



**Broad Agency Announcement
Precision Electronic Warfare
(PREW)**

STRATEGIC TECHNOLOGY OFFICE

DARPA-BAA 09-65

24 August 09

TABLE OF CONTENTS

Part One: Overview Information4

Part Two: Full Text of Announcement5

1. FUNDING OPPORTUNITY DESCRIPTION.....5

1.1 PROGRAM OVERVIEW..... 5

 1.1.1 Program Concept..... 5

 1.1.2 System / Node Description..... 7

1.2 PROGRAM PHASES..... 8

 1.2.1 Phase 1 Clock Synchronization (Base)..... 8

 1.2.2 Phase 2 Pointing (Option 1) 9

 1.2.3 Phase 3 40 Node System Jamming Demonstration (ROM Only) 10

1.3 PROGRAM METRICS..... 11

2. AWARD INFORMATION13

3. ELIGIBILITY INFORMATION14

3.1 ELIGIBLE APPLICANTS 14

 3.1.1 Procurement Integrity, Standards of Conduct, Ethical Considerations, and
 Organizational Conflicts of Interest..... 15

3.2 COST SHARING/MATCHING 16

4. APPLICATION AND SUBMISSION INFORMATION16

4.1 ADDRESS TO REQUEST APPENDIX 16

4.2 SECURITY AND PROPRIETARY ISSUES 17

4.3 CONTENT AND FORM OF APPLICATION SUBMISSION 18

 4.3.1 Restrictive Markings on Proposals..... 19

4.4 FORMATTING CHARACTERISTICS..... 20

 4.4.1 Proposal Format..... 20

4.5 SUBMISSION DATES AND TIMES 24

 4.5.1 Proposal Date 24

5. APPLICATION REVIEW INFORMATION24

5.1 EVALUATION CRITERIA 25

 5.1.1 Ability to Meet Program Go/No-Go Metrics and Phase Elements..... 25

 5.1.2 Overall Scientific and Technical Merit..... 25

 5.1.3 Potential Contribution and Relevance to the DARPA Mission 25

 5.1.4 Proposer’s Capabilities and/or Related Experience 25

 5.1.5 Plans and Capability to Accomplish Technology Transition..... 26

 5.1.6 Cost Realism 26

5.2 REVIEW AND RECOMMENDATION PROCESS 27

6. AWARD ADMINISTRATION INFORMATION.....27

6.1 AWARD NOTICES 27

6.2 MEETING AND TRAVEL REQUIREMENTS 27

6.3 HUMAN USE 28

6.4 ANIMAL USE 28
6.5 PUBLIC RELEASE OR DISSEMINATION OF INFORMATION..... 29
6.6 EXPORT CONTROL..... 30
6.7 SUBCONTRACTING 30
6.8 ELECTRONIC AND INFORMATION TECHNOLOGY 31
6.9 REPORTING 31
 6.9.1 Central Contractor Registration (CCR)..... 31
 6.9.2 Representations and Certifications 31
 6.9.3 Wide Area Work Flow (WAWF)..... 31
 6.9.4 T-FIMS..... 32
6.10 i-EDISON..... 32
6.11 AGENCY CONTACTS..... 32
7. OTHER INFORMATION32
 7.1 INTELLECTUAL PROPERTY..... 32
 7.1.1 Procurement Contract Proposers..... 32
 7.1.2 NonProcurement Contract Proposers..... 33
ATTACHMENT A: PREW DARPA-BAA-09- 65 CLASSIFIED APPENDIX REQUEST
FORM 35

Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Strategic Technologies Office (STO)
- **Funding Opportunity Title** – Precision Electronic Warfare (PREW)
- **Announcement Type** – Initial Announcement
- **Funding Opportunity Number** – Broad Agency Announcement (BAA) 09-65
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – 12.910 Research and Technology Development
- **Dates**
 - Posting Date – 24 August 2009
 - Proposal Due Date – 13 October 2009
 - BAA Closing Date – 23 August 2010
 - Proposers Day date – 9 September 2009

Part Two: Full Text of Announcement

1. FUNDING OPPORTUNITY DESCRIPTION

The Defense Advanced Research Projects Agency 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/>. The following information is for those wishing to respond to the BAA.

DARPA is soliciting innovative research proposals in the area of wireless communication and electronic warfare. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice

1.1 PROGRAM OVERVIEW

The goal of the Precision Electronic Warfare (PREW) program is to demonstrate technologies and a prototype system that will enable the fielding of an ad hoc sparse array consisting of multiple airborne and/or ground nodes that can perform surgical jamming. The PREW system should be able to project RF energy that results in the coherent combining of focused power within a small geographic area of interest (AOI). When operating outside the AOI, the system must minimize the coherency of the RF energy to limit the impact to collateral systems. This capability will allow the warfighter to impact the battlespace concept of operations (CONOPS) by disrupting and controlling communications and navigation services. The PREW system should be designed to be robust, low cost, small size, weight and power distributed platforms. The PREW concept envisions an array of nodes (40 or more) that have synchronized clocks, enabling the signal from each node to be aligned so that the array focuses energy at the desired location. The array will use both spatial and temporal characteristics to exploit the signal to noise ratio (SNR) and temporal requirement of the target and collateral systems. More specifically, this program defines jamming as a denial of Quality of Service (QoS) as opposed to the traditional saturation of receiver front ends. This definition applies for both the intended target, and collateral (unintended) receivers. The operational PREW system effect will be to place the desired energy on the specific target area while not affecting the non-target area. The system should be designed for multi-scenario, multi-platform capability and capable of deployment on airborne platforms or advantaged ground locations. Key technology challenges include oscillator synchronization, accurate pointing, and energy control. Key system objective is to degrade the quality of service of the intended target, while minimizing the quality of service impact to collateral devices. The PREW program is planned for transition in FY13.

1.1.1 Program Concept

The military is increasingly being tasked to engage non-conventional, localized forces using large, expensive, and high value platforms to effectively deny communications and navigation services. Unfortunately, these systems deny services to the entire region and have the negative result of disabling communication services supporting the personnel the system is trying to help. A technology is needed that can surgically disable targets in small areas on demand without hindering or disabling friendly devices in the surrounding area. An on-demand, low-cost capability that can accurately deny hostile forces the ability to communicate and navigate while

allowing the same abilities for friendly forces is highly desired. The PREW program goal is to develop this capability.

The specific target signals for the PREW effort are described in the classified appendix to this BAA. The target signals were chosen as representative of a range of signal classes, to include navigation, digital infrastructure-based communications, and digital non-infrastructure communications.

Two modes of operation are envisioned for a fielded PREW system: point-to-an-area and point-to-a-spot. The difference between the two modes is that the CONOPS for point-to-a-spot mode allows the utilization of a passive or active beacon to assist in the pointing of the array. The point-to-an-area mode is envisioned for situations in which a beacon is not available to assist in pointing accuracy. Although both modes have the same Go/No-Go metrics for pointing accuracy, it is acknowledged that the pointing may not be as precise when a beacon is not available.

The recent introduction of accurate timing devices and techniques to synchronize dispersed clocks are key enablers to developing a PREW system. Precision timing should aid in providing the precise and coherent projection of energy onto targets, on the order of a city block corner, with minimal interference to the surrounding area. For point-to-a-spot the general belief is that a closed-loop beacon approach will be needed to achieve the required accuracy. The proposed system can utilize beacons that are within the node constellation, near the target AOI, or within the target AOI. The beacon device can be a cooperative participant in the system or a device that is unaware that it is being used as a beacon. The proposal should clearly explain the tradeoffs involving beacon location relative to the target region and beacon frequency relative to the target receivers. While it is acceptable for the beacon to be in the target area and at the jam frequency, concepts where this is not the case is also of interest. The proposer should describe the beacon signal structure and the method of utilizing the structure. The number of beacons is not limited to any specific number, but impact to the CONOPS should be considered and discussed. Beacon vulnerability should be considered as part of the system and the proposer should describe the design and the ability to react only to the desired beacon under realistic interference and operational conditions. Proposals based solely on an open loop approach will be considered; however, the proposal should describe how precision is obtained and maintained and also present a detailed error budget.

Clock synchronization represents a significant challenge in this effort. Synchronization can be accomplished in various ways including round trip synchronization, full feedback, 1-bit feedback, location-based, and retro-reflective techniques. These techniques are only examples of the type of approaches that could be proposed and other unique approaches are anticipated. Techniques for clock synchronization should consider how to accomplish persistent alignment of the clock phase. Stabilizing the clock or using emerging technology, such as those developed under the Chip Scale Atomic Clocks Program, can be proposed. Any relevant technology that addresses the synchronization of nodes without requiring direct contact (i.e., wired together) will be considered. Traditional phased array approaches and tethered/wired synchronization methods will not be considered.

This program will establish the efficacy of accurately projecting sufficient coherent energy within small geographical areas to disrupt target systems. The techniques developed will be compatible with modern advanced jamming techniques. NOTE: Advanced jamming techniques are outside the scope of this program. This program restricts the techniques to simple methods such as injecting wideband or narrowband energy into a digital receiver to disable communications. The effect need not be saturation of the receiver front end, but should reduce the communications or navigation receiver Quality of Service (QoS) to a useless level. Further, the PREW effort is focused on precision power projection technologies through the coordination of emitters and not on the technology for the specific RF emissions. Thus, impact to collateral systems due to RF emissions characteristics such as out-of-band emissions and adjacent channel interference will not be addressed:

1.1.2 System / Node Description

The PREW system projects energy from an array of nodes to form a tightly focused spot on a desired location. To accomplish this objective, it is envisioned that each PREW node will need to have the following minimum set of organic capabilities:

- Localization
- Intra-node communication link for coordination
- Command and control communication link (for some airborne platforms this link could be provided by the platform, however, ground-based applications will require a command and control link)
- Synchronization
- Processing for spatial and temporal jamming
- Energy transmission

Concepts that do not include all of the organic capability listed above will be considered, however, the proposal should clearly discuss and justify the decision not to include the listed capabilities.

Two key design drivers for the node design are the target signals supported and the size, weight, power, and cost (SWAP-C) limitations. The nodes should be designed for multi-target and multi-platform capability (i.e., capable of deployment on airborne platforms or on advantaged ground locations). For airborne platforms, persistent low-speed platforms are of interest and well suited for the intended applications. The vision is for an objective system in which nodes can be reprogrammed and reconfigured mid-mission to attack any single target signal at a given instance. During the DARPA technology effort, particularly Phases 1 and 2, modular approaches are acceptable. Although a variety of ground and airborne platforms are under consideration for PREW deployment, the need for a low system cost favors integration on low-cost platforms such as weather balloons. SWAP constraints on the order of 5 lbs and 7 W are typical of these types of platforms. The proposal should describe the roadmap that leads from the Phase 1 proposed configuration and capability through fielding of a system that meets the reprogrammable / reconfigurable vision.

1.2 PROGRAM PHASES

The PREW program consists of three phases as described in the following paragraphs. This PREW BAA is soliciting proposals covering the first two phases of the program. Phase 2 will be included as an option that can be executed at the end of Phase 1. Proposals for Phase 3 may be solicited via a separate BAA at a later date. Although the cost proposals submitted in response to this BAA should only address Phase 1 and 2, the government requests that you submit rough order of magnitude (ROM) costs for Phase 3. The ROM costs are for government planning purposes and will not be evaluated as part of the proposal cost evaluation.

1.2.1 Phase 1 Clock Synchronization (Base)

Phase 1 builds the technological foundation for the program that will lead to follow-on phases, if successful, leading to demonstrating a full PREW capability. The key elements to be developed and demonstrated in Phase 1 include clock synchronization across the array, pointing accuracy, energy coherence at 10 km range, and collateral interference minimization. While the performance metrics associated with this phase are meant to serve as a threshold for measuring progress, the proposer is encouraged to suggest additional technologies and techniques that can show performance beyond the metrics and/or show complementary capabilities.

The primary objective of Phase 1 is to establish the ability to obtain and maintain clock synchronization. Due to the many possible node synchronization approaches, multiple awards to competing and/or complementary technologies are possible. A secondary objective of Phase 1 is to establish that coherent energy can be projected with the achieved clock synchronization.

The specific performance metrics are described in Section 1.3 PROGRAM GO/NO-GO METRICS. For this phase, the nodes may be static (no motion) and based on the ground (i.e., 3 m high pole) for the end-of-phase demonstration. Proposed synchronization techniques should be scalable to meet Phase 2 and Phase 3 metrics. Notionally the stationary Phase 1 node platforms should be designed to operate at altitudes up to 30 km at speeds up to 30 m/s, - although the nodes can be demonstrated in the stationary configuration in Phase 1.

Clock synchronization and coherent energy projection should also be demonstrated in Phase 1. The pointing of the coherent energy and the collateral receiver impact may be shown via modeling and simulation, however, pointing demonstration or elements thereof is allowed if it adds significant evidence that pointing control can be achieved. The government will provide terrain data for simulations that includes rural, urban, and suburban terrain.

Operating frequencies from 200 MHz – 2700 MHz are of interest and baseline targets include 802.11g, GMRS, and those referenced in the classified addendum. For the Phase 1 demonstration, the system can operate in selected bands (e.g., 200 – 450 MHz and 2400 – 2700 MHz); however, the proposal should provide a roadmap describing how full frequency coverage will be achieved by the program conclusion. Proposers are free to propose additional target systems and / or additional frequency coverage.

In support of the Phase 1 objective, the following elements should be described in the proposal:

- Algorithm(s) for clock synchronization that include strong evidence that synchronization can be maintained continuously for moving platforms. The effort should include determination of the motion range and rate that can be supported.
- Preliminary concept(s) of operation including notional command and control concepts, and viable array node platforms.
- Notional design of a ground based array node, consistent with the proposed concept(s) of operation.
- Preliminary phase noise budget that shows how the RMS phase error metric will be met for Phase 1 (10 nodes), Phase 2 (20 nodes) and Phase 3 (40 nodes).
- When proposing concepts that leverage beacons, the concept should ensure that the beacon can be identified for realistic RF environments. This includes both the beacon signal waveform, and the signal processing on the array nodes.
- Approach for conducting required 10-node demonstration of synchronization and pointing.
- Approach for modeling and simulation to show expected precision and jamming effects on both target and collateral devices.

1.2.2 Phase 2 Pointing (Option 1)

Phase 2 seeks to establish a viable method for accurate pointing of the coherent energy from the array toward the desired location. Open loop methods should be considered, but the projection of coherent energy to a small spot (e.g. 100 m average diameter) over long distances (i.e., up to 100 km slant range) are expected to require milliradian level pointing, a significant challenge for open loop methods. The proposal should describe how precision pointing can be achieved and maintained. Proposers that plan to use closed loop methods that employ beacons should explain how these concepts positively impact the pointing ability; i.e. if using a retrodirective concepts, the proposer should describe pointing method utilized such as direct or offset.

A key Phase 2 objective is to perform experiments that show low impact to collateral receivers in the jamming frequency band and are outside the target area. The proposer should describe methods and experiments to validate the systems impact on collateral receivers.

Work under this phase should include extending the array node clock synchronization method for static platforms developed in Phase 1 to moving platforms. The nature of the platforms chosen will impact the synchronization method, so the concept should use velocity and station keeping values consistent with the platform(s) proposed.

All metrics associated with Phase 2 should be measured as part of an airborne demonstration of brassboard nodes. The proposer is responsible for providing the PREW system (to include airborne platforms) for the demonstration but the government will provide access to test ranges to support the demonstrations. In addition to the demonstrations, simulations showing expected performance against the Phase 3 metrics should be conducted during this phase.

In support of the Phase 2 objectives, the following elements should be described in the proposal:

- Approach for completing 20-node airborne demonstration that performs the jamming function and minimizes the impact to collateral receivers.

- Preliminary pointing budget that shows how the pointing error metric will be met for Phase 2 (20 nodes) and Phase 3 (40 nodes). The pointing error metric is the drop in array gain over the maximum actual array gain due to pointing errors. It is independent of the drop in coherent power due to the RMS clock phase error.
- Design of an airborne-based array node, consistent with the proposed concept(s) of operation.
- Simulations to show predicted performance against Phase 3 metrics.
- An airborne Concept of Operations that includes
 - A representative usage case
 - System cost ROM. Multiple node and / or platform designs are acceptable.
 - Recoverability or expendability of airborne nodes
 - Mission duration
 - Platform deployment and control
 - Overall command and control
- Report describing the plans to develop the PREW prototype system to include concepts of operation validated in Phase 1 and 2.

1.2.3 Phase 3 40 Node System Jamming Demonstration (ROM Only)

NOTE: The proposal should provide a description of the plans to complete Phase 3 and an estimated ROM cost for Phase 3. Phase 3 will not be included as a priced option at contract award. The ROM costs are for government planning purposes and will not be evaluated as part of the proposal cost evaluation.

The objective of Phase 3 is to develop and prototype system and demonstrate precision jamming of target receivers in a small region while not adversely impacting the QoS of collateral receivers (on the same frequency) outside the target region. Airborne and ground-based prototype arrays will be demonstrated in this phase. The contractor is responsible for providing the PREW system (to include airborne platforms) but the government will provide access to test ranges to support the demonstrations.

In support of the Phase 3 objective, the following elements should be described in the proposal:

- A 40 node array and prototype system demonstration that surgically jams all targets identified in the classified appendix and minimizes the impact to collateral receivers. The array should be demonstrated in airborne and ground-based implementations. The array nodes may be different for the air and ground scenarios. Alternatively, the nodes may be modified from one configuration to the other. Describe the planned maturity of the system at the conclusion of this demonstration.
- Link budgets that clearly show that sufficient coherent energy can be projected to jam the target receivers in the selected jamming area. Jamming is defined as the ability to drive the QoS of the target to an unacceptable level. (Bit Error Rate (BER) no better than 10^{-2} for the digital communications receiver, and no navigation solution for at least one minute for navigation receivers.) Use this link budget to show how Phase 1 (10 nodes),

Phase 2 (20 nodes) and Phase 3 (40 nodes) will deny / degrade target QoS and assure acceptable collateral receiver QoS.

- Beamshaping concepts to create one or more tailored jamming regions. Multiple array concepts are acceptable, though it is desirable to extend the utility of a single “n” node array. Array size is an allowable system trade to meet performance (e.g., airborne deployment may deploy 100 nodes and select the best 40 to have maximum impact in target area and minimum impact outside target area), however, system cost must include all nodes and all targets.

1.3 PROGRAM METRICS

In order for the Government to evaluate the effectiveness of a proposed solution in achieving the stated program objectives, proposers should note that the Government hereby promulgates the following program go/no-go metrics that may serve as the basis for determining whether satisfactory progress is being made to warrant continued funding of the program. Although the following program metrics are specified, proposers should note that the government has identified these goals with the intention of bounding the scope of effort while affording the maximum flexibility, creativity, and innovation in proposing solutions to the stated problem.

Proposals should cite the quantitative and qualitative success criteria that the proposed effort will achieve by the time of each Phase’s program metric measurement. The performance objectives are summarized by program phase in Table 1.

The classified appendix containing Table 2, lists additional PREW Program Metrics. See paragraph 4.1 for information on requesting the classified appendix. The proposer must address Program Metrics in Table 1 below and Table 2 which is available in the classified appendix.

Metric	Phase 1 (Base) Synchronization	Phase 2 (Option 1) Pointing	Phase 3 (ROM) Jamming
Number of “Active” Nodes	10	20	40
Synchronization	< 40 degrees RMS Phase Error	< 35 degrees RMS Phase Error	< 30 degrees RMS Phase Error
Pointing Loss (Including Synchronization Error)	<3 dB	<2 dB	<1 dB
Jamming Precision (Maximum Area)	1 km² (Simulation @ 10 km range)	1 km²	10,000 m²

Jamming Range (Minimum)	1 km	10 km	100 km
Frequency Coverage	200 – 2700 MHz	200 – 2700 MHz	200 – 2700 MHz
Collateral Jamming Rate (Maximum)	Average no more than 5 events within a one minute interval ¹ (Simulation)	Average no more than 3 events within a one minute interval ¹ (Brassboard Demo)	Average no more than 1 event within a one minute interval ¹ (Prototype Demo)

Table 1. Performance Metrics by Phase

NOTE 1: Event defined as significantly degraded QoS

Table 2. Request Classified Appendix for additional metrics

See paragraph 4.1 for information on requesting the classified appendix. The proposer must address Program Metrics in Table 1 above and Table 2 which is available in the classified appendix.

The pointing loss is measured relative to the center of the AOI. The specified dB level is the minimum degradation allowed between the center of the AOI and the edge of the AOI. Figure 1 shows an example of how pointing loss is defined.

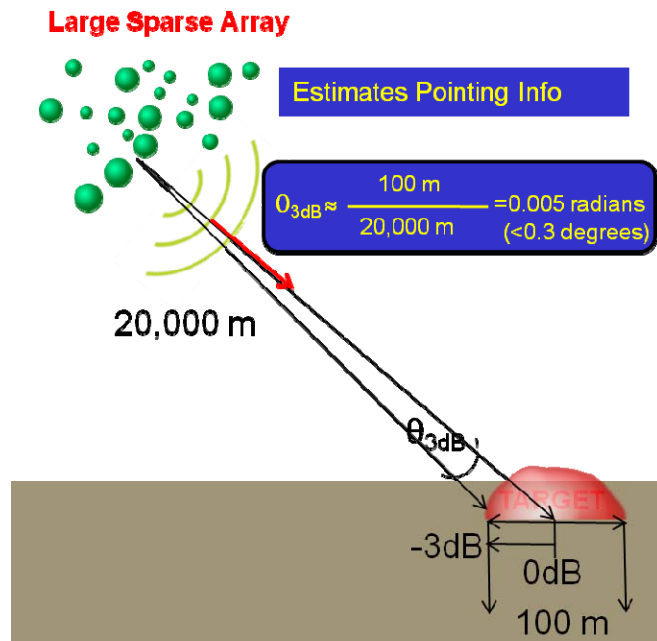


Figure 1: Pointing Error Example

The metric that is being used to determine the impact to collateral receivers is a QoS-based metric. A QoS event for constant bit rate digital communication systems is the Bit Error Rate (BER) for a given data rate over a 5 second period, notionally a BER of 10^{-2} . Figure 2 illustrates the general QoS method of jamming. This finesse method of jamming pushes the target into a high BER regime, while keeping collateral receivers in the low BER regime.

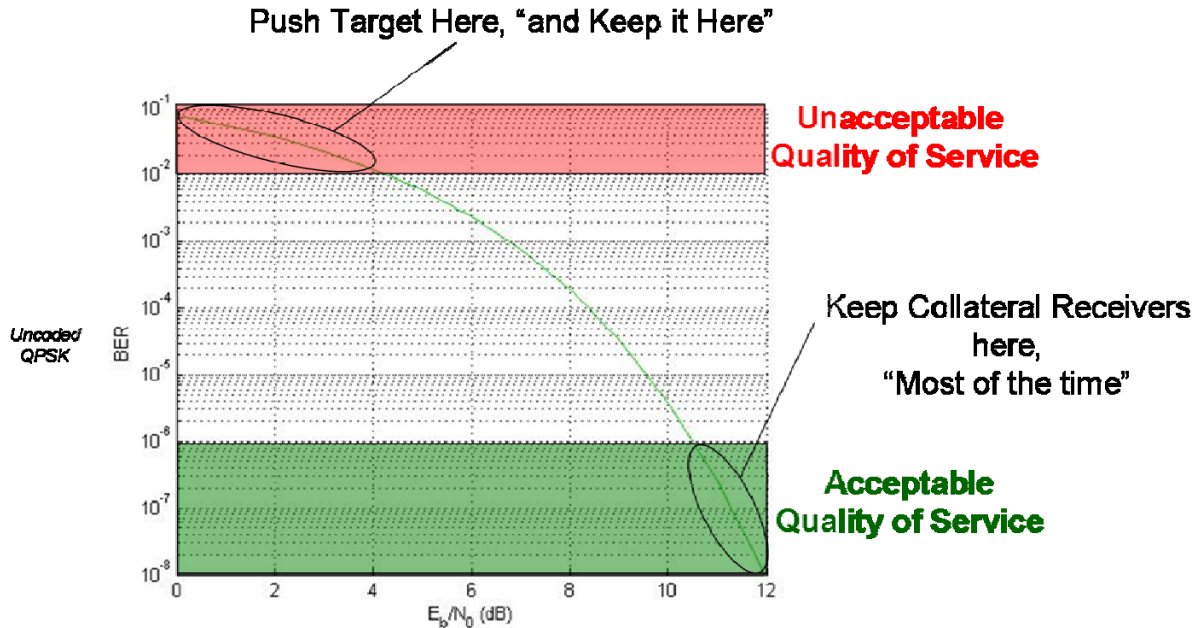


Figure 2: Jam by focusing on the QoS (Digital QPSK Receiver Example)

For a navigation receiver, the QoS is defined as the ability to converge to a navigation solution in position and time. The minimum acceptable QoS is the ability to converge to a viable position and time solution at least once per minute. Additional QoS parameters and specific jamming targets may be proposed.

As described earlier, a baseline frequency range of 200MHz-2700 MHz and the targets outlined in the classified appendix should be used for proposed concepts. The metrics are intended to be demonstrated against each target called out in the appendix. The bandwidth of the single frequency transmission is a tradeoff parameter, but should be selected so as to maximize the effective jamming and minimize the collateral impact.

Proposers should provide a detailed description on how they plan to demonstrate and measure their progress against the program metrics in each phase.

2. AWARD INFORMATION

Multiple awards are possible. 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 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. If the proposed effort is inherently divisible and nothing is gained from the aggregation, proposers should consider submitting it as multiple independent efforts. The Government reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases.

Awards under this BAA will be made to proposers on the basis of the evaluation criteria listed below (see section labeled “Application Review Information”, Sec. 5.), and program balance to provide overall value to the Government. Proposals identified for negotiation may result in a procurement contract, cooperative agreement, or other transaction 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 cannot 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, regardless of the category of research proposed, 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.

3. ELIGIBILITY INFORMATION

3.1 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 meet the following conditions. FFRDCs must clearly demonstrate that the work is not otherwise available from the private sector AND they 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 section 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.

3.1.1 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 Neil Fox, DARPA/STO. As of the date of first publication of the BAA, the Government has not identified any potential conflicts of interest involving this program manager. Once the proposals have been received, and prior to the start of proposal evaluations, the Government will assess potential conflicts of interest and will promptly notify the proposer if any appear to exist. (Please note the Government assessment does NOT affect, offset, or mitigate the proposer's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.) The Program Manager is required to review and evaluate all proposals received under this BAA and to manage all selected efforts. Proposers should carefully consider the composition of their performer team before submitting a proposal to this BAA.

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 Proposer's contact information and a summary of the potential conflict by email to the mailbox address for this BAA at DARPA-BAA-09-65@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 for 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.

3.2 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 Other Transactions 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.

4. APPLICATION AND SUBMISSION INFORMATION

4.1 ADDRESS TO REQUEST APPENDIX

A formal request for the PREW DARPA-BAA-09-65 appendix may be submitted by filling out the DARPA-BAA-09-65 Classified Appendix Request Form (found on page 37 of this BAA) and emailing the Request Form to DARPA-BAA-09-65@darpa.mil with Subject line titled "Request DARPA-BAA-09-65 Classified Appendix". Proposers are encouraged to submit this request as soon as possible to allow for adequate time for BAA Appendix preparation and delivery. The DARPA-BAA-09-65 Classified Appendix Request Form is the only method of request that will be accepted. All requestors will receive a confirmation email with a delivery tracking number. Prior to receipt of any classified information, proof of facility clearance level (FCL) must be validated by the Program Security POC before any classified documentation on the BAA is sent to the performer.

The full PREW DARPA-BAA-09-65 Classified Appendix consists of an FOUO CD (which includes this DARPA-BAA-09-65, BAA DD254 (DoD Contract Security Classification

Specification), and DARPA-CG-545 (Security Classification Guide) and a paper copy of a 1 page BAA classified appendix.

Please specify on Attachment A if you need the entire packet in paper form only, all other packets will be sent as a FOUO CD with a 1 page paper classified appendix. Proposers must demonstrate ability to receive and access DoD Collateral Secret material. All appropriate security safeguards must exist prior to receiving the classified appendix. No extension of the proposal due date will be granted based on inability to acquire security accreditations in a reasonable timeframe.

4.2 SECURITY AND PROPRIETARY ISSUES

The Government anticipates proposals submitted under this BAA will be classified at the SECRET level. 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.

The cost volume of the proposals must be unclassified.

It is expected that some of the work for PREW will be at the unclassified level with documentation marked For Official Use Only (FOUO). FOUO is not a security classification; however pursuant to the DoD 5400.7-R, this information may be withheld from the public for one or more reasons. Information that warrants FOUO markings will be handled and protected in accordance with the above cited regulation.

Classified submissions shall be in accordance with the following guidance:

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 Secret.

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 address to:

Defense Advanced Research Projects Agency
ATTN: Strategic Technology Office
Reference: BAA 09-65
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.

Proposers must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. It is the policy of DARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. The original of each proposal received will be retained at DARPA and all other non-required copies destroyed. A certification of destruction may be requested, provided the formal request is received at this office within 5 days after unsuccessful notification.

4.3 CONTENT AND FORM OF APPLICATION SUBMISSION

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 one year from date of posting on FedBizOpps. Selection remains contingent on availability of funds.

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

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

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

All administrative correspondence and questions on this solicitation, including requests for information on how to submit a proposal abstract or proposal to this BAA, should be directed to one of the administrative addresses below; e-mail is preferred. DARPA intends to use electronic mail and fax for correspondence regarding BAA09-65. Proposals and proposal abstracts may not be submitted by fax or e-mail; any so sent will be disregarded. DARPA encourages use of the Internet for retrieving the BAA and any other related information that may subsequently be provided.

4.3.1 Restrictive Markings on Proposals

All proposals should clearly indicate limitations on the disclosure of their contents. Proposers who include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall-

(1) Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this proposer as a result of, or in connection with, the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

Markings like "Company Confidential" or other phrases that may be confused with national security classifications shall be avoided. See Section 6.0, for additional information.

4.4 FORMATTING CHARACTERISTICS

4.4.1 Proposal Format

Proposers must submit one (1) original hardcopy, -six (6) additional hardcopies of the proposal and two (2) electronic copies of the proposal [in PDF (preferred)] on a CD-ROM. Each copy must be clearly labeled with BAA09-65, proposer organization, proposal title (short title recommended), and Copy _ of 2.

All proposals must be in the format given below. Nonconforming proposals may be rejected without review. Proposals shall consist of two volumes. All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. The page limitation for proposals includes all figures, tables, and charts. Volume I, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) which document the technical ideas and approach upon which the proposal is based. Copies of not more than three (3) relevant papers can be included with the submission. The bibliography and attached papers are not included in the page counts given below. The submission of other supporting materials along with the proposals is strongly discouraged and will not be considered for review. Except for the attached bibliography and Section I, Volume I shall not exceed 70 number pages. Approximate page lengths for each section are shown in braces { } below. All proposals must be written in English.

4.4.1.1 Volume I, Technical and Management Proposal

Section I. Administrative

- A. Cover sheet to include:
- (1) BAA number
 - (2) Technical area
 - (3) Lead Organization Submitting proposal
 - (4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT"
 - (5) Contractor's reference number (if any)
 - (6) Other team members (if applicable) and type of business for each
 - (7) Proposal title
 - (8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
 - (9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available), total funds requested from DARPA, and the amount of cost share (if any) and
 - (10) Date proposal was submitted.
- B. Official transmittal letter.

Section II. Summary of Proposal

- A. {2} Innovative claims for the proposed research. This section is the centerpiece of the proposal and should succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art alternate approaches.
- B. {3} Deliverables associated with the proposed research and the plans and capability to accomplish technology transition and commercialization. Include in this section all proprietary claims to the results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are not proprietary claims, this should be stated.
- C. {2} Cost, schedule and payable milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the prime and major subcontractors, total cost and company cost share, if applicable. **Note: Measurable critical milestones should occur every three months after start of effort.** These payable milestones should enable and support a go/no go decision for the next part of the effort. Additional interim non-critical management milestones are also highly encouraged at a regular interval.
- D. {3} Technical rationale, technical approach, and constructive plan for accomplishment of technical goals in support of innovative claims and deliverable production. (In the proposal, this section should be supplemented by a more detailed plan in Section III.)
- E. {2} General discussion of other research in this area.
- F. {2} A clearly defined organization chart for the program team which includes, as applicable: (1) the programmatic relationship of team member; (2) the unique capabilities of team members; (3) the task of responsibilities of team members; (4) the teaming strategy among the team members; and (5) the key personnel along with the amount of effort to be expended by each person during each year.
- G. {1} A one-slide summary of the proposal in PowerPoint that quickly and succinctly indicates the main objective, key innovations, expected impact, and other unique aspects of the proposal.

Section III. Detailed Proposal Information

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

- A. {6} Statement of Work (SOW) - In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. The page length for the SOW will be dependent on the amount of the effort. 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 exit criteria for each task/activity - a product, event or milestone that defines its completion.
 - Define all deliverables (reporting, data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities.

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

- B. {2} Description of the results, products, transferable technology, and expected technology transfer path enhancing that of Section II. B.
- C. {5} Detailed technical rationale enhancing that of Section II.
- D. {17} Detailed technical approach enhancing and completing that of Section II.
- E. {5} Detailed experimentation and demonstration plan.
- F. {3} Risk assessment and mitigation of key technical approaches
- G. {3} Comparison with other ongoing research indicating advantages and disadvantages of the proposed effort.
- H. {4} Discussion of proposer's previous accomplishments and work in closely related research areas.
- I. {2} Description of the facilities that would be used for the proposed effort.
- J. {2} Detail support enhancing that of Section II, including formal teaming agreements which are required to execute this program.
- K. {2} Cost schedules and milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the primes and major subcontractors, total cost, and any company cost share. **Note: Measurable critical milestones should occur every three months after start of effort.** These milestones should enable and support a go/no go decision for the next part of the effort. Additional interim non-critical management milestones are also highly encouraged at regular intervals. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. Additionally, proposals should clearly explain the technical approach (es) that will be employed to meet or exceed each program metric and provide ample justification as to why the approach (es) is/are feasible.
- L. {4} Clear description of the Go/No-Go's and overview of methods of accomplishment, ref para 1.3.

Section IV. Additional Information

A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas upon which the proposal is based. Copies of not more than three (3) relevant papers can be included in the submission.

4.4.1.2 Volume II, Cost Proposal – {No Page Limit}

Cover sheet to include:

- (1) BAA number;
- (2) Technical area;
- (3) Lead Organization Submitting proposal;
- (4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT";
- (5) Contractor's reference number (if any);
- (6) Other team members (if applicable) and type of business for each;
- (7) Proposal title;
- (8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);

- (9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
- (10) Award instrument requested: cost-plus-fixed-fee (CPFF), cost-award—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), or other transaction;
- (11) Place(s) and period(s) of performance;
- (12) Total proposed cost separated by basic award and option(s) (if any);
- (13) Name, address, and telephone number of the proposer's cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- (14) Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- (15) Date proposal was prepared;
- (16) DUNS number;
- (17) TIN number; and
- (18) Cage Code;
- (19) Subcontractor Information; and
- (20) Proposal validity period
- (21) Any Forward Pricing Rate Agreement, other such approved rate information, or such other documentation that may assist in expediting negotiations (if available).

Detailed cost breakdown to include:

- (1) total program cost broken down by major cost items to include:
 - i. direct labor, including individual labor categories or persons, with associated labor hours and numbered direct labor rates
 - ii. If consultants are to be used, proposer must provide consultant agreement or other document which verifies the proposed loaded daily/hourly rate
 - iii. Indirect costs including Fringe Benefits, Overhead, General and Administrative Expense, Cost of Money, etc. (Must show base amount and rate)
 - iv. Travel – Number of trips, number of days per trip, departure and arrival destinations, number of people, etc.
 - v. Other Direct Costs – Should be itemized with costs or estimated costs. Backup documentation should be submitted to support proposed costs.
- (2) major program tasks by fiscal year
- (3) an itemization of major subcontracts and equipment purchases, to include: a cost proposal as detailed as the Proposer's cost proposal; the subcontractor's cost proposal can be provided in a sealed envelope with the Proposer's cost proposal. Materials should be specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Please include a brief description of the Proposer's procurement method to be used;
- (4) an itemization of any information technology (IT) purchase including subcontractor cost (NOTE: For IT equipment purchases, include a letter stating why the proposer cannot provide the requested resources from its own funding)
- (5) a summary of projected funding requirements by month; and
- (6) the source, nature, and amount of any industry cost-sharing. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these

should be identified as options with separate cost estimates for each; and identification of pricing assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished / Facilities / Information, access to Government Subject Matter Expert/s, etc).

The prime contractor is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO). Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements.

Supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates in Section II C. 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 proposers request an exception from the requirement to submit cost of pricing data. “Cost or pricing data” are not required if the proposer proposes an award instrument other than a procurement contract (e.g., a cooperative agreement, or other transaction.) All proprietary subcontractor proposal documentation, prepared at the same level of detail as that required of the prime shall be provided to the Government either by the prime contractor or by the subcontractor organization when the proposal is submitted. Subcontractor proposals submitted to the Government by the prime contractor should be submitted in a sealed envelope that the prime contractor will not be allowed to view. The subcontractor must provide the same number of hard copies and/or electronic proposals as is required of the prime contractor.

4.5 SUBMISSION DATES AND TIMES

4.5.1 Proposal Date

The proposal (original and designated number of hard and electronic copies) must be submitted to DARPA/STO, 3701 North Fairfax Drive, Arlington, VA 22203-1714 (Attn.: BAA09-65) on or before 4:00 p.m., local time, 13 October 2009, in order to be considered during the initial round of selections; however, proposals received after this deadline may be received and evaluated up to one year from date of posting on FedBizOpps. Proposals may be submitted at any time from issuance of this announcement through the closing date or due date otherwise specified by DARPA; however, proposers are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date deadline.

DARPA will post a consolidated Question and Answer response after 24 Sep 09, before final full proposals are due. In order to receive a response to your question, submit your question by 17 Sep 09 to the DARPA-BAA-09-65@darpa.mil.

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.

5. APPLICATION REVIEW INFORMATION

5.1 EVALUATION CRITERIA

Evaluation of proposals will be accomplished through a scientific/technical review of each proposal using the following criteria, in order of descending importance: (5.1.1) Ability to Meet Program Go/No-Go Metrics and Phase Elements, (5.1.2) Overall Scientific and Technical Merit; (5.1.3) Potential Contribution and Relevance to the DARPA Mission; (5.1.4) Proposer's Capabilities and/or Related Experience; (5.1.5) Plans and Capability to Accomplish Technology Transition; and (5.1.6) 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. The following are descriptions of the above listed criteria:

5.1.1 Ability to Meet Program Go/No-Go Metrics and Phase Elements

The feasibility and likelihood of the proposed approach for satisfying the program go/no-go metrics called out in Section 1.3 and the program phase elements called out in Section 1.2 for the target set described in the classified appendix are explicitly described and clearly substantiated. The proposal reflects a mature and quantitative understanding of the program go/no-go metrics, the statistical confidence with which they may be measured, and their relationship to the concept of operations that will result from successful performance in the program.

5.1.2 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 as referenced in Section 4.4.1.1, Sub-section III. Detailed Technical Proposal on page 22. Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed deliverables clearly defined such that a final product that achieves the goal can be expected as a result of award. The proposal clearly identifies major technical risks and planned mitigation efforts and provides ample justification as to why the approach (es) is / are feasible.

5.1.3 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 military use.

5.1.4 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's expertise to manage the cost and schedule will be evaluated. Similar efforts completed/ongoing by the proposer in this area are fully described including identification of other Government sponsors.

5.1.5 Plans and Capability to Accomplish Technology Transition

The capability to transition the technology to the research, industrial, and operational military communities in such a way as to enhance U.S. defense, and the extent to which intellectual property rights limitations creates a barrier to technology transition.

- Prior experience in transition of technology from research and development to military or commercial utilization
- The capability to transition the technology to research, industrial, and operational military communities in such a way as to enhance U.S. defense, and the extent to which intellectual property delivered with limitations, if any, creates a barrier to technology transition

5.1.6 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. This will be principally measured by cost per labor-hour and number of labor-hours proposed. The evaluation criterion recognize 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. Cost reduction approaches that will be received favorably include innovative management concepts that maximize direct funding for technology and limit diversion of funds into overhead.

- The extent to which the proposer followed the BAA instructions and the clarity of the financial factors provided
- The consistency of the cost proposal with the proposed schedule/milestones, i.e., expenditure plan and funding flow will be evaluated and compared to critical development milestones, equipment purchases, and test events
- The experience level and hours proposed for key personnel are provided and commensurate with the technology demonstration plan
- The detail and description of sub-contractor level of effort and mission accomplishment across proposed tasks/activities
- Potential impact of intellectual property restrictions on long term program affordability.

After selection and before award the contracting officer will negotiate cost/price reasonableness.

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(s) whose proposal(s) is determined advantageous to the Government regardless of its overall rating.

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

5.2 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.

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. For evaluation purposes, a proposal is the document described in "Proposal Format", Section 4.4.2. Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

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

Subject to the restrictions set forth in FAR 37.203(d), input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants /experts who are strictly bound by the appropriate non-disclosure requirements.

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

6. AWARD ADMINISTRATION INFORMATION

6.1 AWARD NOTICES

As soon as the evaluation of a proposal is complete, the proposers 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 letter to the Technical POC identified on the proposal coversheet.

6.2 MEETING AND TRAVEL REQUIREMENTS

There will be a program kickoff meeting and that is expected to be at the prime performer(s) location. In addition, the proposer should include all travel cost associated with proposed reviews and locations. The government anticipates, at a minimum, quarterly program reviews, experiments, or demonstrations. Also, the proposer should anticipate the need to travel to DARPA for not more than three times per twelve month period for government interaction. In addition, the proposal should include all travel cost associated with proposed experimentation.

All key participants are required to attend. Performers should also anticipate periodic site visits at the Program Manager's discretion.

6.3 HUMAN USE

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

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

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. The IRB conducting the review must be the IRB identified on the institution's Assurance. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection, and data analysis. Consult the designated IRB for guidance on writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance along with evidence of appropriate training 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.

6.4 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); and (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals."

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

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

6.5 PUBLIC RELEASE OR DISSEMINATION OF INFORMATION

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

Includes research performed under grants and contracts that are (a) Basic Research"), whether performed by universities or industry or (b) applies research and performed on-campus at a university. The research shall not be considered fundamental in those rare and exception 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.

It is anticipated that the performance of research resulting from the BAA is not expected to be fundamental research.

Proposers are advised if they propose cooperative agreements, DARPA may elect to award other award instruments. DARPA will make this election if it determines that the research resulting from the proposed program will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program.

The following provision will be incorporated into any resultant procurement contract or other transaction:

(a) There shall be no dissemination or publication, except within and between the Contractor and any subcontractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the DARPA Technical

Information Officer (DARPA/TIO). All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by the Contractor. 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.

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

6.6 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, 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.

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

6.8 ELECTRONIC AND INFORMATION TECHNOLOGY

In compliance with Section 508 of the Rehabilitation Act (29 U.S.C. 794d) and FAR Subpart 39.2, if it is anticipated that this BAA will be used to procure electronic or information (EIT) technology, and the exceptions listed in FAR Subpart 39.204 do not apply, the following language must be included in the BAA:

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.

6.9 REPORTING

The number and types of reports will be specified in the award document, but will include as a minimum monthly financial status reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed on before award. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. A Final Report that summarizes the project and tasks will be required at the conclusion of the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle.

6.9.1 Central Contractor Registration (CCR)

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

6.9.2 Representations and Certifications

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

6.9.3 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.

6.9.4 T-FIMS

The award document for each proposal selected and funded will contain a mandatory requirement for four DARPA Quarterly Status Reports each year, one of which will be an annual project summary. These reports will be electronically submitted by each awardee under this BAA via the DARPA Technical – Financial Information Management System (T-FIMS). The T-FIMS URL and instructions will be furnished by the contracting agent upon award.

6.10 i-EDISON

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

6.11 AGENCY CONTACTS

Administrative, technical or contractual questions should be sent via e-mail to DARPA-BAA-09-65@darpa.mil. All requests must include the name, email address, and phone number of a point of contact.

Points of Contact

The technical POC for this effort is Neil Fox, electronic mail: Neil.Fox@darpa.mil.
DARPA/STO
ATTN: BAA09-65
3701 North Fairfax Drive
Arlington, VA 22203-1714

7. OTHER INFORMATION

7.1 INTELLECTUAL PROPERTY

7.1.1 Procurement Contract Proposers

7.1.1.1 Noncommercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS, shall identify all noncommercial technical data, and noncommercial computer software that it plans to generate, develop, and/or deliver under any proposed award instrument in which the Government will acquire less than unlimited rights, and to assert specific restrictions on those deliverables. Proposers shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that proposers do not submit the list, the Government will assume that it automatically has “unlimited rights” to all noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, unless it is substantiated that development of the noncommercial technical data and noncommercial computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data, and noncommercial computer software

generated, developed, and/or delivered under any award instrument, then proposers should identify the data and software in question, as subject to Government Purpose Rights (GPR). In accordance with DFARS 252.227-7013 Rights in Technical Data - Noncommercial Items, and DFARS 252.227-7014 Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, the Government will automatically assume that any such GPR restriction is limited to a period of five (5) years in accordance with the applicable DFARS clauses, at which time the Government will acquire “unlimited rights” unless the parties agree otherwise. Proposers are admonished that the Government will use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. If no restrictions are intended, then the proposer should state “NONE.”

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

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

7.1.1.2 Commercial Items (Technical Data and Computer Software)

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

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)

7.1.2 NonProcurement Contract Proposers

7.1.2.1 Noncommercial and Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting an Other Transaction for Prototype shall follow the applicable rules and regulations governing that instrument, but in all cases should appropriately identify any potential restrictions on the Government's use of any Intellectual Property contemplated under that award instrument. This includes both Noncommercial Items and Commercial Items. Although not required, proposers may use a format similar to that described in Paragraphs 1.a and 1.b above. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer's assertions. If no restrictions are intended, then the proposer should state "NONE."

7.1.2.2 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.

7.1.2.3 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.

ATTACHMENT A: PREW DARPA-BAA-09- 65 CLASSIFIED APPENDIX REQUEST FORM

Date: _____

Company Name: _____

Company Address (Unclassified): _____

Company Address (Classified): _____

Unclassified Fax: _____

Point of Contact Name: _____

POC Phone Number: _____

POC Fax Number: _____

POC E-mail: _____

Company CAGE code: _____

Security or FSO Phone Number: _____

Security or FSO Fax Number: _____

Security or FSO e-mail: _____

Company Secure Fax number: _____