



Broad Agency Announcement  
Nascent Light-Matter Interactions (NLM)  
Defense Sciences Office

HR001118S0014

November 29, 2017

**Table of Contents**

- I. Funding Opportunity Description .....4
  - A. Introduction.....4
  - B. Background .....4
  - C. Program Description/Scope .....5
  - D. Program Structure .....7
  - E. Schedule/Milestones .....8
  - F. Deliverables .....10
  - G. Other Program Objectives and Considerations.....10
- II. Award Information .....11
  - A. General Award Information.....11
  - B. Fundamental Research .....12
- III. Eligibility Information .....13
  - A. Eligible Applicants.....13
  - B. Organizational Conflicts of Interest.....14
  - C. Cost Sharing/Matching .....15
- IV. Application and Submission Information .....15
  - A. Address to Request Application Package .....15
  - B. Content and Form of Application Submission.....15
  - C. Submission Dates and Times .....18
  - D. Funding Restrictions .....18
  - E. Other Submission Requirements.....18
- V. Application Review Information .....22
  - A. Evaluation Criteria .....22
  - B. Review and Selection Process .....22
  - C. Federal Awardee Performance and Integrity Information (FAPIS) .....23
- VI. Award Administration Information .....23
  - A. Selection Notices .....23
  - B. Administrative and National Policy Requirements.....23
  - C. Reporting.....28
- VII. Agency Contacts .....29
- VIII. Other Information .....29
  - A. Frequently Asked Questions (FAQs).....29
  - B. Collaborative Efforts/Teaming .....29
  - C. Proposers Day .....30

ATTACHMENT 1: ABSTRACT SUMMARY SLIDE TEMPLATE

ATTACHMENT 2: ABSTRACT TEMPLATE

ATTACHMENT 3: PROPOSAL SUMMARY SLIDE TEMPLATE

ATTACHMENT 4: PROPOSAL TEMPLATE – VOLUME 1: TECHNICAL & MANAGEMENT VOLUME

ATTACHMENT 5: PROPOSAL TEMPLATE – VOLUME 2: COST VOLUME

ATTACHMENT 6: PROPOSAL TEMPLATE – VOLUME 3: ADMINISTRATIVE & NATIONAL POLICY REQUIREMENTS

## PART I: OVERVIEW INFORMATION

- **Federal Agency Name:** Defense Advanced Research Projects Agency (DARPA), Defense Sciences Office (DSO)
- **Funding Opportunity Title:** Nascent Light-Matter Interactions (NLM)
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** HR001118S0014
- **Catalog of Federal Domestic Assistance (CFDA) Number(s):** 12.910 Research and Technology Development
- **Dates:** (All times listed herein are Eastern Time.)
  - Posting Date **November 29, 2017**
  - Abstract Due Date: December 18, 2017, 4:00 p.m.
  - FAQ Submission Deadline: January 31, 2018, 4:00 p.m. See Section VIII.A.
  - Full Proposal Due Date: February 7, 2018, 4:00 p.m.
- **Anticipated Individual Awards:** DARPA anticipates multiple awards.
- **Types of Instruments that May be Awarded:** Procurement contracts, grants, cooperative agreements, or Other Transactions.
- **Agency contacts**
  - **Technical POC:** Michael Fiddy, Program Manager, DARPA/DSO
  - **BAA Email:** [NLM@darpa.mil](mailto:NLM@darpa.mil)
  - **BAA Mailing Address:**  
DARPA/DSO  
ATTN: HR001118S0014  
675 North Randolph Street  
Arlington, VA 22203-2114
  - **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/opportunities>
- **Teaming Information:** See Section VIII.B for information on teaming opportunities.
- **Frequently Asked Questions (FAQ):** FAQs for this solicitation may be viewed on the DARPA/DSO Opportunities Website. See Section VIII.A for further information.

## **PART II: FULL TEXT OF ANNOUNCEMENT**

### **I. Funding Opportunity Description**

This Broad Agency Announcement (BAA) constitutes a public notice of a competitive funding opportunity as described in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 as well as 2 CFR § 200.203. Any resultant negotiations and/or awards will follow all laws and regulations applicable to the specific award instrument(s) available under this BAA, e.g., FAR 15.4 for procurement contracts.

#### **A. Introduction**

The Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals that advance our knowledge and understanding of light-matter interactions. In particular, DARPA seeks to develop new and systematic approaches to the design of engineered structures and materials that change how we manipulate electromagnetic waves and capitalize on nascent wave-matter interactions. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

#### **B. Background**

In the last few years, our understanding of how materials interact with electromagnetic waves has resulted in nascent concepts that could develop into fundamentally new predictive models for light-matter interactions. Examples include:

- Resonant cavity-enhanced phenomena;
- Breaking Lorentz reciprocity and the role of gain and symmetry;
- The role of epsilon-near-zero materials;
- Developments in non-reciprocal structures;
- New approaches to managing photon density of states;
- New models for both nonlinear and non-scattering structures;
- Freeform optimized structures for wavefront control; and
- Opto-nano-mechanical phenomena for new properties and structure assembly.

Each of these examples provides new possibilities to control electromagnetic waves while also suggesting opportunities for new wave-matter interactions.

To develop new and systematic approaches to the design of structures and materials, a predictive model providing a design tool is required. For example, consider metamaterials that have extended our ability to control electromagnetic waves in new ways. Unlike traditional composite structures, metamaterial designs have emerged from, and rely heavily on circuit theory models and “abstracted” circuit elements. These serve as functionally focused artificial atoms, thereby extending what is possible with “naturally” occurring atoms and molecules. These structured meta-atoms frequently exploit designed resonant scattering phenomena and are useful material building blocks. New resonant and nonresonant structures have extended approaches for

controlling the photonic density of states and provided low-index and negative-index materials. Structured metamaterials have also exploited plasmonic effects to enhance the nonlinear properties of naturally occurring materials. Nevertheless, despite this progress, design methods for prescribed responses remain a challenge. Recent use of numerical optimization methods to generate material structures have proved of somewhat limited use and offer no physical insight or parametric prediction. The overarching challenge is to engineer materials in a predictive and parametric way that execute an arbitrary electromagnetic interaction.

DARPA seeks visionary approaches that lead to models that significantly extend our present ability to predict, manage, and exploit nascent light-matter interactions. Doing so could produce a major conceptual and practical impact on applications of importance to the Department of Defense (DoD). NLM performers will identify and then develop new and emerging concepts that advance how we control electromagnetic waves leading to significant improvements in the state of the art.

### **C. Program Description/Scope**

#### **Program Goal and Potential Impact**

The goal of NLM is to bring together and integrate nascent concepts into models that can both describe and predict new functionality. These models will provide design tools and inform us of new engineered-material performance limits. Successful proposals will address two key elements: (1) theoretical modeling/simulation of new mechanisms of light-matter interactions, and (2) identification of key/elemental structures as building blocks for modeling materials and predicting performance limits. Performers are expected to experimentally verify predicted parameters and validate their design tools by demonstrating new techniques for the control of light-matter interactions in one or more focus areas. Examples of these focus areas may include, but are not limited to, the phenomena listed below as well as phenomena in which quantum and dynamical effects are becoming increasingly important.

If successful, NLM will lead to a deeper conceptual understanding of light-matter interactions as well as a more systematic approach to controlling electromagnetic waves. Most importantly, NLM will advance critical applications through the synthesis of these new models that lead to new capabilities.

#### **Program Approach**

The NLM program will develop new methods of understanding, characterizing, modeling, and quantifying interactions between electromagnetic waves and engineered materials. NLM proposals must:

- Describe in detail a novel model to understanding the interaction between electromagnetic waves and engineered materials. This model should enable translation between a desired light-matter interaction and the structure of an arbitrarily engineered material. The description of the model must:

- *Provide a new method of characterizing light-matter-interactions.* This new method must be useful as a predictive, parametric, robust, and scalable design tool.
  - *Map structure to function and function to structure.* Proposals must quantify the range of materials and physical structures that can be characterized and the range of electromagnetic interactions that are predicted.
  - *Be generalizable.* Although an NLM model may only be initially valid for a small subset of possible materials and possible light-matter-interactions, the proposers must show a path to generalizing the approach to broad classes of materials and broad interactions with electromagnetic waves.
  - *Advance a specific, focused application.* All models should be capable of immediately advancing the state-of-the-art in one or more specific focused applications. (See “Example Phenomena” below.) Proposers should quantify how their proposed work will advance specific application(s) chosen.
- Describe a team capable of carrying out the proposed work. Successful teams will likely contain experts in theory, numerical modeling, fabrication, and quantitative testing. Such a team would bring together communities working in diverse materials and application areas, from theoreticians working in nonlinear scattering theory to wet-bench chemists.

### **Example Phenomena/Focus Areas**

The following is an incomplete list of potential applications upon which teams may choose to focus. Proposers may put forward alternatives with similar potential impact to the state-of-the-art:

- *Extreme nonlinearities:* Parametric phenomena, tunability, color night vision.
- *Unidirectional materials:* Limiters, self-aware surfaces, photon force drives.
- *Density of states engineering:* Meta-sources, thermal emissivity (e.g., reflecting or transmitting radiant energy for cooling turbines or chips), beyond superPlanckian hyperbolic materials.
- *High intensity EM deflectors and concentrators:* Broadband wave control, augmented energy harvesting, and power transfer.

### **Example NLM Approaches**

Approaches may involve interactions involving gain, symmetry, reciprocity-breaking, controlled density of states, energy transport, nonlinear coupling effects and high Q resonance. They may involve creating engineered distinct resonant structures, 2.5D “surfaces,” or 3D bulk materials. In all cases, proposers must develop new design tools that would be parametric, predictive, and generalizable to large classes of engineered materials and large classes of light-matter interactions, and that lend themselves to assembly/fabrication.

## Out of Scope

DARPA considers the following inappropriate for NLM:

- Numerical optimization techniques that do not enable parametric variation of both engineered materials and light-matter interactions; and
- Techniques based solely on perturbative expansions around linear techniques.

## Technical Glossary

- *Nascent*: Just coming into existence and beginning to display signs of future potential.
- *Light*: In this BAA, “Light” and “Electromagnetic Waves” are used interchangeably. The NLM program is interested in approaches to manipulating all electromagnetic frequency bands, from Ultra Violet to Microwave
- *Structured materials*: Resonators on the scale of wavelength to subwavelength dimensions and 2.5D and 3D (i.e., bulk) engineered materials.
- *Control, specifically of electromagnetic waves*: Deflection, focusing, scatter/not scatter, emission, absorb/reflect, frequency mix and frequency shift over a frequency bandwidth of choice, non-reciprocity, forces, energy density, etc.

### D. Program Structure

The NLM program consists of three phases: Phase I (an 18-month base period), Phase II (a 12-month option), and Phase III (an 18-month option). Proposals should address all three phases and provide details for Phase I and Phase II, and a rough order of magnitude (ROM) for Phase III. At the conclusion of Phase I, the Government may fund the option for the Phase II effort on one, some, all, or none of the awards, based on funding availability and promising Phase I results and/or technical progress.

Prior to the completion of Phase II (at approximately Month 24), DARPA intends to request updated technical and cost proposals for Phase III per specifications/guidance provided by DARPA. Participation in the competition for Phase III is optional and will be limited to successful Phase II performers. Associated proposal preparation costs for Phase III will not be reimbursed under Phase II awards. Evaluation of Phase III proposals will be based on evaluation criteria to be specified in the Phase III proposal requests, and Phase III proposal evaluations will be conducted through a scientific and technical review process. The Phase III evaluation criteria will be consistent with the evaluation criteria in this solicitation, and may be tailored to the Phase III requests for updated proposals. The Government reserves the right to change the award instrument or issue a new solicitation for Phase III if programmatic circumstances dictate.

Participation in an early phase does not guarantee funding in subsequent phases; progression to the next phase will be contingent on success. See Section I.E below for specific milestones and a required timeline.

## **Phase I – Building blocks and design strategy – 18 Months**

During Phase I, all performers must:

- Specify an approach to the nascent light-matter interaction problem.
- Present a predictive theoretical model and demonstrate the model’s potential for accomplishing the NLM goals and exceed the state-of-the-art.
- Develop a systematic holistic structure/shape/materials design approach, and use that approach to drive the development of new design tools.
- Purposefully extract and catalog nascent structure(s)/primitives/building blocks for engineered materials.
- Demonstrate that building blocks and devices of their choosing advance their chosen focused applications.

## **Phase II – Proof of concept – 12 Months**

During Phase II, all performers must:

- Demonstrate that their approach has the potential to dramatically advance the state of the art in their chosen focus areas and demonstrate that their approach is scalable and robust. Although all proposals must include a detailed plan for accomplishing these goals, specific “proof-of-concept challenges” will be reviewed at a workshop to be held near the end of Phase I.
- Demonstrate that specific proof-of-concept challenge metrics confirm that the predictive model and design strategy are effective.
- Demonstrate a path to verify performance metrics for designed properties.
- During Phase II, challenge problems for Phase III will be defined, after soliciting input and feedback from Government Stakeholders.

## **Phase III – DARPA Challenge Problems – 18 Months**

During Phase III, all performers must:

- Complete a DARPA challenge problem proposed with input from Government Stakeholders. It is anticipated that three or four varied application directions will be addressed by these challenge problems.

### **E. Schedule/Milestones**

During Phase I (18 months) teams will (1) develop predictive parametric models that can validate proposal-specified performance metrics and (2) build working design tools. All models and tools must be predictive, parametric, robust, and scalable. Performers must quantify both the range of materials and physical structures and the range of electromagnetic wave interactions that can be characterized.

Specific Milestones and key timeframes that apply to all performers are listed below.



- **Phase I – Building Blocks and Design Strategy (18 Months)**
  - 6 Months – **Predictive Model.** Performers must have refined and quantified their models for a light-matter interaction and developed them into a predictive, parametric modeling tool. Teams must extract and catalogue nascent structures/primitives/building blocks.
  - 12 Months – **Working Design Tool.** Performers must show predicted characteristics for hypothetical engineered materials that exceed state of the art. Performers must verify performer-specified performance metrics for their design tool. Preliminary simulations and, ideally, experiments should be completed to this end.
  - 15 Months – **Program Review and Stakeholder Workshop.** Teams continuing to Phase II will attend a workshop to become familiar with stakeholder interests and needs. Phase II experiments/simulations/tests will demonstrate that their design tools can accurately and precisely translate between the intended engineered materials and light-matter interactions.
  
- **Phase II – Proof of Concept (12 Months)**
  - 24 Months – **Verify Performance Metrics.** Performers should demonstrate they are on the path to verifying approved metrics for demonstrating proof-of-concept operation of Design Tools.
  - 25 Months – **Challenge Workshop.** A stakeholder workshop to consider challenge problems for Phase III that establish clear superiority of new engineered materials over existing technologies.
  
- **Phase III – DARPA Challenge Problems (18 Months)**
  - 36 Months, 42 Months, 48 Months – Phase III Challenge Milestones will be defined.

Proposers should provide a technical and programmatic strategy that conforms to the entire program schedule and presents an aggressive plan to fully address all program goals, metrics, milestones and deliverables. The task structure must be consistent across the proposed schedule, Statement of Work, and cost volume.

A target start date of July 2018 may be assumed for planning purposes.

Schedules will be synchronized across performers, as required, and monitored/ revised as necessary throughout the program.

- All proposals must include the following meetings and travel in the proposed schedule and costs:
  - To foster collaboration between teams, and disseminate program developments, a two-day Principal Investigator (PI) meeting will be held approximately every six months, with locations split between the East and

West Coasts of the United States. For budgeting purposes, plan for nine two-day meetings over the course of 48 months: five meetings in the Washington, D.C. area and four meetings in the San Francisco, CA area.

- Regular teleconference meetings will be scheduled with the Government team for progress reporting as well as problems identification and mitigation. Proposers should also anticipate at least one site visit per phase by the DARPA Program Manager during which they will have the opportunity to demonstrate progress towards agreed-upon milestones.

## **F. Deliverables**

Performers will be expected to provide at a minimum the following deliverables:

- Comprehensive quarterly technical reports due within ten days of the end of the given quarter, describing progress made on the specific milestones as laid out in the SOW.
- A phase completion report submitted within 30 days of the end of each phase, summarizing the research done.
- Other negotiated deliverables specific to the objectives of the individual efforts. These may include registered reports, experimental protocols, publications, intermediate and final versions of software libraries, code, and APIs, including documentation and user manuals, and/or a comprehensive assemblage of design documents, models, modeling data and results, and model validation data.
- Reporting as outlined in Section VI.C.

## **G. Other Program Objectives and Considerations**

### **1. Collaboration**

Throughout the course of the program, it is likely to be necessary for all performers—regardless of category—to share relevant information regarding their research and development to support the larger program goals. DARPA expects all program performers to work collaboratively with one another to realize the program objectives outlined herein, so proposers should carefully review the goals for the entire program in order to fully understand the context of each program objective within the overall program structure. All proposals should describe plans for ensuring transparency of their processes to enable interactions with other program performers. Proposals that fail to include these plans may be deemed non-conforming and removed from consideration.

### **2. Intellectual Property**

As discussed above, there is an emphasis on creating and leveraging open source technologies and architectures, making data sharing and collaboration key aspects of this program. Therefore, intellectual property rights asserted by proposers are strongly encouraged to be aligned with open source regimes. See Section VI.B.4 for more information related to intellectual property.

## II. Award Information

### A. General Award Information

DARPA anticipates multiple awards.

The level of funding for individual awards made under this BAA will depend on the quality of the proposals received and the availability of funds. Awards will be made to proposers<sup>1</sup> whose proposals are determined to be the most advantageous to the Government, all evaluation factors considered. See Section V for further information.

The Government reserves the right to:

- select for negotiation all, some, one, or none of the proposals received in response to this solicitation;
- make awards without discussions with proposers;
- conduct discussions with proposers if it is later determined to be necessary;
- segregate portions of resulting awards into pre-priced options;
- accept proposals in their entirety or to select only portions of proposals for award;
- fund awards in increments with options for continued work at the end of one or more phases;
- request additional documentation once the award instrument has been determined (e.g., representations and certifications); and
- remove proposers from award consideration should the parties fail to reach agreement on award terms within a reasonable time or the proposer fails to provide requested additional information in a timely manner.

Proposals identified for negotiation may result in a procurement contract, grant, cooperative agreement, or other transaction (OT), depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors.

Proposers looking for innovative, commercial-like contractual arrangements are encouraged to consider requesting Other Transactions. To understand the flexibility and options associated with Other Transactions, consult <http://www.darpa.mil/work-with-us/contract-management#OtherTransactions>.

In all cases, the Government contracting officer shall have sole discretion to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort will present a high likelihood

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<sup>1</sup> As used throughout this BAA, “proposer” refers to the lead organization on a submission to this BAA. The proposer is responsible for ensuring that all information required by a BAA--from all team members--is submitted in accordance with the BAA. “Awardee” refers to anyone who might receive a prime award from the Government, including recipients of procurement contracts, grants, cooperative agreements, or Other Transactions. “Subawardee” refers to anyone who might receive a subaward from a prime awardee (e.g., subawardee, consultant, etc.).

of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program. For more information on publication restrictions, see the section below on Fundamental Research.

## **B. Fundamental Research**

It is DoD policy that the publication of products of fundamental research will remain unrestricted to the maximum extent possible. National Security Decision Directive (NSDD) 189 defines fundamental research as follows:

‘Fundamental research’ means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons.

As of the date of publication of this BAA, the Government expects that program goals as described herein may be met by proposers intending to perform fundamental research and does not anticipate applying publication restrictions of any kind to individual awards for fundamental research that may result from this BAA. Notwithstanding this statement of expectation, the Government is not prohibited from considering and selecting research proposals that, while perhaps not qualifying as fundamental research under the foregoing definition, still meet the BAA criteria for submissions. If proposals are selected for award that offer other than a fundamental research solution, the Government will either work with the proposer to modify the proposed statement of work to bring the research back into line with fundamental research or else the proposer will agree to restrictions in order to receive an award.

Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to determine whether the proposed research shall be considered fundamental. Appropriate clauses will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This clause can be found at [www.darpa.mil/work-with-us/additional-baa](http://www.darpa.mil/work-with-us/additional-baa).

For certain research projects, it may be possible that although the research to be performed by a potential awardee is restricted research, their subawardee’s effort may be fundamental research. In those cases, it is the awardee’s responsibility to explain in their proposal why its subawardee’s effort is fundamental research.

### **III. Eligibility Information**

#### **A. Eligible Applicants**

All responsible sources capable of satisfying the Government's needs may submit a proposal DARPA's consideration.

#### **1. Federally Funded Research and Development Centers (FFRDCs) and Government Entities**

##### **a. FFRDCs**

FFRDCs are subject to applicable direct competition limitations and cannot propose to this BAA in any capacity unless they meet the following conditions: (1) FFRDCs must clearly demonstrate that the proposed work is not otherwise available from the private sector. (2) FFRDCs must provide a letter on official letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to Government solicitations and compete with industry, and their compliance with the associated FFRDC sponsor agreement's terms and conditions. This information is required for FFRDCs proposing to be awardees or subawardees.

##### **b. Government Entities**

Government Entities (e.g., Government/National laboratories, military educational institutions, etc.) are subject to applicable direct competition limitations. Government entities must clearly demonstrate that the work is not otherwise available from the private sector and provide written documentation citing the specific statutory authority and contractual authority, if relevant, establishing their ability to propose to Government solicitations. This information is required for Government Entities proposing to be awardees or subawardees.

##### **c. Authority and Eligibility**

At the present time, DARPA does not consider 15 U.S.C. § 3710a to be sufficient legal authority to show eligibility. While 10 U.S.C. § 2539b may be the appropriate statutory starting point for some entities, specific supporting regulatory guidance, together with evidence of agency approval, will still be required to fully establish eligibility. DARPA will consider FFRDC and Government entity eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the proposer.

#### **2. Foreign Participation**

Non-U.S. organizations and/or individuals may participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances. For classified submissions, this includes mitigating any Foreign Ownership Control and Influence (FOCI) issues prior to transmitting the submission to DARPA. Additional information on these subjects can be found at [http://www.dss.mil/isp/foci/foci\\_faqs.html](http://www.dss.mil/isp/foci/foci_faqs.html).

## **B. Organizational Conflicts of Interest**

### FAR 9.5 Requirements

In accordance with FAR 9.5, proposers are required to identify and disclose all facts relevant to potential OCIs involving the proposer's organization and *any* proposed team member (subawardee, consultant). Under this Section, the proposer is responsible for providing this disclosure with each proposal submitted to the BAA. The disclosure must include the proposer's, and as applicable, proposed team member's OCI mitigation plan. The OCI mitigation plan must include a description of the actions the proposer has taken, or intends to take, to prevent the existence of conflicting roles that might bias the proposer's judgment and to prevent the proposer from having unfair competitive advantage. The OCI mitigation plan will specifically discuss the disclosed OCI in the context of each of the OCI limitations outlined in FAR 9.505-1 through FAR 9.505-4.

### Agency Supplemental OCI Policy

In addition, DARPA has a supplemental OCI policy that prohibits contractors/performers from concurrently providing Scientific Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS) or similar support services and being a technical performer. Therefore, as part of the FAR 9.5 disclosure requirement above, a proposer must affirm whether the proposer or *any* proposed team member (subawardee, consultant) is providing SETA, A&AS, or similar support to any DARPA office(s) under: (a) a current award or subaward; or (b) a past award or subaward that ended within one calendar year prior to the proposal's submission date.

If SETA, A&AS, or similar support is being or was provided to any DARPA office(s), the proposal must include:

- The name of the DARPA office receiving the support;
- The prime contract number;
- Identification of proposed team member (subawardee, consultant) providing the support; and
- An OCI mitigation plan in accordance with FAR 9.5.

### Government Procedures

In accordance with FAR 9.503, 9.504 and 9.506, the Government will evaluate OCI mitigation plans to avoid, neutralize or mitigate potential OCI issues before award and to determine whether it is in the Government's interest to grant a waiver. The Government will only evaluate OCI mitigation plans for proposals that are determined selectable under the BAA evaluation criteria and funding availability.

The Government may require proposers to provide additional information to assist the Government in evaluating the proposer's OCI mitigation plan.

If the Government determines that a proposer failed to fully disclose an OCI; or failed to provide the affirmation of DARPA support as described above; or failed to reasonably provide additional information requested by the Government to assist in evaluating the proposer's OCI mitigation plan, the Government may reject the proposal and withdraw it from consideration for award.

### **C. Cost Sharing/Matching**

Cost sharing is not required; however, it will be carefully considered where there is an applicable statutory condition relating to the selected funding instrument (e.g., OTs under the authority of 10 U.S.C. § 2371).

### **IV. Application and Submission Information**

Prior to submitting a full proposal, proposers are *strongly encouraged* to first submit an abstract as described below. This process allows a proposer to ascertain whether the proposed concept is: (1) applicable to the NLM BAA and (2) currently of interest. For the purposes of this BAA, applicability is defined as follows:

- The proposed concept is applicable to the funding opportunity description in Section I.
- The proposed concept is important to DSO's current investment portfolio.
- The proposed concept investigates an innovative approach that enables revolutionary advances, i.e., will not primarily result in evolutionary improvements to the existing state of practice.
- The proposed work has not already been completed (i.e., the research element is complete but manufacturing/fabrication funds are required).
- The proposer has not already received funding or a positive funding decision for the proposed concept (whether from DARPA or another Government agency).

Abstracts and full proposals that are not found to be applicable to the NLM BAA as defined above may be deemed non-conforming<sup>2</sup> and removed from consideration. All abstracts and full proposals must provide sufficient information to assess the validity/feasibility of their claims as well as comply with the requirements outlined herein for submission formatting, content and transmission to DARPA. Abstracts and full proposals that fail to do so may be deemed non-conforming and removed from consideration. Proposers will be notified of non-conforming determinations via letter.

#### **A. Address to Request Application Package**

This document contains all information required to submit a response to this solicitation. No additional forms, kits, or other materials are needed except as referenced herein. No request for proposal or additional solicitation regarding this opportunity will be issued, nor is additional information available except as provided at the Federal Business Opportunities website (<http://www.fbo.gov>), the Grants.gov website (<http://www.grants.gov/>), or referenced herein.

#### **B. Content and Form of Application Submission**

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<sup>2</sup> "Conforming" is defined as having been submitted in accordance with the requirements outlined herein.

## **1. Abstract Information**

As stated above, proposers are strongly encouraged to submit an abstract in advance of a full proposal to minimize effort and reduce the potential expense of preparing an out of scope proposal. The abstract provides a synopsis of the proposed project by briefly answering the following questions:

- What is the proposed work attempting to accomplish or do?
- How is it done today, and what are the limitations?
- Who will care and what will the impact be if the work is successful?
- How much will it cost, and how long will it take?

DARPA will respond to abstracts with a statement as to whether DARPA is interested in the idea. If DARPA does not recommend the proposer submit a full proposal, DARPA will provide feedback to the proposer regarding the rationale for this decision. Regardless of DARPA's response to an abstract, proposers may submit a full proposal. DARPA will review all conforming full proposals using the published evaluation criteria and without regard to any comments resulting from the review of an abstract.

Proposers should note that a favorable response to an abstract is not a guarantee that a proposal based on the abstract will ultimately be selected for award negotiation.

While it is DARPA policy to attempt to reply to abstracts within thirty calendar days, proposers to this solicitation may anticipate a response within approximately three weeks. These official notifications will be sent via email to the Technical POC and/or Administrative POC identified on the abstract coversheet.

To assist in abstract development, various templates have been provided along with the BAA posted at <http://www.fbo.gov>. Attachment 1 is for the abstract summary slide and Attachment 2 is for the abstract. Use of these templates is mandatory.

Abstracts not meeting the format prescribed herein may not be reviewed.

### **a. Abstract Format**

All proposers are required to use the templates provided as Attachments 1 and 2 to this solicitation on [www.fbo.gov](http://www.fbo.gov) and <http://www.grants.gov>.

## **2. Full Proposal Information**

Proposals consist of Volume 1: Technical and Management Volume, Volume 2: Cost Volume, and Volume 3: Administrative and National Policy Requirements).

To assist in proposal development, various templates have been provided along with the BAA posted at <http://www.fbo.gov/>. Attachment 3 is for the proposal summary slide (introductory section of the Technical Volume), Attachment 4 is for the Volume 1: Technical and Management Volume, Attachment 5 is for the Volume 2: Cost Volume, and Attachment 6 is for the Volume 3:



Administrative and National Policy Requirements Volume. Use of all templates is mandatory.

All proposal pages (Volumes 1-3) shall be formatted for printing on 8-1/2 by 11-inch paper with 1-inch margins, single-line spacing, and a font size not smaller than 12 point. Font sizes of 8 or 10 point may only be used for figures, tables, and charts. Document files must be in .pdf, .odx, .doc, .docx, .xls, or .xlsx formats. The summary slide described herein must be in .ppt or .pptx format and should be attached as a separate file to this document. Submissions must be written in English.

Proposers are encouraged to submit concise, but descriptive, proposals. Specific examples of problems, approaches, or goals are preferred to qualitative generalities. The Government will not consider pages in excess of the page count limitations, as described herein. Proposals with fewer than the maximum number of pages will not be penalized. Additional information not explicitly called for in the Technical and Management Volume must not be submitted with the proposal, but may be included as links in the bibliography. Such materials will be considered for the reviewers' convenience only and not evaluated as part of the proposal.

Proposals not meeting the format prescribed herein may not be reviewed.

#### **a. Full Proposal Format**

All proposers are required to use the templates provided as Attachments 3, 4, 5, and 6 to this solicitation on [www.fbo.gov](http://www.fbo.gov) and <http://www.grants.gov>.

### **3. Proprietary Information**

Proposers are responsible for clearly identifying proprietary information. Submissions containing proprietary information must have the cover page and each page containing such information clearly marked with a label such as "Proprietary" or "Company Proprietary." NOTE: "Confidential" is a classification marking used to control the dissemination of U.S. Government National Security Information as dictated in Executive Order 13526 and should not be used to identify proprietary business information. See Section V.B.1 for additional information.

### **4. Security Information**

DARPA anticipates that submissions received under this BAA will be unclassified. However, should a proposer wish to submit classified information, an *unclassified* email must be sent to the BAA mailbox requesting submission instructions from the DARPA/DSO Program Security Officer (PSO).

Security classification guidance and direction via a SCG and/or DD Form 254, "DoD Contract Security Classification Specification," will not be provided at this time, since DARPA is soliciting ideas only. If a determination is made that the award instrument may result in access to classified information, a SCG and/or DD Form 254 will be issued by DARPA and attached as part of the award.

## **C. Submission Dates and Times**

Proposers are warned that submission deadlines as outlined herein are in Eastern Time and will be strictly enforced. When planning a response to this solicitation, proposers should take into account that some parts of the submission process may take from one business day to one month to complete (e.g., registering for a DUNS number or TIN).

DARPA will acknowledge receipt of *complete* submissions via email and assign identifying numbers that should be used in all further correspondence regarding those submissions. If no confirmation is received within two business days, please contact the BAA Administrator at [NLM@darpa.mil](mailto:NLM@darpa.mil) to verify receipt.

### **1. Abstracts**

Abstracts must be submitted per the instructions outlined herein *and received by DARPA* no later than the due date and time listed in Part One: Overview Information. Abstracts received after this time and date may not be reviewed.

### **2. Full Proposals**

Full proposal packages--full proposal (Technical and Management Volume, Cost Volume, National and Administrative Requirements) and, as applicable, proprietary subawardee cost proposals, classified appendices to unclassified proposals-- must be submitted per the instructions outlined herein *and received by DARPA* no later than the due date and time listed in Part One: Overview Information. Proposals received after this time and date may not be reviewed.

## **D. Funding Restrictions**

Not applicable.

## **E. Other Submission Requirements**

### **1. Unclassified Submission Instructions**

Proposers must submit all parts of their submission package using the same method; submissions cannot be sent in part by one method and in part by another method nor should duplicate submissions be sent by multiple methods. Email submissions will not be accepted. Failure to comply with the submission procedures outlined herein may result in the submission being deemed non-conforming and withdrawn from consideration.

#### **a. Abstracts**

DARPA/DSO will employ an electronic upload submission system (<https://baa.darpa.mil/>) for all UNCLASSIFIED abstracts sent in response to this solicitation. *Abstracts must not be submitted via Grants.gov.*

First time users of the DARPA BAA Submission website must complete a two-step account

creation process. The first step consists of registering for an extranet account by going to the URL listed above and selecting the “Account Request” link. Upon completion of the online form, proposers will receive two separate emails; one will contain a user name and the second will provide a temporary password. Once both emails have been received, the second step requires proposers to go back to the submission website and log in using that user name and password. After accessing the extranet, proposers may then create a user account for the DARPA BAA Submission website by selecting the “Register your Organization” link at the top of the page. Once the user account is created, proposers will be able to see a list of solicitations open for submissions, view submission instructions, and upload/finalize their abstract.

Proposers who already have an account on the DARPA BAA Submission website may simply log in at <https://baa.darpa.mil/>, select this solicitation from the list of open DARPA solicitations and proceed with their abstract submission. Note: proposers who have created a DARPA BAA Submission website account to submit to another DARPA Technical Office’s solicitations do not need to create a new account to submit to this solicitation.

All abstracts submitted electronically through the DARPA BAA Submission website must meet the following requirements: (1) uploaded as a zip file (.zip or .zipx extension); (2) only contain the document(s) requested herein; (3) only contain unclassified information; and (4) must not exceed 100 MB in size. Only one zip file will be accepted per abstract and abstracts not uploaded as zip files will be rejected by DARPA.

Technical support for the DARPA BAA Submission website is available during regular business hours, Monday – Friday, 9:00 a.m. – 5:00 p.m. Requests for technical support must be emailed to [BAAT\\_Support@darpa.mil](mailto:BAAT_Support@darpa.mil) with a copy to [NLM@darpa.mil](mailto:NLM@darpa.mil). Questions regarding submission contents, format, deadlines, etc. should be emailed to [NLM@darpa.mil](mailto:NLM@darpa.mil). Questions/requests for support sent to any other email address may result in delayed/no response.

*Since proposers may encounter heavy traffic on the web server, DARPA discourages waiting until the day abstracts are due to request an account and/or upload the submission. Note: Proposers submitting an abstract via the DARPA BAA Submission site MUST (1) click the “Finalize” button in order for the submission to upload AND (2) do so with sufficient time for the upload to complete prior to the deadline. Failure to do so will result in a late submission.*

## **b. Proposals Requesting a Procurement Contract or Other Transaction**

Proposers requesting procurement contracts or other transactions may only submit full proposals through ONE of the following methods: (1) electronic upload (DARPA-preferred); or (2) direct mail/hand-carry.

### **i. Electronic Upload**

DARPA/DSO encourages proposers to submit UNCLASSIFIED proposals via the DARPA BAA Submission website at <https://baa.darpa.mil/>.

First time users of the DARPA BAA Submission website must complete a two-step account creation process. The first step consists of registering for an extranet account by going to the URL listed above and selecting the “Account Request” link. Upon completion of the online

form, proposers will receive two separate emails; one will contain a user name and the second will provide a temporary password. Once both emails have been received, the second step requires proposers to go back to the submission website and log in using that user name and password. After accessing the extranet, proposers may then create a user account for the DARPA BAA Submission website by selecting the “Register your Organization” link at the top of the page. Once the user account is created, proposers will be able to see a list of solicitations open for submissions, view submission instructions, and upload/finalize their proposal.

Proposers who already have an account on the DARPA BAA Submission website may simply log in at <https://baa.darpa.mil/>, select this solicitation from the list of open DARPA solicitations and proceed with their proposal submission. *Note: proposers who have created a DARPA BAA Submission website account to submit to another DARPA Technical Office’s solicitations do not need to create a new account to submit to this solicitation.*

All full proposals submitted electronically through the DARPA BAA Submission website must meet the following requirements: (1) uploaded as a zip file (.zip or .zipx extension); (2) only contain the document(s) requested herein; (3) only contain unclassified information; and (4) must not exceed 100 MB in size. Only one zip file will be accepted per full proposal and full proposals not uploaded as zip files will be rejected by DARPA.

Technical support for the DARPA BAA Submission website is available during regular business hours, Monday – Friday, 9:00 a.m. – 5:00 p.m. Requests for technical support must be emailed to [BAAT\\_Support@darpa.mil](mailto:BAAT_Support@darpa.mil) with a copy to [NLM@darpa.mil](mailto:NLM@darpa.mil). Questions regarding submission contents, format, deadlines, etc. should be emailed to [NLM@darpa.mil](mailto:NLM@darpa.mil). Questions/requests for support sent to any other email address may result in delayed/no response.

*Since proposers may encounter heavy traffic on the web server, DARPA discourages waiting until the day proposals are due to request an account and/or upload the submission. Note: Proposers submitting a proposal via the DARPA BAA Submission site MUST (1) click the “Finalize” button in order for the submission to upload AND (2) do so with sufficient time for the upload to complete prior to the deadline. Failure to do so will result in a late submission.*

## **ii. Direct Mail/Hand-carry**

Proposers electing to submit procurement contract or other transaction proposals via direct mail or hand-carried must provide one paper copy and one electronic copy on CD or DVD of the full proposal package. All parts of the proposal package must be mailed or hand-carried in a single delivery to the address noted in Section VII below.

## **c. Proposals Requesting a Grant or Cooperative Agreement**

Proposers requesting grants or cooperative agreements may only submit proposals through ONE of the following methods: (1) electronic upload at Grants.gov (DARPA-preferred); or (2) direct mail/hand-carry to DARPA.

## **i. Electronic Upload**

DARPA encourages grant and cooperative agreement proposers to submit their proposals via electronic upload at <http://www.grants.gov/web/grants/applicants/apply-for-grants.html>. Proposers electing to use this method must complete a one-time registration process on Grants.gov before a proposal can be electronically submitted. *If proposers have not previously registered, this process can take up to four weeks so registration should be done in sufficient time to ensure it does not impact a proposer's ability to meet required submission deadlines.* Registration requirements and instructions are outlined at <http://www.grants.gov/web/grants/register.html>.

Carefully follow the DARPA submission instructions provided with the solicitation application package on Grants.gov. Only the required forms listed therein (e.g., SF-424 and Attachments form) should be included in the submission. *Note: Grants.gov does not accept zipped or encrypted proposals.*

Once Grants.gov has received an uploaded proposal submission, Grants.gov will send two email messages to notify proposers that: (1) the proposal has been received by Grants.gov; and (2) the proposal has been either validated or rejected by the system. *It may take up to two business days to receive these emails.* If the proposal is validated, then the proposer has successfully submitted their proposal. If the proposal is rejected, the submission must be corrected, resubmitted and revalidated before DARPA can retrieve it. If the solicitation is no longer open, the rejected proposal cannot be resubmitted. Once the proposal is retrieved by DARPA, Grants.gov will send a third email to notify the proposer. DARPA will send a final confirmation email as described in Section IV.C.

*To avoid missing deadlines, Grants.gov recommends that proposers submit their proposals to Grants.gov 24-48 hours in advance of the proposal due date to provide sufficient time to complete the registration and submission process, receive email notifications and correct errors, as applicable.*

Technical support for Grants.gov submissions may be reached at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov).

## **ii. Direct Mail/Hand-carry**

Proposers electing to submit grant or cooperative agreement proposals via direct mail or hand-carried must provide one paper copy and one electronic copy on CD or DVD of the full proposal package. Proposers must complete the SF 424 R&R form (Application for Federal Assistance, Research and Related) provided at Grants.gov as part of the opportunity application package for this BAA and include it in the proposal submission. All parts of the proposal package must be mailed or hand-carried to the address noted in Section VII below.

## **V. Application Review Information**

### **A. Evaluation Criteria**

Proposals will be evaluated using the following criteria listed in descending order of importance: Overall Scientific and Technical Merit; Potential Contribution and Relevance to the DARPA Mission; and Cost Realism.

- **Overall Scientific and Technical Merit**

The proposed technical approach is innovative, feasible, achievable, and complete.

- **Potential Contribution and Relevance to the DARPA Mission**

The potential contributions of the proposed effort are relevant to the national technology base. Specifically, DARPA's mission is to make pivotal early technology investments that create or prevent strategic surprise for U.S. National Security.

The proposed intellectual property restrictions (if any) will not significantly impact DARPA's ability to transition the technology

- **Cost Realism**

The proposed costs are realistic for the technical and management approach and accurately reflect the technical goals and objectives of the solicitation. The proposed costs are consistent with the proposer's Statement of Work and reflect a sufficient understanding of the costs and level of effort needed to successfully accomplish the proposed technical approach. The costs for the prime proposer and proposed subawardees are substantiated by the details provided in the proposal (e.g., the type and number of labor hours proposed per task, the types and quantities of materials, equipment and fabrication costs, travel and any other applicable costs and the basis for the estimates).

### **B. Review and Selection Process**

DARPA will conduct a scientific/technical review of each conforming proposal. Conforming proposals comply with all requirements detailed in this BAA; proposals that fail to do so may be deemed non-conforming and may be removed from consideration. Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons

The review process identifies proposals that meet the evaluation criteria described above and are, therefore, selectable for negotiation of awards by the Government. DARPA policy is to ensure impartial, equitable, comprehensive proposal evaluations and to select proposals that meet DARPA technical, policy, and programmatic goals. Proposals that are determined selectable will not necessarily receive awards (see Section II). Selections may be made at any time during the period of solicitation. For evaluation purposes, a proposal is defined to be the document and supporting materials as described in Section IV.

## **1. Handling of Source Selection Information**

DARPA policy is to treat all submissions as source selection information (FAR 2.101 and 3.104), and to only disclose their contents to authorized personnel. Restrictive notices notwithstanding, submissions may be handled by support contractors for administrative purposes and/or to assist with technical evaluation. All DARPA support contractors performing this role are expressly prohibited from performing DARPA-sponsored technical research and are bound by appropriate nondisclosure agreements. Subject to the restrictions set forth in FAR 37.203(d), DARPA may also request input on technical aspects of the proposals from other non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements.

Submissions will not be returned. The original of each submission received will be retained at DARPA and all other non-required copies destroyed. A certification of destruction may be requested via email to the BAA mailbox, provided the formal request is received within 5 days after being notified of submission status.

### **C. Federal Awardee Performance and Integrity Information (FAPIIS)**

Following the review and selection process described above, but prior to making an award above the simplified acquisition threshold (FAR 2.101), DARPA is required<sup>3</sup> to review and consider any information available through the designated integrity and performance system (currently FAPIIS). Selectees have the opportunity to comment on any information about themselves entered in the database. DARPA will consider any comments and other information in FAPIIS or other systems prior to making an award.

## **VI. Award Administration Information**

### **A. Selection Notices**

After proposal evaluations are complete, proposers will be notified as to whether their proposal was selected for award negotiation as a result of the review process. Notification will be sent by email to the Technical and Administrative POCs identified on the proposal cover sheet. If a proposal has been selected for award negotiation, the Government will initiate those negotiations following the notification.

### **B. Administrative and National Policy Requirements**

#### **1. Solicitation Provisions and Award Clauses, Terms and Conditions**

Solicitation provisions relevant to DARPA BAAs are listed on the Additional BAA Content page on DARPA's website at [www.darpa.mil/work-with-us/additional-baa](http://www.darpa.mil/work-with-us/additional-baa). This page also lists award clauses that, depending on their applicability, may be included in the terms and conditions of awards resultant from DARPA solicitations. This list is not exhaustive and the clauses, terms

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<sup>3</sup> Per 41 U.S.C. 2313, as implemented by FAR 9.103 and 2 CFR § 200.205.

and conditions included in a resultant award will depend on the nature of the research effort, the specific award instrument, the type of awardee, and any applicable security or publication restrictions.

For terms and conditions specific to grants and/or cooperative agreements, see the DoD General Research Terms and Conditions (latest version) at [www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx](http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx) and the supplemental DARPA-specific terms and conditions at [www.darpa.mil/work-with-us/contract-management#GrantsCooperativeAgreements](http://www.darpa.mil/work-with-us/contract-management#GrantsCooperativeAgreements).

The above information serves to put potential proposers and awardees on notice of proposal requirements and award terms and conditions to which they may have to adhere.

## **2. System for Award Management (SAM) and Universal Identifier Requirements**

All proposers must be registered in SAM unless exempt per FAR 4.1102. FAR 52.204-7, “System for Award Management” and FAR 52.204-13, “System for Award Management Maintenance” are incorporated into this BAA. See <http://www.darpa.mil/work-with-us/additional-baa> for further information.

NOTE: new registrations can take an average of 7-10 business days to process in SAM. SAM registration requires the following information:

- DUNS number
- TIN
- CAGE Code. If a proposer does not already have a CAGE code, one will be assigned during SAM registration.
- Electronic Funds Transfer information (e.g., proposer’s bank account number, routing number, and bank phone or fax number).

## **3. Representations and Certifications**

In accordance with FAR 4.1102 and 4.1201, proposers requesting a procurement contract must complete electronic annual representations and certifications at [www.sam.gov/](http://www.sam.gov/). In addition, resultant procurement contracts will require supplementary DARPA-specific representations and certifications. See [www.darpa.mil/work-with-us/additional-baa](http://www.darpa.mil/work-with-us/additional-baa) for further information.

## **4. Intellectual Property**

Proposers should note that the Government does not own the intellectual property or technical data/computer software developed under Government contracts. The Government acquires the right to use the technical data/computer software. Regardless of the scope of the Government’s rights, awardees may freely use their same data/software for their own commercial purposes (unless restricted by U.S. export control laws or security classification). Therefore, technical data and computer software developed under this solicitation will remain the property of the awardees, though DARPA will have, at a minimum, Government Purpose Rights (GPR) to technical data and computer software developed through mixed sponsorship.



If proposers desire to use proprietary computer software or technical data or both as the basis of their proposed approach, in whole or in part, they should: (1) clearly identify such software/data and its proposed particular use(s); (2) explain how the Government will be able to reach its program goals (including transition) within the proprietary model offered; and (3) provide possible nonproprietary alternatives in any area that might present transition difficulties or increased risk or cost to the Government under the proposed proprietary solution. Proposers expecting to use, but not to deliver, commercial open source tools or other materials in implementing their approach may be required to indemnify the Government against legal liability arising from such use.

All references to "Unlimited Rights" or "Government Purpose Rights" are intended to refer to the definitions of those terms as set forth in the Defense Federal Acquisition Regulation Supplement (DFARS) 227.

#### **a. Intellectual Property Representations**

All proposers must provide a good faith representation of either ownership or possession of appropriate licensing rights to all other intellectual property to be used for the proposed project. Proposers must provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research.

#### **b. Patents**

All proposers must include documentation proving ownership or possession of appropriate licensing rights to all patented inventions to be used for the proposed project. If a patent application has been filed for an invention, but it includes proprietary information and is not publicly available, a proposer must provide documentation that includes: the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and summary of the patent title, with either: (1) a representation of invention ownership; or (2) proof of possession of appropriate licensing rights in the invention (i.e., an agreement from the owner of the patent granting license to the proposer).

#### **c. Procurement Contracts**

- **Noncommercial Items (Technical Data and Computer Software):** Proposers requesting a procurement contract must list all noncommercial technical data and computer software that it plans to generate, develop, and/or deliver, in which the Government will acquire less than unlimited rights and to assert specific restrictions on those deliverables. In the event a proposer does not submit the list, the Government will assume that it has unlimited rights to all noncommercial technical data and computer software generated, developed, and/or delivered, unless it is substantiated that development of the noncommercial technical data and computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data and computer software generated, developed, and/or delivered, proposers should identify the data and software in question as subject to

GPR. In accordance with DFARS 252.227-7013, “Rights in Technical Data - Noncommercial Items,” and DFARS 252.227-7014, “Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation,” the Government will automatically assume that any such GPR restriction is limited to a period of 5 years, at which time the Government will acquire unlimited rights unless the parties agree otherwise. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Attachment 6.

- **Commercial Items (Technical Data and Computer Software):** Proposers requesting a procurement contract must list all commercial technical data and commercial computer software that may be included in any noncommercial deliverables contemplated under the research project, and assert any applicable restrictions on the Government’s use of such commercial technical data and/or computer software. In the event a proposer does not submit the list, the Government will assume there are no restrictions on the Government’s use of such commercial items. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer to evaluate the proposer’s assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Attachment 6.

#### **d. Other Types of Awards**

Proposers requesting an award instrument other than a procurement contract shall follow the applicable rules and regulations governing those award instruments, but in all cases should appropriately identify any potential restrictions on the Government’s use of any intellectual property contemplated under those award instruments. This includes both noncommercial items and commercial items. The Government may use the list as part of the evaluation process to assess the impact of any identified restrictions, and may request additional information from the proposer, to evaluate the proposer’s assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Attachment 6.

### **5. Program-generated Data**

Data are increasingly the key product of research and engineering endeavors. To ensure the reproducibility of results and access to source data for future research, awardees will be required to maintain and deliver any data generated during award performance (“program-generated data”) that is needed to accomplish these goals. Awardees shall be expected to document both the proprietary and non-proprietary products of their research to ensure the retention and potential reusability of this information. This may include:

- Raw unprocessed data, software source code and executables, build scripts, process sequence, programmatic communication and other collaboration activities;
- Data sets: rarified, experimental, test and measurement data;
- Design of experiments and simulations;
- Models or simulations (computational or mathematical);
- Recordings of various physical phenomena (including images, videos, sensor data, etc.);
- Access to and use of institutional, organizational or scientific community repositories and archives

All program-generated data will reside in DARPA's data repository. When possible, DARPA may share some or all of the program-generated data with the broader research community as open data (with permission to access, reuse, and redistribute under appropriate licensing terms where required) to the extent permitted by applicable law and regulations (e.g., privacy, security, rights in data, and export control). DARPA plans to enable reproducibility of results through data sharing and to establish (or contribute to) digital collections that can advance this and other scientific fields.

## **6. Human Subjects Research (HSR)/Animal Use**

Proposers that anticipate involving human subjects or animals in the proposed research must comply with the approval procedures detailed at [www.darpa.mil/work-with-us/additional-baa](http://www.darpa.mil/work-with-us/additional-baa), to include providing the information specified therein as required for proposal submission.

## **7. Controlled Unclassified Information (CUI) on Non-DoD Information Systems**

All proposers and awardees will be subject to the DARPA requirements related to Controlled Unclassified Information on Non-DoD Information Systems as detailed at [www.darpa.mil/work-with-us/additional-baa](http://www.darpa.mil/work-with-us/additional-baa).

## **8. Electronic Invoicing and Payments**

Awardees will be required to submit invoices for payment electronically via Wide Area Work Flow (WAWF) at <https://wawf.eb.mil>, unless an exception applies. Registration in WAWF is required prior to any award under this BAA.

## **9. Electronic and Information Technology**

All electronic and information technology acquired or created through this BAA must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C. § 749d) and FAR 39.2.

## **10. Publication of Grant Awards**

Per Section 8123 of the Department of Defense Appropriations Act, 2015 (Pub. L. 113-235), all grant awards must be posted on a public website in a searchable format. To comply with this requirement, proposers requesting grant awards must submit a maximum one (1) page abstract that may be publicly posted and explains the program or project to the public. The proposer should sign the bottom of the abstract confirming the information in the abstract is approved for public release. Proposers are advised to provide both a signed PDF copy, as well as an editable (e.g., Microsoft word) copy. Abstracts contained in grant proposals that are not selected for award will not be publicly posted.

## **11. Disclosure of Information and Compliance with Safeguarding Covered Defense Information Controls**

The following provisions and clause apply to all solicitations and contracts; however, the definition of “controlled technical information” clearly exempts work considered fundamental research and therefore, even though included in the contract, will not apply if the work is fundamental research.

DFARS 252.204-7000, “Disclosure of Information”

DFARS 252.204-7008, “Compliance with Safeguarding Covered Defense Information Controls”

DFARS 252.204-7012, “Safeguarding Covered Defense Information and Cyber Incident Reporting”

The full text of the above solicitation provision and contract clauses can be found at <http://www.darpa.mil/work-with-us/additional-baa#NPRPAC>.

Compliance with the above requirements includes the mandate for proposers to implement the security requirements specified by National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171, “Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations” (see <https://doi.org/10.6028/NIST.SP.800-171r1>) that are in effect at the time the BAA is issued, or as authorized by the Contracting Officer, not later than December 31, 2017.

For awards where the work is considered fundamental research, the contractor will not have to implement the aforementioned requirements and safeguards; however, should the nature of the work change during performance of the award, work not considered fundamental research will be subject to these requirements.

### **C. Reporting**

#### **1. Technical and Financial Reports**

The number and types of technical and financial reports required under the contracted project will be specified in the award document, and will include, as a minimum, monthly financial status reports and a yearly status summary. A final report that summarizes the project and tasks will be required at the conclusion of the performance period for the award. The reports shall be prepared and submitted in accordance with the procedures contained in the award

document.

## 2. Patent Reports and Notifications

All resultant awards will contain a mandatory requirement for patent reports and notifications to be submitted electronically through i-Edison (<https://public.era.nih.gov/iedison>).

## VII. Agency Contacts

DARPA will use email for all technical and administrative correspondence regarding this solicitation.

- **Technical POC:** Michael Fiddy, Program Manager, DARPA/DSO
- **BAA Email:** [NLM@darpa.mil](mailto:NLM@darpa.mil)
- **BAA Mailing Address:**  
DARPA/DSO  
ATTN: HR001118S0014  
675 North Randolph Street  
Arlington, VA 22203-2114
- **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/opportunities>

For information concerning agency level protests see <http://www.darpa.mil/work-with-us/additional-baa#NPRPAC>.

## VIII. Other Information

### A. Frequently Asked Questions (FAQs)

Administrative, technical, and contractual questions should be emailed to [NLM@darpa.mil](mailto:NLM@darpa.mil). All questions must be in English and must include the name, email address, and the telephone number of a point of contact.

DARPA will attempt to answer questions in a timely manner; however, questions submitted within 7 days of the proposal due date may not be answered. DARPA will post an FAQ list at: <http://www.darpa.mil/work-with-us/opportunities>. The list will be updated on an ongoing basis until the BAA expiration date as stated in Part I.

### B. Collaborative Efforts/Teaming

DARPA highly encourages teaming before proposal submission and, as such, will facilitate the formation of teams with the necessary expertise. Interested parties should submit a one-page profile including the following information:

- Contact information to include name, organization, email, telephone number, mailing

- address, organization website (if applicable).
- A brief description of the proposer's technical competencies.
- Desired expertise from other teams, if applicable.

All profiles must be emailed to [NLM@darpa.mil](mailto:NLM@darpa.mil) no later than 4:00 p.m. December 5, 2017. Following the deadline, the consolidated teaming profiles will be sent via email to the proposers who submitted a valid profile. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the DoD endorses the information and organizations contained in the consolidated teaming profile document, nor does DARPA or the DoD exercise any responsibility for improper dissemination of the teaming profiles. Teams need not be finalized at the time of abstract submission.

### **C. Proposers Day**

The NLM Proposers Day was held via webcast on November 28, 2017. The webcast is available at <http://www.darpa.mil/work-with-us/opportunities?tFilter=&oFilter=2&sort=name>. Viewing the webcast is voluntary and is not required to propose to this solicitation.