Clean-slate design of Resilient, Adaptive, Secure Hosts (CRASH)

Broad Agency Announcement

DARPA-BAA-10-70

June 1, 2010

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Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA)

- **Funding Opportunity Title** – Transformation Convergence Technology Office (TCTO) Clean-Slate Design of Resilient, Adaptive, Secure Hosts (CRASH)

- **Announcement Type** – Initial Broad Agency Announcement

- **Funding Opportunity Number** – Broad Agency Announcement (BAA) DARPA-BAA-10-70

- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – N/A

- **Dates**

    - Posting Date: See announcement at www.fbo.gov
    - Proposals
        - Initial Closing – 1200 noon (ET), 16 July 2010

        - Final Closing – 1200 noon (ET), 26 November 2010

- **Anticipated Individual Awards** – We anticipate multiple awards for all technical areas.

- **Types of Instruments That May Be Awarded** – Procurement contract and cooperative agreement.

- **Technical POC** – Howard Shrobe, Program Manager, DARPA/TCTO
    - EMAIL: DARPA-BAA-10-70@darpa.mil
    - FAX: (703) 807-1739
    - ATTN: DARPA-BAA-10-70
      3701 North Fairfax Drive
      Arlington, VA 22203-1714

Part Two: Full Text of Announcement

I. FUNDING OPPORTUNITY DESCRIPTION

The Defense Advanced Research Projects Agency is soliciting proposals for innovative research into the design of new computer systems that:
- Are highly resistant to cyber-attack;
- Can adapt after a successful attack in order to continue rendering useful services;
- Learn from previous attacks how to guard against and cope with future attacks; and
- Can repair themselves after attacks have succeeded.

Proposed solutions may involve (but are not limited to):
- Novel hardware architectures
- Novel operating system and other system software
- Novel programming languages and development environments
- Novel formal methods
- Co-designs involving several of the above

Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, and/or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

DARPA often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will appear first on the FedBizOpps website, http://www.fedbizopps.gov/, and Grants.gov website, http://www.grants.gov/. The following information is for those wishing to respond to the BAA.

Background and Problem Statement

Current computer systems are highly vulnerable to cyber attack. The number of attacks and the financial losses due to those attacks have risen exponentially for a decade. Despite significant investments, the situation continues to worsen; novel attacks appear with high frequency and employ increasingly sophisticated techniques.

There are very few fundamental sources of the vulnerabilities exploited by cyber attackers. These attacks stem from the fact that current computer systems cannot enforce the intended semantics of their computations. In particular, they fail to systematically enforce:
- Memory safety
- Type safety
- The distinction between code and data
- Constraints on information flow and access

These properties are not systematically enforced today because they are not:
- Systematically captured during the design process;
- Formally analyzed or verified during design and implementation;

- Captured or enforced by common system programming languages (e.g., the C programming language); and
- Represented explicitly within the runtime environment of the system and therefore cannot be enforced dynamically by either hardware or software techniques.

Current system software is large, complex, and monolithic. Hardware architectures provide mechanisms to protect the kernel from user code, but at the same time grant to the kernel unlimited privileges (at best, a few levels of increased privilege). Consequently, a single penetration into the kernel gives the attacker unlimited access. Since the cost of switching into kernel mode is high, there is a tendency for system programmers to move increasing amounts of functionality into the kernel, making it even less trustworthy and exposing an even larger attack surface.

Current computer systems are not resilient to attacks. They lack the means to recover from attacks either by finding alternative methods for achieving their goals or by repairing the resources corrupted by the attack. They also typically lack the ability to diagnose the underlying problem and to fix the vulnerabilities that enabled the attack. Once a machine is corrupted, manual repairs by specialized personnel are required while the forensic information necessary to affect the repair is typically lacking.

Finally, today's computer systems are nearly identical to one another, do not change appreciably over time, and share common vulnerabilities. A single network-based attack can therefore spread rapidly and affect a very large number of computers.

While these problems are not new, they have not been adequately dealt with largely because designers have been intellectually and institutionally bound by the need to maintain compatibility with legacy systems. These constraints have limited the range of hardware architectures, system software designs, programming languages, etc. that have been considered.

Program Scope

The **C**lean-Slate Design of **R**esilient, **A**daptive, **S**ecure **H**osts (**CRASH**) program seeks to break these intellectual constraints by looking at the problem (as the name implies) from a clean slate perspective. The primary goal of this program is to design new techniques that can effectively solve the problems described above; compatibility and legacy concerns are secondary.

In CRASH, the clean slate approach will involve the co-design of the hardware, system software, programming languages, design environments, and formal methods. Often, making a small change in one of these domains can greatly ease the task of another. For example, providing a uniform software support system for automatic memory management (e.g., garbage collection) can reduce the task of analyzing memory safety. Similarly, hardware type tagging can systematically enforce code/data and other distinctions that might be more difficult and more costly to guarantee at other levels. Programming languages and environments that capture design rationale, constraints, and invariants make it easier to implement self-checking and self-

adaptive software systems. The CRASH program will encourage such cross layer co-design and participation from researchers in any relevant area.

Biological Inspiration

The goal of the CRASH program is to design highly robust, adaptive, and secure computer systems. The strategies used by biological systems can provide significant inspiration. In the human immune system, for example, multiple independent mechanisms constantly monitor the body for pathogens. Even at the cellular level, multiple redundant mechanisms monitor and repair the structure of the DNA. These mechanisms consume significant resources, but they allow the body to continue functioning and to repair the damage caused by malfunctions and infectious agents. Humans and other higher organisms have two cooperating immune systems: the **innate immune system** and the **adaptive immune system**. The **innate immune system** is older in evolutionary terms, acts quickly, but only deals with a fixed set of pathogens that have been ubiquitous over human history. The **adaptive immune system**, in contrast, is slower, but learns how to defend against novel pathogens and uses its memory of these newly encountered pathogens to mount a rapid response in the case of repeated attack. The innate immune system helps the adaptive system by presenting foreign materials together with triggering cues. Finally, at the species level, enough **diversity** is maintained so that even highly communicable diseases and pandemics do not wipe out the entire society.

Program Elements

The CRASH program will translate these immune system strategies into computational terms.

The analog of the innate immune system will include combinations of hardware and software elements that constantly enforce basic semantic properties such as type safety, memory integrity, code/data distinctions, information flow, and access control constraints. The innate subsystem will render impossible attacks based on vulnerabilities stemming from violations of these basic properties. As with biological systems, significant resources should be dedicated to this task. Since hardware resources are now plentiful, it would be reasonable to use hardware mechanisms where this will lead to more complete enforcement or to better runtime performance.

The analog of the adaptive immune system will consist of software and/or hardware mechanisms capable of recognizing and diagnosing novel attacks that bypass the innate system. In addition, the adaptive system will provide mechanisms for repairing the damage caused by the attack and for making reasonable tradeoffs while recovering and adapting after successful attacks. It will also encompass mechanisms that learn to recognize early warning signs to fend off attempts to repeatedly employ the same techniques used in recently encountered attacks. The human adaptive immune system recognizes pathogens by constructing a model of the self and recognizing organisms that do not match this model. The CRASH adaptive system will use models of the intended behavior of its software systems. These models may be constructed by a variety of techniques, including but not limited to the use of machine learning, static analysis, and/or modeling facilities incorporated in the programming language or the programming environment.

Finally, since diversity is an important biological strategy for population survival, CRASH will explore techniques to generate diversity, both between CRASH systems and within a single CRASH system over time.

The mechanisms and principles for implementing the three biologically inspired strategies of innate immunity, adaptive immunity, and dynamic diversity are the outputs of the CRASH program.

Technical Areas of Interest

Implementing these three biologically inspired strategies will require contributions from a broad variety of computer science technical areas. The CRASH program includes the following technical areas of interest:
   1. Processor architectures
   2. Operating systems
   3. Formal methods
   4. Programming languages and environments
   5. Machine learning, self-adaptation, diagnosis, recovery, and repair
   6. Dynamic diversification

Proposals may be submitted that cover any individual area as well as multiple areas showing true synergy. Performers in all of these areas will be expected to work cooperatively with one another to design, implement, test, and evaluate one or more complete CRASH systems. The following principles[1] should guide the overall design of these systems as well as the work in individual technical areas:
   - Modularization - systems should be decomposed into the smallest meaningful components possible, each performing a single conceptual task
   - Economy of mechanism - minimize the number of mechanisms that provide a common capability
   - Complete mediation - properties to be enforced must be checked on every relevant operation
   - Least privilege - every component of the system should have only those privileges necessary to accomplish its task
   - Separation of privilege and mutual suspicion - wherever possible, more than one "principal" must sanction an operation before it can be performed. Components should check the information received from a cooperating component before computing with it.

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[1] Mainly drawn from Saltzer, J. H., and M. D. Schroeder, The protection of information in computer systems, Proceedings of the IEEE. Vol. 63, No. 9 (September 1975), pp. 1278-1308.

Technical Area 1: Processor Architectures

Processor architectures research will support extensions to processor designs that contribute to the goals stated above. Modest processor extensions may be the most appropriate mechanism for systematically enforcing basic semantic properties such as type safety, memory safety, and information control. Work in this technical area is encouraged to explore such extensions. This may include, but is not limited to, tagging for information flow tracking, taint propagation, bounds checking, type checking, access control, and concurrency control. Of less interest are novel instruction set designs and performance-oriented optimizations. Possible implementation techniques include, but are not limited to, Field Programmable Gate Arrays (FPGAs) or instruction set level simulations. The performance goal of the resulting implementation is only to be fast enough to support experimentation in this and other technical areas. Costly and time consuming implementation techniques (e.g. full custom chips) whose only purpose is performance should be avoided. Similarly, board level integration of the processor into a full system should focus on the core research goals and minimize cost and complexity.

Technical Area 2: Operating Systems

Operating systems research will support both the innate and adaptive systems. The innate system will be concerned with enforcement of basic semantic properties such as memory safety, type safety, information flow, and access control. Where relevant, it will work in concert with features provided by the hardware. Cooperation between the operating system and hardware design is strongly encouraged if new hardware is being developed. New operating system structures that do away with the concept of a single all-privileged kernel are highly encouraged. This may require the design of novel hardware protection mechanisms that lead into co-design efforts with Technical Area 1. However, operating systems transferrable to commercial platforms are also of interest.

The operating system should provide techniques that lead to effective rollback and recovery, information flow tracking, and systematic logging. The goal of this technical area is not to produce a feature rich operating system competitive with commercial systems, but rather to build a prototype system capable of illustrating and testing core principles.

Technical Area 3: Formal Methods

Research on formal methods is sought that will contribute to the design of the innate immunity capability, influencing both processor and operating system components. Ideally, formal analysis of software and hardware designs will be used to verify that important properties are being preserved; more importantly, information gathered from formal analysis should be a part of a continual evolutionary design process. The formal methods technical area will participate in the co-design of the processor and operating system technical areas of the program by suggesting features, modifications and restructurings that allow more effective formal analysis and verification. This track will also support the adaptive immunity capability area. Techniques are sought that will allow formal proofs of program properties and other static analysis techniques to help build effective computational models of the intended behavior of a

program. Such techniques may include, but are not limited to, the extraction of efficiently checkable invariant conditions, as well as models of the allowable control flows and data flows.

Technical Area 4: Programming Languages and Environments

This technical area will support both adaptive and innate immunity. Language features and runtime support to guarantee important properties will be encouraged. In addition, it will be of interest to provide language and/or programming environment features that facilitate the capture of important constraints on program execution such as information flow or invariants that must hold at specific points in the program. In addition, language features that facilitate the capture of multiple methods for common goals and the trade-offs among alternative methods are also encouraged. Close integration with Technical Areas 1, 2 and 3 is strongly encouraged.

Technical Area 5: Machine Learning, Self-Adaptation, Diagnosis, Recovery and Repair

This technical area contains the core techniques that will be used for adaptive immunity. The techniques to be explored in this area include, but are not limited to:
- Machine learning techniques that develop a model of the program's intended behavior
- Static analysis techniques for extracting models of the program's intended behavior
- Detection techniques that help determine that the program has stepped outside the bounds of its intended behavior
- Adaptation techniques that allow a program to continue functioning even after a successful attack has corrupted some resources
- Diagnosis techniques to help isolate the underlying cause of the problem
- Recovery techniques that allow a program to roll back to a safe state from which it may continue
- Repair techniques that allow the system to fix the underlying vulnerability

Co-design with other technical areas is strongly encouraged.

Technical Area 6: Dynamic Diversification

This technical area will focus on techniques that introduce diversity between different copies of the same system and within a single copy over time. Topics of interest include, but are not limited to, memory randomization, data structure randomization, stack layout randomization, instruction set diversification, and the use of multiple alternative methods for achieving the same goal. The research in this area should focus on new techniques; existing techniques that are known to be effective should be incorporated in the design, but major research effort should not be proposed for such existing techniques.

Program Structure

The CRASH program will be a collective effort involving all the participants. Performers in the program will be grouped into one or more design teams, each aimed at producing a complete CRASH system. Performers may participate on more than one team, the teams will not be competitively evaluated, and there is no anticipated downselection of teams. The program will have two cycles, each culminating with an integration point at which complete systems will be assembled, analyzed, and red-teamed. These will occur roughly halfway through the program and toward the end of the program's anticipated four-year duration.

Proposals for both integrated teams and individual contributors are encouraged. Individual proposals need not cover all technical areas; rather, integrated design teams covering the full scope of the program's technical areas will be organized from the selected proposals. Integrated teams should be considered only when they reflect clear synergies between technical areas and participants, not just to achieve complete coverage of the technical areas.

Proposals may indicate a willingness to act as integrators for the complete CRASH systems, but integrators must also contribute in at least one of the technical areas. Since the overall program strategy emphasizes co-design, each proposal should identify opportunities for co-design with technologies from technical areas not covered in the proposal.

All performers will have an Associate Contractor Agreement clause included in the award to facilitate the open exchange of information. This clause is intended to ensure appropriate coordination and integration of work by the CRASH contractors, while maximizing commonality and preventing unnecessary duplication of effort.

Schedule

The schedule listed herein contains notional estimates. Proposers should propose a detailed schedule that is consistent with the maturity of their approaches and the risk reduction required for their concepts. These schedules will be synchronized across performers, as required, and monitored/revised as necessary throughout the CRASH program's period of performance. A start date of October 1, 2010, should be assumed for budgeting purposes. Subject to the availability of funbding, the program is intended to last four years, with the first major integration point planned at the end of the second year. The second major integration point will occur toward the end of fourth year.

Two principal investigator (PI) meetings will be held each year at roughly six-month intervals, with the first PI meeting occurring at program initiation. These meetings will focus on open technical interchange and the definition of architectures and interfaces. Difficulties encountered and possible solutions will also be discussed. Red team members will participate actively on each design team and will help identify vulnerabilities early in the design process. Red team activities will be ongoing and will take the form of both white-board analysis efforts and tests of prototype systems. Participants are expected to maintain active collaboration with other members of their design teams and should expect to be involved in frequent working group meetings by either travel or teleconferencing. DARPA and other Government personnel

will be actively involved in these meetings. The goals of the PI meetings will be to: (a) review system architecture performance in simulation/red team evaluations; (b) review and share innovations/accomplishments of each design team; (c) demonstrate prototypes; and (d) plan for the next six month period.

The locations for the technical interchanges, PI meetings, and other events will be specified by the Government. In general, for budgeting travel, assume the locations of technical interchanges will be held alternately in Washington, D.C., and at the performer's location. Assume that PI meetings will be held alternately at east and west coast locations. In addition to site visits, regular teleconference meetings are encouraged to enhance communications with the Government team. Should important issues arise between program reviews, the Government team will be available to support informal interim technical interchange meetings.

Deliverables

Performers shall be required to provide the following deliverables:

- System Development Plan (SDP) – Applicable to all technical areas. The SDPs for each cycle, based upon the performers' proposals, shall be revised after each PI meeting and shared with other performers for synchronization. The SDPs shall describe the scope of the design and development effort, describe hardware and software architectures in sufficient detail for review, reference any applicable documents, and provide a schedule.

- Slide Presentations – Applicable to all technical areas. Annotated slide presentations shall be submitted within one month after the program kickoff meeting and after each review.

- System Documentation – Applicable to all technical areas. System documentation shall be provided within one month after the end of each year documenting the source code, hardware description, language specifications, system diagrams, part numbers, and any other data necessary to replicate and test the designs.

- Monthly Progress Reports – Applicable to all technical areas. A monthly progress report describing progress made, resources expended, and any issues requiring the attention of the Government team shall be provided within 10 days after the end of each month.

- Integration Point Designs Code and Documentation-- All design documents, CAD files, source code, scripts, test chips, system prototypes, etc. needed to re-create the Integration Point System Builds, which are not delivered as part of System Documentation, shall be provided within one month of completion of Integration Point System Assembly.

- Final Report – Applicable to all technical areas. The final report shall concisely summarize the effort conducted.

Intellectual Property

All technical data or computer software that will be developed or delivered under this program is desired to be furnished to the Government with at least Government Purpose Rights. If there is client side software and/or technical data, that software and/or technical data is desired to be freely redistributable. See Section VIII and the Proposal Roadmap instructions for Section 2.8., Intellectual Property, for further details.

II.   AWARD INFORMATION

Multiple awards are anticipated in each technical area. 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 V - Application Review Information), and program balance to provide overall value to the Government. Proposals identified for negotiation may result in a procurement contract or cooperative agreement, 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 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. 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.

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.

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.

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. Howard Shrobe.

Once the proposals have been received, and prior to the start of proposal evaluations, the Government will assess potential conflicts of interest in regards to the DARPA program manager, as well as those individuals chosen to evaluate proposals received under this BAA, 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.)

All proposers and proposed subcontractors must affirm whether they 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 proposer 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 disclosure shall include a description of the action the proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. 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 Performer. 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 proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise), the proposer should promptly raise the issue with DARPA by sending the proposer's contact information and a summary of the potential conflict by email to the mailbox address for this BAA at DARPA-BAA-10-70@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/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.

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 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.

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 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: TCTO
Reference: DARPA-BAA-10-70
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 proposer's responsibility to clearly define to the Government what is considered proprietary data.

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 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 DARPA's policy 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 five days after unsuccessful notification.

2. Proposal Information

Proposers are required to submit full proposals by the time and date specified in the BAA in order to be considered during the initial round of selections. DARPA may evaluate proposals received after this date for a period up to 180 days from the date of posting on FedBizOpps and Grants.gov. Ability to review late submissions remains contingent on availability of funds.

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 non-disclosure requirements. Proposals may not be submitted by fax or e-mail; any so sent will be disregarded.

Submissions not meeting the format described in the BAA may not be reviewed. All administrative correspondence and questions on this solicitation, including requests for information on how to submit a full proposal to this BAA, should be directed to the administrative addresses below; e-mail or fax is preferred.

- o EMAIL: DARPA-BAA-10-70@darpa.mil
- o FAX: (703) 807-1739
- o ATTN: DARPA-BAA-10-70
    3701 North Fairfax Drive
    Arlington, VA 22203-1714

DARPA will employ an electronic upload submission system (T-FIMS) for all unclassified responses to this BAA. Unclassified proposals sent in response to DARPA-BAA-10-70 must be submitted through T-FIMS. See https://www.tfims.darpa.mil/baa/ for more information on how to request an account, upload proposals, and use the T-FIMS tool. Because proposers using T-FIMS may encounter heavy traffic on the web server, and T-FIMS requires a registration and certificate installation for all proposers, proposers should not wait until the day the proposal is due to create an account in T-FIMS and submit the proposal. All proposers using T-FIMS must also encrypt the proposal, as per the instructions below.

All proposals submitted electronically through T-FIMS must be encrypted using Winzip or PKZip with 256-bit AES encryption. Only one zipped/encrypted file will be accepted per proposal and proposals not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and emailed to DARPA-BAA-10-70@darpa.mil following the proposal submission process, as proposers will be issued a document control number at that time. See https://www.tfims.darpa.mil/baa/ for the encryption password form.

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. For further information and instructions on how to zip and encrypt proposal files, see https://www.tfims.darpa.mil/baa/.

For proposers seeking a cooperative agreement, you may elect to use the Grants.gov APPLY function, which replaces the proposal submission process that other proposers follow. The APPLY function does not affect the proposal content or format. The APPLY function is electronic; proposers do not submit paper proposals in addition to the Grants.gov APPLY electronic submission.

Proposers must complete the following steps before submitting proposals on Grants.gov (these steps are also detailed at www.grants.gov/applicants/get_registered.jsp):
- Proposers must obtain a DUNS number
- Proposers must register their organization in the Central Contractor Registration (CCR) (https://www.bpn.gov/CCRSearch/Search.aspx)
- Proposers must obtain a user name and password with an E-Authentication provider
- Proposers must register the Authorized Organization Representative (AOR) in Grants.gov
- Proposers must have the organization's E-BIZ point of contact authorize the AOR to submit applications.

Cooperative agreement proposals may be submitted to DARPA through Grants.gov, or through T-FIMS. If proposers intend to use Grants.gov as their means of submission, then they must submit their entire proposal through Grants.gov; applications cannot be submitted in part to Grants.gov and in part through T-FIMS or hard copy.

3. Proposal Preparation and Format

The proposal shall be delivered in two volumes, Volume 1 (technical proposal) and Volume 2 (cost proposal). Nonconforming proposals may be rejected without review.

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 the total of the maximum page lengths for each section as shown in braces { } below.

Volume 1 – Technical and Management Proposal

Proposal Section 1 - Administrative

1.1. Cover Sheet

The cover sheet should contain the following information:
- BAA number;
- Proposal title;
- Technical area(s);
- Lead organization submitting the proposal;

- 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;
- Total funds requested from DARPA. 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.
- Other team members (if applicable) and type of business for each.

1.2. Official Transmittal Letter

1.3. Table of Contents {No page limit}

Proposal Section 2 - Technical Details

2.1. PowerPoint Summary Chart {1 chart}

Provide a one slide summary of the proposal in PowerPoint that effectively and succinctly conveys the main objective, key innovations, expected impact, and other unique aspects of the proposal.

2.2. 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.

2.3. Proposal Roadmap {1 page}

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. Proposers should specify both final and intermediate products.
g. Cost and schedule of the proposed effort.

2.4. Technical Approach {12 pages}

Provide a detailed description of the technical approach. This section will elaborate on many of the topics identified in the proposal roadmap and will serve as the primary expression of the proposers' scientific and technical ideas.

2.5. Prior Work {2 pages}

Describe any ongoing work or past projects in the related space that have been successfully completed by the team members. Describe if the deliverable or products are fielded (and to what extent), and whether the technology is being marketed.

2.6. 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.

2.7. Statement of Work (SOW) {8 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;
- Cost, schedule and measurable milestones for the proposed research, including estimates of cost for each major 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.)

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

2.8. Intellectual Property {No page limit}

Per section VIII - Other Information, proposers 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 proposers 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 proposer should state "NONE".

2.9. Management Plan {6 pages}

Describe any formal teaming agreements that are required to execute this program and a clearly defined organization chart for the program team (prime contractor and subcontractors, if any).

2.10. Schedule and Milestones {3 pages}

This section should include:
  a. {1 page} Schedule Graphic - Provide a graphic representation of project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-year 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. Use "x months after contract award" designations for all dates.

b. {1 page} Detailed Task Descriptions - Provide detailed task descriptions for each discrete work effort and/or subcontractor in schedule graphic.

c. {1 page} Project Management and Interaction Plan - Describe the project management and interaction plans for the proposed work. If proposal includes subcontractors that are geographically distributed, clearly specify working / meeting models. Items to include in this category include software/code repositories, physical and virtual meeting plans, and online communication systems that may be used.

2.11. Personnel, Qualifications, and Commitments {No more than 2 pages per key person}

List key personnel, in particular, key developers, showing a concise summary of their qualifications. 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 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 proposers should not propose personnel whom they do not intend to execute the contract.

Include a table of key individual time commitments as follows:

Key Individual	Project	Pending/Current	GFY11	GFY12	GFY13	GFY14
Jane Doe	CRASH	Proposed	% Commitment			
	Project 1	Current	n/a	n/a	n/a	
	Project 2	Pending	n/a	n/a	n/a	
John Deer	CRASH	Proposed				

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

Per the instructions in section III.A.1. above, if the proposer 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 proposer, sub and/or individual supports, 2) identify the prime contract numbers AND 3) include a description of the action the proposer has taken or proposes to take to avoid, neutralize, or mitigate the conflict.

If the proposer or any proposed sub IS NOT currently providing SETA support as described, then the proposer 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 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 proposer 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 proposer 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 (i.e., FFRDC's, National laboratories, etc.) 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 proposer 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 (i.e., FFRDC's, National laboratories, etc.) 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 proposer should state "None."

2.17. Facilities {1 page}
If any portion of the research is predicated upon the use of Government Owned Resources of any type, the proposer shall specifically identify the property or other resource required, the date the property or resource is required, the duration of the requirement, the source from which the resource is required, if known, and the impact on the research if the resource cannot be provided. If no Government Furnished Property is required for conduct of the proposed research, the proposal shall so state.

Proposal Section 3 - Additional Information

Proposers should submit a bibliography and may submit up to three papers showing previous work relevant to this BAA.

Volume 2 – Cost Proposal

Cover Sheet

The cover sheet should contain the following information:
- 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: cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), or other transaction;
- 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 proposer's cognizant Defense Contract Management Agency (DCMA) administration office (*if known)*;
- Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- Date proposal was prepared;
- DUNS number (refer to: http://www.dnb.com/US/duns_update);
- TIN number;
- Cage code;
- Subcontractor information; and
- Proposal validity period (minimum 180 days).

The Government requests and recommends that tables included in the cost proposal also be provided in MS Excel™ format with calculation formulae intact to allow traceability of the cost proposal numbers across the prime and subcontractors. If the PDF submission differs from the Excel submission, the PDF will take precedence. Each copy must be clearly labeled with the DARPA BAA number, proposer organization, and proposal title (short title recommended).

Cost Summaries {5 pages}

Provide a top-level total cost summary for the entire program broken down by years. Show each major task and subtask by month and delineate prime and major subcontractor efforts.

Detailed Cost Breakdown {No page limit}

For purposes of building your cost proposal, assume an estimated start date of 1 October 2010. Provide: (1) total program cost broken down by major cost items (direct labor, including labor categories; subcontracts; materials; other direct costs, overhead charges, etc.) and further broken down by task and year; (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[2]; (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.

The prime contractor is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO) with the submission of this proposal. Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements, if applicable. 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. NOTE: For IT and equipment purchases, include a letter stating why the proposer cannot provide the requested resources from its own funding.

Provide supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates above. Include a description of the method used to estimate costs and supporting documentation. Note: "Cost or pricing data" as defined in FAR Subpart 15.4 shall be required if the proposer is seeking a procurement contract award of $650,000 or greater unless the proposer requests an exception from the requirement to submit cost or pricing data. "Cost or pricing data" are not required if the proposer proposes an award instrument other than a procurement contract (e.g., other transaction.) All proprietary subcontractor proposal documentation, prepared at the same level of detail as that required of the prime, shall be made immediately available to the Government, upon request, under separate cover (i.e., mail, electronic/email, etc.), either by the proposer or by the subcontractor organization.

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[2] 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, are not information technology."

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 16 July 2010 (initial closing) in order to be considered during the initial evaluation phase. While DARPA-BAA-10-70 will remain open until 1200 noon (ET) 26 November 2010 (final closing date/BAA expiration), proposers are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date deadline.

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

DARPA currently anticipates using 6.2 funding for this program.

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/technical review of each proposal using the following mandatory criteria: (a) Overall Scientific and Technical Merit; (b) Potential Contribution and Relevance to the DARPA Mission; (c) Realism of Proposed schedule; (d) Proposer's Capabilities and Related Experience; and (e) Cost Realism. 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. 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 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.

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 proposer's submission will be evaluated on how realistic the proposed schedule is in relation to the program's goals. The proposer will be evaluated on its understanding of the timeframe necessary to meet these goals and to identify and mitigate any potential risk in schedule.

4. 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.

5. 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.

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

B. Review and Recommendation 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 the merit and relevance of the specific proposal as it relates to the office rather than against other proposals for research in the same general area, since no common work statement exists. 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 section 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.

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. Award(s) may be made to any proposer whose proposal is determined selectable regardless of its overall rating.

Restrictive notices notwithstanding, proposers 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 proposer 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 contractor bid or proposal 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 electronic uploaded file of each proposal received will be retained at DARPA in accordance with agency records management policy.

VI.   AWARD ADMINISTRATION INFORMATION

A. Award 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 US mail to the Technical POC 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 personnel are required to attend. Performers should also anticipate regular program-wide 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), 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 <u>human subjects in the first year of the project</u>, 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&rn=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.

Awards for both Fundamental and Restricted Research may be made as a result of this BAA. Appropriate clauses will be included in resultant awards for Restricted Research to prescribe publication requirements and other restrictions, as appropriate. DARPA does not anticipate applying publication restrictions of any kind to Fundamental Research.

Proposers are advised if they propose cooperative agreements, DARPA may elect to award other award instruments due to the need to apply publication or other restrictions. 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 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 or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to www.darpa.mil/prc for information about DARPA's public release process.

5. 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:

(1) 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 this contract. 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 of (including deemed exports) hardware, technical data, and software, or for the provision of technical assistance.

(2) 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 technical data or software.

(3) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(4) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors**.**

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 (2) and should do so with their proposal. The plan format is outlined in FAR 19.704.

7. Central Contractor Registration (CCR)

Proposers 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 https://www.bpn.gov/ccr/default.aspx.

8. On-line Representations and Certifications (ORCA)

In accordance with FAR 4.1201, prospective proposers shall complete electronic annual representations and certifications at http://www.darpa.mil/cmo/sectionK.html.

9. 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.

10. 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.

11. 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 goals. 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.

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 email for all technical and administrative correspondence regarding this BAA, with the exception of select/not-selected notifications.

Administrative, technical or contractual questions should be sent via e-mail to DARPA-BAA-10-70@darpa.mil. All requests must include the name, email address, and phone number of a point of contact.

The technical POC for this effort is Howard Shrobe, electronic mail: DARPA-BAA-10-70@darpa.mil.

VIII.   OTHER INFORMATION

1. **Intellectual Property**

   a. **Procurement Contract Proposers**

      i.   **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 may use the list during the scientific review 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)

ii. 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 (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 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 scientific review 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. Non-Procurement Contract Proposers – Noncommercial and Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting a Procurement Contract or Other Transaction 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, proposers 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 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.

c. 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.

d. 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.

2. Solicitation Web Site

The solicitation web page at http://www.darpa.mil/tcto/solicitations.html will have a Frequently Asked Questions (FAQ) list.

3. Proposers' Day

Participants MUST register at http://www.sa-meetings.com/DARPA_CRASH no later than 2359 on Tuesday, 01 June 2010. Registration is limited to 100 attendees. Only two representatives from each organization or institution may attend.

The Proposers' Day will occur on Friday, 04 June 2010 from 0900 ET to 1300 ET at the Executive Conference Center at Liberty Center, 4075 Wilson Boulevard, Suite 350, Arlington, Virginia 22203. Registration opens at 0800 ET.

4. Cost Volume Checklist

The following checklist is provided to assist the proposer in developing a complete and responsive cost volume. Full instructions appear in "Volume 2 - Cost Proposal" beginning on Page 18 of this solicitation document. This worksheet must be included with the coversheet of the Cost Proposal.

1. Are all items included on your Cost Proposal cover sheet?

   ○ **YES**   ○ **NO**

   If reply is "No", please explain:

2. Does your Cost Proposal include (1) a summary cost buildup by Phase, (2) a summary cost buildup by Year, and (3) a detailed cost buildup of for each Phase that breaks out each task and shows the cost per month?

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

3. Does your cost proposal (detailed cost buildup #3 above in item 2) show a breakdown of the major cost items listed below:

   Direct Labor (Labor Categories, Hours, Rates)

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   Indirect Costs/Rates (i.e., overhead charges, fringe benefits, G&A)

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   Materials and/or Equipment

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   Subcontracts/Consultants

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   Other Direct Costs

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   Travel

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

4. Have you provided documentation for proposed costs related to travel, to include purpose of trips, departure and arrival destinations and sample airfare?

   ○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

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5. Does your cost proposal include a complete itemized list of all material and equipment items to be purchased (a priced bill-of-materials (BOM))?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

If reply is "No", please explain:

6. Does your cost proposal include vendor quotes or written engineering estimates (basis of estimate) for all material and equipment with a unit price exceeding $5000?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

If reply is "No", please explain:

7. Does your cost proposal include a clear justification for the cost of labor (written labor basis-of-estimate (BOE)) providing rationale for the labor categories and hours proposed for each task?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

If reply is "No", please explain:

8. Do you have subcontractors/consultants? If YES, continue to question 9. If NO, skip to question 13.

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

9. Does your cost proposal include copies of all subcontractor/consultant technical (to include Statement of Work) and cost proposals?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

 If reply is "No", please explain:

10.   Do all subcontract proposals include the required summary buildup, detailed cost buildup, and supporting documentation (SOW, Bill-of-Materials, Basis-of-Estimate, Vendor Quotes, etc.)?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

 If reply is "No", please explain:

11.   Does your cost proposal include copies of consultant agreements, if available?

12.   If requesting a FAR-based contract, does your cost proposal include a tech/cost analysis for all proposed subcontractors?

○ **YES**   ○ **NO**   **Appears on Page(s)** [Type text]

If reply is "No", please explain:

13. Have all team members (prime and subcontractors) who are considered a Federally Funded Research & Development Center (FFRDC), included documentation that clearly demonstrates work is not otherwise available from the private sector AND provided a letter on letterhead from the 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?

○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

14. Does your proposal include a response regarding Organizational Conflicts of Interest?

○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

15. Does your proposal include a completed Data Rights Assertions table/certification?

○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

5. Submission Checklist

The following items apply prior to proposal submission.

Item	Section	Applicability	Comment
Conflict of Interest	III A 1	Organizations and individuals with potential conflicts	Email DARPA-BAA-10-69@darpa.mil
Obtain DUNS number	Volume 2 - Cost Proposal	Required for cost proposal cover page	http://www.dnb.com/US/duns_update/
Obtain Taxpayer ID Number (TIN)	Volume 2 - Cost Proposal	Required for proposal cover page	http://www.irs.gov/businesses/small/international/article/0,,id=96696,00.html
Obtain CAGE code	Volume 2 - Cost Proposal	Required for proposal cover page	http://www.dlis.dla.mil/CAGESearch/cage_faq.asp
Enroll in E-Verify	VI B 11	Applies to FAR-based contracts, not grants, cooperative agreements, or other transactions	http://www.uscis.gov/portal/site/uscis
Enroll in Contractor Database	VI B 7	Required of all proposers	https://www.bpn.gov/ccr/default.aspx

The following items must be included in zip file comprising the submission package of all proposers:

Item	Section	Comment
Proposal Volume I		See page 16
Proposal Volume II		See page 22
Cost proposal spreadsheet		See page 22
Representations and Certifications	VI B 8	http://www.darpa.mil/cmo/sectionK.html
Intellectual Property	VIII 1	

The following items are required as part of the proposal submission package under certain conditions, as specified:

Item	Section	Applicability
FFRDC compliance letter	III A	Applies only to Federally Funded Research and Development Centers
Government entity compliance letter	III A	Required for Government entities only
IT Equipment Purchase Letter		Required for proposers who intend to purchase IT equipment with contract funds. See page 23
Human Use	VI B 2	Required for all research involving human subjects, biological specimens, and human data
Animal Use	VI B 3	Required for all research involving experimentation or testing involving animals
Subcontracting Plan	VI B 6	Required of all proposers intending to employ subcontractors
Patent ownership	VIII 1 c	Proposers asserting rights to patents to be used in the proposed project
SETA Contractor affirmation	V A 1	All proposers, both primes and subcontractors, holding SETA contracts with DARPA

The following items apply after award:

Item	Section	Applicability	Comment
Cost and technical reports	VI C	Required of all awardees as specified in the award document	
Wide Area Work Flow	VI B 9	Required of all awardees	http://wawf.eb.mil
Patent reporting	VI C 2	Required for all patent applicants	http://s-edison.info.nih.gov/iEdison/