Broad Agency Announcement (BAA) Call N0001425SBC03
For Office of Naval Research (ONR) Global Opportunity:
GlobalX Innovation Joint Challenge: AI for Advancing Maritime Security

CHANGE OVERVIEW: The updates to this announcement are found in the text as follows:
-Section IV- AI Challenge Webinar recorded video added to grants.gov, clarified in text below.

This BAA Call announces the GlobalX Innovation Joint Challenge: AI for Advancing Maritime Security and describes new funding to be awarded under authority of N0001425SB001, Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology. This BAA may be found at the following link: https://www.nre.navy.mil/work-with-us/funding-opportunities.

The Assistance Listing Number for this announcement is 12.300.

I.   SIGNIFICANT DATES AND TIMES

Event	Date	Time
BAA Call Release Date	5 May, 2025	09:30 Singapore Standard Time (SST)
Kick-off Webinar	9 May, 2025	11:30 SST
White Paper Submission Date	23 May, 2025	17:00 SST
Notification of White Paper Valuation*	29 May, 2025	17:00 SST
Proposal Pitch Day	4 June, 2025	13:00 SST
Notification of Selection*	16 June, 2025	17:00 SST
Full Proposal Submission Date*	23 June, 2025	17:00 SST
Grant Award*	30 June, 2025	17:00 SST

Note: * represents an approximate date.

II.   INTRODUCTION

The submission of white papers, proposals, their evaluation and the placement of research grants will be carried out as described in this BAA Call and the Long Range BAA. ONR Global expects to issue only research grants from this BAA Call.

ONR Global expects to award up to a total of $250,000 for an initial twelve-month period of performance for proposals selected under the GlobalX Innovation Joint Challenge. At the complete discretion of ONR Global, an additional twelve-month optional period may be considered following a successful proof of concept. Total grant award values, including the initial and additional optional periods, will not exceed $500,000. ONR Global may award one grant or multiple grants, addressing the challenge problem statement described below. The

number of grants and amounts of funding for each grant will depend on proposals submitted. A successful proof of concept may attract interest from other US federal organizations for potential follow-on applied research efforts under a separate agile acquisition mechanism.

The purpose of this announcement is to focus the attention of the international scientific community on (1) the challenge areas of interest; and (2) the schedule of key events and deadlines, including the Challenge Kick-off Webinar, and the submission of white papers and full proposals.

Recordings of the Kick-off Webinar, supplementary information such as Challenge Guidelines, templates, and Frequently Asked Questions (FAQs) will be available on https://www.nre.navy.mil/organization/onr-global.

III.   CHALLENGE DESCRIPTIONS

Background:

This purpose of the GlobalX Innovation Joint Challenge is to accelerate the traditional knowledge generation cycle, proving or disproving an applied research theory on an advanced timeline, leading to the discovery of revolutionary dual-use capability for the benefit of the U.S. Navy and Marine Corps, the commercial marketplace, and the general public. This challenge is a collaboration between the Office of Naval Research Global and the Singapore Ministry of Defence, addressing a joint Naval need identified by both organizations. The expected outcomes of this Challenge are promising, potentially game-changing, applied concepts whose maturity may be accelerated under separate follow-on technology development efforts.

Objective:

ONR Global is interested in promising applied concepts to realize revolutionary capability advancements with dual-use military and commercial value related to the multidisciplinary problem statement described below. Specifically excluded from consideration are concepts that are duplicative to existing science and technology programs, provide evolutionary enhancements to existing technologies, and/or modernization efforts for existing commercial systems or products.

ONR Global recognizes that international scientists and engineers conduct innovative and novel research. This Challenge provides an opportunity for these international performers to collaborate, generate revolutionary ideas and show proof of concept these ideas will succeed. ONR Global invites outstanding international performers to form multi-national, multidisciplinary teams to address these listed capability challenges.

Non-federal entities from academia and industry may participate. ONR Global requires that the proposing team be led by an eligible non-U.S.-based research entity, whether from academia, industry and/or the broader scientific community. U.S.-based non-federal entities may also participate as part of a multi-national team but are not required. Eligibility requirements are detailed in the BAA, specifically under Section C. Eligibility Information (page 5) and the

ONRG overview (page 11). As stated above, this Challenge is an opportunity specifically directed toward international performers; therefore, ONR Global expects the majority of team members will be entities outside of the U.S. Each team shall designate a lead Principal Investigator (PI) whose organization outside of the U.S. will submit the white paper or proposal and will be responsible for distributing funding to co-PIs and other sub-recipients. For a given project team, one award is made to the PI's institution. Only the PI's institution will be the prime awardee, and that institution is responsible for all aspects of the grant, including adhering to the conditions on the use of funds and other terms and conditions of the grant.

Revolutionary technology development typically results from multidisciplinary teams working in an environment that fosters and leverages serendipitous discovery. ONR Global acknowledges that performers may already have colleagues with whom they wish to collaborate. Nevertheless, ONR Global encourages performers to participate in multi-disciplinary teams to consider a wide range of approaches to address the Challenge Problem Statement. Organizations and individuals that are not subject to U.S. sanctions or are not otherwise excluded from doing business with the U.S. Government, may participate. Please note the grant applicant is responsible for complying with any applicable sanctions, export controls, and similar limitations.

Challenge Problem Statement:

Scene perception—the ability to determine context beyond object recognition—is a necessary condition for a single Unmanned Aerial/Surface/Underwater Vessel (UxV) or UxVs working cooperatively to operate effectively in challenging maritime environments. Examples of operational challenges related to scene perception in a maritime environment are described below. AI-enabled scene perception in UxVs would minimize the cognitive load on operators, increasing operational efficiency.

We are seeking proposals that 1) define challenging and realistic maritime scene perception scenarios represented by real-world and/or synthetic data generated by sensors commonly found on UxV platforms, and 2) present innovative AI algorithms that can successfully operate on that representative data and determine operational context.

Example Scene Perception Scenarios

Traffic Management: Identifying and categorizing different types of vessels (e.g., fishing boats, cargo ships, pleasure crafts) is crucial for traffic management. AI can analyze sensor data to detect vessels even in challenging conditions like rain, sun glare, fog, or darkness and classify them based on their size, shape, and features.

Collision Detection and Avoidance: AI can characterize the behavior and movement patterns of different vessels to maintain navigational situational awareness in challenging conditions such as line-of-sight occlusions and sudden lane changes in high-traffic areas. This allows a UxV to perform pre-emptive course alterations to avoid potential collisions.

Anomaly Detection and Lifelong Learning: AI can monitor vessel traffic patterns and identify unusual or suspicious activities, such as piracy, smuggling, or illegal fishing, and learn to

recognize new patterns in situ. This can enhance maritime security and support law enforcement efforts.

Port Security and Surveillance: AI can be used for port security applications, such as identifying unauthorized access, detecting suspicious objects, and monitoring vessel movements within the port area.

Selected proposals will describe both the construction of a maritime scenario (simulation or physical environment) and the technical details of the novel software-based AI algorithms for UxVs operating in this environment. The type of UxV platform (surface, underwater, or airborne) will be weighted equally in the evaluation process. Deliverables include the maritime scenario dataset used by the performers in this challenge.

IV.   KICK-OFF WEBINAR

ONR Global held a Challenge Kick-off Webinar on 9 May 2025. This webinar is open to view by any interested performers by navigating to the video attached to the grants.gov posting, under Related Documents, Revised Full Announcement. The video is titled AI Challenge- 20250509_121554- Meeting Recording.

V.   WHITE PAPER SUBMISSION

White papers are highly encouraged for all applicants seeking funding from this GlobalX Innovation Joint Challenge. The Challenge evaluation panel will assess how well each white paper submitted achieves the revolutionary capability described in the challenge problem statement above. ONR Global will invite those teams submitting white papers with the most promising concepts to submit a full proposal or to participate in a Proposal Pitch Day (see section VI below). All notifications and feedback will be issued via e-mail notification to the team PI from the Technical Point(s) of Contact or their designee(s). However, any such invitation does not assure a subsequent award. Full proposals may be submitted by any applicant in response to this BAA Call, whether or not a white paper was submitted or evaluated by ONR Global.

White papers shall follow the format provided in this BAA Call (see BAA Call attachments 1-3); this format will meet mandatory ONRG Cover Page requirements. White papers shall be 12-point Times New Roman font and not exceed five single-sided pages. Figures, charts and tables should be legible but may use a smaller font size. White papers must include an additional one-page quad chart and a spreadsheet, which are not part of the white paper page limitation. The five-page white paper should be submitted in Adobe PDF format (preferred) or in Microsoft Word. The quad chart may be submitted in Adobe PDF (preferred) or in Microsoft PowerPoint format. The spreadsheet should be submitted in Microsoft Excel (or compatible) format and should indicate the particular Challenge Problem Statement that the white paper addresses. The

format of the spreadsheet should remain unchanged; please do not alter the order or add additional columns.

The PI for each team shall be the primary point of contact throughout the application process; they are responsible for submitting white papers describing their proposed concept and approach to usn.ncr.onrghq.list.grantsproposals@us.navy.mil by the submission deadline listed in Section I: SIGNIFICANT DATES AND TIMES. White papers received after the deadline may not be considered. The subject line of the email shall read: "*N0001425SBC03 GlobalX Challenge White Paper Submission*". Do not send ZIP files or provide links to "Dropbox" type applications as they will not be reviewed. Password protected files are discouraged.

The GlobalX Challenge evaluation panel will review submitted white papers and will invite teams with the most promising and revolutionary concepts, on or before the date listed in Section I: SIGNIFICANT DATES AND TIMES, to participate in the Proposal Pitch Day or to submit a grant proposal. All teams submitting a full proposal must follow steps listed in section VII below.

VI.   PROPOSAL PITCH DAY

As described above in Section V, ONR Global may invite those teams submitting white papers with the most promising concepts to participate in a Proposal Pitch Day that will be held in accordance with the date listed in Section I: SIGNIFICANT DATES AND TIMES. The intent of the Proposal Pitch Day is to give performers the opportunity to present their ideas to a team of technical experts and to interactively answer any questions that may arise. Details of the event will be provided to those who are invited to participate. ONR Global reiterates full proposals may be submitted by any applicant in response to this BAA Call, whether or not individuals participate in the Proposal Pitch Day or submit a white paper for evaluation by ONR Global.

VII.   FULL PROPOSAL SUBMISSION AND AWARD INFORMATION

Full grant proposals must be submitted to the Department of the Navy at www.grants.gov under BAA number N0001425SBC03 in accordance with the submission deadline listed in Section I: SIGNIFICANT DATES AND TIMES. ONR Global is not obligated to consider full proposals received after this date. See Appendix 1 of BAA N0001425SB001 for instructions on submitting grant proposals via grants.gov. Please note SAM registration is required to submit proposals on grants.gov and may require significant time to complete for new SAM registrants. The GlobalX Challenge evaluation panel will evaluate Full Proposals in accordance with Section E.2 Review and Selection Process within BAA N0001425SB001.

ONR Global will notify teams selected for award and intends to award grants in accordance with the dates listed in Section I: SIGNIFICANT DATES AND TIMES. The initial period of performance is twelve months, in which ONR Global expects Performers to show proof their concept will likely meet proposed objectives. Following a successful proof-of-concept, ONR Global may exercise an optional period of performance for up to an additional twelve months to continue concept development and testing. Regular performance reporting and a final research

progress report are required in accordance with the terms and conditions of the grant. The terms and conditions applicable to assistance instruments as referenced in BAA N0001425SB001 will apply to grants awarded under this BAA Call. Financial and patent reports will also be required.

Although ONR Global expects the above plan to be executed, ONR Global reserves the exclusive right to make changes or cancel this GlobalX Innovation Joint Challenge, as necessary. This Notice does NOT imply any promise of award.

VIII.   POINTS OF CONTACT

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

Technical Points of Contact:
- Primary:
  - Dr. Joel Goodman, ONR Global Science Director, joel.i.goodman.civ@us.navy.mil
- Supplemental:
  - Ms. Christine Buzzel, ONR Program Officer, christine.m.buzzell.civ@us.navy.mil
  - Dr. Richard Yamada, ONR Global Science Director, yujiro.r.yamada.civ@us.navy.mil
  - Mr. Keith Hines, ONR Global Science Advisor to Naval Surface Forces, keith.e.hines.civ@us.navy.mil

Business Point of Contact:
- ONR Global Grants Team, usn.ncr.onrghq.list.grantsproposals@us.navy.mil

IX.   SUBMISSION OF QUESTIONS

Any questions regarding this announcement must be provided to the Business Point of Contact listed above. Please submit all questions in writing by electronic mail.

Answers to questions submitted in response to this Notice will be addressed in a Frequently Asked Questions (FAQ) document posted on https://www.nre.navy.mil/organization/onr-global and grants.gov.

Questions regarding **White Papers or Full Proposals** should be submitted no later than five working days before the dates recommended for receipt of White Papers and/or Full Proposals. Questions received after this date may not be answered.