business** nature, should be submitted to:

Name: Stephen Hughes

Title: Contracting Officer

Division: ONR Code 251

One Liberty Center,
Address 875 North Randolph Street,
Arlington, VA 22203-1995

Email: Stephen.t.hughes@navy.mil

Questions of a **technical** nature, should be submitted to:

Name: Dr. Santanu Das

Title: Program Officer

Division: ONR Code 311

One Liberty Center,
Address 875 North Randolph St., Suite 1115
Arlington, VA 22203-1995

Email: santanu.das@navy.mil

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

Name: Jessie (Yezabeth) Cuevas

Title: Industrial Security Specialist

Division: Security Department, Code 43

One Liberty Center,
Address 875 North Randolph St.,
Arlington, VA 22203-1995

Email: yezabeth.cuevas2@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 most appropriate as determined by the Contracting Officer: