Broad Agency Announcement

Automated Rapid Certification Of Software (ARCOS)

HR001119S0057

May 10, 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:** Automated Rapid Certification Of Software (ARCOS)

- **Announcement Type:** Initial Announcement

- **Funding Opportunity Number:** HR001119S0057

- **Catalog of Federal Domestic Assistance Numbers (CFDA):** Not Applicable

- **Dates**
  - Posting Date: May 10, 2019
  - Proposers Day: May 14, 2019
  - Abstract Due Date: May 24, 2019, 12:00 noon (ET)
  - Proposal Due Date: July 9, 2019, 12:00 noon (ET)
  - BAA Closing Date: July 9, 2019, 12:00 noon (ET)

- **Anticipated Individual Awards:** DARPA anticipates single awards for technical areas 2 and 4, and multiple awards in technical areas 1 and 3

- **Types of Instruments that May be Awarded:** Procurement contract or Other Transaction (OT)

- **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 automating the evaluation of software assurance evidence to enable certifiers to rapidly determine that the system risk is acceptable. 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. 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/)

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

A. Introduction

The goal of the Automated Rapid Certification Of Software (ARCOS) program is to automate the evaluation of software assurance evidence to enable certifiers to determine rapidly that system risk is acceptable. The process of determining that a system's risk is acceptable is referred to as "certification[1]."

Current certification practices are antiquated and unable to scale with the amount of software deployed by the Department of Defense (DoD). Two factors prevent scaling; (a) the use of human evaluators to determine if the system meets certification criteria, and (b) the lack of a principled means to decompose evaluations.

The use of humans to evaluate the quantities of assurance evidence that support software systems results in superficial, incomplete, and/or unacceptably long evaluations. The amount of evidence needed to determine software conformance to certification can be overwhelming to human subject matter experts. Human evaluators also have unique expertise, experience, and biases that influence their approach to evaluations. Because certification requirements may be vague or poorly written, evaluators often must interpret what is intended. Combined, these factors result in inconsistencies over time and across evaluations.

Currently, there is no means to compose evaluations in a principled and trustworthy manner. Composed evaluations would allow subsystems or components to be evaluated independently and

[1] This process is known by several names. Certification and Accreditation (C&A) is the name most commonly used. The Risk Management Framework (RMF) refers to it as Assessment and Authorization (A&A). This document will use the term "certification" generically to mean any process that assesses software fitness for use, resulting in granting authorization for its use.

the results of those evaluations leveraged as assurance evidence in the composed systems. This would amortize the effort of evaluating any component over all systems using that component. Current practice requires re-evaluation of components and their assurance evidence in every system that employs them. Our inability to use a divide and conquer approach to certification of large systems increases the cost and time of performing these certifications.

Two factors will support the acceleration of software certification through the automation of evaluations. First, the DoD has articulated its intentions to have its contractors modernize their engineering processes in the DoD Digital Engineering Strategy. The goal of this strategy is to move away from document-based engineering processes and towards design models that are to be the authoritative source of truth for systems. Such a future does not lend itself to current certification practices, but it will facilitate the automated evaluation of assurance.

Second, advances in several technologies provide a basis for confidence that automated evaluation of assurance evidence to support certification is possible. Model-based design technology, including probabilistic model checking, may enable reasoning over a design in in a way that quantifies uncertainty. So-called Big Code analytics have pioneered the application of semantic-based analytics to software and its associated artifacts. Mathematically rigorous analysis and verification provide the ability to develop software implementations that are demonstrably correct and sound. Assurance case languages provide us a means for expressing arguments on how software fulfills its certification goals, in a manner that is machine-readable.

If successful, ARCOS technologies will transition to program offices needing to reduce certification costs, improve their software evaluations, and/or better understand their software risks. These technologies will improve the quality of assurance evidence generated during development, and will therefore be of interest to contractors creating software for program offices that have adopted ARCOS.

Success in the ARCOS program could enable an app store approach to outfitting platforms for missions by assurance composition of apps that are added to a baseline platform. The ultimate goal of the ARCOS program is continuous certification and mission risk evaluation. However, to achieve this, compositional certification is a necessary first step, in order to pave the way for DoD acceptance and utilization of these technologies.

B. Program Description

ARCOS will develop the capability to automatically evaluate evidence that software systems meet their certification criteria and generate assurance case arguments. Substantiation of these arguments comes from analysis of four types of evidence: (1) test; (2) simulation and emulation; (3) analytical; and (4) software quality assurance.

ARCOS will explore techniques to compose evaluated assurance arguments for pre-evaluated components into the assurance arguments of a system hosting those components. Assurance composition needs to provide evidence that the pre-evaluated components are in an operational context is equivalent to the context of its evaluation. Once this obligation is met, the evaluated properties of the components can be used as evidence in assurance case arguments for the host system. Also of interest are approaches to produce assurance evidence for software implementations that is more amenable to analysis and better able to support composable

assurance. ARCOS will explore techniques to improve the coverage and quality of the evidence for both new and legacy software.

To develop trust in ARCOS, the generated assurance arguments need to be compelling. A knowledgeable human evaluator needs to be able to assess the validity of the generated arguments. ARCOS will explore approaches to assist or automate validity assessments. These assessments will not only check the logical validity of the argument, but also provide a measure of the level of confidence for the arguments, derived from the supporting evidence.

C. Technical Areas

The ARCOS program has four Technical Areas (TAs) as shown in Figure 1:

TA1: Evidence Generation
TA2: Evidence Curation
TA3: Assurance Generation
TA4: Quantitative Assessment

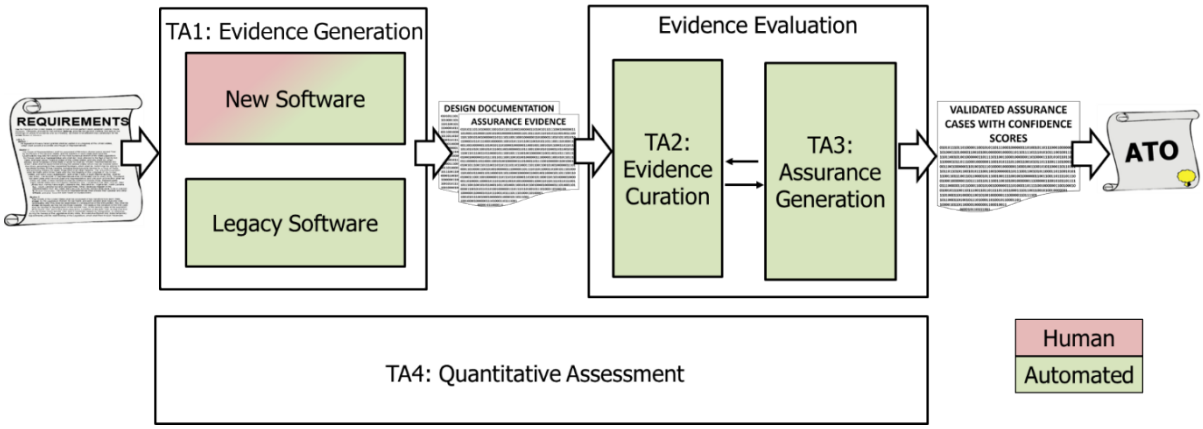

Figure 1: ARCOS overview

Proposers selected for award in TA4 will not be selected for award in any other technical area. Each proposal may only address a single technical area, but proposers may submit multiple proposals.

There are multiple points of essential collaboration among TAs, and the Government expects that all performers to collaborate effectively, as described below. Proposers should read the descriptions of all TAs and the Program Assessments/Schedule section to ensure a full understanding of the program context, structure, and anticipated relationships required among performers. To facilitate the open exchange of information, all program performers will have Associate Contractor Agreement (ACA) language included in their award. See Section VIII.D for further information.

TA1: Evidence Generation

Evidence Generation has two thrusts: (1) generating evidence for new software development, and (2) generating evidence for legacy software. Proposers may choose to answer either or both

thrusts. Proposals that respond to both should provide statements of work and cost proposals that clearly separate the two thrusts into discrete tasks. Each thrust will explore technologies to improve the quality of assurance evidence for a given set of certification criteria. The certification criteria may be at either the system level or the component level. Hosting an independently evaluated component in a larger system requires composition. When composing assurances, the larger system will use the evaluated properties of the component in its own assurance case arguments. The larger system needs to meet whatever obligations the component places on it to ensure its evaluation is valid. To support composition, TA1 will develop technologies to derive the obligations a system must meet in order to utilize a component.

Technologies to support an assurance-driven development approach will be necessary. This will require languages and tools that can produce assurance case arguments prior to and during software design and build. The goal of engineering assurance cases early is to influence and inform software design and build, and drive the development of evidence to support these assurance cases. To support composed assurance, proposed technologies must be able to capture a minimal set of obligations to ensure the generated evidence is valid. TA3 will assure these obligations for systems hosting the component. Key technical challenges include providing language idioms and tools that allow a rich set of arguments, and producing arguments that can support assurance composition.

For legacy software, the goal is to determine gaps in the existing body of evidence, and to automate tests or analysis to bolster the software's assurance. One approach to this task would be to extract a model or specification of the software structure, analyze the legacy evidence to determine where it is insufficient relative to the structure and certification criteria, and use that information to drive automated means of augmenting the evidence to address the insufficiencies. To support composed assurance the technologies need to capture a minimal set of obligations to ensure the generated and pre-existing evidence is valid. The primary technical challenge is the extraction of a specification rich enough to drive analysis and evidence generation.

Technical approaches other than those described will be considered and are encouraged. Proposals should clearly identify which thrust(s) they address. Technologies that can address both thrusts are preferred. A proposal responding to both must clearly delineate the two thrusts within its Statement of Work and Cost Proposal, to enable a partial award in the event that DARPA deems the approach to one thrust of greater interest than the approach to the other. Strong TA1 proposals will substantiate their approach's ability to increase evidence quality. Evidence quality relates to the confidence level of assurance case arguments. High quality evidence results in high confidence arguments. Proposals addressing new software development should discuss how their proposed solution fits into a variety of software development methodologies. Proposals addressing legacy software may assume the use of Evidence Curation (TA2) technology to support the analysis of existing evidence. Strong proposals will describe expected interfaces with Evidence Curation. Strong proposals for legacy software will characterize the types of properties and evidence they expect to address. All proposals should provide analysis of the scalability of their approach. Table 1 shows the program goals and metrics.

TA2: Evidence Curation

Evidence Curation will develop a common representation that can capture all forms of assurance case evidence. This curation representation will link the evidence to particular parts of the

software implementation. The data will be organized to facilitate quick identification of the strongest evidence (i.e., that which will provide the highest degree of confidence) for any query. ARCOS will develop technology to maintain the provenance of the evidence, in order to assure that certifications rely solely upon valid evidence. Technical challenges include the development of representations that scale to the necessary size, and the identification and representation of relationships between evidence domains. Evidence curation plays a central role in the ARCOS program, as both Evidence Generation (TA1) and Assurance Generation (TA3) need to interoperate with Evidence Curation (TA2) technology. TA1 for new software needs to be able to input evidence into the curation representation. TA2 needs to curate existing evidence, often in human readable documents. TA3 needs to be able to perform analytics over the curated evidence, requiring interoperating with the TA2 technologies, as well as collaboration with the TA2 performers.

TA2 proposers may assume that a model of the implementation's architecture is available. The architectural model may be the product of new software design or a specification derived for legacy software in TA1. Proposers should characterize the level of detail they are assuming in such models. Proposers may assume that electronic representations of all evidence is available. Proposers must describe the interface between their proposed technology and all other technical areas. TA2 proposals must describe the merits of their curation approach in terms of providing access to evidence of high quality that is amenable to analysis. Strong proposals will be able to process human readable technical documents, curating the evidence found within. Strong proposals will describe example data formats for the various evidence domains. Strong proposals will describe, through a use case, an example analysis that can be performed efficiently with their evidence representation. Strong proposals will present an analysis of the scalability of their approach. Table 1 shows the program goals and metrics.

TA3: Assurance Generation

Assurance Generation has two goals. First, develop technology for the automatic construction of assurance cases for certification criteria and obligations imposed by evaluated components. Second, develop trustworthy technology for validating and assessing the confidence of an assurance case argument. Generation of assurance case arguments may be done through an iterative process of selecting an argument strategy or assurance pattern and then fleshing out that strategy or pattern with evidence and sub-arguments. Analytic technology will select substantiating evidence to provide the highest level of confidence from curated evidence. To foster trust in the ARCOS system, the generated assurance cases must be checkable by humans. A human evaluator must be able to understand the argument and to assess its strength based on the evidence that supports it. This technical area must develop sound and demonstrably correct technology to validate assurance cases. The assurance case validation technology will not only check the logic structure and validity of the argument, it will also calculate the confidence level of the argument, given the evidence used to substantiate.

Proposers to TA3 may respond to assurance case generation, assurance case validation, or both. A proposal responding to both must clearly delineate the two tasks within its Statement of Work and Cost Proposal, to enable a partial award in the event that DARPA deems the approach to one task of greater interest than the approach to the other. Proposals should address developing the capability to construct sound argument tree structures from argument patterns, developing efficient analytics to select strong evidence to substantiate arguments, and developing a sound approach to

calculating argument confidence from the evidence used to make the argument. TA3 proposals must describe the expected inputs and interfaces, including design/implementation details, evidence store, and certification criteria. Human-on-the-loop solutions will be considered, although automated solutions are preferred. Solutions producing arguments that are pending additional evidence will be considered. Such solutions should provide the user feedback regarding additional evidentiary needs. Strong TA3 proposals will either use an existing assurance case language (perhaps extending it) or provide a compelling argument for creating a new language. Strong proposals will clearly characterize the class of certification criteria for which their solution can generate assurance cases. Strong proposals must contain a sound approach for calculating confidence in a composed argument, accounting for the confidence that obligations for using the components have been met, and the confidence in the components' properties. Strong proposals should illustrate with use case examples how the relative strength of evidence including comparing evidence from multiple domains is determined. Table 1 shows the program goals and metrics.

TA4: Quantitative Assessment

The Quantitative Assessment team will provide progressively challenging sets of artifacts of software systems to measure the progress of ARCOS technologies. Necessary software system artifacts include assurance evidence in the various domains, software design information, software documentation, and software implementations. The progression of challenges will culminate in applying ARCOS technologies to a realistic system. The envisioned progression over three program phases are: (1) a single software module with associated artifacts; (2) a set of interacting modules with associated artifacts; and (3) a realistic military software system. A challenge for the TA4 performer will be to provide artifacts that can be disseminated to all performers, while providing realistic challenges that drive program success. The TA4 performer will provide digital models of the software being assured by the beginning of each assessment. These models are to be sufficiently detailed to allow correlation of curated evidence to the model. The TA4 performer will supply Subject Matter Expertise (SME), to facilitate the understanding of the evaluation system and its evidence. TA4 will, in the final assessment, apply ARCOS technologies, with support from other performers, including the reimplementation of a software module. An ideal system will have a rich set of certification criteria to satisfy from multiple domains. For example, a system that has security requirements and safety requirements.

The TA4 team will run the periodic program assessments. They will provide the assessment inputs, and select which outputs are to be evaluated by a team of government certification experts. Since it will be infeasible for the evaluation team to consider all of the generated output, the TA4 team will provide a method for selecting output for evaluation to maximize the confidence in the assessments.

Proposals must describe a progression of challenge sets and the final evaluation system, as well as the target certification requirements. The challenge sets must have assurance evidence in consumable electronic formats (e.g., databases, spreadsheets), and also in human readable electronic formats. Strong proposals will include a strategy for providing access to all performers of relevant challenge problems while meeting the scaling goals of the program. Strong proposals will describe how data will be selected for evaluation to optimize the evaluation team's time and maximize the confidence in the technology assessment. Strong proposals will include approval from a Government Program Office for the use of the system as the ARCOS evaluation system. Table 1 shows the program goals and metrics.

D. Program Assessments/Schedule

ARCOS is a four-year program, divided into three phases. The first and second phases will be 18 months each, and the third phase will be 12 months long for a total program length of 48 months, or four years. There will be five assessments to measure the technical progress over the course of the program, including two assessments in Phase 1, two assessments in Phase 2, and one assessment in Phase 3. The initial assessment in phases 1 and 2 will generate feedback for the performers from the assessment and evaluation teams, and verify that the various components interoperate correctly. Human-in-the-loop or human-on-the-loop processing is allowed during these two assessments. The goal is to get a sampling of the intended outputs to critique. The final assessment from each phase is to measure a realistic application of the program-developed technology. The TA1 assessments will require the re-implementation of software and the generation of new assurance evidence, and consequently it is envisioned that the TA1 assessments will need more time and will start slightly ahead of the TA2 and TA3 assessments.

For planning purposes, proposers should assume all meetings are two (2) days in length and alternate between the East and West coast. Table 1 shows the goals and metrics for the assessments, Figure 2 shows the program schedule. Program Principal Investigator (PI) meetings are scheduled to facilitate the assessment process, preparing evaluators for assessments, and disseminating results after assessments. The planned PI meetings are as follows:

- Kickoff Meeting
- PI meetings with all performers will occur before the initial assessments in Phase 1 and Phase 2
- PI meetings of the TA1 and TA4 performers will occur before end-of-phase TA1 assessments
- PI meetings of TA2, TA3, and TA4 performers will occur before end-of-phase TA2 and TA3 assessments
- PI meetings will occur after evaluation of assessment data to present the findings of the evaluators and provide general feedback

	Phase 1	Phase 2	Phase 3
Scale	One module from Phase 3 system	Set of modules from Phase 3 system	DoD Relevant Software System
Evidence Domains	Test, Simulation, and Emulation	Test, Simulation, Emulation, Analysis, and SQA	Test, Simulation, Emulation, Analysis, and SQA
Assurance Generation	<4 weeks	<2 weeks	<1 week
TA 1 Legacy Software	3 of 6 evaluators agree with generated evidence	4 of 6 evaluators agree with generated evidence	5 of 6 evaluators agree with generated evidence
New Software	3 of 6 evaluators agree with generated evidence	4 of 6 evaluators agree with generated evidence	5 of 6 evaluators agree with generated evidence
TA 2	100,000+ nodes curated	1,000,000+ nodes curated	10,000,000+ nodes curated
TA 3	3 of 6 evaluators agree with confidence scores	4 of 6 evaluators agree with confidence scores	5 of 6 evaluators agree with confidence scores
TA 4	Performs quantitative assessments with Government Evaluation Team		

Table 1: ARCOS Goals and Metrics

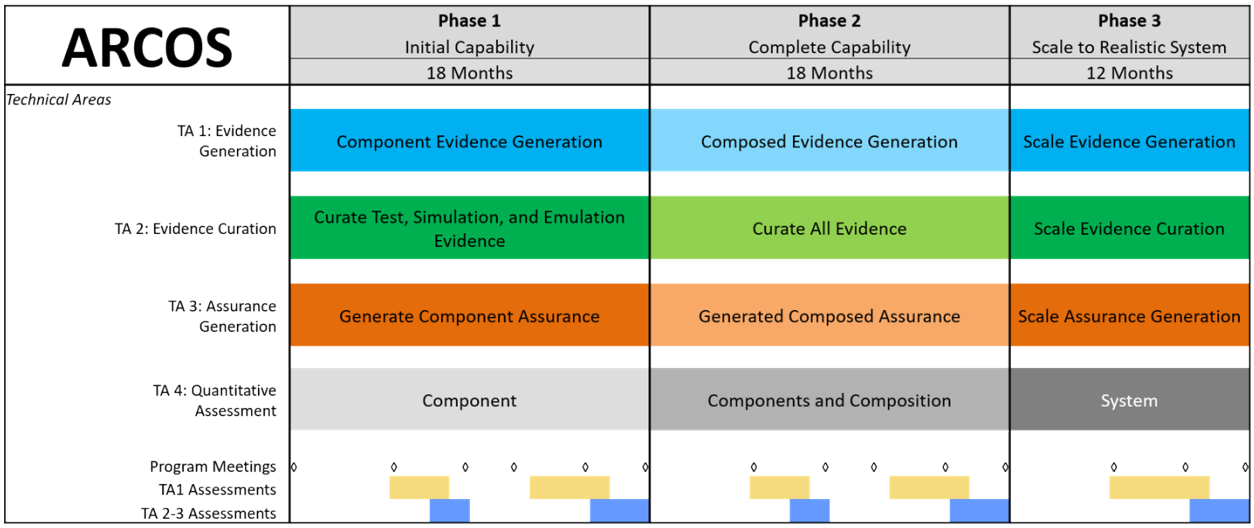

Figure 2: ARCOS Schedule

E. Deliverables

All performers (all TAs) shall be required to provide the following deliverables:

- Commented source code, other necessary data, and accompanying documentation for all software developed under this program.
- Regular code drops provided to the Quantitative Assessment Team (TA4) to include source code, build scripts, development environments, and test inputs.
- For all developed tools, a document discussing concepts of operation for conducting

evaluations, and user guidance for conducting tool assessments. This is to be delivered 30 calendar days before each assessment.

- Slide Presentations - Annotated slide presentations shall be submitted within one month after the program kickoff meeting and after each program event (program reviews, assessments, PI meetings, and technical interchange meetings).
- Quarterly Progress Reports - A monthly progress report describing technical progress made, resources expended, major risks, planned activities, trip summaries, changes to key personnel, and any potential issues and problem areas requiring the attention of the Government team shall be provided within 15 calendar days after the end of each month.
- A Technical and Management Work Plan with a project schedule including milestones, updated as required.
- End of Phase Report after each program phase and a Final Technical Report; the final report shall concisely summarize the effort conducted up to the end of the period of performance.

In addition, the following deliverables are required for TA4:

A report on each assessment. The reports must include quantitative results, including data collected in digital format, and results of each performer's performance with respect to the goals and metrics outlined in Table 1. This is to be delivered 30 calendar days after the end of each assessment. Preliminary results of assessments shall be presented at the post-assessment PI meeting.

F. 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.

It is desired that all noncommercial software (including source code), software documentation, and technical data generated by the program be provided as deliverables to the Government, with a minimum of Government Purpose Rights (GPR), as lesser rights may adversely impact the lifecycle costs of affected items, components, or processes.

G. Security Clearance Requirements

The ARCOS program and developed technology are unclassified. In order to support working with classified systems, either from the TA4 Quantitative Assessment team, or through a transition partner, it is desired that each awardee have at least one SECRET cleared person.

H. Potential Conflicts of Interest

Each proposal may only address a single technical area, but proposers may submit multiple proposals. While proposers may submit proposals for all four technical areas, proposers selected for TA4 cannot be selected for any other technical areas, whether as a prime, subcontractor, or in any other capacity from an organizational to individual level. This is to avoid organizational

conflict of interest (OCI) situations between the technical areas and to ensure objective test and evaluation results. The decision as to which proposal to consider for award is at the discretion of the Government.

II. Award Information

A. Awards

DARPA anticipates multiple awards for TA1 and TA3, as well as single awards for TA2 and TA4. 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 or Other Transaction (OT) Agreement depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. Grants and Cooperative Agreements will NOT be awarded under this program.

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 proposed efforts for fundamental research and non-fundamental research. Some proposed research may present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Based on the anticipated type of proposer (e.g., university or industry) and the nature of the solicited work, the Government expects that some awards will include restrictions on the resultant research that will require the awardee to seek DARPA permission before publishing any information or results relative to the program.

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, see http://www.darpa.mil/work-with-us/contract-management#OtherTransactions.

D. Other Eligibility Requirements

1. Ability to Receive Awards in Multiple Technical Areas - Conflict of Interest

While proposers may submit proposals for all four technical areas, proposers selected for TA4 cannot be selected for any other technical areas, whether as a prime, subcontractor, or in any other capacity from an organizational to individual level. This is to avoid OCI situations between the technical areas and to ensure objective test and evaluation results. The decision as to which proposal to consider for award is at the discretion of the Government.

2. Ability to Support Classified Development

The ARCOS program and developed technology are unclassified. However, in order to support working with classified systems, either from the TA4 Quantitative Assessment team or through a transition partner, it is desired that each awardee (TA1, TA2, TA3, and TA4) have at least one SECRET cleared person at time of proposal. Proposers must provide their CAGE code and security point(s) of contact in their proposals.

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), 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 five (5) pages including the cover sheet and all figures, tables, and charts. The page limit does not include a submission letter (optional).

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 and Impact:** 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 top-level work breakdown structure with a succinct description of what is to be accomplished in each task. Provide a cost estimate for resources over the proposed timeline of the project, broken down by phase. Include labor, materials, a list of deliverables and delivery schedule. Provide cost estimates for each subcontractor (may be a rough order of magnitude).

2. Proposals

Proposals consist of Volume 1: Technical and Management Proposal (including mandatory Appendix A); 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 40 pages, if responding to multiple thrusts in either TA1 or TA3 the maximum page count is 43, including all figures, tables and charts but not including the cover sheet, table of contents 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.

Volume 1 must include the following components:

i. Cover Sheet: Include the following information.

- Label: "Proposal: Volume 1"
- BAA number (HR001119S0057)
- 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
- Security POC, including name, mailing address, telephone number, and email address
- Award instrument requested: procurement contract (specify type), or OT[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. 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, 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	**ARCOS**	Proposed	x	x	x
	Project Name 1	Current	x	x	n/a
	Project Name 2	Pending	n/a	x	x
Name 2	**ARCOS**	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 phase of the project should be separately defined. The SOW must not include proprietary information. 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.
- A measurable milestone, (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.
- Identify any tasks/subtasks (by the prime or subcontractor) that will be accomplished at a university and believed to be fundamental research.

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). 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.

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] or facilities and administrative [F&A], etc.), 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 ARCOS@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

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

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.

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 Federal Business Opportunities (FedBizOpps) 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 cooperative agreements, Section IV.E.1.c, you must request your control number via email at ARCOS@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 **May 24, 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 **July 9, 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.

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 ARCOS@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 ARCOS@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.

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 intellectual property to be used for the proposed project. Proposers must provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research. 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 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).

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 a quarterly technical report. 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. 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).

5. 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.

6. 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:** Raymond Richards, Program Manager, DARPA/I2O
- **Email:** ARCOS@darpa.mil
- **Mailing address**:

  DARPA/I2O
  ATTN: HR001119S0057
  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)

Send administrative, technical, and contractual questions via email to ARCOS@darpa.mil. All questions must be in English and must include the name, email address, and the telephone number of a point of contact.

DARPA will attempt to answer questions in a timely manner; however, questions submitted within 7 days of closing may not be answered. If applicable, DARPA will post FAQs to http://www.darpa.mil/work-with-us/opportunities.

B. Proposers Day

The ARCOS Proposers Day will be held on May 14, 2019, in Arlington, VA. The special notice regarding the ARCOS Proposers Day, DARPA-SN-19-50, can be found at https://www.schafertmd.com/darpa/i2o/arcos/pd/index.php?p=welcome/

For further information regarding the ARCOS Proposers Day, including slides from the event, please see http://www.darpa.mil/work-with-us/opportunities under HR001119S0057.

C. Submission Checklist

The following items apply prior to proposal submission. Note: some items may take up to 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.

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
	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).

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

D. Associate Contractor Agreement (ACA)

This same or similar language will be included in contract awards against HR001119S0057. Awards other than FAR based contracts will contain similar agreement language:

(a) It is recognized that success of the ARCOS 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 ARCOS 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 ARCOS 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 ARCOS research effort include:

Contractor	Technical Area

(end of ACA)