Broad Agency Announcement

Artificial Social Intelligence for Successful Teams (ASIST)

HR001119S0034

March 18, 2019

Defense Advanced Research Projects Agency
Information Innovation Office
675 North Randolph Street
Arlington, VA 22203-2114

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PART I: OVERVIEW INFORMATION

- **Federal Agency Name:** Defense Advanced Research Projects Agency (DARPA), Information Innovation Office (I2O)

- **Funding Opportunity Title:** Artificial Social Intelligence for Successful Teams (ASIST)

- **Announcement Type:** Initial Announcement

- **Funding Opportunity Number:** HR001119S0034

- **Catalog of Federal Domestic Assistance Numbers (CFDA):** 12.910 Research and Technology Development

- **Dates**
  - Posting Date: March 18, 2019
  - Proposers Day: March 14, 2019
  - Abstract Due Date: April 2, 2019, 12:00 noon (ET)
  - Proposal Due Date: May 17, 2019, 12:00 noon (ET)
  - BAA Closing Date: May 17, 2019, 12:00 noon (ET)

- **Anticipated Individual Awards:** DARPA anticipates 4-6 awards for Technical Area 1 (TA1), many smaller awards for TA2, and a single award for TA3.

- **Types of Instruments that may be awarded:** Procurement contracts, grants, Other Transactions (OTs), or cooperative agreements.

- **Agency Contacts**

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  - **I2O Solicitation Website:** http://www.darpa.mil/work-with-us/opportunities

PART II: FULL TEXT OF ANNOUNCEMENT

I. Funding Opportunity Description

DARPA is soliciting innovative research proposals in the area of machine social intelligence in a teaming context. 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.

This Broad Agency Announcement (BAA) is being issued, and any resultant selection will be made, using procedures under Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016. Any negotiations and/or awards will use procedures under FAR 15.4 (or 32 CFR § 200.203 for grants and cooperative agreements). Proposals received as a result of this BAA shall be evaluated in accordance with evaluation criteria specified herein through a scientific review process.

DARPA BAAs are posted on the Federal Business Opportunities (FBO) website (https://www.fbo.gov/) and the Grants.gov website (https://www.grants.gov/).

The following information is for those wishing to respond to this BAA.

A. Introduction/Background

Artificial Intelligence (AI) technologies have made little progress in understanding the most important component of the environments in which they operate: humans. This lack of understanding stymies efforts to create safe, efficient, and productive human-machine teams. The Artificial Social Intelligence for Successful Teams (ASIST) program will develop foundational AI theory and systems that demonstrate the basic machine social skills needed to infer the goals and situational knowledge (i.e., what they believe, correctly or not, to be true of their current situation) of human partners, predict what they will need, and offer context aware actions in order to perform as adaptable and resilient AI teammates.

What makes humans good teammates? Humans intuitively combine pre-existing knowledge with observations and contextual clues to construct *rich mental models of* the world around them and use these models to evaluate goals, perform thought experiments, make predictions, and update their situational understanding. When the environment contains other people, humans use a skill called *theory of mind* (ToM) to infer their mental states from observed actions and context, and predict future actions from those inferred states. When humans form teams, these models can become extremely complex. High-performing teams naturally align key aspects of their models to create shared mental models of their environment, equipment, team, and strategies. ToM and the ability to create shared mental models are key elements of human social intelligence. Together, these two skills form the basis for human collaboration at all scales, whether the setting is a playing field or a military mission.

ASIST performers will create agents that demonstrate these social skills: a machine ToM and the ability to participate in an effective team by representing and helping to maintain shared models. The program will create and employ a testbed for evaluating these agents using customizable open-world environments and standardized interfaces. The interfaces will include a package of

standard sensing channels (i.e., information streams from physical and virtual sensors that will be available to ASIST agents) and communication/action channels (i.e., mechanisms for agents to convey information to human teammates in the testbed and what options they can use to engage with the team). ASIST agents must operate in increasingly complex and specialized environments, be adaptable to sudden perturbations in the mission or team (like the loss of communication with a key teammate), and use noisy multi-channel observations to represent the world and do complex inference and prediction.

B. Program Description/Scope

DARPA is seeking revolutionary ideas that lead to rigorous and practical demonstrations of the feasibility and effectiveness of advances in machine social intelligence in a teaming context. ASIST envisions agents that observe their surroundings; build and maintain rich representations of the environment, team, and individuals, infer their teammates' situational knowledge and goals; predict their teammates' actions and needs; and assist the team by planning complex actions and executing them at appropriate times. ASIST agents will operate in increasingly complex and specialized environments, and will adapt to unexpected perturbations such as a sudden disruption to the team or change in strategy.

In addition, ASIST will advance the scientific state-of-the-art in the area of human-machine teaming. There are many unanswered questions about human-AI teaming, and addressing them will require multiple perspectives from fields including, but not limited, to cognitive science, team science, human factors, and organizational studies.

ASIST agents will be demonstrated in a virtual testbed in which both humans and agents can interact. Experiments will be designed in this testbed to evaluate agents and test novel hypotheses about human and human-machine teaming.

Proposals describing approaches for agents performing services in the physical world are *not* of interest and are considered *out of scope* for the program. Also *not* of interest for ASIST are proposals that focus on development of sensors to enable agents to observe their surroundings.

C. Program Structure

The ASIST program will consist of three technical areas (TAs):

- TA1: AI Agent Architectures
- TA2: Cognitive Modeling of Individuals and Teams
- TA3: Environment and Evaluation

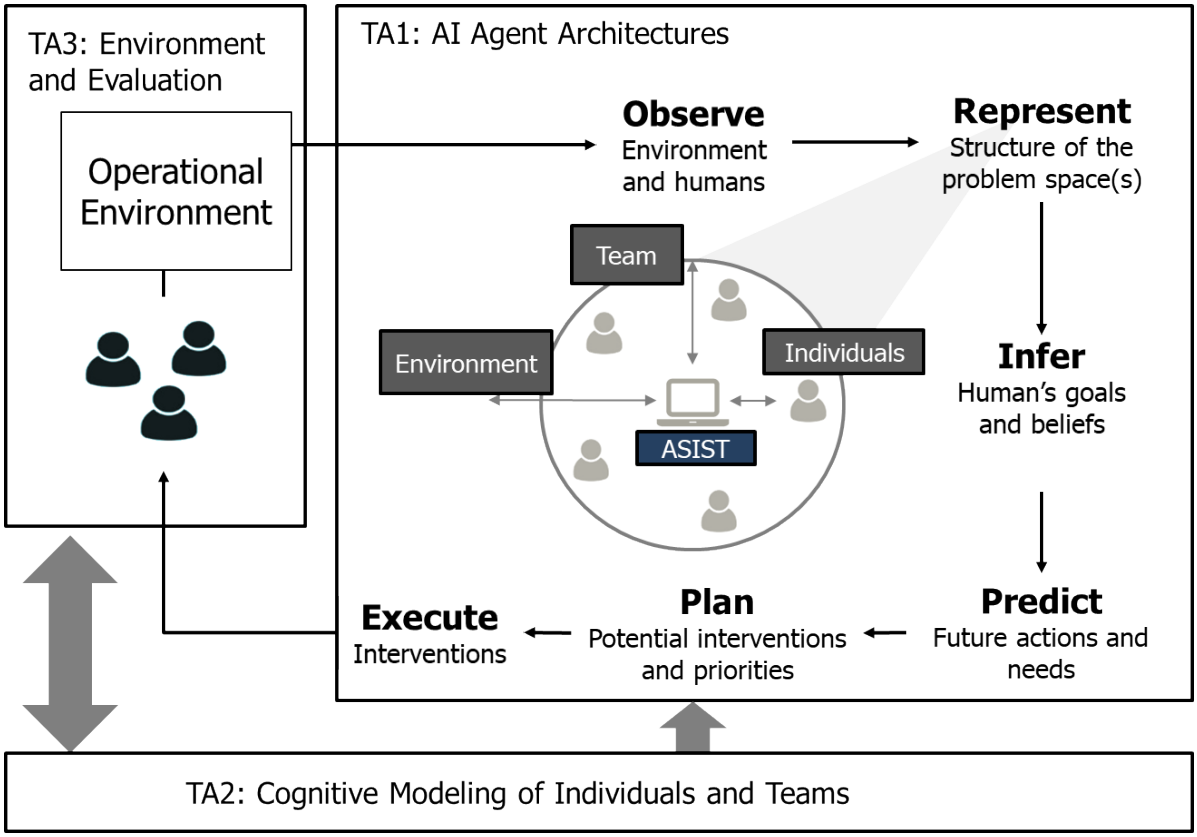

Figure 1: Structure of ASIST showing the interaction of different technical areas

Figure 1 depicts the structure of ASIST, including the various reasoning processes that must be addressed. Each proposal may only address a single technical area but proposers may submit multiple proposals. A proposer may submit proposals for all three technical areas and may participate in either or both TA1 and TA2; however, a proposer selected for TA3 will be unable to perform on any portion of TA1 and/or TA2. This selection process is intended to avoid organizational conflicts of interest (OCI) situations between TAs 1 and 2 and the integration and evaluation activities in TA3, as well as to ensure objective test and evaluation results. The decision as to which proposal to select for award is at the discretion of the Government.

TA3 is expected to involve Human Subjects Research (HSR). TA1 and TA2 may include HSR. See Sections IV.B.2 and VI.B.2 for further HSR proposal submission details.

ASIST will have three phases. The first and second phases will be 15 months each, and the third phase will be 18 months long for a total program length of 48 months, or four years. Phase 1 will focus on technologies to create agents that interact with a single human partner. Phase 2 will extend Phase 1 technologies to include interactions with multiple humans on a team. Phase 3 will research and develop agents capable of partnering with complex teams comprising individuals with specialized roles and skills.

Each phase will have two technical evaluation exercises for a total of six evaluation events throughout the duration of the program. The first evaluation of each phase will occur in the 9th month of the phase and involve relatively simple tasks and only one class of perturbation (e.g.,

reward revaluations only). The second evaluation of the phase will occur at phase completion, and involve relatively complex tasks and multiple classes of perturbation. TA3 will develop and execute the evaluation exercises. TA3 will also conduct evaluation dry runs with the TA1 and TA2 performers approximately three months before each evaluation, to ensure the government team has sufficient insight into team progress to make adjustments to the experiments as needed.

No forced down-selects are anticipated. However, to continue from one phase to the next, individual performers need to demonstrate the viability of their technical approaches and progress toward producing technologies that support the goals and objectives of the program. All performers will be required to agree to an Associate Contractor Agreement (ACA), in order to facilitate program-wide collaboration. TA3 will lead the process for establishing the ACA.

D. Technical Areas

TA1: AI Agent Architectures

The goal of TA1 is to develop and implement AI architectures for human-machine teaming. The agent architectures must:

- use generalizable approaches to represent teams and individual partners;
- demonstrate real-time scalable inference and predict the actions of human partners;
- demonstrate the ability to scale to increasingly complex operations; and
- handle multiple classes of perturbations effectively.

By the end of Phase 1, TA1 teams must demonstrate effective AI agent architectures that exhibit key aspects of machine social intelligence. More specifically, using multi-channel observations, agents should develop representations of the environment and of their human teammate that are sufficient to infer unobservable states of human teammates (such as their situational knowledge, policies, and goals), predict their subsequent actions and needs, and autonomously deliver appropriate information and services to their human teammates. These agents should also have sufficient self-awareness to model how their actions change the environment and team system. By the end of Phase 2, the agents must demonstrate machine social intelligence that includes interactions between multiple humans (for example, the ability to participate in the team's shared mental models). Finally in Phase 3, the agent must make useful contributions to a team of humans, each with specialized roles and skills working collectively toward a complex objective.

ASIST agents must be able to accept and use structured mission knowledge from the team (e.g., rules, constraints, norms, and strategies) and use observations and analytics to reason over team and teammate goals, states, and actions. It is expected that ASIST agents will learn over time to recognize and encourage desirable properties of teams, such as effective team dynamics, efficient task loads, and improved strategies. Agents should also create individualized profiles of human teammates that include categories such as expertise, limitations, effective roles, and common behaviors; this knowledge should be employed to improve their models of the humans/team and the effectiveness of services provided. Strong proposals will describe architectures that can operate in both local and distributed teaming environments, where available sensing and communication options will be limited.

TA1 performers will participate in a working group convened by TA3 (see section regarding TA3) to design the challenge environment and standardized interface, including available

sensing and communication channels. TA1 teams may propose specific API elements to extract state information from the challenge environment, software sensors to monitor operator input devices, and non-invasive sensors to monitor the physiological status of operators. For sensors that are difficult to use or not commonly available, TA1 performers will be expected to provide the sensors. TA1 proposals should address how agents will adapt to environments where some sensors are unavailable (e.g., distributed virtual teams). ASIST is *not* interested in proposals that include significant research effort for novel sensors.

The ASIST working group will also design a standard set of communication mechanisms with which agents can effectively communicate information to their human teammates and participate in alignment of the shared models (e.g. text, audio, visuals, dashboards, etc.). This will include available action options such as specific types and frequencies of knowledge that can be provided.

TA2: Cognitive Modeling and Individuals and Teams

The primary objective for TA2 teams is to formulate novel and testable hypotheses about human-machine teaming and human social cognition. This is expected to include critical topics, such as the variability in team performance (e.g., based on measures of latent properties of teams), norms of behavior and communication, trust, nested mental models, and the applicability to hybrid teams of successful theoretical frameworks for human team performance. TA2 will develop theories of effective human-machine teaming, and will work closely with TA1 to inform the design of the agent architectures. TA2 proposals should describe the state-of-the-art and how it will be advanced.

TA2 performers will pre-register testable hypotheses (to include the approximate magnitude and direction of the effect size) in a repository managed by TA3. TA2 proposers should describe how they will minimize the ambiguity of their claims, and how they will be measured. Proposals should also describe methods for verifying the robustness of analyses.

TA2 teams will collaborate with TA3 to develop new measures and experiments to test these hypotheses, and will analyze and publish the resulting data and conclusions. In so doing, TA2 will contribute to every aspect of the program, enabling improvements in TA1 architectures, and significantly advancing the state of our understanding of human-human and human-machine teaming.

TA2 proposals should include a detailed description of theoretical perspectives and structures, along with existing published claims from the literature that can be tested in the TA3 testbed. Strong proposals will present initial claims that already have evidence from the literature, so that the verification of these claims in the ASIST testbed can provide a firm theoretical grounding for the program. TA2 may propose exploratory experimentation if needed, but TA3 will conduct all confirmatory experimentation (see the section regarding TA3). After each evaluation, TA2 will analyze the resulting data, publish their analyses and conclusions, and propose new and/or revised hypotheses to test in the next evaluation cycle.

TA2 performers will be evaluated based on theories that were validated or invalidated, and published scholarship. TA2 performers are strongly encouraged to work closely with TA1 and TA3 teams to understand what will be experimentally available and to inform the design of agent architectures and experiments.

TA3: Environment and Evaluation

The TA3 performer will develop and implement a scalable testbed and challenge environment(s), organize and execute tests in this testbed, and coordinate with performers to assure protocols and APIs are stable and functioning prior to evaluations and dry-runs. The testbed must include environments that allow for both simple and complex challenges with a single human (Phase 1), many humans (teams as large as 10 in Phase 2), and complex teams with individuals possessing specialized roles and skills (Phase 3).

The TA3 performer will organize, design, and execute six evaluations (two per phase), and host technical meetings approximately three months before each evaluation. The two-day evaluation events will be hosted at the site of the testbed (though they may include both local and distributed experiments) and include representatives from TA1 and TA2 teams. Technical meetings will include a three-day dry-run experiment and a two-day all-hands principal investigator (PI) meeting (plan for attendance of roughly 75-100 people). Location for technical meetings will be local to the TA3 performer. The primary objective of the dry-run is to finalize systems engineering, protocols, and standards in preparation for the subsequent evaluation. It is expected that a small amount of data will be collected at the dry-run events that TA2 teams can use to design analyses (thus proposals should address the likelihood that dry-runs will entail HSR). In addition to the final evaluation event at month 47, TA3 will also organize and host a final three-day technology demonstration in conjunction to a two-day final PI meeting at month 48 in the Washington D.C. area (see Schedule and Milestones below for more details). TA3 proposers should discuss how they will facilitate these events, including the acquisition and provisioning of appropriate event facilities and resources.

TA3 will convene a working group at the beginning of each program phase, with representation from each TA1 and TA2 performer team, to establish a framework for experiments, requirements for a common interface to the testbed environment, and priorities to accommodate as many of the requirements of the other performer teams as feasible. TA3 proposals should include a baseline cost to provide software integration support to four TA1 performer teams as well as experimental planning support to four TA2 performer teams. Proposal should also include separate optional tasks to support additional performer teams in TA1 or TA2. The interface will include a package of standard sensing channels (i.e., information streams that will be available to TA1 agent architectures) and communication/action channels (i.e., mechanisms for agents to convey information to human teammates in the testbed and what options they can use to engage with the team). The sensing channels may include streams from specialized sensors requested and provided by TA1 and TA2 performer teams, but will always include a core set of sensors that are practical in a distributed team environment. The experiment framework agreed to during these working groups is expected to include the structure of the environment and tasks, and a set of additional measures implemented in the experiments to facilitate tests of TA2 hypotheses (which are likely to require measurements outside the recorded sensing channels such as survey instruments or other tests).

TA3 will produce passive experimental designs, in which humans and agents monitor human teams (or recordings of the teams) in the challenge environment, and make inferences and predictions but do not intervene, and active experimental designs in which agents contribute to the team.

Proposed testbeds must be able to challenge human and hybrid teams with both simple and complex tasks. An example of such a testbed would be a customizable Minecraft[1] environment (though this example is not intended to be prescriptive, and proposals should identify the environment or environments that will best meet the program's objectives). Proposed testbeds must have the ability to implement multiple classes of perturbations. Perturbations might include, but are not limited to Reward Revaluation (e.g., sudden changes in mission goal), Transition Revaluation (e.g., structural changes to the environment or team), and Policy Revaluation (e.g., a sudden change to the team strategy).

Strong TA3 proposals will adapt and extend an existing AI testbed with environments that are accessible by distributed teams and can be sustainably maintained as an open community resource for continued advancement in human-machine teaming after the program completes. After each evaluation, the challenge environments should be made available to performers for continued testing. Strong proposals will discuss ways in which to make the testbed environments available to TA1 performers early in Phase 1.

TA3 will maintain a repository in which TA2 performer teams will pre-register testable hypotheses, context, and experimental results and analyses. Strong TA3 proposals will discuss approaches for instantiating this repository to make it available early in the program. TA3 will conduct all experiments, ensure the rigor of the experimental environment, and will collaborate with TA2 performers to ensure academic rigor in the experiment design. In so doing, TA3 should facilitate transfer of best experimentation practices across the TA2 teams and refine their experimentation environment to support a wide range of experiments. By the end of the program, this experimentation environment and its datasets should be sufficiently mature that it can be made open source as a resource to the theoretical and experimental community.

The evaluation exercises developed and conducted by TA3 must assess the Agent's social skill and the Team's effectiveness. Example measures to quantify during evaluation exercise include but are not limited to accuracy of inferences and predictions, time to generate initial inference or update with new information, agent usefulness, trust, adaptation and resilience time, and coordination effort required after perturbation. Strong proposals will discuss additional relevant metrics and measures to be quantified during evaluation exercises.

The TA3 performer will be responsible for recruiting all human subjects that will participate in the evaluation exercises. Sample sizes should be large enough to produce statistically meaningful results for the metrics of Agent Social Skill and Team Effectiveness. The TA3 performer will also be responsible for leading the establishment of the Associate Contractor Agreement.

E. Schedule/Milestones

The schedule for ASIST is shown in Figure 2. The program will start with a 3-day kickoff meeting hosted by DARPA. The program will end with a 5-day meeting that includes a final 3-day technology demonstration followed by a 2-day final PI meeting located in Washington D.C, and hosted by TA3.

[1] Minecraft is a multiplayer, collaborative video game platform.

Six technical meetings will be conducted approximately three months before each evaluation event. Technical meetings will last five days, and include a 3-day dry-run evaluation and a 2-day all-hands PI meeting. Technical meetings will be conducted at a location chosen by the TA3 performer; therefore, travel by other TAs to the evaluation site will be required. For budgeting purposes, please assume either an east or west coast location, whichever is further from a proposer's home location.

Six 2-day evaluation events are anticipated to occur on months 9 and 15 (Phase 1), 24 and 30 (Phase 2), and 39 and 47 (Phase 3) of the program. Evaluations will be conducted at a location chosen by the TA3 performer; therefore, travel by other TAs to the evaluation site will be required. For budgeting purposes, please assume either an east or west coast location, whichever is further from a proposer's home location.

The program manager and other U.S. Government stakeholders will visit prime performer sites approximately once per phase. Visits are anticipated to last one day, and the prime performer should plan for key personnel to participate.

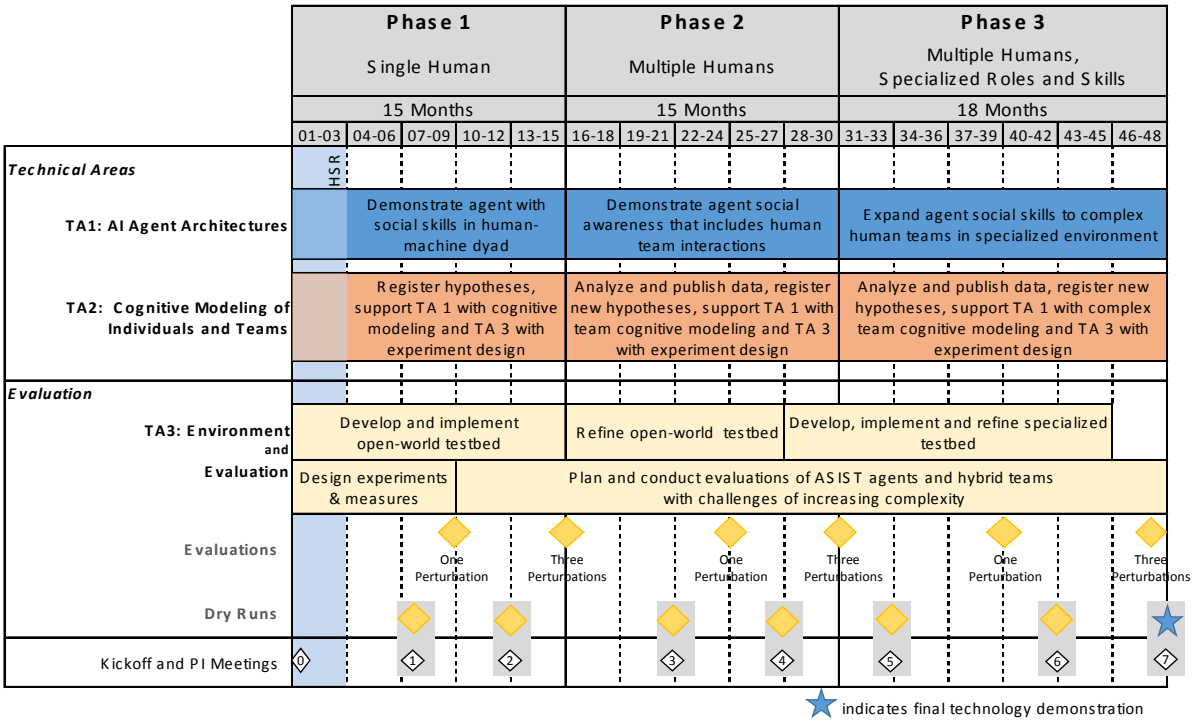

Figure 2: Schedule of the ASIST program

F. Deliverables

Performers are required to provide, at a minimum, the deliverables described below.

- All performers must deliver copies of any technical papers derived from work funded by ASIST.
- Annotated slide presentations must be submitted within one week after the program kickoff meeting and after each program event (site visits, PI meetings, etc.).

- Short quarterly technical reports using a PowerPoint template that summarize key technical accomplishment, list code/results delivered and where, plans for the next quarter, and issues (technical, programmatic, financial) must be provided within 15 calendar days after the end of the quarter.
- Monthly financial status reports must be provided within 15 calendar days after the end of each calendar month.
- TA1 and TA3 performers are required to deliver software source code prior to each dry-run and evaluation.
- Each performer must deliver a final report, at the end of the overall period of performance, which summarizes their project.

G. Government-furnished Property/Equipment/Information

None.

H. Intellectual Property

The program will emphasize creating and leveraging open source technology and architecture. Intellectual property rights asserted by proposers are strongly encouraged to be aligned with open source regimes. See Section VI.B.1 for more details on intellectual property.

I. Potential Conflicts of Interest

Each proposal may only address a single technical area, but proposers may submit multiple proposals. A proposer may submit proposals for all three technical areas and may participate in either or both TA1 and TA2; however, a proposer selected for TA3 will be unable to perform on any portion of TA1 and/or TA2. This selection process is intended to avoid organizational conflicts of interest (OCI) situations between the research TAs and the integration and evaluation activities, as well as to ensure objective test and evaluation results. The decision as to which proposal to select for award is at the discretion of the Government.

II. Award Information

A. Awards

DARPA anticipates multiple awards for TA1 and TA2, as well as a single award for TA3. The level of funding for individual awards made under this solicitation has not been predetermined and will depend on the quality of the proposals received and the availability of funds. Awards will be made to proposers whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work, overall funding strategy, and availability of funding. 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 proposals in increments and/or 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 selected for award negotiation may result in a procurement contract, grant, OT, or cooperative agreement 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 accordance with 10 U.S.C. § 2371b(f), the Government may award a follow-on production contract or Other Transaction (OT) for any OT awarded under this BAA if: (1) that participant in the OT, or a recognized successor in interest to the OT, successfully completed the entire prototype project provided for in the OT, as modified; and (2) the OT provides for the award of a follow-on production contract or OT to the participant, or a recognized successor in interest to the OT.

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 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 and to select the award instrument type. Appropriate language will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This language can be found at 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 non-fundamental research, its proposed subawardee's effort may be fundamental research. It is also possible that the research performed by a potential awardee is fundamental research while its proposed subawardee's effort may be non-fundamental research. In all cases, it is the potential awardee's responsibility to explain in its proposal which proposed efforts are fundamental research and why the proposed efforts should be considered fundamental research.

C. 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.

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.

III. Eligibility Information

A. Eligible Applicants

DARPA welcomes engagement from all responsible sources capable of satisfying the Government's needs, including academia (colleges and universities); businesses (large, small, small disadvantaged, etc.); other organizations (including non-profit); other entities (foreign, domestic, and government); FFRDCs; minority institutions; and others.

DARPA welcomes engagement from non-traditional sources in addition to current DARPA performers.

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.

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).

For more information on potential cost sharing requirements for Other Transactions for Prototype, see http://www.darpa.mil/work-with-us/contract-management#OtherTransactions.

IV. Application and Submission Information

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 (RFP) or additional solicitation regarding this opportunity will be issued, nor is additional information available except as provided at the Federal Business Opportunities website (https://www.fbo.gov), the Grants.gov website (https://www.grants.gov/), or referenced herein.

B. Content and Form of Application Submission

1. Abstracts

Proposers are highly encouraged to submit an abstract in advance of a 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, including brief answers to the following questions:

- What is the proposed work attempting to accomplish or do?
- What is the technical approach (concisely), what are the major innovations, and what are the risks?
- 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.

Abstract Format: Abstracts shall not exceed a maximum of three (3) pages including the cover sheet and all figures, tables, and charts. The page limit does not include a submission letter (optional).

As a reminder, each abstract submitted in response to this BAA shall address only one TA. Organizations may submit multiple abstracts to any one TA, or they may submit abstracts to multiple TAs.

All pages shall be formatted for printing on 8-1/2 by 11 inch paper with 1-inch margins and font size not smaller than 12 point. Font sizes of 8 or 10 point may be used for figures, tables, and charts. Document files must be in .pdf, .odx, .doc, .docx, .xls, or .xlsx formats. Submissions must be written in English. All pages should be numbered.

Abstracts must include the following components:

- **Cover Sheet**: Provide the administrative and technical points of contact (name, address, phone, email, lead organization). Include the BAA number, title of the proposed project, primary subcontractors, estimated cost, duration of the project, and the label "Abstract."

- **Goals:** Describe what is being proposed and what difference it will make (qualitatively and quantitatively) if successful. Describe the innovative aspects of the project in the context of existing capabilities and approaches, clearly delineating the relationship of this work to any other projects from the past and present.

- **Technical Plan:** Outline and address all technical challenges inherent in the approach and possible solutions for overcoming potential problems. Provide appropriate specific milestones (quantitative, if possible) at intermediate stages of the project to demonstrate progress.

- **Capabilities/Management Plan:** Provide a brief summary of expertise of the team, including subcontractors and key personnel. Identify a principal investigator for the project and include a description of the team's organization including roles and responsibilities. Describe the organizational experience in this area, existing intellectual property required to complete the project, and any specialized facilities to be used as part of the project. List Government-furnished property, facilities, or data assumed to be available.

- **Statement of Work, Cost and Schedule:** Provide a Rough Order of Magnitude (ROM) cost estimate for resources over the proposed timeline of the project, broken down by year. Include labor, materials, a list of deliverables and delivery schedule. Provide cost estimates for each subcontractor (may be a ROM).

2. Proposals

Proposals consist of Volume 1: Technical and Management Proposal (including mandatory Appendix A and optional Appendix B); Volume 2: Cost Proposal; the Level of Effort Summary by Task Excel spreadsheet; and the PowerPoint summary slide.

All pages 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 be used for figures, tables, and charts. Document files must be in .pdf, .odx, .doc, .docx, .xls, or .xlsx formats. Submissions must be written in English. All pages of Volume 1 should be numbered.

A summary slide of the proposed effort, in PowerPoint format, should be submitted with the proposal. A template slide is provided as an attachment to the BAA. Submit this PowerPoint file in addition to Volumes 1 and 2 of your full proposal, and the Level of Effort Summary by Task Excel spreadsheet. This summary slide does not count towards the total page count.

Reminder – Each proposal submitted in response to this BAA shall address only one TA. Organizations may submit multiple proposals to any one TA, or they may propose to multiple TAs.

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

a. Volume 1: Technical and Management Proposal

The maximum page count for Volume 1 is twenty-five (25) pages, including all figures, tables and charts but not including the cover sheet, table of contents, Statement of Work (see below), Schedule and Milestones, or appendices. A submission letter is optional and is not included in the page count. Appendix A does not count against the page limit and is mandatory. Appendix B does not count against the page limit and is optional. Additional information not explicitly called for here must not be submitted with the proposal, but may be included in the bibliography in Appendix B. Such materials will be considered for the reviewers' convenience only and not evaluated as part of the proposal.

Volume 1 must include the following components:

i. Cover Sheet: Include the following information.

- Label: "Proposal: Volume 1"
- BAA number (HR001119S0034)
- Technical Area
- Proposal title
- Lead organization (prime contractor) name
- Type of organization, selected from the following categories: Large Business, Small Disadvantaged Business, Other Small Business, HBCU, MI, Other Educational, or Other Nonprofit
- Technical point of contact (POC) including name, mailing address, telephone number, and email address
- Administrative POC including name, mailing address, telephone number, and email address
- Award instrument requested: procurement contract (specify type), grant, OT, or cooperative agreement.[2]
- Total amount of the proposed effort
- Place(s) and period(s) of performance
- Other team member (subcontractors and consultants) information (for each, include Technical POC name, organization, type of organization, mailing address, telephone number, and email address)
- Proposal validity period (minimum 120 days)
- Data Universal Numbering System (DUNS) number[3]
- Taxpayer Identification Number (TIN)[4]
- Commercial and Government Entity (CAGE) code[5]

[2] Information on award instruments can be found at http://www.darpa.mil/work-with-us/contract-management.
[3] The DUNS number is used as the Government's contractor identification code for all procurement-related activities. Go to http://fedgov.dnb.com/webform/index.jsp to request a DUNS number (may take at least one business day). For further information regarding this subject, please see www.darpa.mil/work-with-us/additional-baa for further information.
[4] See https://www.irs.gov/individuals/international-taxpayers/taxpayer-identification-numbers-tin for information on requesting a TIN. Note, requests may take from 1 business day to 1 month depending on the method (online, fax, mail).
[5] A CAGE Code identifies companies doing or wishing to do business with the Federal Government. For further information regarding this subject, please see www.darpa.mil/work-with-us/additional-baa.

- Proposer's reference number (if any)

ii. Table of Contents

iii. Executive Summary: Provide a synopsis of the proposed project, including answers to the following questions:

- What is the proposed work attempting to accomplish or do?
- What is the technical approach (concisely), what are the major innovations, and what are the risks?
- How much will it cost, and how long will it take?

The executive summary should include a description of the key technical challenges, a concise review of the technologies proposed to overcome these challenges and achieve the project's goal, and a clear statement of the novelty and uniqueness of the proposed work.

iv. Innovative Claims and Deliverables: Describe the innovative aspects of the project in the context of existing capabilities and approaches, clearly delineating the uniqueness and benefits of this project in the context of the state-of-the-art, alternative approaches, and other projects from the past and present. Describe how the proposed project is revolutionary and how it significantly rises above the current state-of-the-art.

Describe the deliverables associated with the proposed project and any plans to commercialize the technology, transition it to a customer, or further the work. Discuss the mitigation of any issues related to sustainment of the technology over its entire lifecycle, assuming the technology transition plan is successful.

v. Technical Plan: Outline and address technical challenges inherent in the approach and possible solutions for overcoming potential problems. Demonstrate a deep understanding of the technical challenges and present a credible (even if risky) plan to achieve the project's goal. Discuss mitigation of technical risk. Provide appropriate measurable milestones (quantitative if possible) at intermediate stages of the project to demonstrate progress and a plan for achieving the milestones.

vi. Management Plan: Provide a summary of expertise of the proposed team, including any subcontractors/consultants and key personnel who will be executing the work. Resumes count against the proposal page limit, so proposers may wish to include them in Appendix B (described below). Identify a principal investigator (PI) for the project. Provide a clear description of the team's organization including an organization chart that includes, as applicable, the relationship of team members; unique capabilities of team members; task responsibilities of team members; teaming strategy among the team members; and key personnel with the amount of effort to be expended by each person during the project. Provide a detailed plan for coordination including explicit guidelines for interaction among collaborators/subcontractors of the proposed project. Include risk management approaches. Describe any formal teaming agreements that are required to execute this project. List Government-furnished materials or data assumed to be available.

vii. Personnel, Qualifications, and Commitments: List key personnel (no more than one page per person), showing a concise summary of their qualifications, discussion of previous accomplishments, and work in this or closely related research areas. Indicate the level of effort in terms of hours to be expended by each person during each contract year and other (current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make a substantial time commitment to the proposed activity, and the proposal will be evaluated accordingly. It is DARPA's intention to put key personnel conditions into the awards, so proposers should not propose personnel that are not anticipated to execute the award.

Include a table of key individual time commitments as follows:

Key Individual	Project	Status (Current, Pending, Proposed)	Hours on Project		
			Phase 1	Phase 2	Phase 3
Name 1	**ASIST**	Proposed	x	x	x
	Project Name 1	Current	x	x	n/a
	Project Name 2	Pending	n/a	x	x
Name 2	**ASIST**	Proposed	x	x	x
	Project Name 3	Proposed	x	x	x

viii. Capabilities: Describe organizational experience in relevant subject area(s), existing intellectual property, or specialized facilities. Discuss any work in closely related research areas and previous accomplishments.

ix. Statement of Work (SOW): The SOW must provide a detailed task breakdown, citing specific tasks and their connection to the interim milestones and metrics, as applicable. Each year of the project should be separately defined. The SOW must not include proprietary information. The SOW should only contain and elaborate on tasks described in the technical proposal. For each defined task/subtask, provide:

- A general description of the objective.
- A detailed description of the approach to be taken to accomplish each defined task/subtask.
- Identification of the primary organization responsible for task execution (prime contractor, subcontractor(s), consultant(s)), by name.
- Exit criteria (e.g., a deliverable, demonstration, or other event/activity that marks task completion).
- A definition of all deliverables (e.g., data, reports, software) to be provided to the Government in support of the proposed tasks/subtasks.

Proposers may use "ASIST_SOW_template.docx" for their SOW or a format of their choice. This document is provided on the FBO website, as well as on the Grants.gov website, as an attachment.

x. Schedule and Milestones: Provide a detailed schedule showing tasks (task name, duration, work breakdown structure element as applicable, performing organization), milestones, and the interrelationships among tasks. The task structure must be consistent

with that in the SOW. Measurable milestones should be clearly articulated and defined in time relative to the start of the project.

xi. Appendix A: This section is mandatory and must include all of the following components. If a particular subsection is not applicable, state "NONE". There is no page limit on Appendix A.

(1). Team Member Identification: Provide a list of all team members including the prime, subcontractor(s), and consultant(s), as applicable. Identify specifically whether any are a non-US organization or individual, FFRDC and/or Government entity. Use the following format for this list:

Individual Name	Role (Prime, Subcontractor or Consultant)	Organization	Non-US?		FFRDC or Govt?
			Org	Ind.	

(2). Government or FFRDC Team Member Proof of Eligibility to Propose: If none of the team member organizations (prime or subcontractor) are a Government entity or FFRDC, state "NONE".

If any of the team member organizations are a Government entity or FFRDC, provide documentation (per Section III.A.1) citing the specific authority that establishes the applicable team member's eligibility to propose to Government solicitations to include: 1) statutory authority; 2) contractual authority; 3) supporting regulatory guidance; and 4) evidence of agency approval for applicable team member participation.

(3). Government or FFRDC Team Member Statement of Unique Capability: If none of the team member organizations (prime or subcontractor) are a Government entity or FFRDC, state "NONE".

If any of the team member organizations are a Government entity or FFRDC, provide a statement (per Section III.A.1) that demonstrates the work to be performed by the Government entity or FFRDC team member is not otherwise available from the private sector.

(4). Organizational Conflict of Interest Affirmations and Disclosure: If none of the proposed team members is currently providing SETA or similar support as described in Section III.B, state "NONE".

If any of the proposed team members (individual or organization) is currently performing SETA or similar support, furnish the following information:

Prime Contract Number	DARPA Technical Office supported	A description of the action the proposer has taken or proposes to take to avoid, neutralize, or mitigate the conflict

(5). Intellectual Property (IP): If no IP restrictions are intended, state "NONE". The Government will assume unlimited rights to all IP not explicitly identified as having less than unlimited rights in the proposal.

For all noncommercial technical data or computer software that will be furnished to the Government with other than unlimited rights, provide (per Section VI.B.1) a list describing all proprietary claims to results, prototypes, deliverables or systems supporting and/or necessary for the use of the research, results, prototypes and/or deliverables. Provide documentation proving ownership or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) to be used for the proposed project. Use the following format for these lists:

NONCOMMERCIAL				
Technical Data and/or Computer Software To be Furnished With Restrictions	**Summary of Intended Use in the Conduct of the Research**	**Basis for Assertion**	**Asserted Rights Category**	**Name of Person Asserting Restrictions**
(List)	(Narrative)	(List)	(List)	(List)
(List)	(Narrative)	(List)	(List)	(List)

COMMERCIAL				
Technical Data and/or Computer Software To be Furnished With Restrictions	**Summary of Intended Use in the Conduct of the Research**	**Basis for Assertion**	**Asserted Rights Category**	**Name of Person Asserting Restrictions**
(List)	(Narrative)	(List)	(List)	(List)
(List)	(Narrative)	(List)	(List)	(List)

(6). Human Subjects Research (HSR): If HSR is not a factor in the proposal, state "NONE".

If the proposed work will involve human subjects, provide evidence of or a plan for review by an Institutional Review Board (IRB). Note that use of crowd sourcing sites is not automatically excluded from HSR and proposals to use such resources may require review by an IRB or a formal determination of not human use. HSR efforts will require a Human Research Protection Officer (HRPO) review after the IRB approval. For further information on this subject, see Section VI.B.2.

(7). Animal Use: If animal use is not a factor in the proposal, state "NONE".

If the proposed research will involve animal use, provide a brief description of the plan for Institutional Animal Care and Use Committee (IACUC) review and approval. For further information on this subject, see Section VI.B.2.

(8). Representations Regarding Unpaid Delinquent Tax Liability or a Felony Conviction under Any Federal Law: For further information regarding this subject, please see www.darpa.mil/work-with-us/additional-baa.

Please also complete the following statements.

(1) The proposer is [ ] is not [ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability,

(2) The proposer is [ ] is not [ ] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(9). Cost Accounting Standards (CAS) Notices and Certification: For any proposer who submits a proposal which, if accepted, will result in a CAS-compliant contract, must include a Disclosure Statement as required by 48 CFR 9903.202. The disclosure forms may be found at https://www.whitehouse.gov/wp-content/uploads/2017/11/CASB_DS-1.pdf.

If this section is not applicable, state "NONE". For further information regarding this subject, please see www.darpa.mil/work-with-us/additional-baa.

xii. Appendix B: If desired, include a brief bibliography to relevant papers, reports, or resumes. Do not include technical papers. This section is optional, and the materials will not be evaluated as part of the proposal review.

b. Volume 2 - Cost Proposal

This volume is mandatory and must include all the listed components. No page limit is specified for this volume.

The cost proposal should include a working spreadsheet file (.xls, .xlsx or equivalent format) that provides formula traceability among all components of the cost proposal. The spreadsheet file should be included as a separate component of the full proposal package. Costs must be traceable between the prime and subcontractors/consultants, as well as between the cost proposal and the SOW.

Pre-award costs will not be reimbursed unless a pre-award cost agreement is negotiated prior to award.

i. Cover Sheet: Include the same information as the cover sheet for Volume 1, but with

the label "Proposal: Volume 2."

ii. Cost Summary Tables: Provide a single-page summary table broken down by fiscal year listing cost totals for labor, materials, other direct charges (ODCs), indirect costs (overhead, fringe, general and administrative [G&A]), and any proposed fee for the project. Include costs for each task in each fiscal year of the project by prime and major subcontractors, total cost and proposed cost share, if applicable. Provide a second table containing the same information broken down by project phase.

iii. Cost Details: For each task, provide the following cost details by month. Include supporting documentation describing the method used to estimate costs. Identify any cost sharing.

(1) Direct Labor: Provide labor categories, rates and hours. Justify rates by providing examples of equivalent rates for equivalent talent, past commercial or Government rates from a Government audit agency such as the Defense Contract Audit Agency (DCAA), the Office of Naval Research (ONR), the Department of Health and Human Services (DHHS), etc.

(2) Indirect Costs: Identify all indirect cost rates (such as fringe benefits, labor overhead, material overhead, G&A or F&A, etc.) and the basis for each.

(3) Materials: Provide an itemized list of all proposed materials, equipment, and supplies for each year including quantities, unit prices, proposed vendors (if known), and the basis of estimate (e.g., quotes, prior purchases, catalog price lists, etc.). For proposed equipment/information technology (as defined in FAR 2.101) purchases equal to or greater than $50,000, include a letter justifying the purchase. Include any requests for Government-furnished equipment or information with cost estimates (if applicable) and delivery dates.

(4) Travel: Provide a breakout of travel costs including the purpose and number of trips, origin and destination(s), duration, and travelers per trip.

(5) Subcontractor/Consultant Costs: Provide above information for each proposed subcontractor/consultant. Subcontractor cost proposals must include interdivisional work transfer agreements or similar arrangements. If the proposer has conducted a cost or price analysis to determine reasonableness, submit a copy of this along with the subcontractor proposal.

The proposer is responsible for the compilation and submission of all subcontractor/consultant cost proposals. At a minimum, the submitted cost volume must contain a copy of each subcontractor or consultant non-proprietary cost proposal (i.e., cost proposals that do not contain proprietary pricing information such as rates, factors, etc.). Proprietary subcontractor/consultant cost proposals may be included as part of Volume 2. Proposal submissions will not be considered complete unless the Government has received all subcontractor/consultant cost proposals.

If proprietary subcontractor/consultant cost proposals are not included as part of

Volume 2, they may be emailed separately to ASIST@darpa.mil. Email messages must include "Subcontractor Cost Proposal" in the subject line and identify the principal investigator, prime proposer organization and proposal title in the body of the message. Any proprietary subcontractor or consultant proposal documentation which is not uploaded to the DARPA BAA Submission Website as part of the proposer's submission or provided by separate email shall be made immediately available to the Government, upon request, under separate cover (i.e., mail, electronic/email, etc.), either by the proposer or by the subcontractor/consultant organization.

Please note that a ROM or similar budgetary estimate is not considered a fully qualified subcontract cost proposal submission. Inclusion of a ROM or similar budgetary estimate, or failure to provide a subcontract proposal, will result in the full proposal being deemed non-compliant.

(6) Other Direct Costs (ODCs): Provide an itemized breakout and explanation of all anticipated ODCs.

iv. Proposals Requesting a Procurement Contract: Provide the following information where applicable.

(1) Proposals exceeding the Certification of Cost or Pricing Threshold: Provide "certified cost or pricing data" (as defined in FAR 2.101) or a request for exception in accordance with FAR 15.403.

(2) Proposals for $700,000 or more: Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)), it is Government policy to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to organizations performing work as prime contractors or subcontractors under Government contracts, and to ensure that prime contractors and subcontractors carry out this policy. In accordance with FAR 19.702(a)(1) and 19.702(b), prepare a subcontractor plan, if applicable. The plan format is outlined in FAR 19.704.

(3) Proposers without an adequate cost accounting system: If requesting a cost-type contract, provide the DCAA Pre-award Accounting System Adequacy Checklist to facilitate DCAA's completion of an SF 1408. Proposers without an accounting system considered adequate for determining accurate costs must complete an SF 1408 if a cost type contract is to be negotiated. To facilitate this process, proposers should complete the SF 1408 found at http://www.gsa.gov/portal/forms/download/115778 and submit the completed form with the proposal. To complete the form, check the boxes on the second page, then provide a narrative explanation of your accounting system to supplement the checklist on page one.

v. Proposals Requesting an Other Transaction Agreement: Proposers must indicate

whether they qualify as a nontraditional Defense contractor[6], have teamed with a nontraditional Defense contractor, or are providing a one-third cost share for this effort. Provide information to support the claims.

Provide a detailed list of milestones including: description, completion criteria, due date, and payment/funding schedule (to include, if cost share is proposed, contractor and Government share amounts). Milestones must relate directly to accomplishment of technical metrics as defined in the solicitation and/or the proposal. While agreement type (fixed price or expenditure based) will be subject to negotiation, the use of fixed price milestones with a payment/funding schedule is preferred. Proprietary information must not be included as part of the milestones.

c. Level of Effort Summary by Task Spreadsheet

Provide a one-page table summarizing estimated level of effort per task (in hours) broken out by senior, mid-level, and junior personnel, in the format shown below in Figure 3. Also include dollar-denominated estimates of travel, materials, and equipment. For this table, consider materials to include the cost of any data sets or software licenses proposed. For convenience, an Excel template is available for download along with the BAA. Submit the Level of Effort Summary Excel file (do not convert the Excel file to pdf format) in addition to Volume 1 and Volume 2 of your full proposal. This Excel file does not count towards the total page count.

[6] For definitions and information on an OT agreement see http://www.darpa.mil/work-with-us/contract-management.

SOW Task		Duration (months)	Intensity (hrs/mo)	Labor Hours for Prime							Labor Hours for Subcontractor/Consultants							
				Sr	Skill set(s)	Mid	Skill set(s)	Jr	Skill set(s)	Total	SubC-Sr	Skill set(s)	SubC-Mid	Skill set(s)	SubC-Jr	Skill set(s)	Conslt	Total
1.1.0	<Phase 1 Task 1 name>	7	135	240		680		24		944	-						200	1,144
1.1.1	<Subtask 1.1.1 name>	4	90	80		280		-		360	-						200	560
1.1.2	<Subtask 1.1.2 name>	3	195	160		400		24		584	-						-	584
1.2.0	<Phase 1 Task 2 name>	6	385	108		400		1,800		2,308	1,400						-	3,708
1.2.1	<Subtask 1.2.1 name>	3	656	48		320		1,600		1,968	600						-	2,568
1.2.2	<Subtask 1.2.2 name>	3	113	60		80		200		340	800						-	1,140
:	:	:	:	:		:		:		:	:						:	:
		Phase 1 Total Hours		348		1,080		1,824		3,252	1,400						200	4,652
Phase 1 Costs *First column is prime, second is*								Travel		$ 44,000	$ 12,000						$ 2,000	$ 58,000
total subcontractor, third is total consultant, fourth is total								Materials & Equipment		$ 8,000	$ -						$ -	$ 8,000
2.1.0	<Phase 2 Task 1 name>	8	100	176		560		64		800	100						100	1,000
2.1.1	<Subtask 2.1.1 name>	7	51	96		240		24		360	100						100	560
2.1.2	<Subtask 2.1.2 name>	4	110	80		320		40		440	-						-	440
2.2.0	<Phase 2 Task 2 name>	6	417	180		520		1,800		2,500	1,240						-	3,740
2.2.1	<Subtask 2.2.1 name>	4	435	140		400		1,200		1,740	400						-	2,140
2.2.2	<Subtask 2.2.2 name>	4	190	40		120		600		760	840						-	1,600
:	:	:	:	:		:		:		:	:						:	:
		Phase 2 Total Hours		356		1,080		1,864		3,300	1,340						100	4,640
Phase 2 Costs *First column is prime, second is*								Travel		$ 47,000	$ 12,000						$ 2,000	$ 61,000
total subcontractor, third is total consultant, fourth is total								Materials & Equipment		$ 4,000	$ -						$ -	$ 4,000
3.1.0	<Phase 3 Task 1 name>	9	71	120		400		120		640	100						100	840
3.1.1	<Subtask 3.1.1 name>	3	93	40		200		40		280	100						100	480
3.1.2	<Subtask 3.1.2 name>	6	60	80		200		80		360	-						-	360
3.2.0	<Phase 3 Task 2 name>	6	460	160		800		1,800		2,760	1,200						-	3,960
3.2.1	<Subtask 3.2.1 name>	4	370	80		400		1,000		1,480	600						-	2,080
3.2.2	<Subtask 3.2.2 name>	3	427	80		400		800		1,280	600						-	1,880
:	:	:	:	:		:		:		:	:						:	:
		Phase 3 Total Hours		280		1,200		1,920		3,400	1,300						100	4,800
Phase 3 Costs *First column is prime, second is*								Travel		$ 48,000	$ 12,000						$ 2,000	$ 62,000
total subcontractor, third is total consultant, fourth is total								Materials & Equipment		$ -	$ -						$ -	$ -
		Project Total Hours		984		3,360		5,608		9,952	4,040						400	14,092
Total Project Costs *First column is prime, second is*								Travel		$ 139,000	$ 36,000						$ 6,000	$ 181,000
total subcontractor, third is total consultant, fourth is total								Materials & Equipment		$ 12,000	$ -						$ -	$ 12,000

Figure 3: Example level-of-effort summary table. Numbers illustrate roll-ups and subtotals. The SubC column captures all subcontractor hours and the Conslt column captures all consultant hours. The Skill set(s) columns should indicate an area of expertise (e.g., engineer, software developer, data scientist, subject matter expert).

d. Summary Slide

The submission of a PowerPoint slide summarizing the proposed effort is mandatory. A template PowerPoint slide will be provided on the FBO website, as well as on the Grants.gov website, as an attachment. Submit the PowerPoint file (do not convert PowerPoint file to pdf format) in addition to Volume 1 and Volume 2 of your full proposal. This summary slide does not count towards the total page count.

3. Proprietary and Classified Information

DARPA policy is to treat all submissions as source selection information (see FAR 2.101 and 3.104) and to disclose the contents only for the purpose of evaluation. Restrictive notices notwithstanding, during the evaluation process, 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.

a. 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.

b. Classified Information

Classified submissions (classified technical proposals or classified appendices to unclassified proposals) addressing any TA will not be accepted under this solicitation.

C. Submission Dates and Times

Proposers are warned that submission deadlines as outlined herein are strictly enforced. Note: some proposal requirements may take from one (1) business day to one (1) month to complete (e.g., registering for a Data Universal Numbering System (DUNS) number or Tax Identification Number (TIN). See the proposal checklist in Section VIII.D for further information.

When utilizing the DARPA BAA Submission Website, as described below in Section IV.E.1 below, a control number will be provided at the conclusion of the submission process. This control number should be used in all further correspondence regarding your abstract/proposal submission.

For proposal submissions requesting grants and cooperative agreements, Section IV.E.1.c, you must request your control number via email at ASIST@darpa.mil. Please note that the control number will not be issued until after the proposal due date and time.

Failure to comply with the submission procedures outlined herein may result in the submission not being evaluated.

1. Abstracts

Abstracts must be submitted per the instructions outlined herein and received by DARPA no later than **April 2, 2019, at 12:00 noon (ET)**. Abstracts received after this date and time will not be reviewed.

2. Proposals

The proposal package -- full proposal (Volume 1 and 2) and, as applicable, proprietary subcontractor cost proposals, classified appendices to unclassified proposals -- must be submitted per the instructions outlined herein and received by DARPA no later than **May 17, 2019, at 12:00 noon (ET)**. Proposal submissions received after this date and time will not be reviewed.

D. Funding Restrictions

Not applicable.

E. Other Submission Requirements

1. 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. Emailed submissions of abstracts or full proposals will not be accepted.

a. Abstracts

DARPA/I2O will employ an electronic upload submission system (https://baa.darpa.mil/) for all UNCLASSIFIED abstract responses under this solicitation. *Abstracts should not be submitted via Email or Grants.gov.*

First time users of the DARPA BAA Submission Website must complete a two-step account creation process at https://baa.darpa.mil/. The first step consists of registering for an Extranet account by going to the above URL and selecting the "Account Request" link on the right side of the page, using the Chrome browser. 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, proposers must go back to the submission website and log in using that user name and password. After accessing the Extranet, proposers must create a user account for the DARPA BAA Submission Website by selecting the "Register Your Organization" link at the top of the page. The DARPA BAA Submission Website will display a list of solicitations open for submissions. Once a proposer's user account is created, they may view instructions on uploading 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.

However, the proposer should verify that the account is still active and access can be achieved prior to the day that abstract submissions are due.

All submissions submitted electronically through DARPA's BAA website must be uploaded as zip files (.zip or .zipx extension). The final zip file should contain only the files requested herein and must not exceed 50 MB in size. Only one zip file will be accepted per submission. Note: Submissions not uploaded as zip files will be rejected by DARPA.

Please note that all submissions MUST be finalized, meaning that no further editing will be possible, when submitting through the DARPA BAA Submission Website in order for DARPA to be able to review your submission. If a submission is not finalized, the submission will not be deemed acceptable and will not be reviewed.

Website technical support may be reached at Action@darpa.mil and is typically available during regular business hours (9:00 AM – 5:00 PM ET, Monday-Friday). Questions regarding submission contents, format, deadlines, etc. should be emailed to ASIST@darpa.mil.

Since abstract submitters may encounter heavy traffic on the web server, they should not wait until the day abstracts are due to request an account and/or upload the submission.

Abstracts should not be submitted via Email or Grants.gov. Any abstracts submitted by Email or Grants.gov will not be accepted or reviewed.

b. Proposals Requesting a Procurement Contract or Other Transaction

DARPA/I2O will employ an electronic upload submission system (https://baa.darpa.mil/) for UNCLASSIFIED proposals requesting award of a procurement contract or Other Transaction under this solicitation.

First time users of the DARPA BAA Submission Website must complete a two-step account creation process at https://baa.darpa.mil/. The first step consists of registering for an Extranet account by going to the above URL and selecting the "Account Request" link on the right side of the page, using the Chrome browser. 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, proposers must go back to the submission website and log in using that user name and password. After accessing the Extranet, proposers must create a user account for the DARPA BAA Submission Website by selecting the "Register Your Organization" link at the top of the page. The DARPA BAA Submission Website will display a list of solicitations open for submissions. Once a proposer's user account is created, they may view instructions on uploading 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.

However, the proposer should verify that the account is still active and access can be achieved prior to the day that proposal submissions are due.

All submissions submitted electronically through DARPA's BAA website must be uploaded as zip files (.zip or .zipx extension). The final zip file should contain only the files requested herein and must not exceed 50 MB in size. Only one zip file will be accepted per submission. Note: Submissions not uploaded as zip files will be rejected by DARPA.

Please note that all submissions MUST be finalized, meaning that no further editing will be possible, when submitting through the DARPA BAA Submission Website in order for DARPA to be able to review your submission. If a submission is not finalized, the submission will not be deemed acceptable and will not be reviewed.

Website technical support may be reached at Action@darpa.mil and is typically available during regular business hours (9:00 AM – 5:00 PM ET, Monday-Friday). Questions regarding submission contents, format, deadlines, etc. should be emailed to ASIST@darpa.mil.

Since proposers may encounter heavy traffic on the web server, it is highly recommended that proposers not wait until the day proposals are due to request an account and/or upload the submission. Full proposals should not be submitted via Email. Any full proposals submitted by Email will not be accepted or evaluated.

c. Proposals Requesting a Grant or Cooperative Agreement

Proposers requesting grants or cooperative agreements must submit proposals through one of the following methods: (1) electronic upload per the instructions at https://www.grants.gov/applicants/apply-for-grants.html; or (2) hard-copy mailed directly to DARPA. If proposers intend to use Grants.gov as their means of submission, then they must submit their entire proposal through Grants.gov; applications cannot be submitted in part to Grants.gov and in part as a hard-copy. Proposers using Grants.gov do not submit hard-copy proposals in addition to the Grants.gov electronic submission.

Submissions: Proposers must submit the three forms listed below.

> SF 424 Research and Related (R&R) Application for Federal Assistance, available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_SF424_2_0-V2.0.pdf. *This form must be completed and submitted.*
>
> To evaluate compliance with Title IX of the Education Amendments of 1972 (20 U.S.C. A§ 1681 Et. Seq.), the Department of Defense is using the two forms below to collect certain demographic and career information to be able to assess the success rates of women who are proposed for key roles in applications in science, technology, engineering, or mathematics disciplines. Detailed instructions for each form are available on Grants.gov.
>
> Research and Related Senior/Key Person Profile (Expanded), available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_KeyPersonExpanded_2_0-V2.0.pdf. *This form must be completed and submitted.*
>
> Research and Related Personal Data, available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_PersonalData_1_2-V1.2.pdf. *Each applicant must complete the name field of this form, however, provision of the demographic information is voluntary. Regardless of whether the demographic fields are completed or not, this form must be submitted with at least the applicant's name completed.*

Grants.gov requires proposers to complete a one-time registration process before a proposal can be electronically submitted. If proposers have not previously registered, this process can take between three (3) business days and four (4) weeks if all steps are not completed in a timely manner. See the Grants.gov user guides and checklists at https://www.grants.gov/web/grants/applicants.html for further information.

Once Grants.gov has received an uploaded proposal submission, Grants.gov will send two (2) email messages to notify proposers that: (1) their submission has been received by Grants.gov; and (2) the submission has been either validated or rejected by the system. It may take up to two (2) business days to receive these emails. If the proposal is rejected by Grants.gov, it must be corrected and re-submitted before DARPA can retrieve it (assuming the solicitation has not expired). If the proposal is validated, then the proposer has successfully submitted their proposal and Grants.gov will notify DARPA. Once the proposal is retrieved by DARPA, Grants.gov will send a third email to notify the proposer. If requested by the proposer, a control number for the grant/cooperative agreement

submission can be provided following the due date and time for the proposals. This control number should be used in all further correspondence regarding this submission.

To avoid missing deadlines, proposers should submit their proposals to Grants.gov in advance of the proposal due date, with sufficient time to complete the registration and submission processes, receive email notifications and correct errors, as applicable.

For more information on submitting proposals to Grants.gov, visit the Grants.gov submissions page at http://www.grants.gov/web/grants/applicants/apply-for-grants.html.

Proposers electing to submit grant/cooperative agreement proposals as hard copies must complete the SF 424 R&R form (Application for Federal Assistance, Research and Related) available on the Grants.gov website http://apply07.grants.gov/apply/forms/sample/RR_SF424_2_0-V2.0.pdf.

Proposers choosing to mail hard copy proposals to DARPA must include one (1) paper copy and one (1) electronic copy (e.g., CD/DVD) of the full proposal package.

Technical support for the Grants.gov website may be reached at 1-800-518-4726 and support@grants.gov. Questions regarding submission contents, format, deadlines, etc. should be emailed to ASIST@darpa.mil.

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.

  The task descriptions and associated technical elements are complete and in a logical sequence, with all proposed deliverables clearly defined such that a viable attempt to achieve project goals is likely as a result of award. The proposal identifies major technical risks and clearly defines feasible mitigation efforts.

  Proposer should also take note to the information provided in Section I, as DARPA will also look at how a proposer addresses the technical challenges relevant to each TA, as well as view how key personnel will work on those challenges.

- *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.

  This includes considering the extent to which any proposed intellectual property restrictions will potentially impact the Government'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

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. If necessary, panels of experts in the appropriate areas will be convened. As described in Section IV, proposals must be deemed conforming to the solicitation to receive a full technical review against the evaluation criteria; proposals deemed non-conforming will be removed from consideration.

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.

Selections may be made at any time during the period of solicitation. Pursuant to FAR 35.016, the primary basis for selecting proposals for award negotiation shall be technical, importance to agency programs, and fund availability. Conforming proposals based on a previously submitted abstract will be reviewed without regard to feedback resulting from review of that abstract. Furthermore, a favorable response to an abstract is not a guarantee that a proposal based on the abstract will ultimately be selected for award negotiation. Proposals that are determined selectable will not necessarily receive awards.

For evaluation purposes, a proposal is defined to be the document and supporting materials as described in Section IV.B. Subject to the restrictions set forth in FAR 37.203(d), input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements. No submissions (abstract or proposal) will be returned.

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. Intellectual Property

Proposers should note that the Government does not own the intellectual property of technical data/computer software developed under Government contracts; it acquires the right to use the technical data/computer software. Regardless of the scope of the Government's rights, performers 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 performers, though DARPA desires to have a minimum of Government Purpose Rights (GPR) to noncommercial technical data/computer software developed through DARPA sponsorship.

The program will emphasize creating and leveraging open source technology and architecture. Intellectual property rights asserted by proposers are strongly encouraged to be aligned with open source/open architecture regimes.

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) Part 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 IP 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 IP in the conduct of the proposed research. If proposers desire to use proprietary software or technical data or both as the basis of their proposed approach, in whole or in part, they should: (1) clearly identify in Appendix A 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.

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 five (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 not compliant with the solicitation. A template for complying with this request is provided in Section IV.B.2.a.xi.(5).

- **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 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 not compliant with the solicitation. A template for complying with this request is provided in Section IV.B.2.a.xi.(5).

d. Other Types of Awards

Proposers responding to this solicitation 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 in question. 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 not compliant with the solicitation. A template for complying with this request is provided in Section IV.B.2.a.xi.(5).

2. 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 http://www.darpa.mil/work-with-us/additional-baa, to include providing the information specified therein as required for proposal submission.

3. Electronic and Information Technology

All electronic and information technology acquired through this solicitation must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C. § 794d) and FAR 39.2. Each project involving the creation or inclusion of electronic and information technology must ensure that: (1) Federal employees with disabilities will have access to and use of information that is comparable to the access and use by Federal employees who are not individuals with disabilities; and (2) members of the public with disabilities seeking information or services from DARPA will have access to and use of information and data that is comparable to the access and use of information and data by members of the public who are not individuals with disabilities.

4. 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.

International entities can register in SAM by following the instructions in this link: https://www.fsd.gov/fsd-gov/answer.do?sysparm_kbid=dbf8053adb119344d71272131f961946&sysparm_search=KB0013221.

Note that 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).

5. 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.

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, at a minimum, monthly financial status reports and quarterly technical reports. 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. 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 https://www.sam.gov/. In addition, resultant procurement contracts will require supplementary DARPA-specific representations and certifications. See http://www.darpa.mil/work-with-us/additional-baa for further information.

3. Wide Area Work Flow (WAWF)

Unless using another means of invoicing, performers will be required to submit invoices for payment directly at https://wawf.eb.mil. If applicable, WAWF registration is required prior to any award under this solicitation.

4. Terms and Conditions

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

5. FAR and DFARS Clauses

Solicitation clauses in the FAR and DFARS relevant to procurement contracts and FAR and DFARS clauses that may be included in any resultant procurement contracts are incorporated herein and can be found at www.darpa.mil/work-with-us/additional-baa.

See also Section II.C regarding the disclosure of information and compliance with safeguarding covered defense information controls (for FAR-based procurement contracts only).

6. i-Edison

Award documents will contain a requirement for patent reports and notifications to be submitted electronically through the i-Edison Federal patent reporting system at http://s-edison.info.nih.gov/iEdison.

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

Further information on Controlled Unclassified Information on Non-DoD Information Systems is incorporated herein can be found at www.darpa.mil/work-with-us/additional-baa.

VII. Agency Contacts

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

- **Technical POC:** Joshua Elliott, Program Manager, DARPA/I2O
- **Email:** ASIST@darpa.mil
- **Mailing address**:

  DARPA/I2O
  ATTN: HR001119S0034
  675 North Randolph Street
  Arlington, VA 22203-2114

- **I2O Solicitation Website:** http://www.darpa.mil/work-with-us/opportunities

VIII. Other Information

A. Frequently Asked Questions (FAQs)

Administrative, technical, and contractual questions should be sent via email to ASIST@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 seven (7) days of closing may not be answered. If applicable, DARPA will post FAQs to http://www.darpa.mil/work-with-us/opportunities under the ASIST program.

B. Proposers Day

The ASIST Proposers Day was held on March 14, 2019, in Arlington, VA. The special notice regarding the ASIST Proposers Day, DARPA-SN-19-38, can be found at https://www.fbo.gov/index?s=opportunity&mode=form&id=7ce93286cc8d9515b015c6fb579b850a&tab=core&_cview=0.

For further information regarding the ASIST Proposers Day, including slides from the event, please see http://www.darpa.mil/work-with-us/opportunities under HR001119S0034.

C. Submission Checklist

The following items apply prior to proposal submission. Note: some items may take up to one (1) month to complete.

✓	Item	BAA Section	Applicability	Comment
	Abstract	IV.B.1	Optional, but recommended	Conform to stated page limit.
	Obtain DUNS number	IV.B.2.a.i	Required of all proposers	The DUNS Number is the Federal Government's contractor identification code for all procurement-related activities. See http://fedgov.dnb.com/webform/index.jsp to request a DUNS number. Note: requests may take at least one business day.
	Obtain Taxpayer Identification Number (TIN)	IV.B.2.a.i	Required of all proposers	A TIN is used by the Internal Revenue Service in the administration of tax laws. See https://www.irs.gov/individuals/international-taxpayers/taxpayer-identification-numbers-tin for information on requesting a TIN. Note: requests may take from 1 business day to 1 month depending on the method (online, fax, mail).
	Register in the System for Award Management (SAM)	VI.B.4	Required of all proposers	The SAM combines Federal procurement systems and the Catalog of Federal Domestic Assistance into one system. See https://sam.gov/SAM/ for information and registration. Note: new registrations can take an average of 7-10 business days. SAM registration requires the following information: -DUNS number -TIN -CAGE Code. A CAGE Code identifies companies doing or wishing to do business with the Federal Government. 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).
	Ensure eligibility of all team members	III	Required of all proposers	Verify eligibility, as applicable, for in accordance with requirements outlined in Section 3.
	Register at Grants.gov	IV.E.1.c	Required for proposers requesting grants or cooperative agreements	Grants.gov requires proposers to complete a one-time registration process before a proposal can be electronically submitted. If proposers have not previously registered, this process can take between three business days and four weeks if all steps are not completed in a timely manner. See the Grants.gov user guides and checklists at https://www.grants.gov/web/grants/applicants.html for further information.

The following items apply as part of the submission package:

✓	Item	BAA Section	Applicability	Comment
	Volume 1 (Technical and Management Proposal)	IV.B.2	Required of all proposers	Conform to stated page limits and formatting requirements. Include all requested information.
	Appendix A	IV.B.2.a.xi	Required of all proposers	-Team member identification - Government/FFRDC team member proof of eligibility - Organizational conflict of interest affirmations - Intellectual property assertions - Human subjects research - Animal use - Unpaid delinquent tax liability/felony conviction representations -CASB disclosure, if applicable
	Appendix B	IV.B.2.a.xii	Optional of all proposers	- Appendix B does not count against the page limit - A brief bibliography to relevant papers, reports, or resumes - Do not include technical papers - The materials in Appendix B will not be evaluated as part of the proposal review
	Volume 2 (Cost Proposal)	IV.B.2.b	Required of all proposers	- Cover Sheet - Cost summary - Detailed cost information including justifications for direct labor, indirect costs/rates, materials/equipment, subcontractors/consultants, travel, ODCs - Cost spreadsheet file (.xls or equivalent format) - If applicable, list of milestones for 845 OTs - Subcontractor plan, if applicable Subcontractor cost proposals - Itemized list of material and equipment items to be purchased with vendor quotes or engineering estimates for material and equipment more than $50,000 - Travel purpose, departure/arrival destinations, and sample airfare
	Level of Effort Summary by Task Excel spreadsheet	IV.B.2.c	Required of all proposers	A template LoE Excel file will be provided on the FBO website as an attachment. Submit the LoE Excel file (do not convert Excel file to pdf format).

	PowerPoint Summary Slide	IV.B.2.d	Required of all proposers	A template PowerPoint slide will be provided on the FBO website as an attachment. Submit the PowerPoint file (do not convert PowerPoint file to pdf format).

D. Associate Contractor Agreement (ACA)

This same or similar language will be included in contract awards against HR001119S0034. Awards other than FAR based contracts will contain similar agreement language:

(a) It is recognized that success of the ASIST research effort depends in part upon the open exchange of information between the various Associate Contractors involved in the effort. This language is intended to insure that there will be appropriate coordination and integration of work by the Associate Contractors to achieve complete compatibility and to prevent unnecessary duplication of effort. By executing this contract, the Contractor assumes the responsibilities of an Associate Contractor. For the purpose of this ACA, the term Contractor includes subsidiaries, affiliates, and organizations under the control of the contractor (e.g. subcontractors).

(b) Work under this contract may involve access to proprietary or confidential data from an Associate Contractor. To the extent that such data is received by the Contractor from any Associate Contractor for the performance of this contract, the Contractor hereby agrees that any proprietary information received shall remain the property of the Associate Contractor and shall be used solely for the purpose of the ASIST research effort. Only that information which is received from another contractor in writing and which is clearly identified as proprietary or confidential shall be protected in accordance with this provision. The obligation to retain such information in confidence will be satisfied if the Contractor receiving such information utilizes the same controls as it employs to avoid disclosure, publication, or dissemination of its own proprietary information. The receiving Contractor agrees to hold such information in confidence as provided herein so long as such information is of a proprietary/confidential or limited rights nature.

(c) The Contractor hereby agrees to closely cooperate as an Associate Contractor with the other Associate Contractors on this research effort. This involves as a minimum:

(1) maintenance of a close liaison and working relationship;

(2) maintenance of a free and open information network with all Government-identified associate Contractors;

(3) delineation of detailed interface responsibilities;

(4) entering into a written agreement with the other Associate Contractors setting forth the substance and procedures relating to the foregoing, and promptly providing the Agreements Officer/Procuring Contracting Officer with a copy of same; and,

(5) receipt of proprietary information from the Associate Contractor and transmittal of Contractor proprietary information to the Associate Contractors subject to any applicable proprietary information exchange agreements between associate contractors when, in either case, those actions are necessary for the performance of either.

(d) In the event that the Contractor and the Associate Contractor are unable to agree upon any such interface matter of substance, or if the technical data identified is not provided as scheduled, the Contractor shall promptly notify the DARPA ASIST Program Manager. The Government will determine the appropriate corrective action and will issue guidance to the affected Contractor.

(e) The Contractor agrees to insert in all subcontracts hereunder which require access to proprietary information belonging to the Associate Contractor, a provision which shall conform substantially to the language of this ACA, including this paragraph (e).

(f) Associate Contractors for the ASIST research effort include:

Contractor	Technical Area

(end of ACA)

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