



**DARPA-BAA-10-34**  
**Robust Automatic Transcription of Speech (RATS)**  
**Broad Agency Announcement (BAA)**

for

**Information Processing Techniques Office (IPTO)**  
**Defense Advanced Research Projects Agency**  
**(DARPA)**

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## Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Information Processing Techniques Office (IPTO)
- **Funding Opportunity Title** – Robust Automatic Transcription of Speech (RATS)
- **Announcement Type** – Initial Broad Agency Announcement (BAA)
- **Funding Opportunity Number** – DARPA-BAA-10-34
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – N/A
- **Key Dates**
  - Posting Date – see announcement at [www.fbo.gov](http://www.fbo.gov)
  - Proposal Due Date
    - Initial Closing – 12:00 noon (ET), 29 March 2010
    - Final Closing – 12:00 noon (ET), 29 July 2010
  - An Industry Day is anticipated following publication of the BAA. Details will be provided in a BAA amendment published at [www.fbo.gov](http://www.fbo.gov). See Section VIII.B for further information.
- **Anticipated individual awards** – Multiple awards are anticipated for Technical Area 1 however, only one award is anticipated for Technical Area 2 and one for Technical Area 3.
- **Types of instruments that may be awarded** – Procurement contract or other transaction agreement.
- **Technical POC:** Joseph P. Olive, Program Manager, DARPA/IPTO
  - EMAIL: [DARPA-BAA-10-34@darpa.mil](mailto:DARPA-BAA-10-34@darpa.mil)
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Arlington, VA 22203-1714

## Part Two: Full Text of Announcement

### **I. FUNDING OPPORTUNITY DESCRIPTION**

The Defense Advanced Research Projects Agency (DARPA) often selects its research efforts through the Broad Agency Announcement (BAA) process. This BAA is being issued, and any resultant selection for negotiation and/or award will be made, using procedures under FAR Part 35.016. Any negotiations and/or awards will use procedures under FAR 15.4, Contract Pricing, as specified in the BAA. Proposals received as a result of this BAA shall be evaluated in accordance with evaluation criteria specified herein through a scientific review process. The BAA will appear first on the Federal Business Opportunities website, <http://www.fedbizopps.gov/>. The following information is for those wishing to respond to the BAA.

DARPA seeks strong, responsive proposals from well-qualified sources for a new Human Language Technology (HLT) research and development program called Robust Automatic Transcription of Speech (RATS). The goals of the envisioned program are:

- accurate determination of speech activity,
- speaker and language identification, and
- key word spotting in extremely noisy speech (S/N < 10dB).

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.

### **INTRODUCTION**

The United States has a compelling need for reliable, relevant information to directly support intelligence gathering in the field, to inform military decision makers and respond to national security requirements. Existing transcription and translation and speech signal processing technologies are insufficient for working with noisy or degraded speech signals that are of importance to current and future Department of Defense (DoD) operations. Currently, there is no technological solution which effectively addresses this kind of noisy and distorted speech signal, so operational units are forced to allocate significant human resources for this task. Even so, operators are frequently working “in the dark,” searching blindly over thousands of possible channels at any given moment without prior knowledge of the quality, relevance or language contained in the signal, if there is any signal at all.

The goal of the RATS program is to create technology capable of accurately determining speech activity regions, detecting key words, identifying language and speaker in highly degraded, weak and/or noisy communication channels. RATS test and training data will be collected under both controlled and uncontrolled field conditions.

## TERMINOLOGY

The following terms are used throughout this document and are provided for reference.

Speech	Audio signal (digital waveform)
Text	Ordinary text (in machine readable form) or automatically transcribed speech
English Text	Text (including automatically transcribed speech) that was originally in English or that was translated into English
Source Language	Language in which the speech or text originated
Metric	A numerical measure of performance
$P_{miss}$	Probability of a missed detection
$P_{fa}$	Probability of a false alarm
Total Error (TE)	$TE = 2 (P_{miss}P_{fa}) / (P_{miss} + P_{fa})$
HVI	High Value Individual
Knowledge Base	Structured information extracted from text
User Interface	Software by which users and algorithms interact
Team	Prime contractor plus 0 or more subcontractors

## PROGRAM DESCRIPTION AND STRUCTURE

The RATS Program is currently planned as a 3 phase effort with Phase 1 being 18 months in duration of which the first 6 months would be devoted entirely to collection of data. Phases 2 and 3 will each nominally be 12 months. While these phase lengths are what DARPA is anticipating, offerors should propose phase schedules that realistically match the proposed efforts. Proposals must address all three phases.

Individual proposals are sought for the following three technical areas which are described in detail below:

Technical Area 1: Algorithmic Development and Signal Processing

Technical Area 2: Data Collection

Technical Area 3: Evaluation

While offerors may submit proposals for all three Technical Areas, offerors selected for Technical Area 1 cannot be selected for any portion of the other two Technical Areas.

See Section III.C.1 for further information. Offerors submitting to multiple technical areas must submit separate proposals for each.

It is anticipated that there will be multiple Development teams, but only one Evaluation team and one Data Collection team that will perform across all phases. Not all Development Teams may qualify for advancement to subsequent phases even if they meet the criteria for each phase. The performance criteria for each phase will be specified by DARPA at the start of each phase of the program.

## **TECHNICAL AREA DESCRIPTIONS**

### **Technical Area 1: Algorithmic Development and Signal Processing**

DARPA seeks technology, software development and speech processing algorithms in each of the four areas listed below.

1. **Speech Activity Detection (SAD):** The ability to determine whether a signal is actual speech or background noise, or music. See definition of segments below.
2. **Language Identification (LID):** Once a signal is determined to be actual speech, LID is the capability that identifies the language being spoken.
3. **Speaker Identification (SID):** Once a signal is identified as actual speech, SID is the capability that uniquely identifies whether the person who is speaking is one of the people identified in a list of wanted speakers.
4. **Key Word Spotting (KWS):** Once a signal is identified as actual speech, KWS is the capability to identify specific words or phrases from a list of items in the language being spoken.

All four areas must be addressed in proposals submitted for Technical Area 1. The data to be used for each area will be provided as outlined in the Technical Area 2 description. As stated above, the structure of RATS will be in three phases. Performers will be expected to consistently improve their technologies' performance as the target metrics get more difficult in each successive phase. Evaluations will be held near the end of each phase. DARPA intends to keep the types of performance metrics consistent throughout all three phases, but may introduce new types of test data, such as data collected under varying field conditions and in different languages. All proposals for this Technical Area must include a description of the methodology and algorithms which will be developed to achieve the metrics cited below. In addition, proposals must show a phased time line with interim suitable metrics which provides a clear roadmap for achieving the final metrics. It is left to the offeror to propose a schedule showing the total length of research, the number and length of each phase of research, and the definition of intermediate (phase) metrics which enable the final performance metrics to be achieved.

Before the evaluation period (6 weeks before the end of each phase), each Development Team will be required to submit an integrated system that must be able to

be run at the Evaluation Team's facility and be able to accept signal inputs and provide outputs in a format designated by the Evaluator. Development Teams are expected to support the needs of the Evaluation Team by providing access to all developed system and component software; addressing software instrumentation needs; identifying failure causes, meeting required delivery dates to support evaluation events; and responding to any other test-related issues. The method for evaluating performance is discussed in the Technical Area 3 description below. A final report and briefing will be required as well as interim briefings and status reports.

## **METRICS**

The metrics listed below indicate the level of performance that each Development Team's system is expected to achieve by the end of the program. In order to measure the progress of each system, each Development Team offeror must propose intermediate metrics which enable the final performance metrics to be achieved.

Evaluation of performance will be as outlined below. DARPA anticipates that each of these efforts will be completed in three phases. However, if the offeror believes that the final desired performance may be achieved in a shorter time, this should be indicated in the proposed schedule and program roadmap.

### **SAD**

$P_{\text{miss}} = 1\%$  ;  $P_{\text{fa}} = 0.5\%$  ;  $TE = 0.6\%$

For evaluation of SAD algorithms, all segments of at least 200 msec of speech will count as possible hits. Segments containing short pauses or signals (< 200 msec) can be combined. Figure 1 illustrates an example evaluation for SAD. For computing the percentage of misses and false alarm, the total duration for each event will be 3 seconds.

### **LID**

$P_{\text{miss}} = 5\%$  ;  $P_{\text{fa}} = 1\%$  ;  $TE = 1.7\%$

LID evaluation will consist of calculating the percentages of correct and incorrect language identification over a statistically significant sample size of multiple languages and phrases. The evaluation may also examine performance as a function of the number of languages in the test sample.

### **SID**

$P_{\text{miss}} = 5\%$  ;  $P_{\text{fa}} = 1\%$  ;  $TE = 1.7\%$

For SID evaluation, it will be necessary to distinguish between known and unknown speakers. Evaluation factors will need to account for inter-session variability. Evaluations may also examine SID performance in terms of the number of HVIs in a set and variations in training and test utterance durations. An SID set is nominally defined as 10 HVIs and a hit is the correct identification of any of the HVIs in the set for each significant language.

### **KWS**

$P_{\text{miss}} = 10\%$  ;  $P_{\text{fa}} = 1\%$  ;  $TE = 1.8\%$

For KWS evaluation, a minimum of 3 syllables will be required. KWS evaluation performance will be calculated in terms of the probability of missing a key word for a given false alarm rate. In addition, evaluations may also look at performance as a function of the number of key words in a set. A KWS set is nominally defined as 25 key words/phrases in Farsi and in Arabic and a hit is the correct identification of any word/phrase in the set.

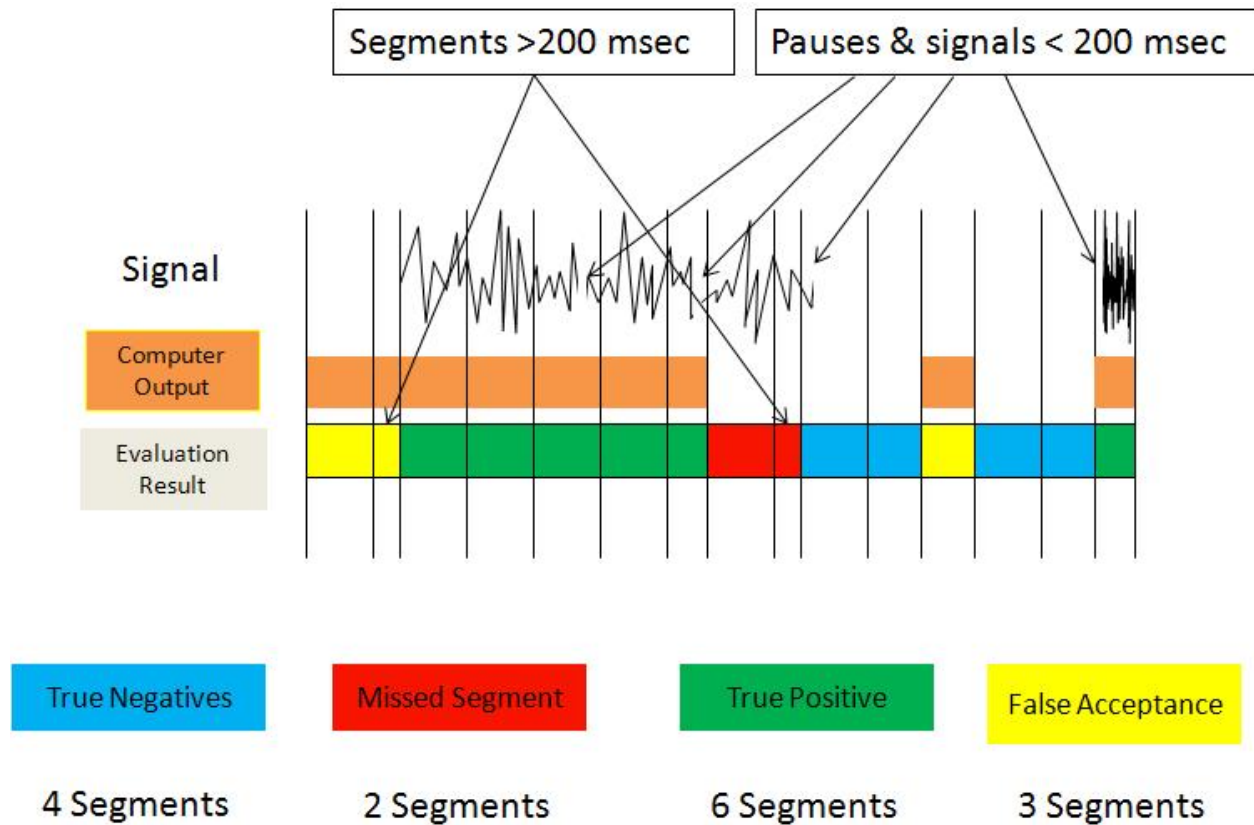


Figure 1: Example of Evaluation of SAD

### Technical Area 2: Data Collection

Proposals must contain a plan consisting of a data collection matrix which specifies, at a minimum,

- the source of the data,
- amount to be collected,
- the language,
- the number of individual speakers and,
- key word(s) and/or phrases.

In addition, offerors must provide an approach and a schedule for collecting, annotating and furnishing all data. At least one half of the data for each of the four categories will be required within the first six months of the first phase. Data is to be collected in multiple languages with multiple speakers as indicated below. Collected data can be used for multiple applications. Data collected will be used for both training and evaluation purposes. Approximately 90% will be provided to the Development Teams as Government Furnished Information (GFI). The remaining 10% of the data will be used for the purpose of evaluation and will not be available for training. This data will be provided as GFI to the Evaluation Team. In general, speech segments should have a signal-to-noise ratio less than 10 dB. Conversational and telephone speech is acceptable if it is noisy. Noise should be part of all speech samples and not separately added. In other words, noise mixing is not acceptable.

Data is to be collected for all four areas as outlined below:

1. SAD: Approximately 1000 hours of data must be provided for training and evaluation for this application. Speech segments must be annotated to indicate stop and start locations within 30 msec. Data used in this task can also be used in other applications and should be so indicated as part of the data collection plan.
2. LID: 30 hours of data must be provided for each of the five selected languages of Arabic, Farsi, Pashto, Dari and Urdu. In addition, data must be provided in 10 other languages not included in the five languages cited. These additional 10 languages can be chosen by the performer but must be identified in the proposal. At least 10 hours of data must be provided for each language for each of these additional languages. In addition, two hours of each of the 15 languages must be provided for testing. Such data must be provided from open sources and needs to be noisy.
3. SID: This data is to be manufactured from a random sample of about 200 individual speakers for each of the 5 selected languages identified above for a total of 1,000 speakers. The data will have to be obtained via weakened signals due to degraded antennae or noisy environments. As stated previously, it is up to the offeror to suggest a collection approach. There should be 10 individual sample sets for each speaker with each sample of speech at least 2 minutes in duration for a minimum total of 20 minutes per speaker or a minimum of approximately 335 hours for all 1,000 speakers. The data should have an unconstrained vocabulary.
4. KWS: A set of 100 words or phrases is to be provided in Arabic, Pashto and Farsi. These words and/or phrases must be embedded in annotated noisy speech containing at least one of the words or phrases in each minute of the data. 100 hours of such speech per language will be required for training and testing. These recordings can come from the data collected for any of the other three areas (SAD, LID and/or SID).

### **Technical Area 3: Evaluation**

The goal of this task is to construct an evaluation framework and to measure the performance of the algorithms developed in Technical Area 1 against the metrics defined above. The RATS program will require technology evaluations to gauge system proficiency and progress. Evaluations will occur near the conclusion of each phase using a compilation of test materials which has not previously been viewed or processed by the Technical Area 1 teams. The evaluation methods will be the same in each phase, but the material tested maybe different. Test material will be carefully selected from data supplied by the Technical Area 2 team to represent real-world operational scenarios. In addition, starting at the end of Phase 2, the Evaluation Team will perform secondary evaluations using classified “real world” data provided as GFI. **Offerors should note that, because some of the evaluation data for Phase 2 and Phase 3 will be operational data, offerors for this technical area must have personnel and access to facilities cleared to the SCI level.** See Section III.C.2 for further details.

Each technical area will be evaluated using well defined measurement methods and will be required to meet specific pre-determined levels of performance which will be determined by DARPA considering the specification of the Technical Area 1 Teams. Performance measurement will be made by comparing system output to carefully produced human references for each evaluated task. Specifics of the implementation of each evaluation will be defined in an evaluation specification document, which will describe the data, tasks, test protocols, and metrology.

The Evaluation Team will be required to develop an evaluation methodology and to identify the data and graphical presentation format to be used to measure and display algorithmic performance. The description of the methodology in the proposal must address the issue of adequate data sample size to ensure statistical significance. The proposal must identify a schedule for this task indicating suitable interim metrics which define percent completion. The offeror will define the list of techniques used to perform the evaluations and will acquire, implement and modify, as applicable, any software necessary to perform this task. The Evaluation Team will conduct the evaluation, measure algorithm performance, analyze the results and prepare a final report and briefing. To support each evaluation, the Evaluation Team will be provided with access to all system and component software developed by the Technical Area 1 teams. The Evaluation Team will work in close coordination with the Technical Area 1 teams to define any necessary interface standards and to ensure test operability.

### **DELIVERABLES**

#### Development Teams:

Six weeks before each phase conclusion, all Development Teams are expected to submit to the Government the following deliverables:

- All software and supporting documentation developed in the program.
- An integrated system to be evaluated at the site of the Evaluation Team

- For Phase 2 and Phase 3, a fully functioning, military user-friendly software suite including an intuitive, easy to use graphic user interface. Systems must be field trainable for new languages, speakers and key words.
- A written final report of their activities and accomplishments.

#### Data Team:

Collected, annotated data will be delivered to the Government and furnished to the Development Teams and the Evaluation Team as GFI per the schedule outlined herein.

#### Evaluation Team:

Within two weeks preceding each phase conclusion, the Evaluation Team is expected to submit to the Government the following deliverables:

- All test datasets and supporting information, including ground truth annotations.
- Evaluations of all Development Team results.
- All software and supporting documentation developed in the program.
- A written final report of its activities and accomplishments, a comparative summary of Development Team results, and the Evaluation Team's conclusions regarding the results of the Development Teams and the program.

### **INTELLECTUAL PROPERTY**

Intellectual Property rights will be considered as part of proposal evaluation. In general, less restrictive rights will be considered more favorably than more restrictive rights. All noncommercial software (including source code), software documentation, hardware designs and documentation, and technical data generated under the RATS program is expected to be provided as a deliverable to the government, with a minimum of Government Purpose Rights. Therefore, to the greatest extent feasible, offerors should not include background proprietary software and technical data as the basis of their proposed approach. If offerors 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 areas that might present transition difficulties or increased risk or cost to the Government under the proposed proprietary solution. Offerors expecting to utilize, but not to deliver, open source tools or other materials in implementing their approach must ensure that the government does not incur any legal obligation due to such utilization. All references to "unlimited" 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. (See also section VI.B.2. below, "Intellectual Property," including subsections c. and d.)

## **II. AWARD INFORMATION**

Multiple awards are anticipated. The amount of resources made available to this BAA will depend on the quality of the proposals received and the availability of funds. Proposals identified for negotiation may result in a procurement contract or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors.

In addition, the Government reserves its rights to the following:

- to select for negotiation all, some, one, or none of the proposals received in response to this solicitation,
- to make awards without discussions with offerors,
- to conduct discussions if it is later determined to be necessary,
- to segregate portions of resulting awards into pre-priced options,
- to accept proposals in their entirety or to select only portions of proposals for award,
- to fund proposals in phases with options for continued work at the end of one or more of the phases,
- to request any additional, necessary documentation once it makes the award instrument determination; such additional information may include but is not limited to Representations and Certifications; and,
- to remove offerors from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time or the offeror fails to timely provide requested additional information.

As of the date of publication of this BAA, DARPA expects that program goals for this BAA may be met by offerors intending to perform 'fundamental research,' i.e., 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.

DARPA intends to fund Phase 1 of this program with 6.2 (Applied Research) funding. DARPA research funded with 6.2 and performed on-campus at a university is considered "fundamental research" except in those rare and exceptional circumstances where a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant. If an offeror intends to subcontract any fundamental research that will be accomplished on-campus at a university, the offeror must clearly identify this aspect of the effort in their proposal. Any resulting contract will clearly specify what part of the effort is "fundamental research" and, therefore, not subject to restrictions on the dissemination of this information.

Notwithstanding this statement of expectation, DARPA 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. In all cases, the contracting officer shall have sole discretion to select award instrument type and to negotiate all instrument provisions with selectees.

### **III. ELIGIBILITY INFORMATION**

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

All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs), Small Businesses, Small Disadvantaged Businesses and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals; however, no portion of this announcement will be set aside for these organizations' participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

Government-funded entities such as Federally Funded Research and Development Centers (FFRDCs) and Government entities (e.g., Government laboratories military educational institutions, etc.) are subject to applicable direct competition limitations and cannot propose to this BAA in any capacity (as prime or sub) unless they meet the following conditions.

- FFRDCs must clearly demonstrate that the work is not otherwise available from the private sector AND they must also provide a letter on letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to Government solicitations in compliance with the associated FFRDC sponsor agreement terms and conditions.
- 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 (as well as, where relevant, contractual authority) establishing their ability to propose to Government solicitations.
- 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 eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the offeror.**

Foreign participants and/or individuals may participate to the extent that such participants comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws, and other governing statutes applicable under the circumstances.

Applicants considering classified submissions (or requiring access to classified information during the life-cycle of the program) shall ensure all industrial, personnel,

and information system processing security requirements are in place and at the appropriate level (e.g., Facility Clearance (FCL), Personnel Security Clearance (PCL), certification and accreditation (C&A)) and any Foreign Ownership Control and Influence (FOCI) issues are mitigated prior to such submission or access. Additional information on these subjects can be found at: [www.dss.mil](http://www.dss.mil).

### **1. Procurement Integrity, Standards of Conduct, Ethical Considerations, and Organizational Conflicts of Interest**

Current federal employees are prohibited from participating in particular matters involving conflicting financial, employment, and representational interests (18 USC 203, 205, and 208.). The DARPA Program Manager for this BAA is Dr. Joseph P. Olive.

Once proposals have been received the Government will assess potential conflicts of interest between those organizations proposing (primes and subs) and those individuals involved in the Government's internal Scientific Review process. Note the Government assessment does NOT affect, offset, or mitigate the offeror's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.

In accordance with FAR 9.503 and without prior approval or a waiver from the DARPA Director, a contractor cannot simultaneously be a SETA and a performer. Therefore, all offerors and proposed subcontractors must affirm whether they (their organizations and individual team members) are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror, sub and/or individual supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The Government will make the final determination on what constitutes a conflict of interest. The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. **Proposals that fail to fully disclose potential conflicts of interests and/or do not have plans to mitigate this conflict will be rejected without technical evaluation and withdrawn from further consideration for award.**

If a prospective offeror has any questions on what constitutes a conflict of interest (whether organizational or otherwise), the offeror should promptly raise the issue with DARPA by sending his/her contact information and a summary of the potential conflict by email to the mailbox address for this BAA at [DARPA-BAA-10-34@darpa.mil](mailto:DARPA-BAA-10-34@darpa.mil), before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Government after full consideration of the circumstances, any conflict situation cannot be effectively mitigated, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this BAA.

### **B. Cost Sharing or Matching**

Cost sharing is not required for this particular program; however, cost sharing will be carefully considered where there is an applicable statutory condition relating to the

selected funding instrument (e.g., for any Technology Investment Agreement under the authority of 10 U.S.C. 2371). Cost sharing is encouraged where there is a reasonable probability of a potential commercial application related to the proposed research and development effort.

## **C. Other Eligibility Requirements**

### **1. Submission of Proposals to Multiple Technical Areas**

While offerors may submit proposals for all three Technical Areas, offerors selected for Technical Area 1 (Algorithmic Development and Signal Processing) cannot be selected for any portion of the other two Technical Areas, whether as a prime, subcontractor or in any other capacity from an organizational to individual level. This is to avoid organizational conflict of interest situations between the Technical Areas and to ensure objective test and evaluation results. However, if an offeror submits proposals for Technical Area 2 (Data Collection) and Technical Area 3 (Evaluation), both may be found selectable. The decision as to which selectable proposal is considered for award is at the discretion of the Government.

### **2. Ability to Support Classified Evaluation**

Prior to execution of an award, offerors submitting proposals to Technical Area 3 (Evaluation) must have personnel and access to facilities with a minimum classification level of SCI. Technical Area 3 offerors must provide their CAGE code and security point(s) of contact in their proposals.

## **IV. APPLICATION AND SUBMISSION INFORMATION**

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

This solicitation contains all information required to submit a proposal. No additional forms, kits, or other materials (other than those noted within this document) are needed. This notice constitutes the total BAA. No additional information is available, nor will a formal Request for Proposal (RFP) or additional solicitation regarding this announcement be issued. Requests for same will be disregarded.

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

#### **1. Proposal Information**

DARPA will employ an electronic upload submission system for responses to this BAA. See also Section IV.F. Other Submission Requirements below. Responding to this announcement requires completion of an online cover sheet for each proposal prior to submission. To do so, the offeror must go to <https://www.csc-ballston.com/baa/index.asp?BAAd=10-34> and follow the instructions there. Upon completion of the online cover sheet, a Confirmation Sheet will appear along with instructions on uploading proposals. The Confirmation Sheet will be used as the Cover Sheet for the proposal and will contain the information outlined below in Proposal

Section 1.1. If an offeror intends to submit more than one proposal, a unique UserID and password must be used in creating each cover sheet. **Since offerors may encounter heavy traffic on the web server, they SHOULD NOT wait until the day the proposal is due to fill out a coversheet and submit the proposal!**

## **2. Proposal Preparation and Format**

The proposal shall be delivered in two volumes, Volume 1 (technical proposal) and Volume 2 (cost proposal). Proposals not meeting the format described in this BAA may not be reviewed.

**All uploaded proposals must be zipped and encrypted using Winzip or PKZip with 256-bit AES encryption.** Only one zipped/encrypted file will be accepted per proposal. Proposals which are not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and emailed to DARPA-BAA-10-34@darpa.mil at the time of proposal submission. See [https://www.CSC-Ballston.com/baa/Encryption\\_Instructions.htm](https://www.CSC-Ballston.com/baa/Encryption_Instructions.htm) for the encryption password form and additional encryption information. Note: the word "PASSWORD" must appear in the subject line of the above email and there are minimum security requirements for establishing the encryption password. Failure to provide the encryption password may result in the proposal not being evaluated.

### **Volume 1 – Technical Proposal**

The technical proposal shall include the following sections, each starting on a new page (where a "page" is 8-1/2 by 11 inches with type not smaller than 12 point, charts may use 10 pt font, margins not smaller than 1 inch, and line spacing not smaller than single-spaced). All submissions must be in English. Individual elements of the proposal shall not exceed total maximum page lengths for each section as shown in braces { } below.

Ensure that each section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA.

## **Proposal Section 1. Administrative**

### **1.1 Confirmation Sheet/Cover Sheet**

**As described above, this cover sheet will contain the following information:**

- BAA number;
- Proposal title;
- Technical Area
- Technical point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
- Administrative point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;

- Summary of the costs of the proposed research, including total base cost, estimates of base cost in each year of the effort, estimates of itemized options in each year of the effort, and cost sharing if relevant;
- Contractor's reference number (if any)
- Contractor's type of business, selected from among the following categories:
  - WOMEN-OWNED LARGE BUSINESS,
  - OTHER LARGE BUSINESS,
  - SMALL DISADVANTAGED BUSINESS [Identify ethnic group from among the following: Asian-Indian American, Asian-Pacific American, Black American, Hispanic American, Native American, or Other],
  - WOMEN-OWNED SMALL BUSINESS,
  - OTHER SMALL BUSINESS,
  - HBCU,
  - MI,
  - OTHER EDUCATIONAL,
  - OTHER NONPROFIT, OR
  - FOREIGN CONCERN/ENTITY.

## **1.2 Table of contents {No page limit}**

### **Proposal Section 2. Technical Details**

#### **2.1 Innovative claims for the proposed research {2 Pages}:**

This page is the centerpiece of the proposal and should succinctly describe the unique proposed approach and contributions. This section may also *briefly* address the following topics:

- a. Problem Description. Provide a concise description of the problem areas addressed. Make this specific to your approach.
- b. Research Goals. Identify specific research goals. Goals should address the technical challenges of the effort.
- c. Expected Impact. Describe the expected impact of your research.

#### **2.2 Proposal Roadmap {3 Pages}:**

The roadmap provides a top-level view of the content and structure of the proposal. It contains a synopsis for each of the roadmap areas defined below, which should be elaborated elsewhere. It is important to make the synopses as explicit and informative as possible. The roadmap must also cross-reference the proposal page number(s) where each area is elaborated. The required roadmap areas are:

- a. Main goals of the proposed research.
- b. Tangible benefits to end users (i.e., benefits of the capabilities afforded if the proposed technology is successful).
- c. Critical technical barriers (i.e., technical limitations that have, in the past, prevented achieving the proposed results).
- d. Main elements of the proposed technical approach.
- e. Basis of confidence (i.e. rationale that builds confidence that the proposed approach will overcome the technical barriers).

- f. Nature and description of end results to be delivered to DARPA. In what form will results be developed and delivered to DARPA and the scientific community? Note that DARPA encourages experiments, simulations, specifications, proofs, etc. to be documented and published to promote progress in the field. Offerors should specify both final and intermediate products.
- g. Cost and schedule of the proposed effort.

#### **2.4 Technical Approach {10 pages}:**

Provide a detailed description of the technical approach. This section will elaborate on all of the topics identified in the proposal roadmap and will serve as the primary expression of the offerors' scientific and technical ideas. This must include a description of the methodology and algorithms which will be developed to achieve the metrics stated above. In addition, proposals must show a phased time line with interim suitable metrics which provides a clear roadmap for achieving the final metrics. It is left to the offeror to propose a schedule showing the total length of research, the number and length of each phase of research, and the definition of intermediate (phase) metrics which enable the final performance metrics to be achieved.

#### **2.5 Comparison with Current Technology {2 Pages}:**

Describe state of the art approaches and the limitations that relate to each area addressed by the proposal. Describe and analyze state of the art results, approaches, and limitations within the context of the problem area addressed by this research. Demonstrating problem understanding requires not just the enumeration of related efforts; rather, related work must be compared and contrasted to the proposed approach.

Technical Area 1 offerors must include an assessment of baseline statistics.

#### **2.6 Statement of Work (SOW) {10 pages}:**

In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. For each task/subtask, provide:

- A general description of the objective (for each defined task/activity);
- A detailed description of the approach to be taken to accomplish each defined task/activity);
- Identification of the primary organization responsible for task execution (prime, sub, team member, by name, etc.);
- The completion criteria for each task/activity - a product, event or milestone that defines its completion.
- Define all deliverables (reports, data, software, hardware, prototypes, etc.) to be provided to the Government in support of the proposed research tasks/activities. Include expected delivery date for each deliverable.

Note: The SOW should be developed so that each phase of the program is separately defined. Do not include any proprietary information in the SOW.

**2.7 Intellectual Property {No page limit}**

Per section VI.B.2 below, offerors responding to this BAA must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights. The Government will assume unlimited rights if offerors fail to identify any intellectual property restrictions in their proposals. Include in this section all proprietary claims to results, prototypes, deliverables or systems supporting and/or necessary for the use of the research, results, prototypes and/or deliverables. If no restrictions are intended, then the offeror should state "NONE".

**2.8 Schedule and Milestones {1 Page}:**

Provide a graphic representation of the project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-phase development plan, which demonstrates a clear understanding of the proposed research; and a plan for periodic and increasingly robust tests over the project life that will show applicability to the overall program concept. Show all project milestones. Measurable milestones should capture key development points in tasks and should be clearly articulated and defined in time relative to start of effort

**2.9 Personnel, Qualifications, and Commitments {NO MORE THAN TWO PAGES PER KEY PERSON}:**

List key personnel, showing a concise summary of their qualifications and unique capabilities. For each person, provide a description of any previous accomplishments or similar efforts completed/ongoing in this or closely related research area, including identification of other Government sponsors, if any.

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 substantial time commitment to the proposed activity and the proposal will be evaluated accordingly. It is DARPA's intention to put key personnel clauses into the contracts, so offerors should not bid personnel whom they do not intend to execute the contract.

Include a table of key individual time commitments as follows:

<b>Key Individual</b>	<b>Project</b>	<b>Pending/Current</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Jane Doe	RATS	Proposed	ZZZ hours	UUU hours	WWW hours
	Project 1	Current	n/a	n/a	n/a
	Project 2	Pending	100 hours	n/a	n/a
John Deer	RATS	Proposed			

### **2.10 Project Management and Interaction Plan {6 pages}:**

Describe the programmatic relationship and/or teaming strategy among the team members for the proposed work. If proposal includes subcontractors that are geographically distributed, clearly specify working / meeting models. Include software/code repositories, physical and virtual meeting plans, and online communication systems that may be used.

Describe formal teaming agreements that are required to execute this program and provide a clearly defined organization chart for the program team (prime contractor and subcontractors, if any). Provide an argument that the team size and composition are both necessary and sufficient to meet the program objectives. Provide detailed interdependencies for each individual effort and/or subcontractor. To the extent that graduate students and postdocs are involved in individual efforts, describe their role and contribution. Describe the Government's role in the project, if any.

### **2.11 Cost Summaries {5 pages}:**

Provide a top level total cost summary for the entire program broken down by phases. Show each major task and subtask by month and delineate prime and major subcontractor efforts. Offerors should format their proposals for Phase 1, with Phases 2 and 3 priced as options.

### **2.12 Organizational Conflict of Interest Affirmations and Disclosure {No page limit}**

Per the instructions in Section III.A.1 above, if the offeror or any proposed sub IS providing SETA support, as described, to any DARPA technical office(s) through an active contract or subcontract (regardless of which DARPA technical office is being supported), they must provide documentation: 1) stating which office(s) the offeror, sub and/or individual supports, 2) identify the prime contract numbers AND 3) include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate the conflict.

If the offeror or any proposed sub IS NOT currently providing SETA support as described, then the offeror should simply state "NONE."

**Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be rejected without technical evaluation and withdrawn from further consideration for award.**

### **2.13 Human use {No page limit}**

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. For further information on this subject, see Section VI.B.4 below. If human use is not a factor in a proposal, then the offeror should state "NONE."

#### **2.14 Animal Use {No page limit}**

For submissions containing animal use, proposals must briefly describe plans for Institutional Animal Care and Use Committee (IACUC) review and approval. For further information on this subject, see Section VI.B.5 below. If animal use is not a factor in a proposal, then the offeror should state “NONE.”

#### **2.15 Statement of Unique Capability Provided by Government or Government-funded Team Member {No page limit}**

Per section III.A. – Eligible Applicants, proposals which include Government or Government-funded entities as prime, sub or team member, shall provide a statement which clearly demonstrates the work being provided by the Government or Government-funded entity team member is not otherwise available from the private sector. If none of the team members belongs to a Government or Government-funded entity, then the offeror should state “Not Applicable.”

#### **2.16 Government or Government-funded Team Member Eligibility {No page limit}**

Per section III.A. – Eligible Applicants, proposals which include Government or Government-funded entities as prime, sub or team member shall provide documentation citing the specific authority which establishes they are eligible to propose to Government solicitations: 1) statutory authority; 2) contractual authority; 3) supporting regulatory guidance; AND 4) evidence of agency approval. If no such entities are involved, then the offeror should state “Not Applicable.”

### **Volume 2 – Cost Proposal**

#### **Cover sheet**

- BAA number;
- Technical area;
- Lead Organization Submitting proposal;
- Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
- Contractor’s reference number (if any);
- Other team members (if applicable) and type of business for each;
- Proposal title;
- Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
- Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
- Award instrument requested: procurement contract or other transaction agreement and specify contract type (e.g. cost-plus-fixed-fee, cost-no fee, cost sharing – no fee, or other type)
- Place(s) and period(s) of performance;

- Total proposed cost separated by basic award and option(s) (if any);
- Name, address, and telephone number of the offeror's cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- Name, address, and telephone number of the offeror's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- Date proposal was prepared;
- DUNS number;
- TIN number; and
- CAGE Code;
- Subcontractor Information; and
- Proposal validity period (minimum 180 days).

### **Detailed cost breakdown**

For purposes of building your cost proposal, assume an estimated start date of 15 August 2010. Offerors should format their cost proposals as follows for Phase 1. Phase 2 should be proposed as a priced option and Phase 3 should be proposed as a Rough Order of Magnitude (ROM).

Provide: (1) total program cost broken down by major cost items (direct labor, including labor categories; subcontracts; materials; travel; other direct costs; overhead charges; etc.) and further broken down by task and phase; (2) major program tasks by fiscal year; (3) an itemization of major subcontracts and equipment purchases; (4) an itemization of any information technology (IT) purchase<sup>1</sup>; (5) a summary of projected funding requirements by month; and (6) the source, nature, and amount of any industry cost-sharing; (7) identification of pricing assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Expert/s, etc.) and (8) provide appropriate cost or price analyses of subcontractor proposals, IAW FAR 15.404-3, to establish the reasonableness of proposed subcontract prices.

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<sup>1</sup> IT is defined as "any equipment, or interconnected system(s) or subsystem(s) of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency. (a) For purposes of this definition, equipment is used by an agency if the equipment is used by the agency directly or is used by a contractor under a contract with the agency which – (1) Requires the use of such equipment; or (2) Requires the use, to a significant extent, or such equipment in the performance of a service or the furnishing of a product. (b) The term "information technology" includes computers, ancillary, software, firmware and similar procedures, services (including support services), and related resources. (c) The term "information technology" does not include – (1) Any equipment that is acquired by a contractor incidental to a contract; or (2) Any equipment that contains imbedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, is not information technology."

The prime contractor is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO). Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. The Subcontractor's cost proposal must be prepared at a level of detail as required by the BAA, FAR 15.403 and FAR 15.404 in order to support Proposal Analysis by the Government (Cost Analysis, Cost Realism Analysis, Technical Analysis, etc).

NOTE: for IT and equipment purchases, include a letter stating why the offeror cannot provide the requested resources from its own funding and include an estimate/quote from the vendor.

For information on 845 Other Transaction Authority for Prototypes (OTA) agreements, refer to [http://www.darpa.mil/cmo/other\\_trans.html](http://www.darpa.mil/cmo/other_trans.html). All proposers requesting an 845 Other Transaction Authority for Prototypes (OTA) agreement must include a detailed list of milestones. Each such milestone must include the following: milestone description, completion criteria, due date, payment/funding schedule (to include, if cost share is proposed, contractor and Government share amounts). It is noted that, at a minimum, such milestones should relate directly to accomplishment of program technical metrics as defined in the BAA and/or the offeror's proposal. Agreement type, fixed price or expenditure based, will be subject to negotiation by the Agreements Officer; however, it is noted that the Government prefers use of fixed price milestones with a payment/funding schedule to the maximum extent possible. Do not include proprietary data. If the proposer requests award of an 845 OTA agreement as a nontraditional defense contractor, as so defined in the OSD guide entitled "Other Transactions (OT) Guide For Prototype Projects" dated January 2001 (as amended) (<http://www.acq.osd.mil/dpap/Docs/otguide.doc>), information must be included in the cost proposal to support the claim. Additionally, if the offeror requests award of an 845 OTA agreement, without the required one-third (1/3) cost share, information must be included in the cost proposal supporting that there is at least one non-traditional defense contractor participating to a significant extent in the proposed prototype project.

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

The full proposal must be submitted per the instructions in Section IV.B - Content and Form of Application Submission above by 1200 noon (ET) on 29 March 2010 (initial closing), in order to be considered during the initial evaluation phase. While DARPA-BAA-10-34 will remain open until 1200 noon (ET) 29 July 2010 (final closing date/BAA expiration), offerors are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date.

DARPA will acknowledge receipt of complete submissions via email and assign control numbers that should be used in all further correspondence regarding proposals.

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

#### **D. Intergovernmental Review - N/A**

#### **E. Funding Restrictions – N/A**

#### **F. Other Submission Requirements**

Proposals MUST NOT be submitted to DARPA via email or fax (see Submission instructions above in Section IV.B).

### **V. APPLICATION REVIEW INFORMATION**

#### **A. Evaluation Criteria**

Evaluation of proposals will be accomplished through a scientific review of each proposal using the following criteria. While these criteria are listed in descending order of relative importance, it should be noted that the combination of all non-cost evaluation factors is significantly more important than cost.

##### **1. Overall Scientific and Technical Merit**

The offeror's proposal will be evaluated on the long term effects of the proposed research including the impact on technology, whether there is sufficient technical payoff to warrant any risk and the offeror's ability to meet program metrics. In addition, the proposed technical approach will be evaluated for feasibility, achievability, completeness and whether it is supported by a proposed technical team that has the expertise and experience to accomplish the proposed tasks. The expertise and experience of the offeror's proposed technical team will be evaluated based upon the qualifications of the key personnel proposed for the effort and their previous accomplishments on similar efforts.

##### **2. Potential Contribution and Relevance to the DARPA Mission**

The potential contributions of the proposed effort with relevance to the national technology base will be evaluated. Specifically, DARPA's mission is to maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security by sponsoring revolutionary, high-payoff research that bridges the gap between fundamental discoveries and their application.

##### **3. Realism of Proposed Schedule**

The offeror's proposal will be evaluated on how realistic the proposed schedule is in relation to the performance metrics. The offeror will be evaluated on its understanding of the timeframe necessary to meet performance metrics and to identify and mitigate any potential risk in schedule.

##### **4. Plans and Capability to Accomplish Technology Transition**

The offeror will be evaluated on their capability to transition the technology to the research, industrial, and/or operational military communities in such a way as to enhance U.S. defense. In addition, the evaluation will take into consideration the extent

to which intellectual property (IP) rights limitations creates a barrier to technology transition.

## **5. Cost Realism**

The objective of this criterion is to establish that the proposed costs are realistic for the proposed approach, as well as to determine the offeror's practical understanding of the effort. The proposal will be reviewed to determine if the costs proposed are based on realistic assumptions, reflect a sufficient understanding of the technical goals and objectives of the BAA, and are consistent with the offeror's technical approach (to include the proposed Statement of Work). At a minimum, this will involve review, at the prime and subcontract level, of the number and types of labor-hours proposed (quantity and mix) per task as well as the types and quantity of materials, equipment and fabrication costs, travel and other various elements proposed.

**NOTE: OFFERORS ARE CAUTIONED THAT EVALUATION RATINGS MAY BE LOWERED AND/OR PROPOSALS REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.**

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

It is the policy of DARPA to ensure impartial, equitable, comprehensive proposal evaluations and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals. Pursuant to FAR 35.016, the primary basis for selecting proposals for acceptance shall be technical, importance to agency programs, and fund availability. In order to provide the desired evaluation, qualified Government personnel will conduct reviews and (if necessary) convene panels of experts in the appropriate areas.

Each proposal will be evaluated on its own merits and relevance against the evaluation criteria herein rather than against other proposals submitted in response to this BAA as no common work statement exists for a direct comparison. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described above in IV.B. – Content and Form of Application Submission. Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Any awards under this BAA will be made to offerors on the basis of the evaluation criteria listed herein including the potential contributions of the proposed work to the overall research program, the availability of funding for the effort and program balance to provide overall value to the Government.

Restrictive notices notwithstanding, offerors are advised that employees of commercial firms under contract to the Government may be used by DARPA to administratively process proposals, monitor contract performance, or perform other administrative duties requiring access to other contractors' proprietary information. These support contracts

include nondisclosure agreements prohibiting their contractor employees from disclosing any information submitted by other contractors or using such information for any purpose other than that for which it was furnished. By submission of its proposal, each offeror agrees that proposal information may be disclosed to those non-Government personnel for the limited purposes stated above. In addition, these support contractors are prohibited from competition in DARPA technical research. 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.

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. Upon completion of the scientific review process, the original of each proposal received will be retained at DARPA and all other copies will be destroyed.

## **VI. AWARD ADMINISTRATION INFORMATION**

### **A. Award Notices**

As soon as the evaluation of a proposal is complete, the offeror will be notified that 1) the proposal has been selected for funding pending contract negotiations, or, 2) the proposal has not been selected. These official notifications will be sent via US mail to the Technical POC identified on the proposal coversheet.

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

#### **1. Security Classification and Proprietary Issues**

NOTE: If proposals are classified, the proposals must indicate the classification level of not only the proposal itself, but also the anticipated award document classification level.

The Government anticipates proposals submitted under this BAA will be unclassified. However, if a proposal is submitted as "Classified National Security Information" as defined by Executive Order 12958 as amended, then the information must be marked and protected as though classified at the appropriate classification level and then submitted to DARPA for a final classification determination.

Offerors choosing to submit a classified proposal from other classified sources must first receive permission from the respective Original Classification Authority in order to use their information in replying to this BAA. Applicable classification guide(s) should also be submitted to ensure the proposal is protected at the appropriate classification level.

Submissions requiring DARPA to make a final classification determination shall be marked as follows: "CLASSIFICATION DETERMINATION PENDING. Protect as

though classified (insert the recommended classification level: (e.g., Top Secret, Secret or Confidential))”

Classified submissions shall be appropriately and conspicuously marked with the proposed classification level and declassification date. In addition, classified submissions shall be in accordance with the following guidance:

Confidential and Secret Collateral Information: Use classification and marking guidance provided by previously issued security classification guides, the Information Security Regulation (DoD 5200.1-R), and the National Industrial Security Program Operating Manual (DoD 5220.22-M) when marking and transmitting information previously classified by another Original Classification Authority. Classified information at the Confidential and Secret level may be mailed via appropriate U.S. Postal Service methods (e.g., USPS Registered Mail or USPS Express Mail). All classified information will be enclosed in opaque inner and outer covers and double wrapped. The inner envelope shall be sealed and plainly marked with the assigned classification and addresses of both sender and addressee. The inner envelope shall be addressed to:

Defense Advanced Research Projects Agency  
ATTN: Information Processing Techniques Office  
Reference: DARPA-BAA-10-34  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

The outer envelope shall be sealed with no identification as to the classification of its contents and addressed to:

Defense Advanced Research Projects Agency  
Security & Intelligence Directorate, Attn: CDR  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

All Top Secret materials: Top Secret information should be hand carried by an appropriately cleared and authorized courier to the DARPA CDR. Prior to traveling, the courier shall contact the DARPA CDR at 571 218-4842 to coordinate arrival and delivery.

Special Access Program (SAP) Information: SAP information must be transmitted via approved methods. Prior to transmitting SAP information, contact the DARPA SAPCO at 703-526-4052 for instructions.

Sensitive Compartmented Information (SCI): SCI must be transmitted via approved methods. Prior to transmitting SCI, contact the DARPA Special Security Office (SSO) at 703-248-7213 for instructions.

Proprietary Data: All proposals containing proprietary data should have the cover page and each page containing proprietary data clearly marked as containing proprietary data. It is the Offeror's responsibility to clearly define to the Government what is considered proprietary data.

Security classification guidance via a DD Form 254 will not be provided at this time since DARPA is soliciting ideas only. After reviewing the incoming proposals, if a determination is made that the award instrument may result in access to classified information a DD Form 254 will be issued and attached as part of the award.

Offerors must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. It is the policy of DARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. The original of each proposal received will be retained at DARPA and all other non-required copies destroyed.

## **2. Intellectual Property**

### **a. Procurement Contract Offerors**

#### **i. Noncommercial Items (Technical Data and Computer Software)**

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all noncommercial technical data and noncommercial computer software that it plans to generate, develop, and/or deliver under any proposed award instrument in which the Government will acquire less than unlimited rights, and to assert specific restrictions on those deliverables. Offerors shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that offerors do not submit the list, the Government will assume that it automatically has "unlimited rights" to all noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, unless it is substantiated that development of the noncommercial technical data and noncommercial computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, then offerors should identify the data and software in question, as subject to Government Purpose Rights (GPR). In accordance with DFARS 252.227-7013 Rights in Technical Data - Noncommercial Items, and DFARS 252.227-7014 Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, the Government will automatically assume that any such GPR restriction is limited to a period of five (5) years in accordance with the applicable DFARS clauses, at which time the Government will acquire "unlimited rights" unless the parties agree otherwise. Offerors are admonished that the Government may use the list during the scientific review process to evaluate the impact of any identified restrictions and may request additional information from the offeror, as may be necessary, to evaluate the offeror's assertions. If no restrictions are intended, then the offeror should state "NONE."

A sample list for complying with this request is as follows:

NONCOMMERCIAL			
Technical Data Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

**ii. Commercial Items (Technical Data and Computer Software)**

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all commercial technical data and commercial computer software (including open source software) that may be embedded in, or that may create linkages affecting distribution rights to, any noncommercial deliverables contemplated under the research effort, along with any applicable restrictions on the Government’s use of such commercial technical data and/or commercial computer software. In the event that offerors do not submit the list, the Government will assume that there are no restrictions on the Government’s use of such commercial items. The Government may use the list during the scientific review process to evaluate the impact of any identified restrictions and may request additional information from the offeror, as may be necessary, to evaluate the offeror’s assertions. If no restrictions are intended, then the offeror should state “NONE.”

A sample list for complying with this request is as follows:

COMMERCIAL			
Technical Data Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

**b. Non-Procurement Contract Offerors – Noncommercial and Commercial Items (Technical Data and Computer Software)**

Offerors responding to this BAA requesting an Other Transaction Agreement shall follow the applicable rules and regulations governing these various 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. Although not required, offerors may use a format similar to that described above. The Government may use the list during the scientific review process to evaluate the impact of any identified restrictions, and may request additional information from the offeror, as may be necessary, to evaluate the offeror’s assertions. If no restrictions are intended, then the offeror should state “NONE.”

**c. All Offerors – Patents**

Include documentation proving your ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under your proposal for the DARPA program. If a patent application has been filed for an invention that your proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, you may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that you own the invention, or 2) proof of possession of appropriate licensing rights in the invention.

**d. All Offerors – Intellectual Property Representations**

Provide a good faith representation that you either own or possess appropriate licensing rights to all other intellectual property that will be utilized under your proposal for the DARPA program. Additionally, offerors shall 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.

**3. Meeting and Travel Requirements**

There will be a program kickoff meeting and all key participants are required to attend. Performers should also anticipate periodic site visits at the program manager's discretion.

**4. Human Use**

All research involving human subjects, to include use of human biological specimens and human data, selected for funding must comply with the federal regulations for human subject protection. Further, research involving human subjects that is conducted or supported by the DoD must comply with 32 CFR 219, *Protection of Human Subjects* (<http://www.dtic.mil/biosys/downloads/32cfr219.pdf>), and DoD Directive 3216.02, *Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research* (<http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm>).

Institutions awarded funding for research involving human subjects must provide documentation of a current Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office of Human Research Protection Federal Wide Assurance (<http://www.hhs.gov/ohrp>). All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance. In addition, personnel involved in human subjects research must provide documentation of completing appropriate training for the protection of human subjects.

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. The IRB conducting the review must be the IRB identified on the institution's Assurance. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection, and data analysis. Consult the designated IRB for guidance on

writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance, along with evidence of appropriate training for all investigators, should accompany the protocol for review by the IRB.

In addition to a local IRB approval, a headquarters-level human subjects regulatory review and approval is required for all research conducted or supported by the DoD. The Army, Navy, or Air Force office responsible for managing the award can provide guidance and information about their component's headquarters-level review process. Note that confirmation of a current Assurance and appropriate human subjects protection training is required before headquarters-level approval can be issued.

The amount of time required to complete the IRB review/approval process may vary depending on the complexity of the research and/or the level of risk to study participants. Ample time should be allotted to complete the approval process. The IRB approval process can last for one to three months, followed by a DoD review that can last for three to six months. No DoD/DARPA funding can be used toward human subjects research until ALL approvals are granted.

## **5. Animal Use**

Any Recipient performing research, experimentation, or testing involving the use of animals shall comply with the rules on animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Act of 1966, as amended, (7 U.S.C. 2131-2159); (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals"; (iii) DoD Directive 3216.01, "Use of Laboratory Animals in DoD Program."

For submissions containing animal use, proposals should briefly describe plans for Institutional Animal Care and Use Committee (IACUC) review and approval. Animal studies in the program will be expected to comply with the PHS Policy on Humane Care and Use of Laboratory Animals, available at <http://grants.nih.gov/grants/olaw/olaw.htm>.

All Recipients must receive approval by a DoD certified veterinarian, in addition to an IACUC approval. No animal studies may be conducted using DoD/DARPA funding until the USAMRMC Animal Care and Use Review Office (ACURO) or other appropriate DoD veterinary office(s) grant approval. As a part of this secondary review process, the Recipient will be required to complete and submit an ACURO Animal Use Appendix, which may be found at <https://mrmc.amedd.army.mil/AnimalAppendix.asp>

## **6. Publication Approval**

It is the policy of the Department of Defense for products of fundamental research to remain unrestricted to the maximum extent possible. The definition of Contracted Fundamental Research is:

"Contracted Fundamental Research includes [research performed under] grants and contracts that are (a) funded by budget category 6.1 (Basic Research), whether

performed by universities or industry or (b) funded by budget category 6.2 (Applied Research) and performed on-campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant.” Such research is referred to by DARPA as “Restricted Research.”

Research performed under grants and contracts that are (a) funded by budget category 6.2 (Applied Research) and NOT performed on-campus at a university or (b) funded by budget category 6.3 (Advanced Research) does not meet the definition of fundamental research. Publication restrictions will be placed on all such research.

It is anticipated that the performance of research resulting from the BAA is fundamental research.

Offerors are advised if they propose grants or cooperative agreements, DARPA may elect to award other award instruments. DARPA will make this election if it determines that the research resulting from the proposed program 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 and will be considered Restricted Research.

For certain research projects, it may be possible that although the research being performed by the Prime Contractor is Restricted Research, a subcontractor may be conducting Contracted Fundamental Research. In those cases, it is the Prime Contractor’s responsibility to explain in their proposal why its subcontractor’s effort is Contracted Fundamental Research.

The following (or similar) provision will be incorporated into any resultant Restricted Research or Non-Fundamental Research procurement contract or other transaction:

There shall be no dissemination or publication, except within and between the Contractor and any subcontractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the DARPA Technical Information Officer (DARPA/TIO). All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by the Contractor. With regard to subcontractor proposals for Contracted Fundamental Research, papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement, pursuant to DoD Instruction 5230.27 dated October 6, 1987.

When submitting material for written approval for open publication, the Contractor/Awardee must submit a request for public release to the DARPA

TIO and include the following information: 1) Document Information: document title, document author, short plain-language description of technology discussed in the material (approx. 30 words), number of pages (or minutes of video) and document type (briefing, report, abstract, article, or paper); 2) Event Information: event type (conference, principle investigator meeting, article or paper), event date, desired date for DARPA's approval; 3) DARPA Sponsor: DARPA Program Manager, DARPA office, and contract number; and 4) Contractor/Awardee's Information: POC name, e-mail and phone. Allow four weeks for processing; due dates under four weeks require a justification. Unusual electronic file formats may require additional processing time. Requests can be sent either via e-mail to [tio@darpa.mil](mailto:tio@darpa.mil) or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to [www.darpa.mil/tio](http://www.darpa.mil/tio) for information about DARPA's public release process.

## **7. Export Control**

Should this project develop beyond fundamental research (basic and applied research ordinarily published and shared broadly within the scientific community) with military or dual-use applications the following apply:

- The Contractor shall comply with all U. S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of the contract or agreement. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports (including deemed exports) of hardware, technical data, and software, or for the provision of technical assistance.
- The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation (whether in or outside the United States), where the foreign person will have access to export-controlled technologies, including data or software.
- The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.
- The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

## **8. Subcontracting**

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy. Each offeror who

submits a contract proposal and includes subcontractors is required to submit a subcontracting plan in accordance with FAR 19.702(a) (1) and (2) should do so with their proposal. The plan format is outlined in FAR 19.704.

### **9. Central Contractor Registration (CCR)**

Offerors selected, but not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this BAA. Information on CCR registration is available at <http://www.ccr.gov>

### **10. On-line Representations and Certifications (ORCA)**

In accordance with FAR 4.1201, prospective offerors shall complete electronic annual representations and certifications at <http://orca.bpn.gov>.

### **11. Wide Area Work Flow (WAWF)**

Unless using another approved electronic invoicing system, performers will be required to submit invoices for payment directly via the Internet/WAWF at <http://wawf.eb.mil>. Registration to WAWF will be required prior to any award under this BAA.

### **12. 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 Subpart 39.2. Each offeror who submits a proposal involving the creation or inclusion of electronic and information technology must ensure that 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 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.

### **13. Employment Eligibility Verification**

As per FAR 22.1802, recipients of FAR-based procurement contracts must enroll as Federal Contractors in E-verify and use E-Verify to verify employment eligibility of all employees assigned to the award. All resultant contracts from this solicitation will include FAR 52.222-54, "Employment Eligibility Verification." This clause will not be included in grants, cooperative agreements, or Other Transactions.

## **C. Reporting**

The number and types of reports will be specified in the award document, but will include as a minimum monthly financial status reports and an annual project summary. In addition, each performing contractor (including subs) on each team will be expected to provide monthly status reports to the Program Manager. Reports and briefing material will also be required as appropriate to document progress in accomplishing

program metrics. These shall be prepared and submitted in accordance with the procedures contained in the award document. A Final Report that summarizes the project and tasks will be required at the conclusion of the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle. There may also be additional reporting requirements for Other Transactions.

### **1. T-FIMS**

The above reports may be electronically submitted by each awardee under this BAA via the DARPA Technical – Financial Information Management System (T-FIMS). If applicable, the T-FIMS URL and instructions will be furnished by the contracting agent prior to award.

### **2. I-Edison**

All required reporting shall be accomplished, as applicable, using the i-Edison.gov reporting website at <http://s-edison.info.nih.gov/iEdison>

## **VII. AGENCY CONTACTS**

DARPA will use electronic mail for all technical and administrative correspondence regarding this BAA, with the exception of selected/not-selected notifications.

Administrative, technical or contractual questions should be sent via e-mail to DARPA-BAA-10-34@darpa.mil. If e-mail is not available, please fax questions to 703-807-4949, Attention: RATS Solicitation. All requests must include the name, email address, and phone number of a point of contact.

Solicitation Web site: [http://www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp).

## **VIII. OTHER INFORMATION**

The solicitation web page at [www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp) will have a Frequently Asked Questions (FAQ) list.

### **A. Collaborative Efforts/Teaming**

Collaborative efforts/teaming are encouraged. A website (<http://csc-ballston.com/baa/RATSteaming.htm>) has been established to facilitate formation of teaming arrangements between interested parties. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the Department of Defense (DoD) endorses the destination web site or the information and organizations contained therein, nor does DARPA or the DoD exercise any responsibility at the destination. This website is provided consistent with the stated purpose of this BAA.

## **B. Industry Day**

An industry day is tentatively planned in conjunction with this BAA. Scheduling is currently TBD, but further information, if any Industry Day is held, will be provided via an amendment to this BAA. Attendance is not required to propose and DARPA will **not** provide reimbursement for costs incurred to participate in this Industry Day. All pertinent information and materials presented at the RATS Industry Day (if held) will be made available at [www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp), following the Industry Day. Non-US citizens will be required to submit a DARPA Form 60 "Foreign National Visit Request" to DARPA. All attendees will be required to present a government-issued photo identification upon entry to the event.