



Broad Agency Announcement

Narrative Networks

DSO

DARPA-BAA-12-03

October 7, 2011

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## Part I: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Defense Sciences Office
- **Funding Opportunity Title** – Narrative Networks
- **Announcement Type** – Initial announcement
- **Funding Opportunity Number** DARPA-BAA-12-03
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – Not applicable.
- **Dates**
  - Posting Date: October 7, 2011
  - Proposals are due by 4:00 PM ET, November 22, 2011
  - Closing Date, 4:00 PM ET, November 22, 2011
- **Concise description of the funding opportunity** – DARPA is soliciting innovative research proposals in the areas of (1) quantitative analysis of narratives, (2) understanding the effects narratives have on human psychology and its affiliated neurobiology, and (3) modeling, simulating, and sensing—especially in stand-off modalities—these narrative influences. Proposers to this effort will be expected to revolutionize the study of narratives and narrative influence by advancing narrative analysis and neuroscience so as to create new narrative influence sensors, doubling status quo capacity to forecast narrative influence.
- **Anticipated individual awards** – Multiple awards are anticipated.
- **Types of instruments that may be awarded** – Procurement contract.
- **Any cost sharing requirements** – None
- **Agency contacts**

Points of Contact:

The BAA Technical POC is William D. Casebeer, who can be reached at [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil).

The BAA Administrator for this effort can be reached at:

E-mail: [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil)

DARPA/DSO

ATTN: DARPA-BAA-12-03

3701 North Fairfax Drive

Arlington, VA 22203-1714

Solicitations can be viewed at:

[http://www.darpa.mil/Opportunities/Solicitations/DSO\\_Solicitations.aspx](http://www.darpa.mil/Opportunities/Solicitations/DSO_Solicitations.aspx)

Teaming Information (See Section VIII.E.) can be viewed at:

<https://team.sainc.com/n2>

## Part II: 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. The BAA will appear on the FedBizOpps website, <http://www.fedbizopps.gov/>. The following information is for those wishing to respond to the BAA.

**Overview:** DARPA is soliciting innovative research proposals in the areas of (1) quantitative analysis of narratives, (2) understanding the effects narratives have on human psychology and its affiliated neurobiology, and (3) modeling, simulating, and sensing—especially in stand-off modalities—these narrative influences. Proposers to this effort will be expected to revolutionize the study of narratives and narrative influence by advancing narrative analysis and neuroscience so as to create new narrative influence sensors, doubling status quo capacity to forecast narrative influence. Proposed research should investigate innovative approaches that enable revolutionary advances in narrative science, devices, and/or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

**Motivation:** Narratives exert a powerful influence on human thoughts and behavior. They consolidate memory, shape emotions, cue heuristics and biases in judgment, influence in-group/out-group distinctions, and may affect the fundamental contents of personal identity. It comes as no surprise that because of these influences stories are important in security contexts: for example, they change the course of insurgencies, frame negotiations, play a role in political radicalization, influence the methods and goals of violent social movements, and likely play a role in clinical conditions important to the military such as post-traumatic stress disorder. Therefore, understanding the role stories play in a security context, and the spatial and temporal dimensions of that role is especially important.

**Program Structure:** The program is structured in two eighteen-month phases, with an option for a third eighteen-month phase should further refinement of prototype technologies to meet transition partner requirements be needed. The first phase consists of foundational work across all three program technical areas. The second phase will use validated findings from all three co-evolved technical areas to construct and deliver optimized prototype technologies in the form of documents, software, hardware and devices. DARPA reserves the right to work with selected performers to rationalize partnerships in the second phase so as to maximize chances of successful development and testing of prototype technologies. The government team anticipates that by the end of phase one, findings in all three technical areas will be robust enough such that a synergistic, wholly focused effort will continue into phase two with further refinement and co-evolution of phase one funded efforts. The US Government desires to have at least Government Purpose Rights to any methodologies or software developed as a result of Narrative Networks, DARPA-BAA-12-03 research. See Section VIII, “Intellectual Property.”

**Proposer Structure:** Proposers are encouraged, but not required, to form interdisciplinary teams to innovatively address the Narrative Networks program technical areas. Teams that choose to work in only one technical area or with teams from only one discipline within the context of the Broad Agency Announcement should fully justify the motivation for considering the proposed technical area in isolation. Additionally, teams applying to only one technical area should understand that partnerships will be necessary to maximize chances of successful development and testing of prototype technologies in the later phases. Therefore, inclusion of integration plans for prototype development work is strongly recommended from single technical area proposal submissions. Extensions of existing frameworks and tools into the narrative domain are encouraged so long as they result in revolutionary advances in narrative analysis, neuroscience, and tool production. To maximize competitiveness within a particular technical area, teams should develop, describe and propose measurements and validation techniques for multiple sub-goals within it. Teams that propose to multiple Technical Areas should ensure they provide traceability between work proposed in sub-goals that cross Technical Areas to ensure proposals are unified and coherent. Proposers seeking to accomplish work in only one technical area are encouraged to produce data and products that can be used by other teams as the program progresses to the technology prototyping phase. For Technical Area Two, animal work is acceptable for the exploration of neurobiological mechanisms, but work with human subjects is strongly encouraged. Proposed use of animal models, in lieu of human subjects, must be fully described and justified.

**Technical Area (TA) One: Narrative Analysis.** Ascertaining exactly what function stories enact, and by what mechanisms they do so, is a necessity to effectively analyze the security phenomena shaped by stories. To do this in a scientifically respectable manner requires a working theory of narratives, an understanding of what role narratives play in security contexts, and examination of how to best analyze stories so as to decompose them and their psychological impact systematically. The primary goal of Technical Area One is to revolutionize the state of the art in narrative analysis by focusing on the innovative application of tools not traditionally used in that domain. This goal serves to ascertain who is telling stories to whom and for what purpose, and to discover latent indicators of the spread and influence of narrative tropes in structures such as social networks, traditional and social media, and in conversation. Technical Area One provides a critical framework necessary for progress in Technical Areas Two and Three.

1. **TA 1 Sub-goal One: Develop new, and extend existing narrative theories.** Identify the nature of stories, including, but not limited to, a list of necessary and sufficient conditions that help distinguish narrative stimuli from other stimuli. Identify and explore the kinematics and dynamics of story ontology. Identify and explore the structure and function of narratives, including identifying and discussing aspects of narratives that are universal versus aspects that vary considerably across cultural or social contexts.
2. **TA 1 Sub-goal Two: Identify and understand the role of narrative in security contexts.** Determine the role and extent stories play in influencing political violence. Identify and explore the function narratives serve in the process of

political radicalization and how they can influence a person or group's choice of means (such as indiscriminant violence) to achieve political ends. Identify and explore how narratives influence bystanders-to-conflict in terms of shaping their attitudes and perceptions. Identify and explore how narratives shape the process of negotiation, especially between key stakeholders. Identify and explore the relationship between narratives and the mechanisms that generate and reinforce psychiatric or clinical conditions. Develop methodologies that enable assessment of the impact of narratives on attitudes and perceptions.

3. **TA 1 Sub-goal Three: Survey and extend the state of the art in narrative analysis and decomposition tools.** Take narratives and make them quantitatively analyzable in a rigorous, transparent and repeatable fashion. Identify and develop narrative analysis tools that best establish a framework for the scientific study of the psychological and neurobiological impact of stories on people. Identify and develop analytic approaches or tools that explore how stories propagate in a system so as to influence behavior. Identify temporal and spatial dimensions of narratives in different media and how these dimensions complicate the analysis of narratives, and develop a framework or method for addressing these complications to enable advancements in Technical Areas Two and Three.

All proposed efforts within each sub-goal need to be structured in a manner that is measurable in comparison to the state of the art and that can be validated by independent researchers. This structure and associated metrics must be clearly described in the proposal along with milestones for their accomplishment.

Proposals are considered responsive to Technical Area One if they address all three sub-goals described above. Proposals that include additional sub-goals are also welcome and will be considered for funding. Proposals that do not address all sub-goals will be considered non-responsive.

**Technical Area Two: Narrative Neurobiology.** Since the brain is the proximate cause of our actions, stories have a direct impact on the neurobiological processes of both the senders and receivers of narratives. Understanding how stories inform neurobiological processes is critical if we are to ascertain what effect stories have on the psychology and neurobiology of human choices and behaviors. The primary goal of Technical Area Two is to revolutionize our understanding of how narratives and stories influence our underlying neurobiology at multiple levels of analysis, ranging from basic neurochemistry, to the systems level, to big-picture system-of-systems analysis. Technical Area Two serves as the neurobiological and neurochemical backbone of the narratives identified and analyzed as being relevant in Technical Area One, and proposals that link TA 2 goals to explanations of salient narrative psychological phenomena such as engagement, transportation, immersion, and synchronization are highly encouraged.

1. **TA 2 Sub-goal One: Assay narrative effects on our basic neurochemistry.** Determine if narratives uniquely modulate human hormone or neurotransmitter production. Determine if the production and uptake of behaviorally important neurotransmitters such as oxytocin or serotonin is influenced by narratives, and in what way. Identify novel neurotransmitters or other biologically active molecules modulated by narrative influence. Determine the impact of narratives on volume transmission systems in the brain in general. Determine the manner in which narrative effects change during ontogeny and/or due to socio-economic and other environmental conditions.
2. **TA 2 Sub-goal Two: Understand narrative impact on the neurobiology of memory, learning and identity.** Identify the mechanisms that explain why stories modulate recall. Determine how brain regions important for memory are influenced by narratives. Identify what role reward processing mechanisms associated with learning play in the processing of narratives. Explore the differential influence of stories on neurotransmitter systems as compared to other environmental stimuli. Determine how stories impact the neurobiology of important identity-related judgments, such as whom you consider to be a member of your in-group and whom you count as an out-group member.
3. **TA 2 Sub-goal Three: Assess narrative influence on the neurobiology of emotions.** Identify the neurobiological emotions that are impacted by salient narratives. Determine why, in neural terms, stories are especially effective at generating emotional reactions. Identify and explore any unique influences narratives have on the neural mechanisms of empathy and sympathy. Determine in neurobiological terms how and why narratives stir emotions such as disgust or outrage.
4. **TA 2 Sub-goal Four: Examine how narratives influence the neurobiology of moral judgment.** Explore the influence of stories on the neurobiology of moral judgment and development. Determine what aspects of narratives are most likely to cause changes in moral judgments and via what mechanism. Identify the neural mechanism or mechanisms by which narratives affect judgments about moral guilt and innocence, or the moral permissibility and/or impermissibility of certain actions.
5. **TA 2 Sub-goal Five: Determine how narratives modulate other brain mechanisms related to social cognition.** Determine how narratives differentially affect the neurobiological basis of theory of mind and judgments of the mental states of others. Identify and explore how stories influence neural mechanisms responsible for the generation and sustainment of collective action or group behavior. Determine if and by what mechanisms stories uniquely synchronize or sustain the neural mechanisms of shared attention, collaboration, joint problem-solving and trust.

All efforts within each sub-goal need to be structured in a manner that is measurable in comparison to extant state of the art and that can be validated by independent researchers. This structure and associated metrics must be clearly described in the proposal along with milestones for their accomplishment.



Proposals are considered responsive to Technical Area Two if they address more than one of the sub-goals described above. Proposals that include additional sub-goals are also welcome and will be considered for funding. DARPA anticipates funding a set of teams that considered collectively address all of Technical Area Two's stated sub-goals.

**Technical Area Three: Narrative Models, Simulations and Sensors.** In order to understand exactly how narratives influence human behavior, models must be developed that can simulate these influences and directly measure their impact. This technical area will focus on the development of tools to understand others, detect narrative influence, and predict responses. The ultimate goal of Technical Area Three is to enable prevention of negative behavioral outcomes, such as use of indiscriminant violence, and generation of positive behavioral outcomes, such as building trust. This will involve modeling and simulating the influence of narratives on individuals and/or groups to help us predict and quantify how and why our behavior changes as a result of narrative interaction. Proposals to this technical area will address these goals by building sensor systems that detect the appropriate variables contained in these models. Technical Area Three captures the deliverables and technologies that potential users will be most likely to interact with at the conclusion of the program. These models, simulations and sensors should be designed in a manner that allows for modification and refinement due to the successful incorporation of methodologies and findings developed and confirmed in Technical Areas One and Two.

1. **TA 3 Sub-goal One: Revolutionize the state of the art in modeling and simulating influence.** Baseline against existing models of the influence process to determine the best extant methods of understanding and forecasting influence. Use findings from Technical Areas One and Two as they become available to frame more effective models of the influence process. Refine and extend models of behavior by including consideration of narrative-driven mental and neurobiological states and the variables which influence them. Develop novel or improved methods for capturing the transition from changes in beliefs, desires and attitudes to actions. Survey and analyze particular modeling methodologies (agent-based, game-theoretic, system dynamics, directed graphs, etc.) to determine how to best extend them to influence-oriented applications. Determine how influence models are best validated and verified.
2. **TA 3 Sub-goal Two: Develop and validate new models or dramatically improve existing influence models by incorporating narrative considerations.** Identify whether existing influence models can be improved by the addition of a narrative "layer." Identify and examine the ontology and transition states of this layer. Develop a methodology for incorporating narrative-driven neurobiological considerations into improved influence models and determine whether this requires modeling individuals and/or groups. Determine what aspects of narrative neurobiology (such as memory, emotions, judgment, learning, and identity) are most critical for building a new or dramatically enhancing existing influence models. Build such a model capable of either or both individual and population-level narrative influence modeling, and demonstrate that it is twice as effective as

existing methods at forecasting influence. Validate and verify the model in at least one potentially iterable testable domain (such as forecasting the success of advertising, movies, public relations campaigns or reception of disaster relief interventions).

3. **TA 3 Sub-goal Three: Develop non-standard and novel sensor suites keyed to the variables and processes identified in new or improved influence models.**

Determine what critical variables are missing from current influence models or must be incorporated into new influence models. Identify how those variables can best be identified, detected and measured. Identify what environmental variables are most critical for the influence process and develop methods for measuring them. Baseline against current technologies for detecting and measuring indirect indicators of neural activity (such as capillary dilation, galvanic skin response, eye pupil dilation, gaze direction, micro-facial feature analysis, etc.), and against current standoff technologies for more direct detection and measurement (such as sensing neurobiological compounds). Develop technologies to enable a significant improvement in direct and/or indirect measures, or develop an entirely new measure and demonstrate how it is better than existing measures at detecting influence events. Efforts that rely solely on standoff/non-invasive/non-detectable sensors are highly encouraged. The technologies developed in TA 3 Sub-goal Three should be validated independently and then used in the validation and verification of any models developed to satisfy TA 3 Sub-goal Two.

All efforts within each sub-goal need to be structured in a manner that is measurable in comparison to extant state-of-the-art and that can be validated by independent researchers. This structure and associated metrics must be clearly described in the proposal along with milestones for their accomplishment.

Proposals are considered responsive to Technical Area Three if they fully address all three sub-goals described above. Proposals that include additional sub-goals are also welcome and will be considered for funding. Proposals that do not fully address all sub-goals will be considered non-responsive.

**Tools for Potential Performers:** The teaming website will contain useful information for potential performers, including a Frequently Asked Questions portal. The teaming website will also contain examples of generic, pre-annotated narratives and a description of the annotated dimensions that potential performers can leverage for advances in all three technical areas. Intent to use the pre-annotated narratives as databases or examples for Technical Area One or stimuli for Technical Area Two is entirely optional and will not bias for or against selection. They are provided as examples only, and program goals are not constrained by their content. The full set of pre-annotated narratives will be released upon source selection.

## **II. AWARD INFORMATION**

Multiple awards are anticipated. The amount of resources made available under this BAA will depend on the quality of the proposals received and the availability of funds.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation, and to make awards without discussions with proposers. The Government also reserves the right to conduct discussions if it is later determined to be necessary. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that proposer. The Government reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases.

Awards under this BAA will be made to proposers on the basis of the evaluation criteria listed below (see section labeled "Application Review Information," Sec. V.), and program balance to provide overall value to the Government. Proposals identified for negotiation may result in a procurement contract depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. The Government reserves the right 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. The Government reserves the right to remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time or the proposer 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 proposers intending to perform 'fundamental research,' i.e., basic or applied research performed on campus 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. 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. If proposals are selected for award that offer other than a fundamental research solution, then DARPA 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. See Section VI.B.4 for further information on fundamental, non-fundamental and restricted research. In all cases, the DARPA 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.

Federally Funded Research and Development Centers (FFRDCs) and Government entities (Government/National laboratories, military educational institutions, etc.) are subject to applicable direct competition limitations and cannot propose to this BAA in any capacity unless they address the following conditions. FFRDCs must clearly demonstrate that the proposed work is not otherwise available from the private sector AND must also provide a letter on letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to government solicitations and compete with industry, and compliance with the associated FFRDC sponsor agreement and terms and conditions. This information is required for FFRDCs proposing to be prime or subcontractors. 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 Proposer.

#### **B. 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 U.S.C. §§ 203, 205, and 208). The DARPA Program Manager for this BAA is William D. Casebeer. Once the proposals have been received, and prior to the start of proposal evaluations, the Government will assess potential conflicts of interest and will promptly notify the Proposer if any appear to exist. (Please note, the Government assessment does NOT affect, offset, or mitigate the Proposer's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.)

Without prior approval or a waiver from the DARPA Director, in accordance with FAR 9.503, a Contractor cannot simultaneously provide scientific, engineering, technical assistance (SETA) or similar support and also be a technical performer. Therefore, all Proposers as well as proposed subcontractors and consultants must affirm whether they (their organizations and individual team members) are providing SETA or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the Proposer, subcontractor, consultant, or individual supports and identify the prime contract number(s). 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 disclosure must include a description of the action the Proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. If in the sole opinion of the Government after full consideration of the circumstances, a proposal fails to fully disclose potential conflicts of interest and/or any identified conflict situation cannot be effectively mitigated, the proposal will be rejected without technical evaluation and withdrawn from further consideration for award.

If a prospective Proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise) or has questions on what constitutes a conflict of interest, the Proposer should promptly raise the issue with DARPA by sending his/her contact information and a summary of the potential conflict to the BAA mailbox before time and effort are expended in preparing a proposal and mitigation plan.

### **C. Other Eligibility Criteria**

#### **Collaborative Efforts**

Collaborative efforts/teaming are encouraged. A teaming website, <https://team.sainc.com/n2>, will facilitate the formation of teams with the necessary expertise. 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 website 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.

## **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 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. Security 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 13526, 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.

Security classification guidance via a DD Form 254, “DoD Contract Security Classification Specification,” 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.

Proposers 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.

Classified submissions shall be appropriately and conspicuously marked with the proposed classification level and declassification date. 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 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 submitted via ONE of the two following methods:

1. Hand-carried by an appropriately cleared and authorized courier to the DARPA CDR. Prior to traveling, the courier shall contact the DARPA CDR at 703-526-4052 to coordinate arrival and delivery.

OR

2. 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: Defense Sciences Office  
Reference: **DARPA-BAA-12-03**  
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 703-526-4052 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 703-526-4052 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 Proposer's responsibility to clearly define to the Government what is considered proprietary data.

Proposers 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. A certification of destruction may be requested, provided the formal request is received at this office within 5 days after unsuccessful notification.

## **2. Proposal Submission Information**

Proposers are required to submit proposals by the time and date specified in the BAA in order to be considered for selection. DARPA may evaluate proposals received after this date for a period up to one year from date of posting on FedBizOpps. Ability to review late submissions remains contingent on availability of funds.

The typical proposal should express a consolidated effort in support of one or more related technical concepts or ideas. Disjointed efforts should not be included into a single proposal.

Restrictive notices notwithstanding, proposals may be handled, for administrative purposes only, by a support contractor. This support contractor is prohibited from competition in DARPA technical research and is bound by appropriate nondisclosure requirements. Proposals and abstracts may not be submitted by fax or e-mail; any so sent will be disregarded.

Proposals not meeting the format described in the BAA may not be reviewed.

### **For Proposers Submitting Full Proposals, as Hard Copies/ On CD-ROM:**

Proposers must submit an original hardcopy, one (1) electronic copy of the full proposal [in PDF (preferred)] on a CD-ROM to the mailing address listed in Part I. Each copy must be clearly labeled with DARPA-BAA-12-03, proposer organization, proposal title (short title recommended).

### **For Proposers Submitting to an Electronic Business Application (Not Submitting Hard Copies/CD-ROM):**

Full proposals sent in response to DARPA-BAA-12-03 may be submitted via DSO's BAA Website (<https://dsobaa.sainc.com>). Visit the website to register for an account (via the "Register your Organization" link along the left side of the homepage), view submission instructions, and upload/finalize the proposal. All submissions must be compressed and encrypted as described below. Proposers using the DSO BAA Website may encounter heavy traffic on the submission deadline date; it is highly advised that submission process be started as early as possible.



All proposals submitted electronically by means of an Electronic Business Application Tool or proposal submission web site must be encrypted using WinZip or PKZip with 256-bit AES encryption. Only one zipped/encrypted file (containing both proposal volumes) will be accepted per proposal and proposals not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and e-mailed to [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil) at the time of proposal submission. See <https://dsobaa.sainc.com> for the encryption password form.

Note the word "PASSWORD" must appear in the subject line of the above e-mail 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. For further information and instructions on how to zip and encrypt proposal files, see <https://dsobaa.sainc.com>.

**For All:**

All administrative correspondence and questions on this solicitation, including requests for information on how to submit an abstract or full proposal to this BAA, should be directed to one of the administrative addresses below; e-mail is preferred.

BAA Administrator  
E-mail: [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil)

DARPA/DSO  
ATTN: DARPA-BAA-12-03  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

[http://www.darpa.mil/Opportunities/Solicitations/DSO\\_Solicitations.aspx](http://www.darpa.mil/Opportunities/Solicitations/DSO_Solicitations.aspx)

DARPA intends to use electronic mail for correspondence regarding DARPA-BAA-12-03. Proposals may not be submitted by fax or e-mail; any so sent will be disregarded. DARPA encourages use of the Internet for retrieving the BAA and any other related information that may subsequently be provided.

**3. Full Proposal Format**

All full proposals must be in the format given below. Nonconforming proposals may be rejected without review. Proposals shall consist of two volumes. All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. The page limitation for full proposals includes all figures, tables, and charts. Volume I, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) which document the technical ideas and approach upon which the proposal is based. Copies of not more than three (3) relevant papers can be included with the submission. The bibliography and attached papers are not included in the page counts given below. The submission of other supporting materials along with the proposals is

strongly discouraged and will not be considered for review. Volume I, Technical and Management Proposal, shall not exceed **40** pages. Maximum page lengths for each section are shown in braces { } below. All full proposals must be written in English.

**a. Volume I, Technical and Management Proposal**

Section I. Administrative

- A. Cover sheet to include:
- (1) BAA number;
  - (2) Technical area;
  - (3) Lead Organization submitting proposal;
  - (4) Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, “NON PROFIT” OR “NOT-FOR-PROFIT”;
  - (5) Contractor’s reference number (if any);
  - (6) Other team members (if applicable) and type of business for each;
  - (7) Proposal title;
  - (8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), e-mail (if available);
  - (9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), e-mail (if available);
  - (10) total funds requested from DARPA, separated by Base Award and Options (if any), and the amount of cost share (if any); AND
  - (11) Date proposal was submitted.
- B. Official transmittal letter.

Section II. Summary of Proposal

- A. {1} Innovative claims for the proposed research. This section is the centerpiece of the proposal and should succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art alternate approaches.
- B. {1} Deliverables associated with the proposed research and the plans and capability to accomplish technology transition and commercialization. Include in this section all proprietary claims to the results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are not proprietary claims, this should be stated. For forms to be completed regarding intellectual property, see Section VIII. There will be no page limit for the listed forms.
- C. {1} Cost, schedule and measurable milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the prime and major subcontractors, total cost and company cost share, if applicable. (Note: Measurable milestones should capture key development points

- in tasks and should be clearly articulated and defined in time relative to start of effort.)
- D. {1} Technical rationale, technical approach, and constructive plan for accomplishment of technical goals in support of innovative claims and deliverable production. (In the full proposal, this section should be supplemented by a more detailed plan in Section III.)
  - E. {1} General discussion of other research in this area.
  - F. {1} A clearly defined organization chart for the program team which includes, as applicable: (1) the programmatic relationship of team member; (2) the unique capabilities of team members; (3) the task of responsibilities of team members; (4) the teaming strategy among the team members; and (5) the key personnel along with the amount of effort to be expended by each person during each year.

### Section III. Detailed Proposal Information

- A. {4} Statement of Work (SOW) - In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. The page length for the SOW will be dependent on the amount of the effort. The SOW must not include proprietary information. 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 (reporting, data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities; and
  - Clearly identify any tasks/subtasks (prime or subcontracted) that will be accomplished on-campus at a university.

*Note: It is recommended that the SOW should be developed so that each cycle of the program is separately defined. Do not include any proprietary information in the SOW.*

- B. {2} Description of the results, products, transferable technology, and expected technology transfer path enhancing that of Section II. B. This should also address mitigation of life-cycle and sustainment risks associated with transitioning intellectual property for U.S. military applications, if applicable. See also Section VIII, "Intellectual Property."
- C. {16} Detailed technical approach enhancing and completing that of Section II.
- D. {3} Comparison with other ongoing research indicating advantages and disadvantages of the proposed effort.
- E. {2} Discussion of proposer's previous accomplishments and work in closely related research areas.

- F. {1} Description of the facilities that would be used for the proposed effort.
- G. {1} Detail support enhancing that of Section II, including formal teaming agreements which are required to execute this program.
- H. {5} Cost, schedules and measurable milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the primes and major subcontractors, total cost, and any company cost share. (Note: Measurable milestones should capture key development points in tasks and should be clearly articulated and defined in time relative to start of effort.)

Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. Additionally, proposals should clearly explain the technical approach(es) that will be employed to meet or exceed each program metric and provide ample justification as to why the approach(es) is/are feasible. The milestones must not include proprietary information.

#### Section IV. Additional Information

A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas upon which the proposal is based. Copies of not more than three (3) relevant papers can be included in the submission. This section does not count towards the overall page limit for Volume I.

#### **b. Volume II, Cost Proposal – {No Page Limit}**

- A. Cover sheet to include:
  - (1) BAA number;
  - (2) Technical area;
  - (3) Lead Organization submitting proposal;
  - (4) Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
  - (5) Contractor’s reference number (if any);
  - (6) Other team members (if applicable) and type of business for each;
  - (7) Proposal title;
  - (8) 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);
  - (9) 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);
  - (10) Award instrument requested: cost-plus-fixed-fee (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), or other transaction;
  - (11) Place(s) and period(s) of performance;

- (12) Total proposed cost separated by basic award and option(s) (if any);
- (13) Name, address, and telephone number of the proposer's cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- (14) Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- (15) Date proposal was prepared;
- (16) DUNS number;
- (17) TIN number;
- (18) Cage Code;
- (19) Subcontractor Information; and
- (20) Proposal validity period.

B. The proposers cost volume shall provide cost and pricing data, or other than cost or pricing data in sufficient detail to substantiate the program price proposed (e.g., realism and reasonableness). All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. No smaller font may be used. **In doing so, the proposal shall provide a detailed cost breakdown by major program tasks by government fiscal year, by phase and calendar fiscal year. See Appendix A and B for sample cost element summary sheets.** The breakdown shall include:

- (1) Total program cost broken down by major cost items:
  - a. Direct Labor – Including individual labor categories with associated labor hours and direct labor rates;
  - b. Consultants – If consultants are to be used, proposer must provide a copy of the consultant's proposed SOW as well as a signed consultant agreement or other document which verifies the proposed loaded daily / hourly rate, hours and any other proposed consultant costs (e.g., travel);
  - c. Indirect Costs – Including Fringe Benefits, Overhead, General and Administrative Expense, Cost of Money, Fee, etc. (must show base amount and rate);
  - d. Travel – Provide the purpose of the trip, number of trips, number of days per trip, departure and arrival destinations, number of people, etc.;
  - e. Other Direct Costs – Itemized with costs; Back-up documentation is to be submitted to support proposed costs;
  - f. Equipment Purchases – Itemization with costs, including quantities, unit prices, proposed vendors (if known), and the basis of estimate (e.g., quotes, prior purchases, catalog price lists, etc.); any item that exceeds \$5,000 must be supported with back-up documentation such as a copy of catalog price lists or quotes prior to purchase; (NOTE: For equipment purchases, include a letter stating why the proposer cannot provide the requested resources from its own funding);
  - g. Materials – Itemization with costs, including quantities, unit prices, proposed vendors (if known), and the basis of estimate (e.g., quotes, prior purchases, catalog price lists, etc.); any item that exceeds \$5,000

must be supported with back-up documentation such as a copy of catalog price lists or quotes prior to purchase;

- h. Major program tasks by Government Fiscal Year (GFY = Oct 1 – 30 Sep); and
- i. A summary of projected funding requirements by month.

- (2) A summary of total program costs by phase and calendar fiscal year;
- (3) A priced Bill-of-Materials (BOM) clearly identifying, for each item proposed, the source of the unit price (i.e., vendor quote, engineering estimate, etc.) and the type of property (i.e., material, equipment, special test equipment, plant equipment, information technology (IT, as defined in FAR Part 2.101);
- (4) An itemization of Subcontracts. All subcontractor cost proposal documentation must be prepared at the same level of detail as that required of the prime. Subcontractor proposals should include Interdivisional Work Transfer Agreements (IWTA) or evidence of similar arrangements;
- (5) The source, nature, and amount of any industry cost-sharing. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each; and
- (6) 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.).

- C. Supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates in paragraph B. above. The proposer shall provide a detailed description of the methods used to estimate costs, to include, at a minimum: (1) substantiation of all rates and factors, and (2) labor and material estimates supported by a narrative basis-of-estimate (BOE) providing sufficient detail to substantiate cost estimates. **The prime contractor is responsible for compiling and providing, as part of its proposal submission to the government, subcontractor proposals prepared at the same level of detail as that required of the prime.**

The prime contractor shall provide a cost reasonableness analysis of proposed subcontractor prices as defined in FAR Subpart 15.404-3. Such analysis shall indicate the extent to which the prime contractor has negotiated subcontract prices. All proprietary subcontractor proposal documentation, prepared at the same level of detail as that required of the prime shall be provided to the Government either by the prime contractor or by the subcontractor organization when the proposal is submitted. Subcontractor proposals submitted to the

Government by the prime contractor should be submitted in a sealed envelope that the prime contractor will not be allowed to view. The subcontractor must provide the same number of hard copies and/or electronic proposals as is required of the prime contractor. This does not relieve the proposer from the requirement to include, as part of their submission, subcontract proposals that do not include proprietary pricing information (rates, factors, etc.).

If items of Contractor Acquired Property are proposed, exclusive of material, the proposer shall clearly demonstrate that the inclusion of such items as Government Property is in keeping with the requirements of FAR Part 45.102.

NOTE: "cost or pricing data" as defined in FAR Subpart 15.4 shall be required if the proposer is a contract award of \$700,000 or greater unless the proposer requests an exception from the requirement to submit cost or pricing data.

NOTE: Proposers are cautioned that evaluation ratings may be lowered and/or proposals rejected if submittal instructions are not followed.

#### **4. Submission Dates and Times**

##### **a. Full Proposal Date**

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

To receive consideration under this BAA, **FULL PROPOSALS MUST BE RECEIVED ON OR BEFORE 4:00 PM ET, on November 22, 2011.** Full proposals may be submitted at any time from issuance of this announcement through **November 22, 2011.**

DARPA will acknowledge receipt of complete submissions via e-mail and confirm control numbers that should be used in all further correspondence regarding proposals. If no confirmation is received within two business days, please contact the BAA Administrator at [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil) to ensure the proposal was submitted properly. DARPA will post a consolidated FAQ, which will be posted on [http://www.darpa.mil/Opportunities/Solicitations/DSO\\_Solicitations.aspx](http://www.darpa.mil/Opportunities/Solicitations/DSO_Solicitations.aspx). In order to receive a response to your question, submit your question to [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil).

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

#### **5. Intergovernmental Review**

Not applicable.

## 6. Funding Restrictions

Not Applicable.

### V. APPLICATION REVIEW INFORMATION

#### A. Evaluation Criteria

Proposals will be evaluated using the following criteria, listed in descending order of importance: (a) Overall Scientific and Technical Merit; (b) Potential Contribution and Relevance to the DARPA Mission; (c) Cost Realism; (d) Realism of Proposed Schedule; (e) Proposer's Capabilities and/or Related Experience; and (f) Plans and capability to Accomplish Technology Transition.

##### (a) Overall Scientific and Technical Merit

The proposed technical approach is feasible, achievable, complete and supported by a proposed technical team that has the expertise and experience to accomplish the proposed tasks. Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed deliverables clearly defined such that a final outcome that achieves the goal can be expected as a result of award. The proposal identifies major technical risks and planned mitigation efforts are clearly defined and feasible.

##### (b) 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.

##### (c) Cost Realism

The objective of this criterion is to establish that the proposed costs are realistic for the technical and management approach offered, as well as to determine the proposer'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 proposer'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 type and number of labor hours proposed per task as well as the types and kinds of materials, equipment and fabrication costs proposed. It is expected that the effort will leverage all available relevant prior research in order to obtain the maximum benefit from the available funding. For efforts with a likelihood of commercial application, appropriate direct cost sharing may be a positive factor in the evaluation. The evaluation criterion recognizes that undue emphasis on cost may motivate proposers to offer low-risk ideas with minimum uncertainty and to staff the effort with junior personnel in order to be in a more competitive posture. DARPA discourages such cost strategies.



**(d) Realism of Proposed Schedule**

The proposer's abilities to aggressively pursue performance metrics in the shortest timeframe and to accurately account for that timeframe will be evaluated, as well as proposer's ability to understand, identify, and mitigate any potential risk in schedule.

**(e) Proposer's Capabilities and/or Related Experience**

The proposer's prior experience in similar efforts must clearly demonstrate an ability to deliver products that meet the proposed technical performance within the proposed budget and schedule. The proposed team has the expertise to manage the cost and schedule. Similar efforts completed/ongoing by the proposer in this area are fully described including identification of other Government sponsors.

**(f) 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 the proposed intellectual property (IP) rights will potentially impact the Government's ability to transition the technology.

**B. Review and Selection Process**

Evaluation of proposals will be accomplished through a scientific/technical review of each proposal. 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.

Award(s) will be made to proposers whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work to the overall research program and the availability of funding for the effort. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons.

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.

Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. For evaluation purposes, a proposal is the document described in “Full Proposal Format,” Section IV.B.3. 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.

Restrictive notices notwithstanding, proposals may be handled for administrative purposes by support contractors. These support contractors are prohibited from competition in DARPA technical research and are bound by appropriate non-disclosure requirements.

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. After proposals have been evaluated and selections made, the original of each proposal received will be retained at DARPA and all other copies will be destroyed.

## **VI. AWARD ADMINISTRATION INFORMATION**

### **A. Selection Notices**

As soon as the evaluation of a proposal is complete, the proposer 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 e-mail to the Technical and Administrative POCs identified on the proposal coversheet.

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

#### **1. Meeting and Travel Requirements**

There will be a program kickoff meeting and all key participants are required to attend. Performers should also anticipate regular program-wide PI Meetings and periodic site visits at the Program Manager's discretion.

#### **2. 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.access.gpo.gov/nara/cfr/waisidx\\_07/32cfr219\\_07.html](http://www.access.gpo.gov/nara/cfr/waisidx_07/32cfr219_07.html)) 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/pdf/321602p.pdf>).

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 all investigators should all 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 between one to three months, followed by a DoD review that could last between three to six months. No DoD/DARPA funding can be used towards human subjects research until ALL approvals are granted.

### **3. 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-www.army.mil/index.cfm?pageid=Research\\_Protections.acuro&m=1](https://mrmc-www.army.mil/index.cfm?pageid=Research_Protections.acuro&m=1).

#### **4. Publication Approval**

It is the policy of the Department of Defense that the publication of products of fundamental research will 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.’

Pursuant to DoD policy, 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.

1. Research to be performed as a result of this BAA is expected to be Fundamental.  
DARPA does not anticipate applying publication restrictions of any kind.
2. Research to be performed as a result of this BAA is expected to be Restricted. The research resulting from the proposed program is anticipated to 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 relative to the program. Other restrictions may also apply.

3. Research to be performed as a result of this BAA is expected to be Non-fundamental. DARPA permission must be received before publishing any information or results relative to the program. Other restrictions may also apply.

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 same 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 DARPA's Public Release Center (DARPA/PRC). 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 PRC 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 [prc@darpa.mil](mailto:prc@darpa.mil) or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to [http://www.darpa.mil/NewsEvents/Public\\_Release\\_Center/Public\\_Release\\_Center.aspx](http://www.darpa.mil/NewsEvents/Public_Release_Center/Public_Release_Center.aspx) for information about DARPA's public release process.

## 5. Export Control

The following clause will be included in all procurement contracts, and may be included in Other Transactions as deemed appropriate:

(a) *Definition.* “Export-controlled items,” as used in this clause, means items subject to the Export Administration Regulations (EAR) (15 CFR Parts 730-774) or the International Traffic in Arms Regulations (ITAR) (22 CFR Parts 120-130). The term includes:

1) “Defense items,” defined in the Arms Export Control Act, 22 U.S.C. 2778(j)(4)(A), as defense articles, defense services, and related technical data, and further defined in the ITAR, 22 CFR Part 120.

2) “Items,” defined in the EAR as “commodities”, “software”, and “technology,” terms that are also defined in the EAR, 15 CFR 772.1.

(b) The Contractor shall comply with all applicable laws and regulations regarding export-controlled items, including, but not limited to, the requirement for contractors to register with the Department of State in accordance with the ITAR. The Contractor shall consult with the Department of State regarding any questions relating to compliance with the ITAR and shall consult with the Department of Commerce regarding any questions relating to compliance with the EAR.

(c) The Contractor's responsibility to comply with all applicable laws and regulations regarding export-controlled items exists independent of, and is not established or limited by, the information provided by this clause.

(d) Nothing in the terms of this contract adds, changes, supersedes, or waives any of the requirements of applicable Federal laws, Executive orders, and regulations,

including but not limited to—

(1) The Export Administration Act of 1979, as amended (50 U.S.C. App. 2401, *et seq.*);

(2) The Arms Export Control Act (22 U.S.C. § 2751, *et seq.*);

(3) The International Emergency Economic Powers Act (50 U.S.C. § 1701, *et seq.*);

(4) The Export Administration Regulations (15 CFR Parts 730-774);

(5) The International Traffic in Arms Regulations (22 CFR Parts 120-130);

and (6) Executive Order 13222, as extended;

(e) The Contractor shall include the substance of this clause, including this paragraph (e), in all subcontracts.

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

## **7. 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 proposer 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.

## **8. 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."

## **9. Additional Requirements and Responsibilities relating to Alleged Crimes by or against Contractor Personnel in Iraq and Afghanistan**

The following clause will be used in all contracts performed in Iraq or Afghanistan. Contracts performed in Iraq or Afghanistan are contracts with the Department of Defense, a subcontract at any tier issued under such a contract, or a task order or delivery order at any tier issued under such contract, including a contract, subcontract, or task order or delivery order issued by another Government agency for the Department of Defense, if the contract, subcontract, or task order or delivery order involves work performed in Iraq or Afghanistan for a period longer than 14 days.

(a) The Contractor shall report to the appropriate investigative authorities, identified in paragraph (c) below, any alleged offenses under—

(1) The Uniform Code of Military Justice (chapter 47 of title 10, United States code) (applicable to contractors serving with or accompanying an armed force in the field during a declared war or a contingency operation); or

(2) The Military Extraterritorial Jurisdiction Act (chapter 212 of title 18, United States Code).

(b) The Contractor shall provide to all contractor personnel who will perform work on a contract in Iraq or Afghanistan, before beginning such work, information on the following:

(1) How and where to report an alleged crime described in paragraph (a) of this clause.

(2) Where to seek victim and witness protection and assistance available to contractor personnel in connection with an alleged offense described in paragraph (a) of this clause.

(c) The appropriate investigative authorities to which suspected crimes shall be reported include the following officials –

(i) US Army Criminal Investigations Division at <http://www.cid.army.mil/reportacrime.html>

(ii) Air Force Office of Special Investigations at <http://www.osi.andrews.af.mil/library/factsheets/factsheet.asp?id=14522>

(iii) Navy Criminal Investigative Service at <http://www.ncis.navy.mil/Pages/publicdefault.aspx>; or

(iv) To the command of any supported military element or the command of any base.

(d) Personnel seeking whistleblower protection from reprisals for reporting criminal acts shall seek guidance through the DoD Inspector General hotline at (800) 424-9098 or <http://www.dodig.mil/HOTLINE/index.html>. Personnel seeking other forms of victim or witness protections should contact the nearest military law enforcement office.

## **10. Central Contractor Registration (CCR) and Universal Identifier Requirements**

Unless the proposer is exempt from this requirement, as per FAR 4.1102 or 2 CFR 25.110 as applicable, all proposers must be registered in the Central Contractor Registration (CCR) and have a valid Data Universal Numbering System (DUNS) number prior to submitting a proposal. Information on CCR registration is available at <http://www.ccr.gov>. All proposers must maintain an active CCR registration with current information at all times during which they have an active Federal award or proposal under consideration by DARPA. All proposers must provide the DUNS number in each proposal they submit.



DARPA cannot make an assistance award to a proposer until the proposer has provided a valid DUNS number and has maintained an active CCR registration with current information.

### **11. Reporting Executive Compensation and First-Tier Subcontract Awards**

The FAR clause 52.204-10, "Reporting Executive Compensation and First-Tier Subcontract Awards," will be used in all procurement contracts valued at \$25,000 or more. A similar award term will be used in all grants and cooperative agreements.

### **12. Updates of Information Regarding Responsibility Matters**

FAR clause 52.209-9, Updates of Publicly Available Information Regarding Responsibility Matter, will be included in all contracts valued at \$500,000 where the contractor has current active Federal contracts and grants with total value greater than \$10,000,000.

## **C. Reporting**

The number and types of reports will be specified in the award document, but will include as a minimum quarterly financial status reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed on before award. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. 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.

## **D. Electronic Systems**

### **1. Representations and Certifications**

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

### **2. 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.

### 3. i-Edison

The award document for each proposal selected for funding will contain a mandatory requirement for patent reports and notifications to be submitted electronically through i-Edison (<http://s-edison.info.nih.gov/iEdison>).

#### **VII. AGENCY CONTACTS**

The preferred method of communication for this BAA is e-mail.

Points of Contact:

The Technical POC for this effort is **William Casebeer**  
E-mail: [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil)

The BAA Administrator for this effort can be reached at:  
E-mail: [DARPA-BAA-12-03@darpa.mil](mailto:DARPA-BAA-12-03@darpa.mil)

DARPA/DSO  
ATTN: DARPA-BAA-12-03  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

#### **VIII. OTHER INFORMATION**

##### **A. Intellectual Property Procurement Contract Proposers**

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

Proposers 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. Proposers shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that proposers 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 proposers 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. Proposers are admonished that the Government will 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. If no restrictions are intended, then the proposer should state “NONE.” It is noted an assertion of “NONE” indicates that the Government has “unlimited rights” to all noncommercial technical data and noncommercial computer software delivered under the award instrument, in accordance with the DFARS provisions cited above. Failure to provide full information may result in a determination that the proposal is not compliant with the BAA – resulting in nonselectability of the proposal.

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

**NONCOMMERCIAL**

Technical Data 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)

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

Proposers 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 that may be embedded in 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 proposers 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 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. If no restrictions are intended, then the proposer should state “NONE.” Failure to provide full information may result in a determination that the proposal is not compliant with the BAA – resulting in nonselectability of the proposal.

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. All Proposers – 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.

## **C. All Proposers – 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, proposers 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.

## **D. All Proposers – Teaming**

A teaming website, <https://team.sainc.com/n2>, will facilitate the formation of teams with the necessary expertise. 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 website 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.

**APPENDIX A**

**Contracts Cost Element Summary Sheet**

**COST ELEMENT SUMMARY [SAMPLE]**

Year 1				Year 2 or Option Year			
COST ELEMENT	BASE	RATE	AMT	BASE	RATE	AMT	TOTAL PROPOSED AMOUNT
DIRECT LABOR (list each direct labor category separately.)	Hrs	\$	\$	Hrs	\$	\$	\$
TOTAL DIRECT LABOR			\$			\$	\$
FRINGE BENEFITS	\$	%	\$	\$	%	\$	\$
TOTAL LABOR OVERHEAD	\$	%	\$	\$	%	\$	\$
SUBCONTRACTORS, IOTS, CONSULTANTS (List Separately)			\$			\$	\$
MATERIALS & EQUIPMENT			\$			\$	\$
MATERIAL OVERHEAD	\$	%	\$	\$	%	\$	\$
TRAVEL			\$			\$	\$
ODCs			\$			\$	\$
G&A	\$	%	\$	\$	%	\$	\$
IR&D/B&P	\$	%	\$	\$	%	\$	\$
SUBTOTAL COSTS			\$			\$	\$
COST OF MONEY (See DD Form 1861)			\$			\$	\$
TOTAL COST			\$			\$	\$
PROFIT/FEE	\$	%	\$	\$	%	\$	\$
TOTAL PRICE/COST			\$			\$	\$
GOVERNMENT SHARE			\$			\$	\$
RECIPIENT SHARE			\$			\$	\$

**SUBCONTRACTORS/INTERORGANIZATIONAL TRANSFERS (IOT) & CONSULTANTS  
PRICE SUMMARY**

A	B	C	D	E	F
SUBCONTRACTOR, IOT & CONSULTANT NAME	SOW TASKS PERFORMED*	TYPE OF AWARD	SUBCONTRACTOR, IOT & CONSULTANT QUOTED PRICE	COST PROPOSED BY PRIME FOR THE SUBCONTRACTOR, IOT & CONSULTANT	DIFFERENCE (COLUMN D - Column E), IF APPLICABLE
TOTALS					

\*Identify Statement of Work, Milestone or Work Breakdown Structure paragraph or provide a narrative explanation as an addendum to this Table that describes the effort to be performed.