

**Special Notice N00014-17-R-SN-0004**  
**Special Program Announcement for 2018 Office of Naval Research**  
**Research Opportunity: Learning Continuum and Performance Aid (LCaPA)**

**I. INTRODUCTION**

The purpose of this announcement is to notify interested parties of an Office of Naval Research (ONR) industry day on October 16-17, 2017, to inform industry about areas of research beginning in Fiscal Year (FY) 2018 in support of the “Learning Continuum and Performance Aid (LCaPA)”, to be launched under the N00014-17-S-B001, Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology which can be found at <https://www.onr.navy.mil/en/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements>. The research opportunity described in this announcement specifically falls under the Warfighter Performance (Code 34) - Human and Bioengineered Systems sub-section. The submission of proposals, their evaluation and the placement of research grants and 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) an industry day for dialogue amongst those interested in this arena, and (3) the planned timetable for the submission of white papers and proposals.

**II. DISCLAIMER**

The ONR will not issue paper copies of this Announcement. This Announcement does not constitute an indication that the Government will contract for this effort based on any of the draft requirements discussed through this Special Notice. This Special Notice is neither a contract, nor a request for proposal, nor a promise to contract, nor a commitment of any kind. The Government assumes no liability for costs incurred by any participant for travel or participation.

**III. TOPIC DESCRIPTION**

The proposed topic will focus on Naval training and readiness. The program will develop a collection of flexible interoperable applications that support an individualized learning continuum capable of capturing a Sailor's abilities. The product will provide performance feedback, remediation, job aiding, and data collection / retrieval that can be used for individual career management, skill classification, selection, automatic content re-engineering, supervisor evaluations, and Fleet readiness tracking. The system will focus on the Navy Aviation Electrician's Mate (AE) rating.

**Background:**

Today's sailors typically attend school and receive most of their rate-specific training up-front for up to two years. Then by the time they reach their assignments, their knowledge and skills

have likely atrophied and/or the technology they trained on has become outdated. Thus, as part of Sailor 2025, the Navy wants to provide “Ready, Relevant Training” to the Fleet, which will provide a career-long learning continuum where training is delivered at the point of need by modern delivery methods to enable faster learning and better knowledge retention. This will help the Navy transform their one-size-fits-all conveyor-belt-training-model to a new learner-centric training model.

To accomplish this objective, there is an urgent need for sailors to receive modernized content through multiple delivery methods to accelerate learning, minimize atrophy, and provide on-the-job performance support that improves individual performance and enhances mission readiness. This will significantly reduce the cost and time for getting the training to the Fleet and increase the Navy’s agility in a rapidly changing world. Specifically, the goal is to provide training content to Sailors that is accessible anytime from anywhere and that the content is updated and delivered to the Fleet faster. Delivery will be at the point of need so that Sailors will have convenient access to training content and support.

**Objective:**

The **Learning Continuum and Performance Aid (LCaPA)** program will focus on the following six critical areas for Navy training and readiness. Proposals may cover the entire effort, as prime integrator, or focus on specific subcomponents of the overall effort.

Critical areas to be addressed:

- 1) **The right training at the right time.** As the Navy moves toward smaller crews, sailors must master more skills in less time and have less skill decay (i.e., more efficient training). By tracking sailors’ past training and experience and knowing future assignments and requirements, this program can present sailors with the training they need when they need it.
- 2) **Training where it’s needed.** Due to increased and rapidly changing skill requirements, future sailors need to train and adapt throughout their whole careers. It will not be possible to confine training to schools and training centers. This program will use mobile platforms (e.g., tablets) to provide sailors access to training wherever they are and whenever they need it.
- 3) **Engaged and motivated learning.** Engagement helps learning. For LCaPA, training will not often take place in formalized settings where sailors are required to attend, thus the training will need to be especially engaging so that sailors are motivated to use it, even in informal settings where training is not mandatory. To further motivate sailors, this program will provide tools to help them formulate career goals and find training resources that will explicitly aid in their job performance.
- 4) **Persistent learner record.** The LCaPA program will create, for each sailor, a life-long learning record that records training and performance. LCaPA will provide tools that will use sailors’ life-long learning records to provide sailors, instructors, and commanders visibility into their performance and readiness.

- 5) **Reuse of existing high-quality training resources.** This program will provide tools that will make it easy to incorporate existing training resources, and avoid the need to redevelop these resources.
- 6) **Machine learning for training improvement.** As a sailor is trained, LCaPA will use real-time assessments to track the sailor's performance. As a sailor works in the fleet, LCaPA will track the sailor's on-the-job performance. This data will be recorded in the life-long learning record. Using machine learning and data mining techniques, LCaPA will provide tools that analyze the life-long learning records and identify key training experiences and gaps so that unique training profiles can be automatically created for each sailor. Thus, LCaPA will automatically adapt and provide training that targets the dynamically changing Naval environment. This will require capabilities for Intelligent System Updates and Predictive Analytics.

The delivered system will contain a number of features to aid and assist current and future fleet training needs. Specifically, the system will contain the following elements:

- a) **Personalized Guided Study:** System adaptively recommends topics and resources based on the learner's prior record.
- b) **Adapting to Skill Decay:** System contains models of knowledge and skill decay rates, and tracks individual, unit, and Rate proficiency and readiness based on those models.
- c) **Learner Models:** System has a model of the Sailor's current knowledge, skills, and abilities (KSAs) & Competencies, and models of where they should be in their current career development. These models are used to advise and guide the sailor to achieve targeted levels of proficiency.
- d) **Mobile Learning:** System provides access through a mobile app on a tablet (or other mobile device) to enable continuity across career and assignment transitions.
- e) **Ubiquitous Learning:** System follows a client/server approach, exchanging local data with a server, so that a learner's resources and goals are available on every device they use after they log in.
- f) **Virtual Agent Relationship:** The system provides a virtual avatar that is designed to act as a persistent guide and mentor across career transitions, to build rapport and to encourage returning to the system for further required study.
- g) **Persistent Memory:** The system has some capability of persistent memory for key previous interactions.
- h) **Social Motivation:** The system uses various methods to encourage career-long learning (e.g., teams, leaderboards, unlocks and achievements; sailors will collaborate and compete with their peers). These methods are to be flexible and tailored to the individual's preferred and/or most effective training incentives.
- i) **Persistent Learner Record:** The system will record all learning activities to a persistent record, which can provide continuity (e.g., log in from different machines) and support life-long learning. This record is stored online so that the learner can continue training on multiple devices. The data will likely need to be stored on a Navy Server, compliant with IA and PII regulations.
- j) **Reuse of existing high-quality resources:** The system will be designed to use existing digital resources that can be delivered intelligently through the systems dashboard. These resources can be external/third party web/intranet resources (e.g., videos, web pages) or other applications on the same device. This approach allows the system to

- make use of customized or advanced training systems where they exist, but also to provide an effective and inexpensive solution for filling in the gaps where no specialized training environments exist.
- k) Training Effectiveness Evaluations: The system will allow the comparison of training effectiveness through comparisons of various training materials and mediums, and be capable of suggesting the most appropriate materials based on individual preferences.
  - l) Capturing Sailor's experience: The system will be able to capture all electronic training and some level of on-the-job experiences (e.g., pull data from electronic maintenance tracking systems).
  - m) Intelligent System Updating: The system will be able to analyze training resources (utilized on the job) and captured Sailors' experiences to intelligently re-engineer the current training materials to target the evolving training needs (training tailored at the Unit level). The system will also intelligently tailor the AE Rate's KSAs and Competencies for selection and classification. The Intelligent System Updating shall communicate by pushing data to the Authoritative Data Environment with other Manpower, Personnel, Training and Education (MPT&E) systems to enable "Big Data" analytics on Fleet performance requirements and provide some level of alerts to MPT&E stakeholders when performance deficiencies or gaps exist.
  - n) Predictive Analytics: The system will have the ability to learn over time how KSAs and Competencies are interrelated, thus being able to predict training times for Sailors wishing to transfer to a new Rate. Guidance on the times and courses required will be provided through the systems career planning module.

The Office of Naval Research (ONR) is interested in receiving proposals that build upon existing work within ONR and other government funded projects; thus, offerors must be willing to cooperate and exchange software, data, and other information in an integrated program with other contractors, as well as with system integrators selected by ONR.

#### **IV. INDUSTRY DAY**

ONR will hold an Industry Day on October 16 - 17, 2017. There is no registration fee for participation. The Industry Day will serve to provide specific information that will be required knowledge when submitting against the ensuing BAA.

#### **ADVANCED REGISTRATION IS REQUIRED.**

Please register in advance so we can have an accurate count of those planning to attend and set up one-on-one meetings on for those who would like to discuss further. Please contact Tatiana McCook (tatiana.mccook.ctr@navy.mil) to register.

Who should attend: Defense contracting firms operating within the science and technology (S&T) enterprise with previous demonstrated successes in science and technology improvements in training, performance assessment, career management, and/or data mining. If you have further technical questions please contact LCDR Pete Walker at peter.walker@navy.mil.

The LCAPA Industry Day will be held on Oct 16 - 17, 2017, at the following location:

Office of Naval Research  
Strategic Analysis, Inc.  
Corporate Headquarters  
4075 Wilson Boulevard  
Suite 200  
Arlington, Virginia 22203

## **V. WHITE PAPER SUBMISSION**

Although not required, white papers are strongly encouraged for all offerors seeking funding. 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. Initial Government evaluations and feedback will be issued via e-mail notification from the Technical Point of Contact. The initial white paper appraisal is intended to give entities a sense of whether their concepts are likely to be funded.

Detailed Full Proposal (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 or any offeror who did not submit a white paper.

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: Learning Continuum and Performance Aid (LCaPA)” 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 2017. 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 is 10 November, 2017.

## **VI. FULL PROPOSAL SUBMISSION AND AWARD INFORMATION**

Full proposals should be submitted in accordance with the schedule in the section entitled “Significant Dates and Times” and should be submitted under ONR’s Long Range BAA by 1 December, 2017. Full Proposals received after that date will be considered as time and availability of funding permit.

ONR anticipates that only contracts will be issued for this effort.

ONR plans to fund three to five individual awards with a value of \$500,000 per year, using research funds. However, lower and higher cost proposals will be considered.

The period of performance for projects may be from three to five years.

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

## **VII. SIGNIFICANT DATES AND TIMES**

<b>Event</b>	<b>Date</b>	<b>Time</b>
Industry Day Registration Deadline	Oct 11, 2017	4:00 PM
LCAPA Industry Day Check-In	Oct 16, 2017 2017	09:00 AM
LCAPA Industry Day	Oct 16–17, 2017	09:00 AM to 4:00 PM
White Paper Submission Deadline*	Nov 1, 2017	4:00 PM Eastern
Notification of White Paper Evaluation*	Nov 10, 2017	4:00 PM Eastern
Full Proposal Submission Deadline	Dec 1, 2017	4:00 PM Eastern
Notification of Selection: Full Proposals *	Dec 15, 2017	4:00 PM Eastern
Awards *	15 February 2018	4:00 PM Eastern

Note: \* These are approximate dates.

## **VIII. BUILDING SECURITY**

Upon arrival, pre-registered attendees will be asked to check in at the registration desk. Photo identification may be asked upon check-in.

## **IX. POINTS OF CONTACT**

In addition to the points of contact listed in N00014-17-S-B001, the specific points of contact for this announcement are listed below:

Technical Points of Contact:

LCDR Pete Walker, peter.walker@navy.mil

Industry Day Security Point of Contract:

Laura Biggerstaff, laura.biggerstaff.ctr@navy.mil

Contracts Point of Contact:

Surlean Darby, Surlean.D.Darby@navy.mil

## **X. 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/>
- Grants.gov Webpage – <http://www.grants.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 no later than two weeks before the dates recommended for receipt of White Papers and/or Full Proposals. Questions after this date may not be answered.