

Broad Agency Announcement

Active Interpretation of Disparate Alternatives (AIDA)

HR001117S0026

April 3, 2017



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:** Active Interpretation of Disparate Alternatives (AIDA)
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** HR001117S0026
- **Catalog of Federal Domestic Assistance Numbers (CFDA):** 12.910 Research and Technology Development
- **Dates**
 - Posting Date: April 3, 2017
 - Proposers Day: April 7, 2017
 - Abstract Due Date: April 21, 2017, 12:00 noon (ET)
 - Proposal Due Date: June 6, 2017, 12:00 noon (ET)
 - BAA Closing Date: June 6, 2017, 12:00 noon (ET)
- **Anticipated Individual Awards per Technical Area (TA):** Multiple awards are anticipated for TA1, TA2 and TA3. A single award is anticipated for Technical Area 4, and a single award is anticipated for TA5.
- **Technical Areas (TAs):** There are five TAs under this BAA. Proposers should note that a proposal may address more than one TA.
- **Types of Instruments that May be Awarded:** Procurement contracts, cooperative agreements or Other Transactions
- **Agency Contacts**
 - **Technical POC:** Boyan Onyshkevych, Program Manager, DARPA/I2O
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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 creating a multi-hypothesis semantic engine that generates explicit alternative interpretations of events, situations, or trends from a variety of unstructured sources, by mapping structured knowledge into a common semantic space, for use in an environment where there are noisy, conflicting, and potentially deceptive information. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

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

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

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

A. Program Overview

The United States Government has an interest in developing and maintaining a strategic understanding of events, situations, and trends around the world, in a variety of domains. The information used in developing this understanding comes from many disparate sources, in a variety of genres, and data types, and as a mixture of structured and unstructured data. Unstructured data can include text or speech in English and a variety of other languages, as well as images, videos, and other sensor information. Even structured sources can vary in the expressiveness, semantics, and specificity of their representations. Moreover, analysis is complicated by the need to overcome the noisy, conflicting, and potentially intentionally deceptive nature of the data.

It is a challenge for those who strive to achieve and maintain an understanding of these events, situations, and trends that information from each medium is often analyzed independently, without the context provided by information from other media. Often, each independent analysis results in only one interpretation, with alternatives being eliminated due to lack of evidence, even in the absence of contradictory evidence. When these independent, impoverished analyses are combined, generally late in the analysis process, the result can be a single apparent consensus view that does not reflect a true consensus.

The goal of Active Interpretation of Disparate Alternatives (AIDA) is to develop a multi-hypothesis semantic engine that generates explicit alternative interpretations of events, situations, and trends from a variety of unstructured sources, for use in noisy, conflicting, and potentially deceptive information environments. This engine must be capable of mapping knowledge

elements automatically derived from multiple media sources into a common semantic representation, aggregating information derived from those sources, and generating and exploring multiple hypotheses about the events, situations, and trends of interest. This engine must establish confidence measures for the derived knowledge and hypotheses, based on the accuracy of the analysis and the coherence of the semantic representation of each hypothesis. This engine must also be capable of utilizing knowledge in the common semantic representation and the generated hypotheses as alternate contexts for the media analysis algorithms by altering their models or prior probabilities to enhance accuracy and resolve ambiguities in line with expectations from the context. In addition, the engine must be able to communicate with its user to reveal the generated hypotheses and to allow the user to alter the hypotheses or to suggest new ones.

B. Concept of Operations

A user who needs to understand an event, situation, or trend will use AIDA to analyze relevant multimedia information streams. These information streams are expected to be partially filtered, that is, to be fairly rich with items relevant to the event, situation, or trend of interest but with a significant number of irrelevant items in the stream.

The AIDA prototype will be expected to operate in a constantly streaming data environment, where incoming information items (e.g., individual documents or images) will be handled one at a time, and will not be available to be revisited in their raw form, only in featurized form.

Each incoming information item will be analyzed, resulting in a set of structured representations about events, sub-events or actions, entities, relations, locations, time, and sentiments (referred to in this BAA as “knowledge elements”) that are observable in that information item. These knowledge elements will be expressed in the AIDA common semantic representation formalism.

Next, the knowledge elements derived from each information item will be linked, co-referenced, and disambiguated relative to the aggregate of knowledge elements from all previous information items. The aggregated knowledge elements will be referred to in this BAA as a knowledge base. As knowledge elements are accumulated into the knowledge base, duplicate knowledge elements will be combined, while distinct knowledge elements will be preserved with all of their properties. In the resulting knowledge base, only one knowledge element will reference each real-world entity, event, etc. (Alternate interpretations of a real-world entity, event, etc. will be represented in the knowledge base in a manner to be determined by the relevant performers.)

Either continuously or at set intervals, the AIDA prototype will generate all plausibly relevant hypotheses about the real-world situation, event, or trend that are supported by some interpretation of the input information items. These hypotheses must be differentiated by one or more significant knowledge elements, but may share subsets of knowledge elements.

At any time during AIDA processing, both the whole knowledge base and the individual hypotheses will be available to the user for inspection and editing. The user will be able to adjust or downgrade the confidence of hypotheses postulated by the AIDA prototype or even add completely new hypotheses. In addition, the knowledge base and the hypotheses will be made available to the media analysis algorithms as alternate contexts, to be used as feedback to help disambiguate or refine their analysis in line with expectations from the context. Based on AIDA

output, the user will be able to produce reports or move resolved knowledge into a persistent enterprise knowledge base.

As a result of the processing carried out by the AIDA system, the user will have a complete, comprehensive, and nuanced view of an event, situation, or trend of interest. Knowledge derived from multiple media sources will be accessible to both users and automated analysis tools in a form that will enable them to find patterns, conflicts, or deception attempts that were previously imperceptible. This new access to and organization of knowledge will enable improved downstream analysis and contingency planning.

C. Program Structure

It is anticipated that the AIDA program will consist of three 18-month phases. The structure of the AIDA program will include the following technical areas (TAs), which are described in detail below.

- TA1 - Semantic Mapping and Feedback
- TA2 - Common Semantic Representation
- TA3 - Multiple Hypotheses
- TA4 - Integration and Multiple Interpretations
- TA5 - Data

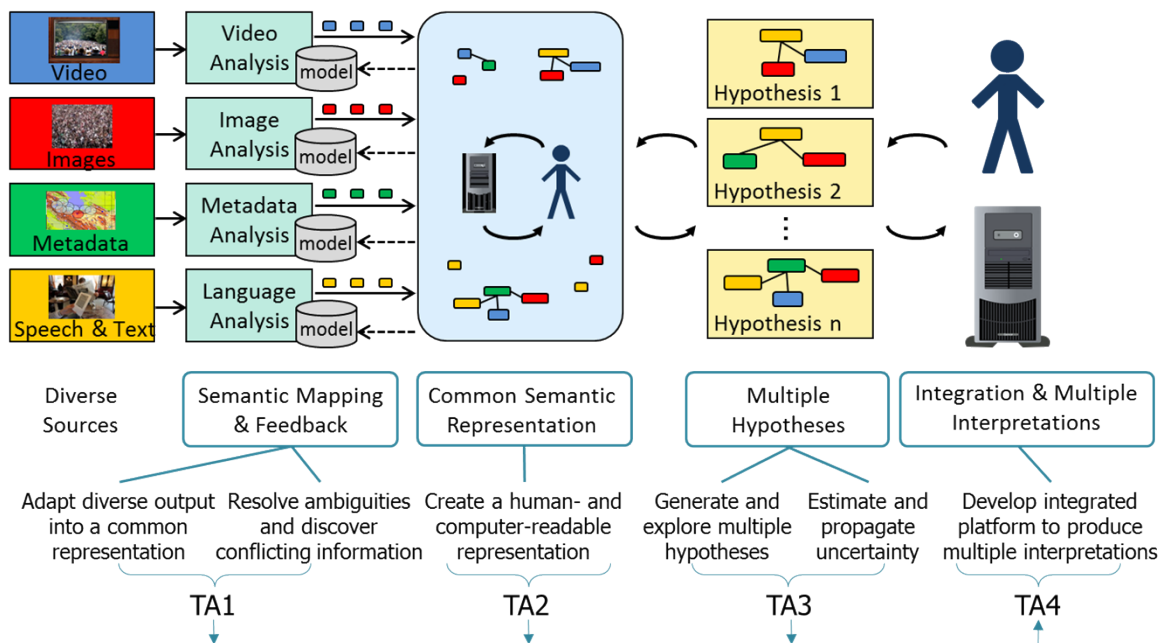


Figure 1: Arrangement of AIDA technical areas

A proposal may address any single technical area or combination of TA1, TA2, and TA3. Proposals addressing TA4 or TA5 should not be combined with any other TA. Performers selected for TA1, TA2, TA3, and/or TA4 may not perform in TA5, and vice versa. Any proposer submitting to more than one technical area (TA1-TA3) should submit a single proposal for all the TA's proposed, but they must ensure that the budget is well delineated so that partial awards are possible. Proposers may also submit a proposal addressing only part of TA1, TA2, or TA3

instead of addressing the whole TA, but it is subject to limitations listed in the descriptions of each TA below. In such cases where a proposer is addressing only part of a TA (TA1, TA2 and TA3), the proposal must state clearly how the proposed work will contribute to the entire TA or the entire program. Performers addressing only part of a TA will need to show value to the program in order to be considered for continued funding after Phase 1.

The program evaluations will be conducted by the National Institute of Standards and Technology (NIST) and this BAA is not soliciting proposals for this effort. The evaluation piece will be performed on the scenarios developed by the TA5 performer in consultation with the Government. The program evaluations will take place one month before the end of each phase. There will be one additional program evaluation within the first year of the program. This will serve as a dry-run for the subsequent program evaluations, as well as determine a baseline for the AIDA technologies. The “ground truth” for the corpus will be produced by the TA5 performer.

TA1: Semantic Mapping and Feedback

Today, there are numerous technologies and platforms to analyze various media inputs, such as text, speech, images, videos, metadata, and other sensor inputs. However, these analytics provide disparate outputs with semantics that are not easily combined. Using only one-best output may result in errors due to ambiguities in the input or inaccuracies in the analysis process. Also, it is often unclear which derived knowledge elements should be considered for hypotheses and which can be treated as background information.

Proposers to TA1 should address the core research challenge of extracting knowledge elements from all available media using existing analysis algorithms provided by the TA1 performer and identified in the proposal, as well as mapping this information into the common semantic representation language defined by the TA2 performer(s).

The primary input to TA1 will be streams of text, speech, images, video, and their associated metadata, from a variety of genres, both formal (e.g., news) and informal (e.g., social media, blogs). As previously mentioned, these information streams are expected to be partially filtered, with items relevant to the event, situation, or trend of interest, but also with a significant number of irrelevant items. TA5 will be providing approximately 100k discrete information items (documents, audio snippets, etc.) that will have been selected on the basis of metadata alone to be from the relevant time period and region for the situation in question. It is up to the TA1 performer(s) to filter the information further, as they see fit, and to exclude irrelevant items.

TA1 algorithms must analyze each incoming information item and produce a set of structured representations about events, sub-events or actions, entities, relations, locations, time, and sentiments (referred to in this BAA as knowledge elements) that are observable in that information item. These knowledge elements, expressed in the AIDA common semantic representation formalism, will constitute the output of the TA1 algorithms.

TA1 proposals must not concentrate on improving the accuracy of analysis of individual media. They must use existing algorithms and modify them to work within the AIDA framework. While TA1 algorithms should be capable of resolving ambiguities and discovering conflicts within an information item, this resolution and discovery is not expected to be absolute; in fact, it is preferable that there be multiple interpretations if any uncertainty remains.

Each knowledge element of the representation is expected to have a confidence measure associated with it, in addition to a provenance record. Mutually-exclusive knowledge elements should be marked as such. For example, a single object in a particular image might be either a dog or a cat, but cannot be both.

In addition to being able to perform analysis of a specific input information item in a generic background context, TA1 algorithms must also be capable of accepting alternate contexts and producing alternate analyses for each context. Proposers to TA1 must offer a means of using the common semantic representation of each hypothesis as context to modify priors, provide priming, produce feedback, or adjust models. For example, the analysis of a certain image produces knowledge elements representing a tank on a road. However, knowledge elements in one or more hypotheses or user input suggest that this is a river rather than a road. The analysis algorithm should use this information for additional analysis of the image with priors favoring a boat. The result of this feedback-context analysis should not eliminate the initial background-context analysis. Rather, the feedback-context analysis should produce alternate analyses with adjusted confidences and/or new knowledge elements to be submitted to the TA2 knowledge base. The common semantic representation language will combine knowledge elements of a context uniformly, regardless of the provenance of the element, whether human input, video, foreign language text, etc.

TA1 algorithms must utilize the application programming interface (API) layer in the form specified by the TA4 performer to input the information stream and output knowledge elements and must input and output partial hypotheses expressed in the common semantic representation data structure specified by the TA2 performer(s). Since the common semantic representation to be used in AIDA is to be defined by TA2 performer(s) early in the program, it has not been defined at the time of this BAA. For the purposes of the proposals in response to this BAA only, TA1 proposers may assume that knowledge will be communicated to the TA1 algorithms using the common semantic representation below (The actual knowledge base may be in some different representation, this description is just defining the representation conveyed through the API for the purposes of proposal writing only). The syntactic representation will be the Terse RDF Triple Language (Turtle) syntax for RDF triples, and the proposer may specify schemata, ontologies, or vocabularies of their choosing.

The first algorithm delivery will be due in time for integration in advance of the baseline evaluation (see schedule section below) and other algorithm deliveries will be due in time for integration for each end-of-phase evaluation.

Proposals partially addressing TA1 (as opposed to addressing all of TA1) must meet the following minimum requirements; they must address two or more media types (text, speech, image, video, or structured data suggested by proposers) and they must address the issues of mapping each media analysis output into the common semantic representation and using the hypotheses as feedback context.

TA2: Common Semantic Representation

Proposals for TA2 should be focused on research and development of a novel common semantic representation capable of representing structured information derived from the various TA1 analytics for the multiple media of interest in AIDA, and related algorithms. This structured information, referred to in this BAA as knowledge elements, shall be aggregated in a knowledge

base. Although there may be need for some natural language, image thumbnails, featurized media, etc. in the knowledge base for reference, registration, or matching purposes, it is expected that most of the assertions in the knowledge base will be expressible in the structured representation, with elements derived from an ontology. Alternatively, they may be mapped into an ontology-based structured representation, if the actual common semantic representation being proposed is a vector space or other non-symbolic representation.

Although this BAA uses the term “knowledge base,” it is not expected that the AIDA knowledge base will necessarily conform to standard definitions of a “knowledge base” or even a “probabilistic knowledge base,” but will be developed as needed to address AIDA program requirements.

The primary input to TA2 will be structured knowledge elements, with confidence measures, expressed in the common semantic representation language, that have been derived from one information item (e.g. a document) at a time. Additional inputs to TA2 will come from TA4 in the form of user edits, modifications, or additions to the knowledge base. Like the primary input, these additional inputs will be structured knowledge elements, with confidence measures, expressed in the common semantic representation language.

The knowledge base and individual knowledge elements in the common semantic representation must have a human-readable presentation form, in addition to the machine-tractable form to be used by TA3. Proposers to TA2 may propose any internal representation for the knowledge base, whether triple-store, multi-graph, vector space/embedding, etc., so long as it meets the technical requirements and has the presentation forms specified above. Additional requirements for the representations (and the presentation forms) include assertion-level confidence measures and assertion-level provenance(s).

TA2 proposals must address knowledge element reference determination (“linking”) and aggregation. For example, they must be able to determine whether the knowledge elements derived from a new document refer to an entity already existing in the knowledge base, merge in any new information into the record, and update confidences and provenances accordingly.

In addition, TA2 proposers should address the challenge of introduction of new ontological concepts that will enable the analytics to handle the various scenarios involved in the training and evaluation of the AIDA integrated prototype. It is expected that new ontological elements will be primarily specific concepts or leaf nodes, as opposed to upper-model concepts. Fully automated solutions to this challenge are preferred, but are not required, and are not a primary focus of the AIDA program.

It is expected that the TA2 performer(s) will share initial draft specifications for the common semantic representation language approximately 4 months after the beginning of Phase 1, so that TA1 and TA3 performers are able to start adapting their API layers accordingly.

Initial experimental versions of algorithms will be due in time for integration in advance of the baseline evaluation (see schedule section below) and interim and full algorithm deliveries will be due in time for integration for each subsequent evaluation.

Proposals partially addressing TA2 (as opposed to fully addressing TA2) may propose solutions for ontological concept learning, entity disambiguation, common semantic space design, etc. In

order to be selected, however, a proposal must demonstrate significant potential utility to the overall program.

TA3: Multiple Hypotheses

Proposers to TA3 should address the core research challenges of assembling information as expressed in the common semantic representation in the knowledge base to form one or more internally-consistent hypotheses. Each hypothesis should capture an internally-consistent model of the world as conveyed by an interpretation of some subset of the input data and expressed in the knowledge base. The goal is not to describe epistemic truth, but to construct hypotheses from the TA2 knowledge base to provide users and automated analytics with a representation of events, situations, or trends as expressed in the data stream. It is expected that, in most cases where the knowledge base is constructed from unstructured sources, there will be more than one hypothesis that could be extracted from the knowledge base. Furthermore, any contradictory or deceptive input data is likely to also result in additional hypotheses being generated. If there is a consistent disinformation narrative in the data, it should result in an identifiable hypothesis or hypotheses that capture the narrative that the disinformation campaign is attempting to convey.

Input information can flow from two sources to the TA3 algorithms:

The first input to TA3 will be the knowledge base produced in TA2. Since the common semantic representation to be used in AIDA is to be defined by TA2 performer(s) early in the program, it has not been defined at the time of this BAA. For the purposes of the proposal in response to this BAA only, TA3 proposers may assume that knowledge will be communicated to the TA3 algorithms using the common semantic representation below (the actual knowledge base may be in some different representation, this description is just defining the representation conveyed through the API, for the purposes of proposal writing only). The syntactic representation will be the Turtle syntax for RDF triples, and the proposer may specify schemata, ontologies, or vocabularies of their choosing.

The second input to TA3 will be from the user interface to be constructed by the TA4 performer. The user interface will allow the user to inspect individual hypotheses produced by TA3 (in some suitable presentation form) and potentially prune them or adjust the overall individual confidences for the hypotheses. Additionally, TA4's user interface will allow the user to create new hypotheses (either from scratch, or by editing existing hypotheses), which then need to be passed back to the TA3 process, in addition to having elements, confidences, or relations injected back into the TA2 knowledge base. For the purposes of proposing to TA3, proposers may assume that new or modified hypotheses created in the TA4 interface would be communicated to the TA3 algorithms using the same syntax as above (actual syntax and semantics of APIs would be defined early in the AIDA program).

TA3 algorithms must find all relevant hypotheses that are substantially different from all other hypotheses. Substantially different means that at least one of the knowledge elements in the hypothesis differentiates that hypothesis from all others. TA3 algorithms will be expected to produce a confidence measure for each hypothesis, building on the confidences of the component assertions in the knowledge base that contribute to the hypothesis.

Hypotheses produced by TA3 algorithms must be internally semantically consistent (logically, ontologically, and pragmatically). TA3 algorithms may discard hypotheses generated through errors caused by the individual analytics and/or wrong interpretation of ambiguous unstructured data, where possible. However, hypotheses should not be discarded just because their probability is low.

Proposals to TA3 must address research and development of novel techniques for estimating the confidence of the hypotheses, based on the elements associated with the hypotheses and on other factors as proposed. The confidence measures should take into account the confidences produced by the analysis processes, the ability to resolve ambiguities, knowledge element aggregation successes, etc.

In addition, every TA3 proposal should include a proposed semantic coherence metric (see section D. Program Evaluation).

The first algorithm delivery will be required to be in time for integration in advance of the baseline evaluation (see schedule section below), and other algorithm deliveries will be due in time for integration for each end-of-phase evaluation.

Proposals addressing only part of TA3 may focus on combination of evidence, semantic consistency/coherence metrics, or generation of a hypothesis as a subset of a larger knowledge base or semantic representation.

TA4: Integration and Multiple Interpretations

Proposals to TA4 should be focused on development of a prototype that is capable of accepting various data streams, utilizing the algorithms developed by the TA1-3 performers. The TA4 prototype must also be capable of managing user interaction by probing the knowledge base, displaying the hypotheses, submitting a query to the system, editing the knowledge elements in the knowledge base or the hypotheses, and injecting additional “what-if” hypotheses to any stage of the computation. Access to the knowledge base must be flexible, there must be a variety of means to visualize the information, confidences must be provided, and the sources (provenances) of all elements of the hypotheses or the semantic space must be maintained. The table below summarizes inputs and outputs to components in the integrated prototype, facilitated by APIs and infrastructure produced by the TA4 performer.

TA	Input	From	Output	To
TA1	raw media	media	knowledge elements	TA2
	hypotheses	TA4 TA3		
TA2	knowledge elements	TA1	knowledge elements	TA3 TA4
	knowledge elements and hypotheses	TA4		
TA3	knowledge elements	TA2	hypotheses	TA1 TA2 TA4

	knowledge elements and hypotheses	TA4		
TA4	knowledge elements	TA2	knowledge elements and hypotheses	User TA1 TA2 TA3
	hypotheses	TA3		
	hypotheses	user		

It is anticipated that significant TA4 work will be required in Phase 1, with definition of APIs, system building, and integration. In later phases, the TA4 team will continue to improve the integrated prototype, add features as needed, and coordinate with transition partners. The TA4 performer will be responsible for developing the APIs that TA1, TA2, and TA3 algorithms will use to accept input and output.

Operational testing of AIDA technology will be a crucial aspect of the program. Potential transition partners include a variety of Department of Defense, military, and intelligence community organizations, and proposers to TA4 must be prepared to travel to both CONUS and OCONUS transition partner sites.

Proposers to TA4 must have the capability to handle classified data. At the time of proposal submission, all proposers to TA4 must have personnel with Top Secret clearances who are eligible for SCI; access to facilities to store and process SCI material and hold SCI discussions; and the ability to conduct experiments with AIDA prototypes on classified data in government facilities.

TA5: Data

Proposals to TA5 should address the development of novel techniques for effective creation, collection, and annotation of the data necessary for AIDA research, development, and evaluation.

It is expected that the program will explore four different scenarios: one scenario for training and three for evaluation. The scenarios will involve events such as international conflicts, natural disasters, violence at international events, or protests and demonstrations. DARPA will provide data for the training scenario with limited, basic annotation at the program's kick-off. Proposers to TA5 should prepare to re-annotate the training scenario data according to the more extensive AIDA annotation standard to be developed in collaboration with DARPA, NIST and the other performers, and collect and annotate data for three evaluation scenarios, one for each end-of-phase evaluation. The re-annotation of the training scenario must be completed by 13 months after the beginning of Phase 1. The data for the evaluation scenario in Phase 1 must be completed by 16 months after the beginning of Phase 1, the data for the evaluation scenario in Phase 2 must be completed 13 months after the beginning of Phase 2, and the data for the evaluation scenario for Phase 3 must be completed 13 months after the beginning of Phase 3. These corpora will include all media of interest to the program (text, speech, images, video, and the associated metadata). They will contain both data that is relevant to the scenario as well as irrelevant data, but relevant data is expected to comprise between five and 20 percent of all data.

DARPA will work with the TA5 performer(s) to select real-world events, situations, or trends for the scenarios. A scenario may involve one major event, an event with multiple sub-events, or multiple events. The corpus for each scenario should consist of at least 100,000 information items (e.g., documents, audio snippets, etc.) with a balance between the different genres and media.

The languages of the input for each scenario will be English plus a local language relevant to the scenario. For every non-English language chosen for any scenario, the Government will provide linguistic resources and tools of a quality and composition to be determined, but consisting at least of the type and size found in a LORELEI Related Language Pack (LRLP)¹. To see a sample LRLP, please visit the DARPA Open Catalog and refer to the Uzbek language pack (<https://opencatalog.darpa.mil/BOLT.html>).

Any proposal to TA5 should include a proposed annotation scheme that covers all aspects of data annotation for AIDA research, development, and evaluation. The annotation plan should be described in sufficient detail to show its applicability and feasibility, but may include open questions to be resolved in coordination with DARPA, NIST, and the other performers during the program.

D. Program Evaluation

As stated above, NIST will perform the program evaluation for AIDA. This section describes AIDA evaluation as it is currently planned, but NIST will make adjustments and changes as necessary during the course of the program.

It is anticipated that the assessment will consist of four parts, as summarized in the table below.

	What will be evaluated	Performance criteria
End-to-End	Comprehensive, ranked analytic alternate interpretations	F-measure
TA1	Events, actions, entities, relations, locations, time, and sentiment	F-measure
TA2	Differentiated and disambiguated elements in semantic representation	F-measure
TA3	Semantic coherence of hypotheses or interpretations	semantic coherence measure

End-to-end program evaluation will determine the ability of an integrated AIDA system to discover and generate the different hypotheses. System results will be compared against the “ground truth” that will be assembled by combining all hypotheses generated by annotators and augmented by all the system-generated hypotheses that were adjudicated to be correct. Two adjudicators will perform the adjudication for each hypothesis and, in the case of discrepancies, a third adjudicator will be used to make a final decision. An F-measure will determine the accuracy of the system counting all off-target, inaccurate, or insufficiently differentiated hypotheses as false positives.

¹ http://www.lrec-conf.org/proceedings/lrec2016/pdf/1138_Paper.pdf

TA1 evaluation will consist of evaluating the accuracy of the knowledge elements produced by the TA1 algorithms. The “ground truth” will consist of all knowledge elements relevant to the various hypotheses. An F-measure will determine the accuracy of the algorithms counting all erroneous knowledge elements as false alarms. The specific means of determining relevance will be determined by the evaluation team during the program.

TA2 evaluation will involve the assessment of the knowledge elements entered into the common semantic representation and the aggregation algorithms, especially the disambiguation function. This will also be an assessment of completeness and accuracy and will be evaluated by the F-measure.

TA3 evaluation will assess the semantic coherence of the generated hypotheses. This assessment will evaluate each hypothesis to ensure that the knowledge elements and other assertions are mutually logically, ontologically, and pragmatically consistent and not contradictory. Program participants and NIST will develop this metric during Phase 1. Every TA3 proposal should include a proposed semantic coherence metric.

E. Schedule/Milestones

PI meetings will be held every nine months, in the middle and end of each phase. In addition, there will be a kick-off meeting at the start of the program. Because AIDA PI meetings are expected to include working sessions on specific engineering, standards, and interoperability issues, performers are expected to include appropriate technical personnel (software developers, grad students, etc.) in PI meetings as needed to address meeting agendas, in addition to the PI. Proposers should estimate travel costs accordingly.

The program manager and other US Government stakeholders will visit the different sites in each phase of the program.

Evaluations will occur on the seventeenth month of each phase. In addition, there will be a baseline evaluation nine months after the start of the program. The first phase training scenario will be used for the baseline evaluation, to ensure that the end-of-phase evaluations run properly.

F. Deliverables

TA1, TA2, and TA3 performers are required to deliver software compatible with the APIs for integration three months before the end of each phase so that the TA4 team can integrate their software into the TA4 integrated prototypes for evaluation and six months after the kickoff so that their software will be integrated into the prototypes for the baseline evaluation.

The TA4 team must integrate all available software in time to begin the baseline and end-of-phase evaluations.

The TA5 team must deliver: the re-annotated training scenario corpus by 13 months after the beginning of Phase 1; the Phase 1 evaluation scenario corpus by 16 months after the beginning of Phase 1; the Phase 2 evaluation scenario corpus by 13 months after the beginning of Phase 2; and the Phase 3 evaluation scenario corpus by 13 months after the beginning of Phase 3.

The evaluation team will deliver the evaluation results 4 weeks before the end of the phase.

G. Government-furnished Property/Equipment/Information

For every non-English language chosen for any scenario, the Government will provide linguistic resources and tools of a quality and composition to be determined, but consisting at least of the type and size found in an LRLP².

H. Intellectual Property

The program will emphasize creating and leveraging open source technology and architecture. Intellectual property rights asserted by proposers are strongly encouraged to be aligned with open source regimes. See Section VI.B.2 for more details on intellectual property.

A key goal of the program is to establish an open, standards-based, multi-source, plug-and-play architecture that allows for interoperability and integration. This includes the ability to easily add, remove, substitute, and modify software and hardware components. This will facilitate rapid innovation by providing a base for future users or developers of program technologies and deliverables. Therefore, it is desired that all noncommercial software (including source code), software documentation, hardware designs and 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. See Section VI.B.2 for more details on intellectual property.

I. Security Clearance Requirements

Technical Area 4 performers must have cleared personnel to the TS/SCI level during the period of performance in order to communicate with transition partners and possibly evaluate the technology on their corpora.

² http://www.lrec-conf.org/proceedings/lrec2016/pdf/1138_Paper.pdf

II. Award Information

A. Awards

Multiple awards are anticipated. 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 and provide the best value 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, cooperative agreement, or Other Transaction (OT) depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors.

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

In all cases, the Government contracting officer shall have sole discretion to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program. For more information on publication restrictions, see the section below on Fundamental Research.

B. Fundamental Research

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

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

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

Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to select award instrument type and to negotiate all instrument terms and conditions with selectees. Appropriate clauses will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This clause can be found at www.darpa.mil/work-with-us/additional-baa.

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

III. Eligibility Information

A. Eligible Applicants

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); 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

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.

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.

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).

D. Other Eligibility Requirements

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

While proposers may submit proposals for all five technical areas, proposers selected for TA5 cannot be selected for any portion of any other technical area, whether as a prime, subcontractor, or in any other capacity from an organizational to individual level.

2. Ability to Support Classified Development

At the time of proposal submission, all proposers wishing to submit proposals under TA4 must have personnel with a Top Secret clearance that are eligible for SCI and access to facilities that can store, process, and hold SCI discussions. TA4 proposers must provide their CAGE code and security point(s) of contact on the cover sheet of their proposal. Proposers to all the other TAs are not required to hold or obtain security clearances.

IV. Application and Submission Information

A. Address to Request Application Package

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

B. Content and Form of Application Submission

1. Abstracts

Proposers are highly encouraged to submit an abstract in advance of a proposal to minimize effort and reduce the potential expense of preparing an out of scope proposal.

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 full proposals submitted 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 six 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.

Abstracts must include the following components:

- **Cover Sheet (1 page):** Provide the administrative and technical points of contact (name, address, phone, email, lead organization). Include the BAA number, title of the proposed project, technical area(s) to be addressed, and whether 'fully' or 'partially' addressing TA requirements, primary subcontractors, estimated cost, duration of the project, and the label "Abstract."
- **Goals and Impact (1 page):** 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 (1 page):** Outline and address all technical challenges inherent in the approach and possible solutions for overcoming potential problems.
- **Capabilities/Management Plan (1 page):** 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.
- **Cost and Schedule (1 page):** Provide a rough order of magnitude cost estimate for resources over the proposed timeline of the project, broken down by year. Provide rough order of magnitude cost estimates for each subcontractor.
- **Open (1 page):** If desired, include anything you consider relevant that differentiates your team and approach.

2. Proposals

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

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.

Reminder – Each proposal submitted in response to this BAA may address more than 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 counts for each section of Volume 1, including all figures, tables and charts, but not including the cover sheet, table of contents, or appendices, are specified below. A submission letter is optional and is not included in the page count. Appendix A does not count against the page limit and is mandatory. Appendix B does not count against the page limit and is optional. Additional information not explicitly called for here must not be submitted with the proposal, but may be included as links in the bibliography in Appendix B. Such materials will be considered for the reviewers’ convenience only and not evaluated as part of the proposal.

Volume 1 must include the following components:

i. Cover Sheet: Include the following information.

- Label: “Proposal: Volume 1”

- BAA number (HR001117S0026)
- Technical area(s) or partial technical area(s) to be addressed, and whether ‘fully’ or ‘partially’ addressing TA requirements
- 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, and email
- Administrative POC including name, mailing address, telephone number, and email address
- Award instrument requested: procurement contract (specify type), cooperative agreement or OT³
- 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) number⁴
- Taxpayer identification number⁵
- Commercial and Government Entity (CAGE) code⁶
- TA4 proposers only - CAGE code and security point(s) of contact
- Proposer’s reference number (if any)

ii. Table of Contents

iii. Executive Summary (1 page max): Provide a synopsis of the proposed project, including answers to the following questions:

- What is the proposed work attempting to accomplish or do?
- How is it done today, and what are the limitations?
- 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.

³ Information on award instruments can be found at <http://www.darpa.mil/work-with-us/contract-management>.

⁴ 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.

⁵ See <http://www.irs.gov/businesses/small/international/article/0,,id=96696,00.html> for information on requesting a TIN. Note, requests may take from 1 business day to 1 month depending on the method (online, fax, mail).

⁶ 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.

iv. Innovative Claims and Deliverables (1 page max): 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 (8 pages max if proposal limited to one TA; 12 pages max if proposal addresses two or more TAs): 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.

vi. Management Plan (3 pages max if proposal limited to one TA; 5 pages max if proposal addresses two or more TAs): Provide a summary of expertise of the proposed team, including any subcontractors/consultants and key personnel who will be executing the work. Resumes count against the proposal page limit so proposers may wish to include them in Appendix B below. Identify a principal investigator (PI) for the project. Provide a clear description of the team's organization including an organization chart that includes, as applicable, the relationship of team members; unique capabilities of team members; task responsibilities of team members; teaming strategy among the team members; and key personnel with the amount of effort to be expended by each person during the project. Provide a detailed plan for coordination including explicit guidelines for interaction among collaborators/subcontractors of the proposed project. Include risk management approaches. Describe any formal teaming agreements that are required to execute this project. List Government-furnished materials or data assumed to be available.

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

Include a table of key individual time commitments as follows:

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

viii. Capabilities (3 pages max): 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) (1 page max per task): 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; and
- 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 (2 pages max): 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. Open: (optional, 2 pages max) Include anything you consider relevant that differentiates your team and approach.

xii. Appendix A: This section is mandatory and must include all of the following components. If a particular subsection is not applicable, state “NONE”.

- (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:

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

- (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, or has provided within the last year, 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 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.

Further information regarding the CAS notices and certification can be found in the FAR 52.230-1, as well as at www.darpa.mil/work-with-us/additional-baa.

If this section is not applicable, state “NONE”.

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

b. Volume 2 - Cost Proposal

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

The cost proposal should include a working spreadsheet file (.xls 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 Government fiscal year listing cost totals for labor, materials, other direct charges (ODCs), indirect costs (overhead, fringe, general and administrative (G&A)), and any proposed fee for the project. Include costs for each task in each fiscal year of the project by prime and major subcontractors, total cost and proposed cost share, if applicable. Provide a second table containing the same information broken down by project phase.

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

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

Department of Health and Human Services (DHHS), etc.

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

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

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

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

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

If proprietary subcontractor/consultant cost proposals are not included as part of Volume 2, they may be emailed separately to AIDA@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 BAAT 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) ODCs: Provide an itemized breakout and explanation of all anticipated other direct costs.

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

(1) Proposals for \$750,000 or more: 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 (OT) for Prototypes Agreement: Proposers must indicate whether they qualify as a nontraditional Defense contractor⁷ have teamed with a nontraditional Defense contractor, or are providing a one-third cost share for this effort. Provide information to support the claims.

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

c. Level of Effort Summary by Task Spreadsheet

Provide a one-page table summarizing estimated level of effort per task (in hours) broken out by senior, mid-level and junior personnel, in the format shown below in Figure 2. 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

⁷ For definitions and information on OT agreements see <http://www.darpa.mil/work-with-us/contract-management>.

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)	Labor Hours					
			Senior	Mid	Junior	Total	SubC	Conslt
1.1.0	<Phase 1 Task 1 name>	7	240	680	24	944	-	200
1.1.1	<Subtask 1.1.1 name>	4	80	280	-	360	-	200
1.1.2	<Subtask 1.1.2 name>	3	160	400	24	584	-	-
1.2.0	<Phase 1 Task 2 name>	6	108	400	1,800	2,308	1,400	-
1.2.1	<Subtask 1.2.1 name>	3	48	320	1,600	1,968	600	-
1.2.2	<Subtask 1.2.2 name>	3	60	80	200	340	800	-
:	:	:	:	:	:	:	:	:
Phase 1 Total Hours		16	348	1,080	1,824	3,252	1,400	200
Phase 1 Costs	Travel	\$ 44,000					\$12,000	\$2,000
	Materials & Equipment	\$ 8,000					\$ -	\$ -
2.1.0	<Phase 2 Task 1 name>	8	176	560	64	800	100	100
2.1.1	<Subtask 2.1.1 name>	7	96	240	24	360	100	100
2.1.2	<Subtask 2.1.2 name>	4	80	320	40	440	-	-
2.2.0	<Phase 2 Task 2 name>	6	180	520	1,800	2,500	1,240	-
2.2.1	<Subtask 2.2.1 name>	4	140	400	1,200	1,740	400	-
2.2.2	<Subtask 2.2.2 name>	4	40	120	600	760	840	-
:	:	:	:	:	:	:	:	:
Phase 2 Total Hours		16	356	1,080	1,864	3,300	1,340	100
Phase 2 Costs	Travel	\$ 48,000					\$13,000	\$2,400
	Materials & Equipment	\$ -					\$ -	\$ -
3.1.0	<Phase 3 Task 1 name>	9	120	400	120	640	100	100
3.1.1	<Subtask 3.1.1 name>	3	40	200	40	280	100	100
3.1.2	<Subtask 3.1.2 name>	6	80	200	80	360	-	-
3.2.0	<Phase 3 Task 2 name>	6	160	800	1,800	2,760	1,200	-
3.2.1	<Subtask 3.2.1 name>	4	80	400	1,000	1,480	600	-
3.2.2	<Subtask 3.2.2 name>	3	80	400	800	1,280	600	-
:	:	:	:	:	:	:	:	:
Phase 3 Total Hours		16	280	1,200	1,920	3,400	1,300	100
Phase 3 Costs	Travel	\$ 49,000					\$12,000	\$2,000
	Materials & Equipment	\$ -					\$ -	\$ -
Project Total Hours		48	984	3,360	5,608	9,952	4,040	400
Project Costs	Travel	\$141,000					\$37,000	\$6,400
	Materials & Equipment	\$ 8,000					\$ -	\$ -

Figure 2: 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.

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) will not be accepted under this solicitation. AIDA is a fundamental research program.

C. Submission Date and Time

Proposers are warned that submission deadlines as outlined herein are strictly enforced. Note: some proposal requirements may take from 1 business day to 1 month to complete. See the proposal checklist in Section VIII.C for further information.

When utilizing the DARPA BAA Submission Website, as described below in Section IV.E. 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.b, you may request a control number for your submission via email at AIDA@darpa.mil. Please note that the control number will not be issued until after the proposal due date and time.

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

1. Abstracts

Abstracts must be submitted per the instructions outlined herein and received by DARPA no later than **April 21, 2017 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 the Level of Effort Summary by Task Spreadsheet) and, as applicable, proprietary subcontractor cost proposals -- must be submitted per the instructions outlined herein and received by DARPA no later than **June 6, 2017 at 12:00 noon (ET)**. Submissions received after this date and time will not be reviewed.

D. Funding Restrictions

Not applicable.

E. Other Submission Requirements

1. Unclassified Submission Instructions

Proposers must submit all parts of their submission package using the same method; submissions cannot be sent in part by one method and in part by another method nor should duplicate submissions be sent by multiple methods. Email submissions will not be accepted.

a. Abstracts

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

First time users of the DARPA BAA Submission Website must complete a two-step account creation process at <https://baa.darpa.mil/>. The first step consists of registering for an Extranet account by going to the above URL and selecting the “Account Request” link. 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.

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 AIDA@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. Any abstracts submitted by Email will not be accepted or evaluated.

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. 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.

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 AIDA@darpa.mil.

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

c. Proposals Requesting a Cooperative Agreement

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

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

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

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

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

For more information on submitting proposals to Grants.gov, visit the Grants.gov submissions page at: <http://www.grants.gov/web/grants/applicants/apply-for-grants.html>. Proposers electing to submit cooperative agreement proposals as hard copies must complete the SF 424 R&R form (Application for Federal Assistance, Research and Related) available on the Grants.gov website http://apply07.grants.gov/apply/forms/sample/RR_SF424_2_0-V2.0.pdf.

Technical support for the Grants.gov website may be reached at 1-800-518-4726 and

support@grants.gov. Questions regarding submission contents, format, deadlines, etc. should be emailed to AIDA@darpa.mil. Proposers choosing to mail hard copy proposals to DARPA must include one paper copy and one electronic copy (e.g., CD/DVD) of the full proposal package.

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; Cost Realism; and Plans and Capability to Accomplish Technology Transition:

- *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.

Proposers should also take note of 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.

For TA4 proposers, the Government will be looking at whether the proposer has the capability and a feasible plan to transition the technology to the research, industrial, and/or operational military communities in such a way as to enhance U.S. defense capabilities.

- *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.2. 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 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 technical data/computer software developed through DARPA sponsorship.

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 such software/data and its proposed particular use(s); (2) explain how the Government will be able to reach its program goals (including transition) within the proprietary model offered; and (3) provide possible nonproprietary alternatives in any area that might present transition difficulties or increased risk or cost to the Government under the proposed proprietary solution.

Proposers expecting to use, but not to deliver, commercial open source tools or other materials in implementing their approach may be required to indemnify the Government against legal liability arising from such use.

All references to "Unlimited Rights" or "Government Purpose Rights" are intended to refer to the definitions of those terms as set forth in the Defense Federal Acquisition Regulation Supplement (DFARS) 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 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.xii.(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.xii.(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.xii.(5).

2. Human Research Subjects/Animal Use

Proposers that anticipate involving Human Research Subjects or Animal Use must comply with the approval procedures detailed at www.darpa.mil/work-with-us/additional-baa.

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 www.darpa.mil/work-with-us/additional-baa for further information.

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

2. Representations and Certifications

If a procurement contract is contemplated, prospective awardees will need to be registered in the SAM database prior to award and complete electronic annual representations and certifications consistent with FAR guidance at 4.1102 and 4.1201; the representations and certifications can be found at www.sam.gov. Supplementary representations and certifications can be found at www.darpa.mil/work-with-us/additional-baa.

3. Wide Area Work Flow (WAWF)

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

4. Terms and Conditions

A link to the DoD General Research Terms and Conditions for Grants and Cooperative Agreements and supplemental agency terms and conditions can be found at www.darpa.mil/work-with-us/contract-management#GrantsCooperativeAgreements.

5. FAR and DFARS Clauses

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

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

6. i-Edison

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

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

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

VII. Agency Contacts

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

- **Technical POC:** Dr. Boyan Onyshkevych, Program Manager, DARPA/I2O
- **Email:** AIDA@darpa.mil
- **Mailing address:**
DARPA/I2O
ATTN: HR001117S0026
675 North Randolph Street
Arlington, VA 22203-2114
- **I2O Solicitation Website:** <http://www.darpa.mil/work-with-us/opportunities>

VIII. Other Information

A. Frequently Asked Questions (FAQs)

Administrative, technical, and contractual questions should be sent via email to AIDA@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/Opportunities/Solicitations/I2O_Solicitations.aspx.

B. Proposers Day

The Proposers Day will be held on April 7, 2017 in Arlington, VA. The special notice regarding the AIDA Proposers Day, DARPA-SN-17-28, can be found at https://www.fbo.gov/index?s=opportunity&mode=form&id=f5f34ac263bfc2eb6215ef8886663a7e&tab=core&_cview=1.

For further information regarding the AIDA Proposers Day, including slides from the event, please see <http://www.darpa.mil/work-with-us/opportunities> under HR001117S0026.

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
	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 http://www.irs.gov/businesses/small/international/article/0,,id=96696,00.html 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 www.sam.gov 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 representations and certifications are up to date	VI.C.2	Required of all proposers	Federal provisions require entities to represent/certify to a variety of statements ranging from environmental rules compliance to entity size representation. See http://www.sam.gov for information.
	Ensure eligibility of all team members	III	Required of all proposers	Verify eligibility, as applicable, for in accordance with requirements outlined in Section 3.
	Register at Grants.gov	IV.E.1.b	Required for proposers requesting grants or cooperative agreements	Grants.gov requires proposers to complete a one-time registration process before a proposal can be electronically submitted. If proposers have not previously registered, this process can take between three business days and four weeks if all steps are not completed in a timely manner. See the Grants.gov user guides and checklists at http://www.grants.gov/web/grants/applicants/applicant-resources.html for further information.

The following items apply as part of the submission package:

✓	Item	BAA Section	Applicability	Comment
	Volume 1 (Technical and Management Proposal)	IV.B.2	Required of all proposers	Conform to stated page limits and formatting requirements. Include all requested information.
	Appendix A	IV.B.2.a.xii	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 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.a.xi	Required of all proposers	A template LoE Excel™ file will be provided on the FedBizOpps website as an attachment. Submit the LoE Excel™ file (do not convert Excel™ file to pdf format).

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