Broad Agency Announcement

ASW Continuous Trail Unmanned Vessel (ACTUV)
Phases 2 through 4

Tactical Technology Office (TTO)

DARPA-BAA-12-19

December 13, 2011

Table of Contents:

Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Tactical Technology Office (TTO)
- **Funding Opportunity Title –** ASW Continuous Trail Unmanned Vessel (ACTUV) Phases 2 through 4
- **Announcement Type –** Broad Agency Announcement – Initial Announcement
- **Funding Opportunity Number –** Broad Agency Announcement (BAA) 12-19
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – N/A
- **Dates**
    - Posting Date: December 13, 2011
    - Industry Day: December 20-21, 2011
    - Deadline to Submit Questions: January 15, 2012
    - Proposal Due Date: February 28, 2012
- **Description of the funding opportunity:** The Anti-Submarine Warfare (ASW) Continuous Trail Unmanned Vessel (ACTUV) program seeks to develop and demonstrate an independently deploying unmanned surface vessel optimized to provide continuous overt trail of threat submarines. The program is architected to achieve three primary objectives:

    1. Design, build, and demonstrate an experimental vessel based on clean sheet design approaches founded on the assumption that no person steps aboard at any point in its operating cycle, enabling beyond state-of-the-art platform performance characteristics.

    2. Demonstrate the technical viability of an independently deploying unmanned naval vessel under sparse remote supervisory control to enable a new class of maritime system.

    3. Demonstrate a game-changing ASW operational capability and facilitate rapid transition of that capability to the Navy in response to critical operational demand.
- **Types of instruments that may be awarded** – Procurement contract or other transaction.
- **No cost sharing is required for this BAA –** See Section 3.3.
- **Agency contact**
    - Technical Point of Contact (POC)
        - Mr. Scott Littlefield, DARPA/TTO
    - Contractual POC
        - Mr. Chris Glista, DARPA/CMO

    DARPA/TTO
    ATTN: BAA 12-19
    3701 North Fairfax Drive
    Arlington, VA 22203-1714

Email: DARPA-BAA-12-19@darpa.mil

- **Other** – Annexes containing additional export controlled and classified information are available upon request as described in Section 1.7 of Part Two of this announcement.

Part Two: Full Text of Announcement

1.0 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 on the FedBizOpps website, http://www.fedbizopps.gov. The following information is for those wishing to respond to the BAA.

1.1 Program Overview

The Anti-Submarine Warfare (ASW) Continuous Trail Unmanned Vessel (ACTUV) program seeks to develop and demonstrate an independently deploying unmanned surface vessel optimized to provide continuous overt trail of threat submarines. The program is architected to achieve three primary objectives:

1. Design, build, and demonstrate an experimental vessel based on clean sheet design approaches founded on the assumption that no person steps aboard at any point in its operating cycle, enabling beyond state-of-the-art platform performance characteristics.

2. Demonstrate the technical viability of an independently deploying unmanned naval vessel under sparse remote supervisory control to enable a new class of maritime system.

3. Demonstrate a game-changing ASW operational capability and facilitate rapid transition of that capability to the Navy in response to critical operational demand.

Current unmanned surface vessel systems and concepts are operated as close adjuncts to conventional manned ships – they are launched and recovered from manned ships, tele-operated from manned ships, and are limited to direct support of manned ship missions. The ACTUV system will be a first-of-its-kind unmanned naval vessel that is designed and sized for theater or global independent deployment. It is envisioned that ACTUV will operate under a sparse remote supervisory command and control model, with a shore based supervisor providing high level mission objectives and intermittently monitoring autonomous performance through a beyond-line-of-sight (BLOS) communications link. A key program focus will be on the ability of the system to demonstrate safe navigation at sea within the framework of maritime law and the International Regulations for Preventing Collisions at Sea (COLREGs). Additionally, the system will need to autonomously employ its sensor suite consistent with situational awareness and mission objectives, and implement appropriate tactics in response to both target behaviors and environmental factors. Finally, the ACTUV system will require robust internal state awareness and adaptation to generate the high levels of system reliability necessary to achieve months-long deployments without operator maintenance or repair.

The ACTUV program will define new platform performance potential by re-envisioning surface vessel design to fully exploit opportunities created by eliminating all crew support requirements. Conventional naval architecture tenets should be examined in this unmanned system context, which in addition to recouping first-order crew support overhead, may offer second-order benefits such as relaxed reserve buoyancy margins, dynamic stability limits, and even new platform orientation assumptions. The objective is to demonstrate disproportionate platform capabilities in terms of speed, endurance, sea keeping, and maneuverability. The program will also maintain a strong focus on exploiting novel system architectures and internal arrangements

enabled by being unmanned to explore new construction methods and maintenance approaches to achieve disproportionately low system procurement cost and efficient inter-deployment maintenance.

The ability to achieve robust propulsive overmatch in a low cost, unmanned platform creates a disruptive change in ASW operational risk calculus, opening the door to unconventional missions, tactics, and sensor employment. ACTUV system design activity will be underpinned by a set of real world operational objectives to deliver propulsive overmatch against threat submarines and to support tracking over the entire duration of a target submarine's deployment. The system is not intended as an ASW search asset. ACTUV relies on conventional force structure to provide a target cue, and then relieves those search assets from being tied up in intensive trail operations. The system design activity will include identification and development of novel sensor modalities and employment methods that can take advantage of the unique unmanned platform configurations and characteristics to achieve robust performance against the most challenging quiet submarine targets.

While the ACTUV concept was first explored under a DARPA study titled "Unmanned Naval Vessel (UNV)," and later as part of Phase 1 concept studies, there is no intent to constrain the ACTUV solution space to these concept configurations. Proposers are encouraged to independently explore system concepts which maximize performance capability for the cost.

The program is being conducted in four phases. Responses to this BAA are for Phases 2-4 only.

ACTUV Phase 1 (Summary): This phase was conducted under a previous BAA that resulted in three "full scope" awards which developed complete vessel conceptual designs, and three "limited scope" awards which matured and tested approaches for COLREGS compliant autonomous behaviors, assessed the efficacy of high frequency active sonar for imaging of a small submarine, and evaluated ACTUV platform performance alternatives through crowd sourcing. The Phase 1 studies validated that the ACTUV concept is technically feasible, identified significant areas of technical risk, and helped refine the goals and objectives of the ACTUV program. Each of the "full scope" performers from Phase 1 delivered a draft ACTUV system performance specification. From these draft performance specifications the Government developed an "Indicative Performance Specification" for the ACTUV system. This is not meant to be the requirements document for this BAA. Rather, it is to be used as guidance for the continued development of the ACTUV system. The Indicative Performance Specification and other background information from Phase 1 are available to proposers as described in Section 1.7.

Phase 2: This phase will develop a detailed design of the ACTUV system, including vessel hardware, sensors, software, associated control stations, and logistical support systems necessary to operate and maintain ACTUV. Phase 2 will include risk-reduction, component testing, scale-model testing, and surrogate vessel testing needed to mature and validate ACTUV technologies. The software development and testing efforts in this phase will mature and demonstrate the ability of the ACTUV's autonomy system to generate an accurate world model using representative ACTUV sensor inputs, and will demonstrate correct ACTUV mission behaviors in simulation and on a surrogate platform. Phase 2 will include a Critical Design Review to evaluate the maturity and feasibility of the ACTUV system detailed design, and a Production Readiness Review to evaluate the readiness of the contractor team to proceed with system construction.

Phase 3: This phase will construct the ACTUV vessel, complete software development and conduct initial sea trials to validate the performance of the vessel and functionality of the onboard sensing systems. Phase 3 will complete the development, production, testing and documentation of ACTUV system software, control stations, and support systems. This phase will culminate in delivery of the ACTUV vessel, support systems, and system documentation to the Government.

Phase 4: This phase will provide contractor support for Government testing of the ACTUV system. Phase 4 testing will evaluate both the technical and operational performance of the ACTUV system. The autonomy, ASW performance, and endurance of the ACTUV system will be tested in progressively more stressing scenarios, with substantial input and involvement from the user community.

1.2 Performance Requirements

1.2.1 Overall System

- Supportable from a forward-deployed location with minimal infrastructure and low life cycle cost
- Capable of a high "op tempo" and efficient post-deployment turnaround
- Connectivity for operations through over-the-horizon sparse supervisory control and local tele-operations control
- Open architecture design to support incorporation of new sensors and software
- Compliant with DoD Information Assurance and Anti-Tamper requirements

1.2.2 Mission Performance

- Capable of track and trail of a quiet diesel electric submarine through its entire operating cycle in adverse environmental conditions
- Able to acquire a target submarine given an initial cue that the submarine is within a two kilometer radius area of uncertainty (AOU) when ACTUV arrives at the edge of the AOU. Larger AOU capability is highly valued if achievable within the vessel cost goal.
- Sufficient endurance to maintain target trail throughout a submarine operational deployment
- Capable of reporting target location and target and own-ship activity(ies)
- Resilient to countermeasures and counter-tactics

1.2.3 Vessel Attributes and Performance

- Operable throughout all at-sea mission phases with no person stepping on board
- Sufficient electrical, processing, weight, and volume design margins to support additional capabilities and alternative payloads
- High system reliability for long duration missions in the harsh maritime environment
    - 85% probability of mission completion
    - 95% probability of successful return to port
- Operable under local tele-operations control in and around ports; fully autonomous operations in the open ocean
- Designed for service life of 15 years
    - Three deployments per year

    - 40 days between deployments
- Sufficient range (6200 km unrefueled) for independent theater or global deployment
- Extended loiter endurance to support on-station prepositioning (80 days at-sea, 3000 km from port)
- Speed, maneuverability, and endurance advantage over target submarine
- Sea-keeping sufficient to maintain mission effectiveness through high sea states (operational in sea state 5; survivable in sea state 7)

1.2.4 Autonomy

- Independently deployable unmanned vessel able to transit, loiter, respond to cue, track, trail and reacquire a submarine target
- Operable under sparse remote supervisory command and control with operator-configurable levels of autonomy
- Capable of continuous autonomous operations through periods of lost communications
- Capable of autonomous arbitration between competing mission and operating objectives based on strategic context, mission phase, internal state, and external conditions
- Compliant with COLREGs and maritime law
- Capable of developing and maintaining a high-fidelity world model through the employment of situational awareness sensors and data fusion algorithms
- Capable of optimizing vessel performance using a high level of internal state awareness and dynamic performance assessment

1.3 Vessel Cost Goal

Based on the results of Phase 1, the production cost objective for the ACTUV in FY13 dollars is $20M, not including non-recurring engineering (NRE), design, software, and tooling costs. Full-scope proposers are encouraged to state a specific production cost goal for their vehicle, and to engage in cost vs. capability trades throughout Phase 2 of the program to ensure that their target production cost is not exceeded. Production costs incurred during Phase 3, including long-lead material, will be separately tracked from non-recurring costs through the task structure of the contract to provide visibility into the projected and actual production cost. Use of a cost-plus-incentive-fee contract with a share line on fee is anticipated as a means of incentivizing control of vehicle production cost.

1.4 Full Scope and Partial Scope Awards

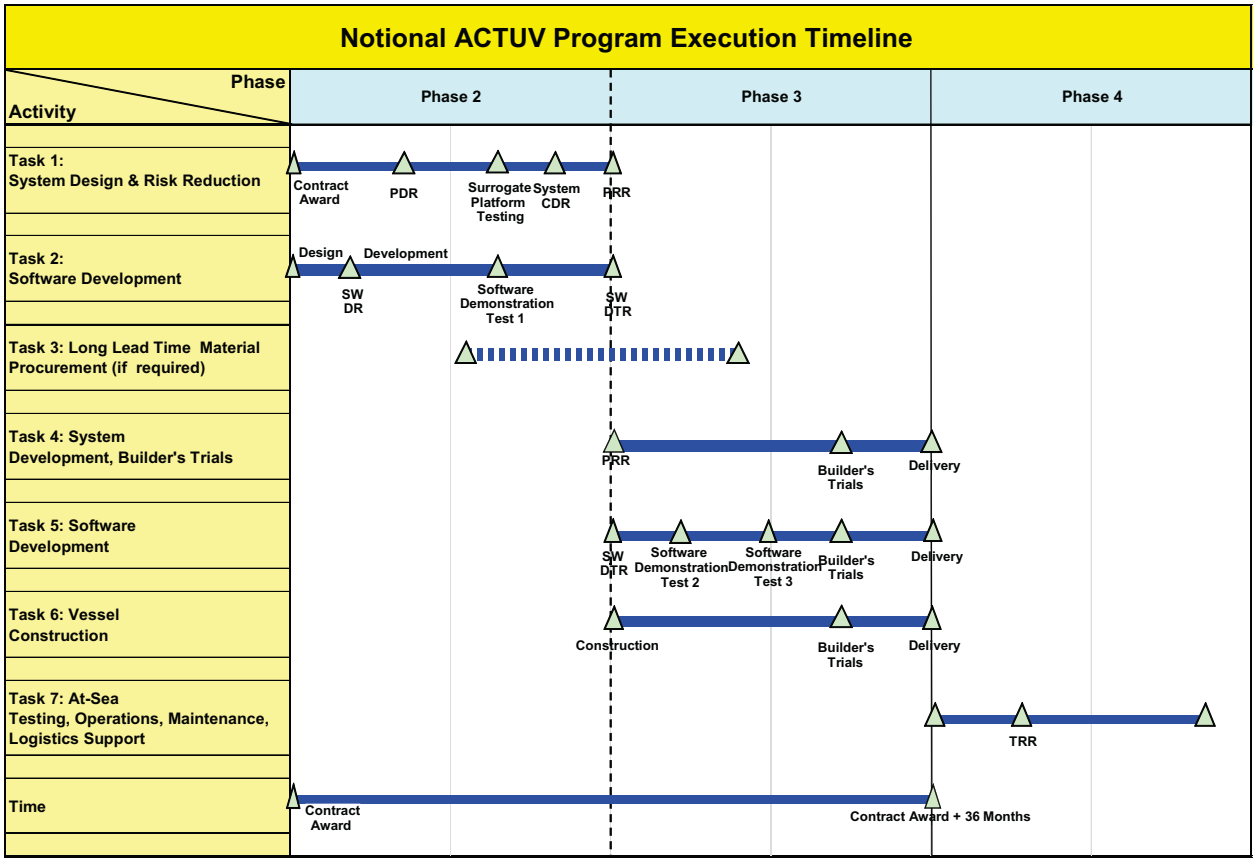
Proposals submitted under this BAA can be either “full scope” or “partial scope.” A full scope proposal should encompass all required work to complete the goals of Phases 2 through 4 of the ACTUV program, including technology development, risk reduction, autonomy, ASW sensor processing, sensor fusion, vessel state monitoring and optimization, detailed design and construction of an ACTUV vehicle, provision of associated support equipment and control stations, and logistical and technical support to follow-on testing. Full scope proposals should also provide an open-architecture approach for integrating products developed separately under partial scope awards.

Partial scope proposals are sought in one or more of the following areas perceived to be significant technical risk areas for the program: autonomy to support COLREGs compliant

unmanned sea vessel operations through all ACTUV mission phases, ASW sensor processing to support automated acquisition and tracking of submarine targets, sensor fusion to support accurate, high fidelity world model generation, and vessel state monitoring and optimization to support ACTUV reliability requirements. If awarded, these partial scope efforts are intended to provide technical risk reduction for the program, and should be at a level of maturity, and conducted on a time scale that would allow testing and integration during ACTUV Phase 2, 3, or 4. Partial scope efforts should also adhere to open-architecture approaches to facilitate future integration and testing.

1.5 Schedule and Objectives by Program Phase

The combined schedule for Phase 2 and Phase 3 of ACTUV is 36 months, with some overlap in Phases to allow for procurement of long-lead material. Phase 4 will be conducted in six month increments for up to 18 months of continued contractor support to ACTUV vessel testing. Major activities within these phases are shown in the following figure and are described below. Proposers are free to propose changes to the task structure within the overall 36 month schedule if needed to accommodate their technical approach.



Task 1 – System Design and Risk Reduction

Objectives: Reduce technical risk through continued development and testing of the ACTUV system and key components. Develop a complete and accurate ACTUV technical design and prepare for production. This task includes:

- System preliminary design, engineering analysis, modeling and simulation, critical technology and construction process development, risk reduction demonstrations, system detail design, and a high-fidelity operational performance assessment.
- Design, construction and testing of models and test articles to validate key elements of the ACTUV design or construction process.
- Creation of all specifications, drawings, and other technical data to define the system in sufficient detail for construction.
- Design, construction, development, procurement and/or fabrication of any specialized fabrication tools (molds, jigs, etc.) and equipment necessary to support the construction of ACTUV.

Reviews: The following reviews are associated with this phase and task. The reviews may be combined if appropriate, based on the contractor's proposed schedule:

- A Kick-off Meeting / Program Management Review at its facility to present project management processes, structure, and schedule for ACTUV project execution.
- A System Requirements Review (SRR)
- A System Functional Review (SFR)
- A Preliminary Design Review (PDR)
- A System Critical Design Review (System CDR)
- A Production Readiness Review (PRR). The purpose of the PRR is to determine that the ACTUV System detailed design is complete and documented at a level adequate to support production, that any required tools and facilities are available, that delivery of equipment and materials is scheduled to support production, and that the prime contractor and major subcontractors have accomplished adequate production planning to commence vessel fabrication.

Testing: Key testing in this task includes:

- Surrogate Platform Tests to demonstrate the performance of mission and situational awareness sensors selected for the ACTUV platform. The Contractor may choose to mount these sensors on any appropriate platform that permits testing and or demonstration in a manner similar to their intended employment aboard ACTUV.
- Testing to assess the sea-keeping performance of the ACTUV hull design. The Contractor may construct and employ a scale model of the ACTUV vessel to complete these tests. This testing may be waived if the Contractor proposes to use an existing hull form for which adequate performance data is available.

Major Deliverables:

- System design specification
- Vessel arrangement drawings
- Engineering analysis reports that support design
- Scale models and test articles
- Test Plans / Reports for all tests or demonstration events
- Final report at the conclusion of the task

Task 2 – Software Development

Objectives:

- Design, develop and demonstrate all required ACTUV software through a series of functional code demonstrations scheduled at regular intervals throughout the program. This task includes topside sensor processing, underwater sensor processing, world model development, vessel autonomy, vessel control systems, vessel health/maintenance, and control stations' software.
- Define, document, and follow an open systems approach for using modular design, standards-based interfaces, and widely-supported consensus-based standards. The Contractor should implement a modular open software design that uses open standards where practicable for all internal and external software interfaces. Provide a Software Development Plan (SDP); the information content of the SDP should use terminology consistent with IEEE STD 12207 to establish a standardized way of communicating the contractor's standards and practices to the Government.

Reviews: The following reviews are associated with this phase and task. The reviews may be combined if appropriate, based on the contractor's proposed schedule:

- Software Development Plan (SDP) Review. The purpose is to present the Contractor's approach to software design, development, integration, test, and configuration management.
- Software Design Review (SWDR). At the SWDR, it is expected that the top-level design for the topside sensor processing, underwater sensor processing, world model development, vessel autonomy, vessel control systems, vessel health/maintenance, and control stations' software be of sufficient detail to begin software development in accordance with the SDP. The SWDR can be conducted incrementally.
- Software Demonstration Test Review(s). The purpose is to present the results from Software Demonstration Test 1, the Autonomy Simulation Demonstration, and any other key software demonstrations.

Testing: Key testing in this task includes:

- Software Demonstration Test 1. The purpose is to demonstrate the Phase 2 sensor processing and world model software. Software Demonstration Test 1 will specifically focus on the detection, classification and processing of underwater sensor and situational awareness sensor data for the purpose of developing a correct and actionable world model. Input data should be real-world data from sensors and processors planned for incorporation in the ACTUV design. Population of the world model and management of world model data are expected to be performed in real-time.
- Autonomy Simulation Demonstration. The purpose is to exercise the ACTUV autonomous navigation and vessel control software. The Autonomy Simulation Demonstration should demonstrate the performance of the autonomous navigation and vessel control functions to execute the ASW mission using simulated world model data derived from simulated situational awareness and mission sensors inputs. The world model software used for the Autonomy Simulation Demonstration should be part of the same software product series as that used for world model development and evaluation as part of the Software Demonstration Test 1.

Major Deliverables:

- Software Development Plan
- Software Requirements List
- Software to support Software Demonstration Test 1
- Algorithm Description Documents
- Test Plans / Reports for all tests or demonstration events
- Final report at the conclusion of the task

Task 3: Long Lead Time Material Procurement

Objective: Procure long lead time material if needed to support vessel construction schedule. The contractor should initiate procurement of long lead time material based on maturity of system detailed design and component specifications and vendor lead time estimates. Cost of long lead time material is included in the vessel cost goal.

Task 4: System Development and Trials

Objectives: Complete all non-recurring engineering, testing and support efforts associated with the continued development and construction of the ACTUV System. Successfully complete Builder's Trials. This task includes:

- Design, development, procurement and/or fabrication and delivery of specialized shore support equipment, spare parts, remote and local operator control stations, and services for operations and maintenance of the ACTUV platform.
- Completion of a Technical Data Package including as-built engineering drawings, ACTUV system operations manuals, and system and major component technical manuals in electronic format. The manuals should be written in English and should be sufficient to support operation, troubleshooting, repair, and maintenance of the ACTUV System.
- Demonstration that the ACTUV vehicle can be operated through both local line of sight control and through remote supervisory control via a satellite link, using DoD approved radio frequencies and satellite communications or appropriate surrogates.
- Completion of a Maintenance Plan, identifying preventive maintenance requirements and schedule of preventive maintenance activities. The plan should address all major preventive maintenance tasks, their expected duration, resources required to complete the maintenance action, and the estimated labor requirements.
- Completion of a Vessel Maintenance Manual with diagnostic procedures for identifying malfunctions and completing repairs for onboard systems. The manual should address all major unscheduled maintenance tasks, their expected duration, resources required to complete the maintenance action, and the estimated labor requirements.
- Completion of Component Assembly and Repair Drawings for all repairable subsystems and components installed aboard the vessel.

Reviews: Applicable quarterly and/or test reviews

Testing: Builder's Trials are a critical event in ACTUV development whose purpose is to demonstrate the ACTUV platform, its on-board systems and shore support systems meet the ACTUV performance requirements. The Builder's Trials are also intended to demonstrate that the vessel and its supporting systems possess the requisite capabilities to support further mission systems testing and mission performance assessment. Key testing in this task includes:

- Demonstration of the suitability of specialty equipment, port infrastructure and services to support ACTUV operations, mooring, service, and maintenance. The demonstration should also validate procedures for launching, and recovering the vessel, including travel-lift or crane methods, if used.
- Demonstration of the full range of vessel propulsion and maneuvering capability. Demonstration of seakeeping performance subject to the range of sea conditions available during the test period.
- Demonstration of autonomy, COLREGs, and ASW functionality, other than functionality requiring support by a submarine target and COLREGs behaviors requiring multiple vessels. Functions requiring a submarine target or multiple surface vessels can be demonstrated through simulation/stimulation if appropriate.

Major Deliverables:

- Specialized Shore Support Equipment
- Remote Supervisory Control Station
- Local Tele-operations Control Station
- Spare parts, material and consumables sufficient to support Builder's Trials
- Test Plans / Reports for all tests or demonstration events
- Final report at the conclusion of the task

Task 5: Software Development and Documentation

Objective: ACTUV Software completion. The Contractor should complete all software development necessary for the ACTUV System, to include topside sensor processing, underwater sensor processing, world model development, vessel autonomy, vessel control systems, vessel health/maintenance, and control stations' software. The contractor should implement and document processes and features necessary to meet DoD information assurance (IA) and anti-tamper (AT) requirements, and participate with the Government program manager in getting any required IA and AT certifications.

Reviews: The following reviews are associated with this phase and task. The reviews may be combined if appropriate, based on the contractor's proposed schedule:

- Software Design Reviews
- Software Demonstration Test Reviews

Testing: Key testing in this task includes:

- Software Demonstration Test 2 to exercise software features incorporated subsequent to the Software Demonstration Test 1. Software Demonstration Test 2 should demonstrate control of a mobile surrogate ACTUV platform using representative ACTUV sensors, world model software, and ACTUV Autonomy Software. Input data should be real-world data from sensors and processors planned for incorporation in the ACTUV design. Functions requiring a submarine target or multiple surface vessels can be demonstrated through simulation/stimulation if appropriate.
- Software Demonstration Test 3 to exercise the control station software with a mobile surrogate ACTUV platform and demonstrate software features incorporated subsequent to the Software Demonstration Test 2.

Major Deliverables:

- Documentation for all ACTUV software, including source code.
- Documentation of IA and AT processes and features.
- Test Plans / Reports for all tests or demonstration events.
- Final report at the conclusion of the task.

Task 6: Vessel Construction

Objective: Construction of the ACTUV vessel.

Reviews: The Contractor should present construction progress and status as part of quarterly reviews.

Testing: Sub-system and system integration and check-out prior to builder's trials.

Major Deliverables:

- One ACTUV platform
- Documentation of actual vessel construction costs, including materials and installed equipment, direct labor, and production overhead.

Task 7: At-Sea Testing, Operations, Maintenance and Logistics Support

Objectives: Support the conduct of a series of tests including controlled exercises of increasing stress and complexity and free-play operational exercises verifying the ACTUV requirements are met and can reasonably be expected to be sustained during an entire operational cycle. The definition of test events and provision of submarine targets and other vessels will be the responsibility of the Government. For estimating purposes, there will be three six-month test phases, with approximately 40 days of at-sea testing per phase. This task includes:

- Personnel, equipment and support services to control and operate the ACTUV for all Phase 4 testing operations. This includes staff capable of operating ACTUV in the local tele-operations control mode and capable of exercising all functions of ACTUV and the Local Tele-Operation Control Station (LTCS) when operating in that mode.
- Personnel capable of operating ACTUV in the remote supervisory control mode and capable of exercising all functions of ACTUV and the Remote Supervisory Control Station (RSCS) when operating in that mode.
- Personnel, equipment, tools, materials, training and supervision to maintain and repair the ACTUV and support subsystems throughout Phase 4 of the ACTUV Program.
- Troubleshooting and analysis to correct hardware deficiencies and software errors found during testing.

Reviews: The Contractor should report status as part of periodic progress and status reviews. The Contractor is expected to work with the Government to conduct Test Readiness Reviews (TRRs) prior to scheduled test events.

Testing: The Contractor should support the development of the test plan for ACTUV Phase 4 At-Sea Operations. The objectives of Phase 4 testing are to evaluate the ability of ACTUV to deploy and operate autonomously, comply with COLREGs requirements, and effectively track and trail a submarine target, while validating system operability and reliability.

Major Deliverables:

- Test Plans / Reports for all tests or demonstration events
- Documentation of software or hardware deficiencies and corrective actions; revisions to ACTUV technical data package to correct mistakes and incorporate hardware and procedural changes.

1.6 Additional Requirements

- Cost and schedule tracking and control: The contractor should implement effective measures to track cost and schedule performance. The contractor should also maintain and make available to the Government an integrated master schedule. For full-scope awards the contractor should propose a contract work breakdown structure and earned value management system at a sufficient level of detail to manage the program and provide the Government with insight on actual cost and schedule performance throughout the program.
- Security and information assurance: The contractor should implement effective industrial, operations, and data security programs, procedures, and controls to safeguard ACTUV software and sensitive hardware, including information assurance for all software and technical data created, managed and stored for the configuration baseline and the construction of the ACTUV as defined by DoDD 8500.1.
- Integrated Product Data Environment (IPDE): Deliverables and associated information generated during the performance of this contract should reside in an Integrated Product Data Environment (IPDE) which will be available to the Government.
- Configuration Management: Full scope awards should include development of a Configuration Management Plan. Following System CDR the Contractor should invoke the Configuration Management Plan to track design changes and ensure that ACTUV's drawings and other technical data are consistent with the actual system configuration.

- ACTUV Reliability Model: Full scope awards should include development of a predictive model for ACTUV system reliability to verify that the system design is capable of meeting performance requirements for mission completion and return-to-port reliability.
- Meetings and Reviews: Reviews and / or meetings may be combined as appropriate when recommended by the contractor and approved by the Government. For all reviews, the Contractor should provide meeting facilities and meeting support. Meeting support includes, but is not limited to, identification of a suitable meeting location (subject to Government approval), preparation of agenda, preparation of presentation materials, providing read-ahead versions of presentation materials to the Government prior to reviews, preparation of meeting minutes, and action item reporting and tracking.
- Integrated Test and Evaluation Plan: Full scope awards should include development and maintenance of an Integrated Test and Evaluation Plan (ITEP), including a verification matrix that tracks how ACTUV performance requirements are being verified.

1.7 Classified and Export Controlled Annexes

Annexes with classified information at the secret level and export controlled information containing supporting information can be requested via email to DARPA-BAA-12-19@darpa.mil. Requests for the classified annex, which will include the export controlled annex on a separate disk, should include, at a minimum, the company name, technical POC name and phone number, Facility Security Officer (FSO) name and phone number, CAGE code, statement of facility clearance and safeguarding capability, and a valid address for receiving classified material at the secret level. DARPA will verify the facility clearance and the clearance of the recipient before mailing the classified material.

Proposers authorized to receive export controlled information, but lacking a facility clearance, may request the export controlled annex via email to DARPA-BAA-12-19@darpa.mil. Requests for the export controlled annex alone should include, at a minimum, the company name, technical POC name and phone number, statement acknowledging eligibility to receive export controlled information, address, and proof of citizenship or permanent residency from one of the following: U.S. passport; certified birth certificate issued by the city, county, or state of birth; consular report of birth (of U.S. citizen) abroad or certification of birth; naturalization certificate; certificate of citizenship; or permanent resident card (also known as a “green card”).

Proposers should allow at least five (5) business days for processing requests for the classified or export controlled annexes plus time for delivery. The complete set of annexes will not be available until after the planned Industry Day to be held on December 20 – 21 (see DARPA Special Notice # DARPA-SN-12-19 available on www.febizopps.gov for additional information). Please note that participation in the Industry Day is optional and is not required to propose to this BAA. Requestors of the classified annex need only submit one request and both annexes will be provided when available, if necessary via separate mailings. Requests for this information will not be accepted after 30 days from the date that proposals are initially due.

2.0 AWARD INFORMATION

At least one "Full Scope" award is anticipated. Additional partial scope risk reduction proposals associated with autonomy to support COLREGS compliant unmanned sea vessel operations through all ACTUV mission phases, ASW active sensor processing to support automated acquisition and tracking of submarine targets, sensor fusion to support accurate, high fidelity world model generation, and vessel state monitoring and optimization to support ACTUV reliability requirements may be funded. The amount of resources made available under this BAA will depend on the quality and technical merit 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 5.0, "Application Review Information"), and program balance to provide overall value to the Government. Proposals identified for negotiation may result in a procurement contract or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. 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 provide requested additional information in a timely manner.

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. Therefore, DARPA anticipates restrictions on the resultant research. Notwithstanding this statement of expectation, DARPA recognizes that proposed research solutions could be of either a fundamental or restricted nature. Proposers should indicate in their proposal whether they believe the nature of the research included in their proposal is fundamental or restricted, with the understanding that in all cases, the DARPA contracting officer shall have sole discretion to select award instrument type and to negotiate all instrument provisions with selectees. See Section 6.2.4 for further information on fundamental, non-fundamental and restricted research.

3.0 ELIGIBILITY INFORMATION

3.1 Eligible Applicants

All responsible sources capable of satisfying the Government's needs may submit a proposal that will 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 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.

If the Proposer identifies that access to unique capabilities or test facilities at a Department of Defense laboratory would be advantageous to their proposal, the Proposer may request that those capabilities or facilities be made available as GFE/GFI rather than subcontracting for them. DARPA intends to make any such capabilities or facilities available on an equal basis to any contractor selected for funding under this BAA.

Due to security requirements associated with submarine targets and specific sensor performance, only U.S. contractors who are capable of receiving, processing, and storing export controlled and classified information associated with this effort are eligible for awards that cover the full scope of the solicitation. Foreign participants and/or individuals may participate as subcontractors or consultants to the extent that such participants comply with any necessary non-disclosure agreements, security regulations, export control laws, ITAR regulations, and other governing statutes applicable under the circumstances. Since DARPA does not intend to directly provide classified or export controlled data to any international participants, Proposers are reminded that implementation of applicable agreements and licenses is the responsibility of the Proposer.

Proposers considering classified submissions (or requiring access to classified information during the life-cycle of the program, including the classified annex to this BAA) 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: http://www.dss.mil.

3.2 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 Mr. Scott Littlefield. Once the proposals have been received, and prior to the start of proposal evaluations, the Government will assess potential conflicts of interest and will promptly notify the Proposer if any appear to exist. (Please note, the Government assessment does NOT affect, offset, or mitigate the Proposer's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.)

Without prior approval or a waiver from the DARPA Director, in accordance with FAR 9.503, a Contractor cannot simultaneously provide scientific, engineering, technical assistance (SETA) or similar support and also be a technical performer. Therefore, all Proposers as well as proposed subcontractors and consultants must affirm whether they (their organizations and individual team members) are providing SETA or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the Proposer, subcontractor, consultant, or individual supports and identify the prime contract number(s). Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure must include a description of the action the Proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. If in the sole opinion of the Government after full consideration of the circumstances, a proposal fails to fully disclose potential conflicts of interest and/or any identified conflict situation cannot be effectively mitigated, the proposal will be rejected without technical evaluation and withdrawn from further consideration for award.

If a prospective Proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise) or has questions on what constitutes a conflict of interest, the Proposer should promptly raise the issue with DARPA by sending his/her contact information and a summary of the potential conflict to the BAA mailbox, DARPA-BAA-12-19@darpa.mil, before time and effort are expended in preparing a proposal and mitigation plan.

3.3 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.

3.4 Other Eligibility Criteria

3.4.1 Collaborative Efforts

Collaborative efforts and teaming are encouraged. Specific content, communications, networking, and team formation are the sole responsibility of the participants, however Proposers are encouraged to use the Interested Vendors List associated with this solicitation on http://www.fedbizopps.gov/.

4.0 APPLICATION AND SUBMISSION INFORMATION

4.1 Address to Request Application Package

This solicitation contains all information required to submit a proposal. No additional forms, kits, or other materials are needed. Additional supporting information is available in the form of classified and export controlled annexes to this BAA (see Section 1.7, "Classified and Export Controlled Annexes," for instructions on requesting the classified and/or export controlled annex). 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.

4.2 Content and Form of Application Submission

4.2.1 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 effort being solicited by this BAA is classified or otherwise involves access to or generation of classified information. Security classification guidance via a DD Form 254, "DoD Contract Security Classification Specification," will be provided automatically to recipients of the classified annex to the BAA.

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

Classified submissions shall be appropriately and conspicuously marked with the proposed classification level and declassification date. Submissions requiring DARPA to make a final classification determination shall be marked as follows:

> CLASSIFICATION DETERMINATION PENDING. Protect as though classified (insert the recommended classification level: (e.g., Top Secret, Secret or Confidential)

Classified submissions shall be in accordance with the following guidance:

Confidential and Secret Collateral Information: Use classification and marking guidance provided by previously issued security classification guides, the Information Security Regulation (DoD 5200.1-R), and the National Industrial Security Program Operating Manual (DoD 5220.22-M) when marking and transmitting information previously classified by another Original Classification Authority. Classified information at the Confidential and Secret level may be submitted via ONE of the two following methods:

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

OR

2. Mailed via appropriate U.S. Postal Service methods (e.g., (USPS) Registered Mail or USPS Express Mail). All classified information will be enclosed in opaque inner and outer covers and double wrapped. The inner envelope shall be sealed and plainly marked with the assigned classification and addresses of both sender and addressee.

The inner envelope shall be addressed to:

Defense Advanced Research Projects Agency
ATTN: Tactical Technology Office
Reference: BAA 12-19
3701 North Fairfax Drive
Arlington, VA 22203-1714

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

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

All Top Secret materials: Top Secret information should be hand carried by an appropriately cleared and authorized courier to the DARPA CDR. Prior to traveling, the courier shall contact the DARPA CDR at 703-526-4052 to coordinate arrival and delivery.

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

Sensitive Compartmented Information (SCI): SCI must be transmitted via approved methods. Prior to transmitting SCI, contact the DARPA Special Security Office (SSO) at 703-526-4052 for instructions.

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

Proposers must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. It is the policy of DARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. An original electronic copy 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.

4.2.2 Proposal Information

Proposers are required to submit full proposals by the time and date specified in this 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 six months from date of posting on FedBizOpps. Ability to review late submissions remains contingent on availability of funds.

Those Proposers desiring a "full scope" award under this BAA should include a full description of their technical approach and costs for all program phases and tasks. Full scope proposals not selected for a full scope award may be evaluated and considered for a partial scope award based on the elements of their technical and cost proposal that directly address autonomy to support COLREGS compliant unmanned sea vessel operations through all ACTUV mission phases, ASW active sensor processing to support automated acquisition and tracking of submarine targets, sensor fusion to support accurate, high fidelity world model generation, and vessel state monitoring and optimization to support ACTUV reliability requirements. These elements should be identified in the proposal, and are anticipated to fall within Task 2 and Task 5 as described in Section 1.5.

Those Proposers desiring a "partial scope" award under this BAA should tailor their technical and cost proposal to focus on the specific aspects of autonomy to support COLREGS compliant unmanned sea vessel operations through all ACTUV mission phases, ASW active sensor processing to support automated acquisition and tracking of submarine targets, sensor fusion to support accurate, high fidelity world model generation, and/or vessel state monitoring and optimization to support ACTUV reliability requirements that they intend to address, and should identify how their effort could be integrated into the ACTUV program during Phase 2, 3, and/or 4.

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

Proposers must submit an original and one (1) hardcopy of the full proposal and two (2) electronic copies of the proposal (preferred in Microsoft Office compatible formats) on a CD-ROM. Each copy must be clearly labeled with DARPA-BAA-12-19, Proposer organization, proposal title (short title recommended), and Copy 1 of 1. Proposals not meeting the format described in the BAA may not be reviewed.

DARPA intends to use electronic mail for correspondence regarding BAA 12-19. All administrative correspondence and questions on this solicitation, including requests for information on how to submit a proposal to this BAA, should be sent via email to DARPA-BAA-12-19@darpa.mil. Proposals may not be submitted by fax or e-mail; any so sent will be disregarded. DARPA encourages use of the Internet for retrieving the BAA and any other related information that may subsequently be provided.

4.2.3 Proposal Format

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. Volume I, Technical, Management, and Resourcing 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 submission of other supporting materials along with the proposals is strongly discouraged and will not be considered for review. All proposals must be written in English. The page limit for volume 1 is 75 pages for full scope proposals and 50 pages for partial scope proposals, excluding the following items: Proposal Affirmations (I.C); Intellectual Property Forms (II.E); System Performance Table (III.A); Integrated Statement t of Work (III.D); and Integrated Master Schedule (III.E).

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

Section I. Administrative

A. Cover sheet to include:
   (1) BAA number
   (2) Lead Organization submitting proposal
   (3) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT"
   (4) Contractor's reference number (if any)
   (5) Other team members (if applicable) and type of business for each
   (6) Proposal title
   (7) 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)
   (8) 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)
   (9) Total funds requested from DARPA, and the amount of cost share (if any)
   (10) Date proposal was submitted.

B. Official transmittal letter.

C. Proposal Affirmations

   (1) Organizational Conflict of Interest Affirmations and Disclosure: Per the instructions in Section 3.2 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) Human Use: For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. For further information on this subject, see Section 6.2.2 below. If human use is not a factor in a proposal, then the Proposer should state "NONE."

(3) Animal Use: 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 6.2.3 below. If animal use is not a factor in a proposal, then the Proposer should state "NONE."

(4) Government or Government-funded Team Member Eligibility: Per Section 3.1 – 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 eligibility documentation as required by Section 3.1. If no such entities are involved, then the Proposer should state "NONE."

Section II. Summary of Proposal

This section should provide an overview of the system concept, proposed work plan, and team capabilities. This section should be concise; . further elaboration should be provided in Section III.

A. Concept description and innovative claims. This section should include descriptions and depictions of the Proposer's preliminary system concept, including identification of unique benefits and advantages relative to state of the art technologies and other potential system approaches.

B. Overview of program execution. This section should include a description of the approach and execution plan for program phases, including system design and risk reduction, construction, demonstration, and transition. The Proposer should outline their approach to software design, development, integration, test, and configuration management for each of the software products being developed for ACTUV. The Proposer should identify how the specific software development methodology (e.g., Agile, Waterfall, etc…) will be used and how that methodology will mitigate risk to schedule, cost, and software quality.

C. Corporate, team, and personnel resources and expertise. This section should provide descriptions and depictions of the project team, including support for the expertise, experience, facilities, and other resources that will be leveraged to ensure project success. There should be a clearly defined organization chart for the program team which includes, as applicable: (1) the programmatic relationship of team members; (2) the unique capabilities of team members; (3) the list 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. Formal teaming agreements should be included in Volume II if applicable.

D. Cost, schedule and measurable milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the prime and major subcontractors, total cost and company cost share, if applicable. (Note: Measurable milestones should capture key development points in tasks and should be clearly articulated and defined in time relative to start of effort.)

E. Proprietary claims. This section should include all proprietary claims to the results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are not proprietary claims, this should be stated. For forms to be completed regarding intellectual property, see Section 8.1, "Intellectual Property."

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, managerial, and resourcing issues.

A. Technical Approach and Expected System Performance. This section should provide details on the proposed technical solution to achieve the ACTUV Performance Requirements outlined in section 1.2 and major derived requirements and quantified performance attributes that are part of the Proposer's approach. Areas of technical risk and approach to mitigating that risk should be clearly defined, including pursuit of competing technical approaches, modeling and simulation, scale model testing, and surrogate platform testing. To assist in documenting the approach, full scope Proposers should complete and attach the System Performance Table included in this BAA (see Section 8.3, "System Performance Table").

B. Software Development Methodology. This section should describe the Proposer's approach to open architecture software design, development, integration, test, documentation, and configuration management for each of the software products being developed for ACTUV. The Proposer should explain how their specific software development methodology(ies) (e.g., Agile, Waterfall, etc…) will be used, how that methodology will mitigate risk to schedule, cost, and software quality.

C. Work Breakdown Structure (WBS). This section should include a logical and complete WBS tailored to the proposed deliverables. WBS detail to level 3 or greater should be included.

D. Integrated Statement of Work (SOW), technical support, and Basis of Estimate (BOE). This section is the heart of the proposal and should provide all necessary detail to define the proposed effort and deliverables, support the proposed effort with relevant technical details, and list planned resource allocation based on BOE build-ups. The following sections should be repeated for each WBS element (to level 3 or greater), and should encompass the full proposed scope of work and proposed cost.

   i. SOW Element. The specific SOW element should be fully defined, describing the scope to be performed under the proposed effort to include objectives, task descriptions, and completion criteria.
   ii. Deliverables. All deliverables associated with the specific SOW element should be defined, including descriptions of contents, anticipated formats, and delivery dates (days after contract award).
   iii. Technical Rationale. Detailed technical rationale and supporting information that directly underpin the approach and execution for the specific SOW element should be

provided. Only details that support activity that is explicitly included within the proposed scope and BOE shall be included. Information regarding subjects that are not explicitly included in the proposed scope and BOE should be limited to Section II only. Government furnished information, equipment, or facilities required for completion of the SOW element should also be included here.

iv. BOE. Cost summary and BOE calculations associated with the specific SOW element should be detailed. Costs should represent total cost to the Government for the specific SOW element, showing detailed build up from lowest level labor hour and material estimates in a consistent cost basis methodology, including cost of labor, materials, overhead, and other direct charges. Subcontractor costs should be annotated and added to prime contractor costs to show a comprehensive and integrated BOE for the specific SOW element. Any cost share should be noted.

E. Integrated Master Schedule. This section should include a depiction of the time phased relationships and dependencies between all activities associated with the execution of the WBS elements (to level 3 or greater). Deliverables should be clearly indicated, as well as need dates for any external information or resources.

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.

b. Volume II, Cost Proposal

Cover sheet to include:

(1) BAA number;
(2) Lead Organization submitting proposal;
(3) Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
(4) Contractor’s reference number (if any);
(5) Other team members (if applicable) and type of business for each;
(6) Proposal title;
(7) 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);
(8) 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);
(9) Award instrument requested: firm fixed price (FFP), cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, cost-plus-incentive-fee (CPIF), other type of procurement contract (specify), or other transaction; Note - hybrid contract types with separate CLINs for development and production are permitted. The ultimate award instrument type is subject to negotiation.
(10) Place(s) and period(s) of performance;
(11) Total proposed cost separated by basic award and option(s) (if any);
(12) Name, address, and telephone number of the Proposer’s cognizant Defense Contract Management Agency (DCMA) administration office (if known);

(13) Name, address, and telephone number of the Proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (if known);
(14) Date proposal was prepared;
(15) DUNS number;
(16) TIN number; and
(17) Cage Code;
(18) Subcontractor Information; and
(19) Proposal validity period.

The cost volume has no page limit and should include the following information:

A WBS identical to the WBS provided in Volume I.

A consolidated SOW that is identical to the SOW definition in Volume 1, Section III.D.i and III.D.ii, but without supporting technical and cost information. This consolidated SOW should not include proprietary information.

A detailed cost breakdown to include: (1) total program cost broken down by major cost items (direct labor, including labor categories and direct labor rates; subcontracts; materials; other direct costs, overhead charges and rates, etc.) and further broken down by task and phase; (2) major program tasks by fiscal year; (3) an itemization of major subcontracts and equipment purchases; (4) an itemization of any information technology (IT) purchase[1]; (5) a summary of projected funding requirements by month; and (6) the source, nature, and amount of any industry cost-sharing; and (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)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). Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. 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

- [1] 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."

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 $700,000 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.

The Government may award either a Federal Acquisition Regulation (FAR) based contract or an Other Transaction Authority for Prototypes (OTA) agreement for prototype system development proposals. Proposers interested in receiving an OTA are asked to submit proposal responses that accommodate both options. The Government will evaluate all Proposers' FAR based proposals in accordance with the established evaluation criteria. After award selection based on the FAR based proposals, the Government will evaluate the selected awardees Other Transaction proposal with the intent of selecting the program approach offering the most benefit to the Government. The intent of this evaluation approach is to prevent contractors with greater financial flexibility from reducing the proposed cost to the Government by providing a large cost share or extra effort beyond that of a contractor with less financial capability. In this approach all proposals are evaluated based upon their technical merits and ability to realistically price their proposed technical scope. For information on 845 Other Transaction Authority for Prototypes (OTA) agreements, refer to:
http://www.darpa.mil/Opportunities/Contract_Management/Other_Transactions_and_Technology_Investment_Agreements.aspx.

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

4.3 Submission Dates and Times

The full proposal (original and designated number of hard and electronic copies) must be submitted to DARPA/TTO, 3701 North Fairfax Drive, Arlington, VA 22203-1714 (Attn.: BAA 12-19) on or before 4:00 p.m., local time (EDT), February 28, 2012 (initial closing), in order to be considered during the initial evaluation phase; however, BAA 12-19 will remain open for 180 days after posting on FedBizOpps. Proposals may be submitted at any time from issuance of this announcement through June 12, 2012; 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 by January 23, 2012, before final full proposals are due. In order to receive a response to your question, submit your question by January 15, 2012 to DARPA-BAA-12-19@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.

4.4 Intergovernmental Review

Not Applicable.

4.5 Funding Restrictions

Not Applicable.

5.0 APPLICATION REVIEW INFORMATION

5.1 Evaluation Criteria

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

5.1.1 Overall Scientific and Technical Merit

The proposed technical approach is innovative, 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.

5.1.2 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.

5.1.3 Cost Realism

The objective of this criterion is to establish 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. The evaluation criterion recognizes that undue emphasis on cost may motivate Proposers to offer low-risk ideas 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 business practices and approaches that maximize direct funding for technology and limit diversion of funds into overhead charges.

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 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.

5.1.5 Technology Transition

The evaluation will take into consideration the extent to which the proposed intellectual property (IP) rights will potentially impact the Government's ability to transition the technology to the research, industrial, and operational military communities.

5.2 Review and Recommendation Process

Evaluation of proposals will be accomplished through a scientific/technical review of each proposal. Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons.

Award(s) will be made to Proposers whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work to the overall research program and the availability of funding for the effort. Award(s) may be made to any Proposer(s) whose proposal is determined selectable regardless of its overall rating.

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 funding availability. In order to provide the desired evaluation, qualified Government personnel will conduct reviews and (if necessary) convene panels of experts in the appropriate areas.

Proposals will not be evaluated against each other since they are not submitted in accordance with a common work statement. For evaluation purposes, a proposal is the document described in Section 4.2.2, "Proposal Information." 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 or 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. Proposals will not be returned. An original electronic copy 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 (5) days after unsuccessful notification.

6.0 AWARD ADMINISTRATION INFORMATION

6.1 Selection Notices

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

6.2 Administrative and National Policy Requirements

6.2.1 Meeting and Travel Requirements

There will be a program kickoff meeting and all key participants are required to attend. Performers should also anticipate monthly teleconference reviews and quarterly reviews throughout the duration of the program. The Program Manager or his representatives may conduct periodic site visits at the Program Manager's discretion.

6.2.2 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 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.

6.2.3 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.

6.2.4 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 Technology Development) does not meet the definition of fundamental research. Publication restrictions will be placed on all such research.

Research to be performed as a result of this BAA is expected to be Restricted. The research resulting from the proposed program is anticipated to present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results relative to the program. Other restrictions may also apply.

Proposers are advised if they propose grants or 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 same or similar provision will be incorporated into any resultant Restricted Research or Non-Fundamental Research procurement contract or other transaction:

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

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

6.2.5 Export Control

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

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

1) "Defense items," defined in the Arms Export Control Act, 22 U.S.C. 2778(j)(4)(A), as defense articles, defense services, and related technical data, and further defined in the ITAR, 22 CFR Part 120.
2) "Items," defined in the EAR as "commodities," "software," and "technology," terms that are also defined in the EAR, 15 CFR 772.1.

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

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

(d) Nothing in the terms of this contract adds, changes, supersedes, or waives any of the requirements of applicable Federal laws, Executive orders, and regulations, including but not limited to—

(1) The Export Administration Act of 1979, as amended (50 U.S.C. App. 2401, *et seq.*);
(2) The Arms Export Control Act (22 U.S.C. 2751, *et seq*.);
(3) The International Emergency Economic Powers Act (50 U.S.C. 1701, et seq.);
(4) The Export Administration Regulations (15 CFR Parts 730-774);
(5) The International Traffic in Arms Regulations (22 CFR Parts 120-130); and
(6) Executive Order 13222, as extended;

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

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

6.2.7 Electronic and Information Technology

The ACTUV vessel is considered a national security system as defined in FAR subpart 39.204.

6.2.8 Employment Eligibility Verification

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

6.2.9 Central Contractor Registration (CCR) and Universal Identifier Requirements

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

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

6.2.10 Reporting Executive Compensation and First-Tier Subcontract Awards

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

6.2.11 Updates of Information Regarding Responsibility Matters

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

6.3 Reporting

The number and types of reports will be specified in the award document, but will include as a minimum monthly financial and technical 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, to include quarterly status briefings, and briefings associated with major technical reviews. Additional reports will be required in association with deliverables associated with the tasks for each phase (see Section 1.5, "Schedule and Objectives by Program Phase"). A final report that summarizes the project and tasks will be required at the conclusion of the performance period for the base award, and each option period, notwithstanding the fact that the research may be continued under a follow-on vehicle. At least one copy of each report will be delivered to DARPA and not merely placed on an internet site.

6.4 Electronic Systems

6.4.1 Representations and Certifications

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

6.4.2 Wide Area Work Flow (WAWF)

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

6.4.3 i-Edison

All required invention and patent reporting shall be accomplished, as applicable, using the i-Edison.gov reporting website at (http://s-edison.info.nih.gov/iEdison).

7.0 AGENCY CONTACTS

DARPA will use electronic mail for all technical and administrative correspondence regarding this BAA, with the exception of classified communications.

Administrative, technical or contractual questions should be sent via e-mail to DARPA-BAA-12-19@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 Mr. Scott Littlefield
The contractual POC for this effort is Mr. Chris Glista
DARPA/TTO
ATTN: BAA 12-19
3701 North Fairfax Drive
Arlington, VA 22203-1714
DARPA-BAA-12-19@darpa.mil

8.0 OTHER INFORMATION

8.1 Intellectual Property

8.1.1 Procurement Contract Proposers

Noncommercial Items (Technical Data and Computer Software)

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

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

NONCOMMERCIAL				
Technical Data Computer Software To be Furnished With Restrictions	Summary of Intended Use in the Conduct of the Research	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(NARRATIVE)	(LIST)	(LIST)	(LIST)

Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all commercial technical data and commercial computer software

that may be embedded in any noncommercial deliverables contemplated under the research effort, along with any applicable restrictions on the Government's use of such commercial technical data and/or commercial computer software. In the event that Proposers do not submit the list, the Government will assume that there are no restrictions on the Government's use of such commercial items. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions and may request additional information from the Proposer, as may be necessary, to evaluate the Proposer's assertions. If no restrictions are intended, then the Proposer should state "NONE." Failure to provide full information may result in a determination that the proposal is not compliant with the BAA – resulting in nonselectability of the proposal.

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

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

8.1.2 Non-Procurement Contract Proposers – Noncommercial and Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting a Grant, Cooperative Agreement, Technology Investment Agreement, or Other Transaction for Prototype 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 in Paragraphs 1.a and 1.b above. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the Proposer, as may be necessary, to evaluate the Proposer's assertions. If no restrictions are intended, then the Proposer should state "NONE." Failure to provide full information may result in a determination that the proposal is not compliant with the BAA – resulting in nonselectability of the proposal.

8.1.3 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.

8.1.4 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.

8.2 Desired Rights in Software and Technical Data

DARPA strongly desires that all system design documentation and deliverables (to include software) developed either for the ACTUV program or imported for use in the ACTUV System be provided with Unlimited Rights. However, if the Proposer believes that these products and deliverables can be provided with other types of rights and still satisfy the Government's requirements, the Proposer may provide this information in its proposal, and the Government will consider this information during the evaluation consistent with the evaluation criteria under section 5.1.

8.3 Industry Day

DARPA/TTO intends to host an industry day conference in support of Phase 2-4 of the ACTUV program on December 20-21, 2011 (see DARPA Special Notice # DARPA-SN-12-19 available on www.febizopps.gov for additional information). Please note that participation in the Industry Day is optional and is not required to propose to this BAA. Slides from the industry day will be provided in the classified and export controlled annexes to this BAA. For instructions on requesting the classified and/or export controlled annexes see Section 1.7, "Classified and Export Controlled Annexes".

8.4 System Performance Table

Full scope Proposers are requested to summarize their concept's expected system performance by completing the following table. Non-applicable performance characteristics should be included with the annotation "N/A." If the Proposer prefers to include additional performance characteristics, the Proposer may do so by appending additional section(s) to the bottom of the table below, keeping it clearly separated from the main table. More information regarding the Government's assessment of potential threshold and objective performance values based on Phase 1 results can be found in the Indicative Performance Specification available in the classified and export controlled annexes (See Section 1.7).

Proposed ACTUV System Performance Table
BAA 12-19

Proposer Organization:
Proposal Title:

System Attribute	Solution / Expected Performance
Speed, endurance, and maneuvering characteristics	
ASW Mission Performance	
Sensor suite (above and below water)	
Autonomous Operations Capability	
Vessel	
Vessel type and major attributes of Hull, Mechanical, and Electrical Systems	
Design and Construction Approach	
Integrated Logistics Support Approach	
Maintenance, Accessibility, and Safety Features	
Service Life, Fabrication, and Materials	
Survivability Features	
Signature Management	
Margins, Additional Payload Capacity, & Modularity	
Ship Motions & Dynamic Loading; Sea State Capability	
Communication and Navigation Systems	
Information Assurance/Anti-Tamper	
Launch & Recovery	
Storage and Surge Capabilities	
Command & Control Interfaces	
Ship Handling & Service Interfaces	
Reliability	
Maintainability	
Ambient and Operational Environments	