Broad Agency Announcement

Atmospheric Water Extraction (AWE)

BIOLOGICAL TECHNOLOGIES OFFICE

HR001120S0014

December 31, 2019

TABLE OF CONTENTS

PART I: OVERVIEW INFORMATION

- **Federal Agency Name –** Defense Advanced Research Projects Agency (DARPA), Biological Technologies Office (BTO)
- **Funding Opportunity Title – Atmospheric Water Extraction (AWE)**
- **Announcement Type –** Initial Announcement
- **Funding Opportunity Number –** HR001120S0014
- **North American Industry Classification System (NAICS) –** 541714
- **Catalog of Federal Domestic Assistance Numbers (CFDA) –** 12.910 Research and Technology Development
- **Dates**
  - Posting Date: December 31, 2019
  - Proposal Abstract Due Date and Time: January 28, 2020, 4:00 PM ET
  - Full Proposal Due Date and Time: March 12, 2020, 4:00 PM ET
  - BAA Closing Date: March 13, 2020
  - Proposers' Day: January 7, 2020

  https://beta.sam.gov
- **Concise description of the funding opportunity –** The goal of the AWE program is to enable water extraction from the atmosphere to produce a small, low-powered, light-weight system with two form-factors: one capable of providing potable water for expeditionary forces (daily output sufficient for the individual warfighter), and another for stabilization missions (daily output to supply ~150 people).
- **Anticipated individual awards –** Multiple awards are anticipated.
- **Types of instruments that may be awarded –** Procurement contract, cooperative agreement, or other transaction.
- **Agency contact**

  The BAA Coordinator for this effort may be reached at:
  AWE@darpa.mil
  DARPA/BTO
  ATTN: HR001120S0014
  675 North Randolph Street
  Arlington, VA 22203-2114

PART II: FULL TEXT OF ANNOUNCEMENT

1. Funding Opportunity Description

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 and 2 CFR § 200.203. Any resultant award negotiations will follow all pertinent law and regulation, and any negotiations and/or awards for procurement contracts will use procedures under FAR 15.4, Contract Pricing, as specified in the BAA.

The Defense Advanced Research Projects Agency (DARPA) often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will appear first on the beta.SAM.gov website, https://beta.sam.gov, and the Grants.gov website http://www.grants.gov/. The following information is for those wishing to respond to the BAA.

DARPA is soliciting innovative proposals to address: (1) the development of novel sorbent materials, (2) materials synthesis and scale up, (3) component and systems modeling, and (4) complete integration and fabrication of the aforementioned elements into a device to extract potable water from the atmosphere. Proposed research should develop innovative approaches focused on: identifying sorbents with high water capacities, fast release kinetics, novel mechanisms of water desorption/release and component/system designs that optimize mass/heat transfer, utilize advanced manufacturing, and employ alternative power sources to meet the strict size, weight, and power (SWaP) objectives of the final deliverable. The final form factor should provide sufficient potable water for either: (1) an individual's daily drinking requirements, or (2) the daily drinking requirements for up to 150 people. The system should operate under a range of atmospheric conditions (relative humidity [RH], 20-100%; 35-120 ^{o}F), produce water that is potable without further treatment, operate within the defined SWaP parameters, and demonstrate continued operability for an extended period (30 days). Specifically excluded from this research are incremental improvements to conventional sorbent- or condensation-based atmospheric water generation or strategies that rely on purification of an existing liquid water source.

1.1. PROGRAM OVERVIEW

"*The world's ultimate weapon runs on water; everything else runs on fuel.*" The warfighter can survive three weeks without food but only three days without water. Water transport is, therefore, mission-critical but logistically challenging, requiring equipment, fuel, and personnel that limits tactical maneuver and decision space. Water distribution also leads to avoidable casualties. As the military moves towards more mobile, flexible, and self-sufficient operations, including the Expeditionary Advanced Base Operations (EABO, U.S. Marine Corps) and the Multi-Domain Operations (MDO, Army) concepts, reducing the water resupply requirements will have even more important tactical implications. Liberating the warfighter from the water supply chain will have a significant impact on the reduction of causalities and costs, as well as provide a marked tactical advantage, especially in forward operating environments.

Water is also a critical resource across Humanitarian and Disaster Relief (HADR) missions and stabilization activities ranging from conflict prevention to post-conflict restabilization operations.

In addition, interstate water-driven conflicts have been documented in the Middle East, Africa, and Central Asia, and smaller-scale adversarial restriction to water or contamination of water sources has been used as a local destabilizing force. By providing a ubiquitous source of potable water, AWE will eliminate the ability of adversaries to use water as a tactical or destabilizing leverage point, thereby reducing the likelihood of interstate water conflicts.

Current operational strategies for water acquisition are generally limited to: (1) regional freshwater sources, (2) desalination, or (3) transported bottled water. Regional freshwater sources are not always available, limit operational flexibility, and generally must be treated before use (e.g., Reverse Osmosis Water Purification Unit, Tactical Water Purification System, etc.) due to either natural or deliberate contamination. These units can produce potable water at high rates (475-11,000 L/h) but have substantial power/fuel requirements (3-60 kW) and are cumbersome (900-17,000 kg). The same systems can be used with a diminished capacity for desalination. However, because water sources are not routinely located within a secure perimeter, water purification efforts using these systems invite a significant security risk. As a result, the military relies heavily on transported bottled water, which is distributed to forward operating areas by truck or aircraft, adding significant logistical costs, casualties, and waste streams. Other state-of-the-art water production technologies, such as dehumidifiers, are not currently utilized by the military because their performance is not satisfactory with respect to SWaP requirements. Furthermore, dehumidifiers are incapable of harvesting water directly from low humidity air (<40% RH; e.g., Kandahar, Afghanistan).

The goal of AWE is to provide potable water for a range of military needs by developing low-powered, distributable systems that can provide potable water anywhere, anytime, and without the need for any external liquid water source (e.g., groundwater, seawater, rivers, lakes, etc.). AWE will harvest water from the global atmospheric reservoir by catalyzing two technical areas: transformational sorbent materials development (Technical Area 1) and extractor modeling, engineering, and sorbent integration (Technical Area 2). AWE will addresses potable water needs in two program tracks: (1) expeditionary, a unit for individual warfighters in the field, and (2) stabilization, which will provide the daily drinking requirements for up to 150 people (i.e., a company or humanitarian mission).

1.2. TECHNICAL APPROACH AND PROGRAM STRUCTURE

1.2.1. Technical Areas

The AWE program includes two technical areas (TAs) that will run concurrently for the duration of the program. **Proposals that do not address both TAs as characterized within this section will be deemed non-responsive and not considered for review.** The focus areas of each TA, broken out by program phase, are summarized in Table 1. These two technical areas are:

1. **Technical Area 1 (TA1): Transformational Sorbent Materials Development.** Develop next-generation sorbent materials that can rapidly and efficiently extract water from ambient air and subsequently release it.

2. **Technical Area 2 (TA2): Extractor Modeling, Engineering, and Sorbent Integration.**

Design components and complete systems to leverage new sorbents to extract water from air within the SWaP parameters defined for the expeditionary or stabilization track. Water potability is a necessary feature of the final prototype device.

Table 1. Program Focus Areas by TA and Phase

Technical Areas	Phase I (24 Month)	Phase II (24 Month)
TA 1: Transformational Sorbent Materials Development	**Sorbent Development** New materials synthesized and characterized **Sorbent Selection** Best material(s) optimized and integrated into prototype device	**Sorbent Optimization** Iterative optimization of sorbent properties in integrated device **Production at Scale** Sorbent synthesis scaled for multiple prototypes
TA 2: Extractor Modeling, Engineering, and Sorbent Integration	**System Modeling** Component and system model developed and optimized **Component Development** Prototypes of all components designed and manufactured **System Prototyping** Complete prototype constructed for Capability Demonstration	**Component and System Optimization** Iterative optimization of components and system with sorbent through design-build-test-learn cycle **Final Device Development** Demonstration of final program objectives and delivery of devices to Independent Verification and Validation (IV&V) provider or performer

TA1. Transformational Sorbent Materials Development

TA1 will develop next-generation sorbent materials for the rapid and efficient extraction of water from ambient air (35-120 ^{o}F, ~4-49 ^{o}C, 20-100% RH). The goal of TA1 is to produce novel sorbents that display properties optimized for atmospheric water extraction. TA1 consists of three core elements: sorbent material selection and optimization, materials characterization, and scaled synthesis of sorbent materials, and will include an *in operando* assessment of materials in a performer-defined test platform.

Sorbent Selection. Sorbent materials for TA1 may include, but are not limited to: metal-organic frameworks (MOFs), covalent-organic frameworks (COFs), conjugated microporous polymers (CMPs), biologically-templated carbon nanofibers (BioCNFs), and super moisture-adsorbent gels (SMAGs). Blends or composites of sorbent materials are also suitable for investigation in TA1. The use of flexible or switchable materials with novel, low energy mechanisms for water desorption are highly encouraged. TA1 is agnostic with respect to choice of material; however, conventional desiccants (e.g., Li salts) are discouraged, as the

selected material must have some precedence suggesting the ability to overcome the limitations of prior approaches and meet the rigorous SWaP metrics desired for the AWE program. The use of theoretical methods to understand, predict, and improve materials properties is encouraged. Ultimately, sorbent materials will likely require a combination of key characteristics that may include, but are not limited to:

- High water capacity
- Efficient vapor capture at low RH
- Rapid water adsorption/desorption kinetics
- Optimal sorption profiles
- Low heats of adsorption
- Switchable/smart mechanisms for water release
- Chemical and mechanical cycling stability

Materials Characterization. Proposers may target a variety of materials or composite materials (e.g., MOFs, COFs, SMAGs, etc.); however, it is recommended that performers explicitly specify target properties for their materials that reflect those best suited to the designated program track (i.e., expeditionary vs. stabilization) and initial design proposal. Selection of materials should be justified based on the aforementioned properties, and proposers should plan to report progress against their defined target metrics throughout the course of the program. Typical materials characterization techniques may include, but are not limited to: structural methods (e.g., X-ray diffraction, nuclear magnetic resonance, etc.), water adsorption/desorption isotherms, (Diffuse Reflectance Infrared Fourier Transform) spectroscopy (e.g., DRIFTS), and experiments demonstrating chemical and mechanical stability after multiple adsorption/desorption cycles.

Performers should demonstrate that the candidate material(s) are ontrack to meet the desired characteristics for the end-use device in a Sorbent Metrics Report in Month 12 of the program. The material demonstrated at Month 12 should be used in the first prototype of the device (i.e., in the Capability Demonstration at Month 22). Between Month 12 and Month 36 of the program, performers may optimize their material as part of the design-build-test-learn cycle in conjunction with refinement of the water extraction device. A final Sorbent Metrics Report at Month 36 of the program also marks the end of anticipated materials development and refinement.

Scalability. In Phase II, performers should also plan to demonstrate reproducible and scalable synthesis of the optimized sorbent(s). Target metrics for scalable production should be specified in the proposal and may include, but are not limited to: batch size, synthesis time, purity/reproducibility, and cost.

The following information should be included in the proposal and, where applicable, in the Specific Program Plan (Attachment 4) to address TA1 challenges:

- Target sorbent material(s), materials class, or composites to be studied and proposed mechanism of water adsorption and desorption;
- Anticipated material characteristics, including interim milestones for obtaining the

proposer-defined target characteristics within the project timeline;
- Proposed methods for materials characterization to measure relevant properties, including water sorption and desorption characteristics;
- Integration of the material into component design (TA2) and prototype;
- Material scalability plan, including interim milestones for scaling synthesis, verifying reproducibility/quality, and projected/target cost for production of material at scale;
- Experimental design for standardized, in operando evaluation and comparison of candidate sorbent materials.

Deliverables for TA1 and TA2 will be assessed together through a Sorbent Metrics Report at Month 12 and Month 36 and integrated material/system Capability Demonstrations at Month 22 and Month 48 of the program (see Sections 1.2.4 and 1.3).

TA2. Extractor Modeling, Engineering, and Sorbent Integration

Atmospheric water generation efforts to date have focused largely on power-intensive dehumidification systems that have been modified through the use of more efficient components and incrementally improved designs. The objective of the AWE program is not to build a better dehumidifier, but rather a game-changing water extraction device with substantially increased water yields and dramatically reduced SWaP parameters than current systems. To meet the stringent end-user SWaP requirements that will make these devices fieldable in resource-limited, far-forward settings, proposers will need to outline creative engineering approaches rather than be derivative of past paradigms.

TA2 will integrate sorbents into engineered systems that fully leverage the properties of the sorbent materials synthesized in TA1. TA2 consists of three fundamental elements: modeling, component design, and system integration. These areas will require technical innovation as part of a design-build-test-learn cycle that will iterate on an initial foundation established in the early stages of the program (i.e., the model should feed into component design, which will inform system integration).

Modeling. Systematic and complete analyses of water harvesting devices to identify theoretical efficiency limits and major energy losses are not presently available. These models will be needed to engineer an optimized system. Modeling efforts should be included early in the program to define initial component-level requirements for systems and provide a framework for how the proposed device is intended to operate. As part of this, a process flow diagram and/or prototype schematic should be included as part of the proposal. Revisions to the design are expected as system modeling progresses, and refinement of the model through the duration of the program may prove useful in the design-build-test-learn cycle to optimize the components, system, and sorbent properties. Proposers will be expected to develop component and integrated system models that consider factors such as the following:

- Airflow optimization
- Temperature control
- Mass transfer
- Heat transfer

- Sorbent materials integration

Component Design. Performers will need to design and develop individual components of the system that will maximize performance of the selected sorbents. For instance, support substrates for the sorbents will need to be tuned to maximize heat and mass transfer through the material. Design of heat exchanger and condenser components may leverage advances in additive manufacturing. Although initial component design is envisioned to conclude in Phase I of the program, refinement and optimization of these components is expected to continue in Phase II as part of a design-build-test-learn cycle. Key components may include, but are not limited to:

- Support substrates for sorbents
- Heat exchangers
- Condensers
- Process control systems
- In-line water purification (if needed)

System Integration. A holistic, co-design approach that integrates and iterates the materials, components, and system modeling in a design-build-test-learn cycle will be needed to achieve a device with optimized water output and minimized SWaP parameters. Approaches such as topology optimization may be used to unify all of the necessary design elements. An integrated system prototype utilizing the sorbent described in the Month 12 Sorbent Metrics Report is expected by Month 22 of the program and a final prototype system using the sorbent described in the Month 36 Sorbent Metrics Report is expected at the end of Month 48. These mid-term and final Capability Demonstrations will allow performers to show progress towards the end-of-program objectives (Section 1.3). The system prototype should be suitable for Independent Verification and Validation (IV&V) testing by independent experts.

The following information should be included in the proposal to address TA2 challenges:

- Approach for component- and systems-level modeling;
- Process flow and/or prototype schematic detailing starting point(s) for device development and iteration;
- Proposed strategies for sorbent support materials and design to maximize water adsorption characteristics and minimize water desorption energetics;
- Fabrication and prototyping proficiencies, including additive manufacturing and topology optimization capabilities (as needed); and
- Description of design-build-test-learn cycle to be used for device optimization, particularly with respect to water output and SWaP characteristics.

1.2.2. Program Tracks

AWE will address atmospheric water extraction needs in two tracks: (1) expeditionary and (2) stabilization. The expeditionary unit will provide sufficient drinking water for an individual warfighter, with SWaP parameters restricted by the need for portability and operation in austere

environments. The stabilization device will provide the daily drinking needs for up to 150 people (i.e., a company or humanitarian mission), with SWaP requirements tailored to resources typically available to missions of that scale.

While the technical areas described in Section 1.2.1 are identical in either track, the end-of-program objective metrics differ significantly between the two tracks (Section 1.3.1) and the sorbent, engineering, and device design will vary between tracks.

Proposers may propose to one or both tracks. Separate proposals should be submitted for those proposing to both tracks.

1.2.3. Program Structure

AWE is divided into two sequential phases: Phase I (Base) for 24 months and Phase II (Option) for 24 months (Figure 1). Proposers must present a plan for no more than 4 years that includes a comprehensive approach for meeting all program metrics in either the expeditionary or stabilization track (Section 1.2.2). Progression from Phase I to Phase II is dependent on successful completion of Phase-specific goals in the mid-term Capability Demonstration described below (Section 1.2.4).

Phase I (Base, 24 months)
During the 24-month Phase I, performers will synthesize and characterize new sorbent materials and optimize the best materials for atmospheric water extraction (TA1). Performers will develop component- and system-level models of an atmospheric water extraction device, and design and prototype components, as well as the integrated system (TA2). Performers should show progress in their material development through a Sorbent Metrics Report at Month 12. An integrated material/system Capability Demonstration near the end of Phase I (Month 22) will demonstrate progress towards the end-of-program objectives (Sections 1.2.4 and 1.3.2).

Phase II (Option, 24 months)
A 24-month Phase II will focus on a design-build-test-learn cycle to iteratively improve on the materials, components, and system designed in Phase I. Phase II requirements include optimization of the sorbent properties to the device and production of the sorbent at scales suitable for multiple prototype development (TA1), as well as component and system optimization and development and delivery of a prototype device that meets all program metrics (TA2). A final Capability Demonstration (Month 48) will demonstrate that performers have met the end-of-program objectives (Section 1.2.4 and 1.3.1).

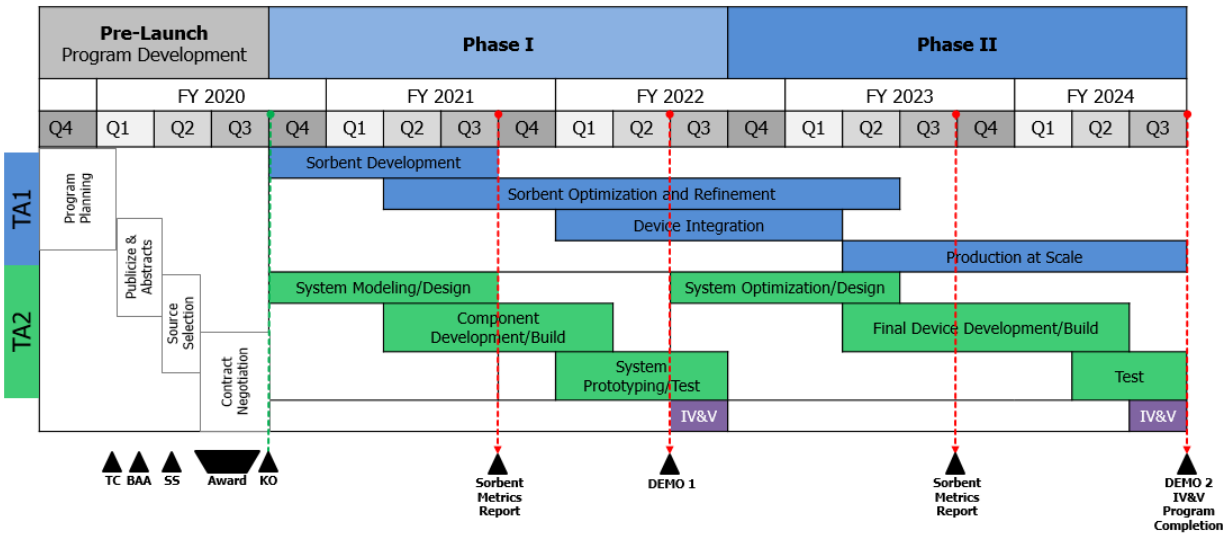

Figure 1. Program Schedule and General Overview

1.2.4. Sorbent Metric Reports and Capability Demonstrations

A Sorbent Metrics Report at Month 12 of the program will validate that performers are on track in the development of their sorbent material. Performers will be expected to detail progress toward predetermined metrics and properties that can be quantitatively measured through established characterization techniques.

The material described in the Sorbent Metrics Report at Month 12 should be used in the subsequent Capability Demonstration at Month 22 (Demo 1, Figure 1). A second Sorbent Metrics Report will be expected in Month 36 of the program. The material described in the Month 36 Sorbent Metrics Report should be employed in the device for the end-of-program demonstration (Demo 2, Figure 1).

A Capability Demonstration at Month 22 will validate that the performers are making adequate progress towards the end-of-program objectives, with the ability to meet water output and potability objectives under a defined set of SWaP parameters in the appropriate track (Section 1.3.2). At the end of the program, a similar Capability Demonstration will be required to verify that the device has met the end-of-program objectives (Section 1.3.1).

Both Capability Demonstrations will be coupled with Independent Verification and Validation (IV&V, Section 1.2.5) provided by independent experts to verify the reported water output, water quality, and SWaP metrics for the prototype device. The first set of IV&V will take place after the Capability Demonstration at Month 22 of the program and will inform the Phase I – Phase II transition. More extensive IV&V will take place in the last quarter of the program (starting at Month 45), that will evaluate water output, SWaP parameters, and may also include field testing.

1.2.5. Independent Verification and Validation

Sorbent materials and systems developed throughout the program will undergo IV&V using a team established by DARPA that will help test and validate progress. The IV&V team will consist of subject matter experts from Government organizations, Federally Funded Research and Development Centers (FFRDCs), and/or other relevant domains. IV&V may include verification of sorbent material characteristics, as well as water output, water quality, and SWaP metrics for the prototype device.

To avoid potential conflicts of interest, AWE performers will not be allowed to compete for the IV&V contract. DARPA is not soliciting proposals for IV&V under HR001120S0014.

Government teams interested in participating in IV&V should not respond to this BAA but should rather indicate their interest in the AWE program by reaching out directly to the DARPA Program Manager.

1.3. PROGRAM METRICS

For the Government to evaluate how effectively a proposed solution will achieve the stated program objectives, the Government hereby promulgates the following program metrics that may serve as the basis for determination of satisfactory progress to warrant continued funding. Although the desired program metrics are specified (Section 1.3.1-2, Tables 2-3), proposers should note that the Government has identified these goals with the intention of bounding the scope of effort while affording the maximum flexibility, creativity, and innovation to proposed solutions to the stated problem. Proposals should cite the quantitative and qualitative success criteria that the effort will achieve by each Phase's program milestone and intermediary metric measurement. **The criteria put forward by proposers should outline the metrics that their strategy will attain, not simply reflect the aspirational objectives set forward below**.

1.3.1. End-of-Program Objectives

Proposers should plan to design and optimize their atmospheric water extraction systems against the end-of-program objectives and derived metrics laid out below and summarized in Table 2. These metrics aggressively target an increase in water output as compared to current state-of-the-art atmospheric water generation systems while significantly reducing SWaP requirements. The metrics outlined in Tables 2 and 3 represent the ideal outcome of the program.

In order to assist proposers in responding to the areas of greatest importance for the program, the metrics are split into two categories: objectives and derived metrics. For the purposes of this solicitation, objectives should be considered fixed targets. Derived metrics will be measured and considered over the course of the program, and these metrics should be clearly defined by proposers and re-evaluated after the first prototype of the device (end of Phase I). Both the objectives and derived metrics are prioritized and further detailed below. Proposers should clearly indicate their own set of anticipated target metrics in their proposal and in the Specific Program Plan (Attachment 4), achievement of which will be assessed in a Capability Demonstration at the end of the program and will be validated by external IV&V partners.

Metric Prioritization for Expeditionary Track

Table 2. Expeditionary Track End-of-Program Summary Objectives and Derived Metrics

Objectives	
Output	≥5.5 L/day @40 °F (~4 °C), 50% RH ≥5.5 L/day @80 °F (~27 °C), 10% RH ≥7.5 L/day @110 °F (~43 °C), 60% RH
Weight	≤2.5 kg (dry weight), including power source for 24 hour run-time
Potability	Long-term potability military field standards, as defined in TB-Med-577
Derived Metrics	
Size	Device volume not to exceed 1.5 liters (not including reservoir)
Power	On-board power limited by size/weight requirements
Operational Lifetime	Meet above metrics during continuous operation for ≥30 days

The objectives and derived metrics defined for the Expeditionary Track are driven by the needs of the end-user. As such, those parameters that make the device useful for field deployment (i.e., sufficiently beneficial to the warfighter to justify the added weight of carrying the device) are those that should be prioritized. Devices that rely principally on current battery technology for power will likely be too cumbersome, especially when the additional weight required for multi-day operation is considered. Therefore, a successful expeditionary device will likely require creative solutions that maximize the use of passive or alternative energy sources.

1. Objective: The system must provide sufficient water output to supply or substantively augment the potable water needs of an individual warfighter.
2. Derived metric: The device should be designed with an eye towards minimizing power requirements and, where external power is necessary, employing readily-accessible power sources that are compatible with use in austere environments. The weight of a proposed device should be reported, including the weight of any external power source (assume 24-hour run time for end-of-program metrics).
    - Readily available, disposable power supplies for the warfighter include AA alkaline batteries, 123 Li batteries, and BA5590 batteries.
    - PV solar cells may present a burden in the field, and their inclusion should be weighed against tactical considerations, portability, and functionality with respect to warfighter mobility.
3. Objective: The weight of the device should be minimized for portability in the field.
4. Derived metric: the size of the device should be minimized for portability in the field.
5. Objective: Water should be potable without further treatment.
6. Derived metric: The device should be continuously operable with minimal or no maintenance for ≥30 days.

Additional considerations:

- The device need not include a reservoir for water collection but should be adaptable to common systems (e.g., Camelback bladder, MSR bladder, Nalgene bottle).
- Proposers should plan to deliver at least 5 units to DARPA, IV&V partners, and DoD stakeholders for testing at the end of the program.

Metric Prioritization for Stabilization Track

Table 3. Stabilization Track End-of-Program Summary Objectives and Derived Metrics

Objective	
Power	≤42 Wh/L H_2O @40 °F (~4 °C), 50% RH ≤42 Wh/L H_2O @80 °F (~27 °C), 10% RH ≤42 Wh/L H_2O @110 °F (~43 °C), 60% RH
Potability	Long-term potability military field standards, as defined in TB-Med-577
Derived Metrics	
Size	Max footprint of 0.75 m^2, contained on a standard military palette (40'×48", ~1 m×1.2 m)
Weight	≤138 kg (dry weight, military 4-man lift weight, 305 lbs)
Output	≥1150 L/day @40 °F (~4 °C), 50% RH ≥1150 L/day @80 °F (~27 °C), 10% RH ≥1150 L/day @110 °F (~43 °C), 60% RH
Operational Lifetime	Meet above metrics during continuous operation for ≥30 days

The metrics for the Stabilization Track are derived from: (1) DoD requirements to attain a satisfactory fuel (or power) consumption to water output ratio, and (2) end-user input. Attaining this energy metric is critical to enabling adoption of the technology by the DoD and is a core program objective, whereas the latter guides a broad set of use cases where the device could be deployed and forms the derived metrics of the program.

1. Objective: The device should minimize the power requirement per liter of water generated. Extracting seven liters of water per liter of fuel (or equivalent water/power ratio) is the minimum threshold required to be of utility to the DoD, and significant improvements over that ratio are expected for this program.
2. Derived metrics: Size and weight of the device should be minimized to allow for facile (e.g., vehicular) transport of the device.
3. Derived metric: Water output of the device should be maximized. A target output for a device serving 150 people is ≥1150 L/day. However, a device serving a smaller number of people and operating on a reduced power source (e.g., a vehicle alternator instead of a generator) will be given equal consideration. A threshold output of ≥120 L/day is strongly recommended.
4. Objective: Water should be potable without further treatment.
5. Derived metric: The device should be continuously operable with minimal or no

maintenance for ≥30 days.

Additional considerations:

- The device need not include a reservoir but should include a means of filling one.
- Proposers should plan to deliver one unit to DARPA, IV&V partners, and DoD stakeholders for testing at the end of the program.

1.3.2 Mid-Program Capability Demonstration

To assess progress towards the end-of-program objectives (Section 1.3.1), proposers should prepare for a Capability Demonstration at Month 22 of the program. Objectives for this demonstration are summarized in Table 4. Proposers should also consider derived metrics (as defined above for each track) and may include target-derived metrics in the Specific Program Plan (Attachment 4). The ability to meet the track-specific objectives primarily, as well as derived metrics secondarily, will inform whether performers progress to Phase II of the program (i.e., from base to option).

Table 4. Month 22 Capability Demonstration Objectives

Expeditionary Track Objectives	
Output	≥1 liter/day under test conditions*
Size	Device volume not to exceed 6 liters (not including reservoir)
Weight	≤7 kg (dry weight), including power source for 24-hour run-time
Stabilization Track Objective	
Power	≤420 Wh/L H_2O under test conditions*

*The three test conditions are as follows (1) 40 ^oF (~4 ^oC), 50% RH, (2) 80 ^oF (~27 ^oC), 10% RH, and (3) 110 ^oF (~43 ^oC), 60% RH

1.4. GENERAL REQUIREMENTS

1.4.1. Proposing Teams

It is expected that proposals will involve multidisciplinary teams with expertise from multiple complementary disciplines (e.g., chemistry, materials science, engineering, etc.). Specific content, communications, networking, and team formation are the sole responsibility of the proposer teams. Proposer teams must submit a single, integrated proposal led by a single Principal Investigator under a single prime contractor that addresses all program technical areas and phases, as applicable. Proposer teams (from the same or different institutions) should be assembled as a single research entity, and report as such. Proposer teams should include a Project Manager for administrative, financial, and management oversight of the proposed program.

DARPA will hold a Proposers Day (see Section 8, Other Information) to facilitate the formation of proposer teams with the expertise necessary to meet the goals of the program and will share information among interested proposers through the DARPA Opportunities Page.

1.4.2. Commercialization Plan

Proposers are encouraged to present a plan for commercialization of the technologies developed during the program or for transition to commercial entities. It is critical that the prototype units funded by the AWE program be designed in a manner that position them for further development and deployment by the end of the program.

1.4.3. Deliverables

All products, material and otherwise, to be provided to the Government as outcomes from conducted research should be defined in the proposal. Performers need to allot time and budget to fulfill obligations for travel to review meetings and the transmission of report documentation.

Monthly financial reports: Performers are required to provide financial status updates. The prime Performer shall include information for itself and all subawardees/subcontractors. These reports should be in the form of an editable Microsoft (MS) Excel™ file, and should provide financial data including, but not limited to:

- Program spend plan by phase and task
- Incurred program expenditures to date by phase and task
- Invoiced program expenditures to date by phase and task

Monthly technical progress reports: Performers are required to provide monthly research updates in the form of a standardized slide presentation given to DARPA and discussed with the program management team via teleconference. Length and detail level is at the discretion of the Program Manager.

Semi-annual program reviews: Leadership from each performer team (with additional key personnel at the discretion of the Principal Investigator [PI]) will be required to present research progress in person at program review meetings. The purpose of these reviews is to ensure adequate engagement with the DARPA team to discuss details that might otherwise fall outside the scope of a routine technical brief, and provide opportunities to discuss progress towards milestones and scientific goals, any ongoing technical or programmatic challenges that must be overcome to achieve the overarching goals of the program.

End of Phase report: Three months prior to the end of Phase I (i.e., at Month 21), performers must draft and present to DARPA a written report of all research activities and metrics satisfied. This report should contain as much supporting data as possible.

Final Program Report: When the final funding phase closes out, performer teams must provide a final report summarizing all research activities, outcomes, and materials discovered during the program; publications, research presentations, patent applications that result from the research pursued; and any additional deliverables requested by the DARPA contracting agent for this program.

2. Award Information

2.1. GENERAL AWARD INFORMATION

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

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation and to make awards without discussions with proposers. The Government also reserves the right to conduct discussions if it is later determined 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, as applicable.

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 (see Section VI.B.2., "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/or cost/price within a reasonable time, and the proposer fails to timely provide requested additional information. Proposals identified for negotiation may result in a procurement contract, cooperative agreement, or other transaction, depending upon the nature of the work proposed, the required degree of interaction between parties, whether or not the research is classified as Fundamental Research, and other factors.

Proposers looking for innovative, commercial-like contractual arrangements are encouraged to consider requesting Other Transactions. To understand the flexibility and options associated with Other Transactions, consult http://www.darpa.mil/work-with-us/contract-management#OtherTransactions.

In accordance with 10 U.S.C. § 2371b(f), the Government may award a follow-on production contract or Other Transaction (OT) for any OT awarded under this BAA if: (1) that participant in the OT, or a recognized successor in interest to the OT, successfully completed the entire prototype project provided for in the OT, as modified; and (2) the OT provides for the award of a follow-on production contract or OT to the participant, or a recognized successor in interest to the OT.

In all cases, the Government contracting officer shall have sole discretion to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort 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. For more information on publication restrictions, see the section below on Fundamental Research.

2.2. FUNDAMENTAL RESEARCH

It is DoD policy that the publication of products of fundamental research will remain unrestricted to the maximum extent possible. National Security Decision Directive (NSDD) 189 defines fundamental research as follows:

> 'Fundamental research' means 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.

As of the date of publication of this BAA, the Government expects that program goals as described herein may be met by proposed efforts for fundamental research and non-fundamental research. Some proposed research may present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Based on the anticipated type of proposer (e.g., university or industry) and the nature of the solicited work, the Government expects that some awards will include restrictions on the resultant research that will require the awardee to seek DARPA permission before publishing any information or results relative to the program.

Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to determine whether the proposed research shall be considered fundamental and to select the award instrument type. Appropriate language will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This language can be found at http://www.darpa.mil/work-with-us/additional-baa.

For certain research projects, it may be possible that although the research to be performed by a potential awardee is non-fundamental research, its proposed subawardee's effort may be fundamental research. It is also possible that the research performed by a potential awardee is fundamental research while its proposed subawardee's effort may be non-fundamental research. In all cases, it is the potential awardee's responsibility to explain in its proposal which proposed efforts are fundamental research and why the proposed efforts should be considered fundamental research.

3. Eligibility Information

3.1. ELIGIBLE APPLICANTS

All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA.

3.1.1. Federally Funded Research and Development Centers (FFRDCs) and Government Entities

FFRDCs

FFRDCs are subject to applicable direct competition limitations and cannot propose to this BAA in any capacity unless they meet the following conditions. (1) FFRDCs must clearly demonstrate that the proposed work is not otherwise available from the private sector. (2) FFRDCs must provide a letter, on official letterhead from their sponsoring organization, that (a) cites the specific authority establishing their eligibility to propose to Government solicitations and compete with industry, and (b) certifies the FFRDC's compliance with the associated FFRDC sponsor agreement's terms and conditions. These conditions are a requirement for FFRDCs proposing to be awardees or subawardees.

Government Entities

Government Entities (e.g., Government/National laboratories, military educational institutions, etc.) are subject to applicable direct competition limitations. 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 and contractual authority, if relevant, establishing their ability to propose to Government solicitations and compete with industry. This information is required for Government Entities proposing to be awardees or subawardees.

Authority and Eligibility

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 FFRDC and Government Entity eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the proposer.

3.1.2. Non-U.S. Organizations

Non-U.S. organizations and/or individuals may participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances.

3.2. ORGANIZATIONAL CONFLICTS OF INTEREST

FAR 9.5 Requirements

In accordance with FAR 9.5, proposers are required to identify and disclose all facts relevant to potential OCIs involving the proposer's organization and *any* proposed team member (subawardee, consultant). Under this Section, the proposer is responsible for providing this disclosure with each proposal submitted to the BAA. The disclosure must include the proposer's, and as applicable, proposed team member's OCI mitigation plan. The OCI mitigation plan must include a description of the actions the proposer has taken, or intends to take, to prevent the existence of conflicting roles that might bias the proposer's judgment and to prevent the proposer from having unfair competitive advantage. The OCI mitigation plan will specifically discuss the disclosed OCI in the context of each of the OCI limitations outlined in FAR 9.505-1 through FAR 9.505-4.

Agency Supplemental OCI Policy
In addition, DARPA has a supplemental OCI policy that prohibits contractors/performers from concurrently providing Scientific Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS) or similar support services and being a technical performer. Therefore, as part of the FAR 9.5 disclosure requirement above, a proposer must affirm whether the proposer or *any* proposed team member (subawardee, consultant) is providing SETA, A&AS, or similar support to any DARPA office(s) under: (a) a current award or subaward; or (b) a past award or subaward that ended within one calendar year prior to the proposal's submission date.

If SETA, A&AS, or similar support is being or was provided to any DARPA office(s), the proposal must include:

- The name of the DARPA office receiving the support;
- The prime contract number;
- Identification of proposed team member (subawardee, consultant) providing the support; and
- An OCI mitigation plan in accordance with FAR 9.5.

Government Procedures
In accordance with FAR 9.503, 9.504 and 9.506, the Government will evaluate OCI mitigation plans to avoid, neutralize or mitigate potential OCI issues before award and to determine whether it is in the Government's interest to grant a waiver. The Government will only evaluate OCI mitigation plans for proposals that are determined selectable under the BAA evaluation criteria and funding availability.

The Government may require proposers to provide additional information to assist the Government in evaluating the proposer's OCI mitigation plan.

If the Government determines that a proposer failed to fully disclose an OCI; or failed to provide the affirmation of DARPA support as described above; or failed to reasonably provide additional information requested by the Government to assist in evaluating the proposer's OCI mitigation plan, the Government may reject the proposal and withdraw it from consideration for award.

3.3. COST SHARING/MATCHING

Cost sharing is not required; however, it will be carefully considered where there is an applicable statutory condition relating to the selected funding instrument. Cost sharing is encouraged where there is a reasonable probability of a potential commercial application related to the proposed research and development effort.

4. Application and Submission Information

4.1. ADDRESS TO REQUEST APPLICATION PACKAGE

This announcement, any attachments, and any references to external websites herein constitute the total solicitation. If proposers cannot access the referenced material posted in the announcement found at http://www.darpa.mil, contact the administrative contact listed herein.

4.2. CONTENT AND FORM OF APPLICATION SUBMISSION

All submissions, including abstracts and proposals, must be written in English with type no smaller than 12-point font. A smaller font may be used for figures, tables, and charts. The page limitation includes all figures, tables, and charts. All pages shall be formatted for printing on 8-1/2 by 11-inch paper. Margins must be 1-inch on all sides. Copies of all documents submitted must be clearly labeled with the DARPA BAA number, proposer organization, and proposal title/proposal short title.

4.2.1. Proposal Abstract Format

Proposers are strongly encouraged to submit an abstract in advance of a full proposal to minimize effort and reduce the potential expense of preparing an out of scope proposal. DARPA will respond to abstracts providing feedback and indicating whether, after preliminary review, there is interest within BTO for the proposed work. DARPA will attempt to reply within 20 calendar days of receipt. Proposals may be submitted irrespective of comments or feedback received in response to the abstract. Proposals are reviewed without regard to feedback given as a result of abstract review. The time and date for submission of proposal abstracts are specified in Part I above.

The abstract is a concise version of the proposal comprising a maximum of **eight (8)** pages including all figures, tables, and charts. All submissions must be written in English with type no smaller than 12-point font. A smaller font may be used for figures, tables, and charts. All pages shall be formatted for printing on 8-1/2 by 11-inch paper. Margins must be 1-inch on all sides. Copies of all documents submitted must be clearly labeled with the DARPA BAA number, proposer organization, and proposal abstract title.

The page limit does NOT include:

- Official transmittal letter (optional);
- Cover sheet;
- Executive summary slide;
- Specific program plan;
- Resumes; and
- Bibliography (optional).

Abstracts must include the following components:

> **A. Cover Sheet (does not count towards page limit):** Include the administrative and technical points of contact (name, address, phone, fax, e-mail, lead organization). Also include the BAA number, title of the proposed project, primary subcontractors, estimated cost, duration of the project, and the label "ABSTRACT."
>
> **B. Executive Summary Slide (does not count towards page limit):** The slide template is provided as **Attachment 1** to the BAA posted at https://beta.sam.gov. Use of this template is required.

C. Goals and Impact: Clearly describe what is being proposed and what difference it will make (qualitatively and quantitatively), including brief answers to the following questions:

1. What is the proposed work attempting to accomplish or do?
2. How is it done today? And what are the limitations?
3. What is innovative in your approach, and how does it compare to the current state-of-the-art (SOA)?
4. What are the key technical challenges in your approach, and how do you plan to overcome these?
5. Who will care, and what will the impact be if you are successful?
6. How much will it cost and how long will it take?

D. Technical Plan: Outline and address all technical areas and challenges inherent in the approach and possible solutions for overcoming potential problems. This section should provide specific objectives, metrics, and milestones at intermediate stages of the project to demonstrate a plan for accomplishment of the program goals. Propose additional appropriate qualitative and quantitative metrics specific to the approach, as needed. Outline of intermediary milestones should occur at no greater than 6-month increments.

E. Specific Program Plan (does not count towards page limit): Summarize targeted material, including its properties and scalability goals. Summarize target metrics for the Capability Demonstrations at Month 22 and end-of-program. It is encouraged, though not required, to use the Specific Program Plan template provided as **Attachment 4**.

F. Management and Capabilities: Provide a brief summary of expertise of the team, including subcontractors and key personnel.

A principal investigator for the project and a description of the team's organization, including a breakdown by Technical Area (TA), must be identified. All teams are strongly encouraged to identify a Project Manager/Integrator to serve as the primary point of contact to communicate with the DARPA Program Manager, IV&V partner, and Contracting Officer's Representative, coordinate the effort across co-performer, vendor, and subcontractor teams, organize regular performer meetings or discussions, facilitate data sharing, and ensure timely completion of milestones and deliverables.

Include a description of the team's organization, including roles and responsibilities. Team member descriptions should address the Technical Plan, describe the time and percent effort divisions for members participating across multiple TAs, and delineate individuals to avoid duplication of efforts.

Describe the organizational experience in this area, existing intellectual property required to complete the project, and any specialized facilities to be used as part of the project. List Government-furnished materials or data assumed to be available. Describe any specialized facilities to be used as part of the project, the extent of access to these facilities, and any biological containment, biosafety, and certification requirements.

G. Cost and Schedule: Provide a cost estimate for resources over the proposed timeline of the project, broken down by phase and major cost items (e.g., labor, materials, etc.). Include cost estimates for each potential subcontractor (may be a rough order of magnitude).

4.2.2. Proposal Format

All full proposals must be in the format given below. Proposals shall consist of two volumes: 1) **Volume I, Technical and Management Proposal**, and 2) **Volume II, Cost Proposal.** All submissions must be written in English with type no smaller than 12-point font. A smaller font may be used for figures, tables, and charts. The page limitation includes all figures, tables, and charts. All pages shall be formatted for printing on 8-1/2 by 11- inch paper. Margins must be 1-inch on all sides. Copies of all documents submitted must be clearly labeled with the DARPA BAA number, proposer organization, and proposal title/proposal short title. Volume I, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) which document the technical ideas and approach upon which the proposal is based. Copies of not more than three (3) relevant papers may be included with the submission. The bibliography and attached papers are not included in the page counts given below. The submission of other supporting materials along with the proposals is strongly discouraged and will not be considered for review. **The maximum page count for Volume I is 40 pages.** The official transmittal letter is not included in the page count. Volume I should include the following components:

NOTE: Non-conforming submissions that do not address both technical areas and/or follow the instructions herein may be rejected without further review.

a. Volume I, Technical and Management Proposal

Section I. Administrative

A. Cover Sheet (LABELED "PROPOSAL: VOLUME I") to include:

1. BAA number (HR001120S0014);
2. Lead organization submitting proposal (prime contractor);
3. Type of organization, selected from among the following categories: "LARGE BUSINESS," "SMALL DISADVANTAGED BUSINESS," "OTHER SMALL BUSINESS," "HBCU," "MI," "OTHER EDUCATIONAL," OR "OTHER NONPROFIT";
4. Proposer'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 (Program Manager or Principle Investigator) to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), e-mail (if available);

8. Administrative point of contact (Contracting Officer or Award Officer) to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), e-mail (if available);
9. Award instrument requested: cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), cooperative agreement, or other transaction;
10. Place(s) of performance, including all subcontractors and consultants;
11. Period of performance;
12. Total funds requested from DARPA, total funds requested per phase and the amount of any cost share (if any);
13. Proposal validity period; AND
14. Date proposal was submitted.

Information on award instruments is available at http://www.darpa.mil/work-with-us/contract-management.

B. Official Transmittal Letter.

C. Executive Summary Slide: The slide template is provided as **Attachment 1** to the BAA posted at https://beta.sam.gov. Use of this template is required.

Section II. Detailed Proposal Information

A. Executive Summary: Provide a synopsis of the proposed project, including answers to the following questions:

- What is the proposed work attempting to accomplish or do?
- How is it done today, and what are the limitations?
- What is innovative in your approach?
- What are the key technical challenges in your approach, and how do you plan to overcome these?
- Who or what will be affected, and what will be the impact if the work is successful?
- How much will it cost, and how long will it take?

B. Goals and Impact: Clearly describe what the team is trying to achieve and the difference it will make (qualitatively and quantitatively) if successful. Describe the innovative aspects of the project in the context of existing capabilities and approaches, clearly delineating the uniqueness and benefits of this project in the context of the state of the art, alternative approaches, and other projects from the past and present. Describe how the proposed project is revolutionary and how it significantly rises above the current state-of-the-art. Describe the deliverables associated with the proposed project

and any plans to commercialize the technology, transition it to a customer, or further the work.

C. Technical Plan: Outline and address technical challenges inherent in the approach and possible solutions for overcoming potential problems. This section should provide appropriate measurable milestones (quantitative if possible) at intermediate stages of the program to demonstrate progress and a plan for achieving the milestones. The technical plan should demonstrate a deep understanding of the technical challenges and present a credible (even if risky) plan to achieve the program goal. Discuss mitigation of technical risk.

D. Specific Program Plan (does not count towards page limit): Summarize targeted material, including its properties and scalability goals. Summarize target metrics for the Capability Demonstrations at Month 22 and end-of-program. It is encouraged, though not required, to use the Specific Program Plan template provided as **Attachment 2**.

E. Management Plan: Provide a summary of expertise of the team, including any subcontractors, and key personnel who will be doing the work. A Principal Investigator (PI) for the project must be identified, along with a description of the team organization, including the breakdown by technical area. All teams are strongly encouraged to identify a Project Manager/Integrator to serve as the primary point of contact to communicate with the DARPA Program Manager, IV&V partner, and Contracting Officer's Representative, coordinate the effort across co-performer, vendor, and subcontractor teams, organize regular performer meetings or discussions, facilitate data sharing, and ensure timely completion of milestones and deliverables.

Provide a clear description of the team's organization including an organization chart that includes, as applicable: the programmatic relationship of team members; the unique capabilities of team members; the task responsibilities of team members, the teaming strategy among the team members; and key personnel with the amount of effort to be expended by each person during each year. Provide a detailed plan for coordination, including explicit guidelines for interaction among collaborators/subcontractors of the proposed effort. Include risk management approaches. Describe any formal teaming agreements that are required to execute this program.

F. Capabilities: Describe organizational experience in relevant subject area(s), existing intellectual property, specialized facilities, and any Government-furnished materials or information. Describe any specialized facilities to be used as part of the project, the extent of access to these facilities, and any biological containment, biosafety, and certification requirements. Discuss any work in closely related research areas and previous accomplishments.

G. Statement of Work (SOW) (does not count towards page limit): The SOW should provide a detailed task breakdown, citing specific tasks for each technical area, and their connection to the milestones and program metrics. Each phase of the program should be separately defined. The SOW must not include proprietary information. It is encouraged, though not required, to use the SOW template provided as **Attachment 3**. The SOW is not included in the Volume 1 page count.

For each task/subtask, provide:

- A detailed description of the approach to be taken to accomplish each defined task/subtask.,
- Identification of the primary organization responsible for task execution (prime contractor, subcontractor(s), consultant(s), by name).
- A measurable milestone, i.e., a deliverable, demonstration, or other event/activity that marks task completion. Include completion dates for all milestones. Include quantitative metrics.
- A definition of all deliverables (e.g., data, reports, software) to be provided to the Government in support of the proposed tasks/subtasks.

NOTE: It is recommended that the SOW be developed so that each technical area and Phase of the program is separately defined.

Do not include any proprietary information in the SOW.

H. Schedule and Milestones: Provide a detailed schedule showing tasks (task name, duration, work breakdown structure element as applicable, performing organization), milestones, and the interrelationships among tasks. The task structure must be consistent with that in the SOW. Measurable milestones should be clearly articulated and defined in time relative to the start of the project. It is encouraged, though not required, to use the Gantt Chart template provided as **Attachment 4**.

I. Commercialization Plan: Provide information regarding the types of partners (e.g., government, private industry) that will be pursued and submit a timeline with incremental milestones toward successful engagement. The plan should include a description of how DARPA will be included in the development of potential technology transfer relationships. If the Commercialization Plan includes the formation of a start-up company, a business development strategy must also be provided.

a. Volume II, Cost Management Proposal

Cover Sheet (LABELED "PROPOSAL: VOLUME II"):

1. BAA Number (HR001120S0014);

2. Lead organization submitting proposal;
3. Type of organization, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT";
4. Proposer'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 (Program Manager or Principal Investigator) 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 (Contracting Officer or Award Officer) 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: cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), cooperative agreement, or other transaction;
10. Place(s) of performance, including all subcontractors and consultants;
11. Period of performance;
12. Total proposed cost separated by Task Area and Phase (as defined in Figure 1), and the amount of any cost share (if any);
13. Name, address, and telephone number of the proposer's cognizant Defense Contract Management Agency (DCMA) administration office (*if known)*;
14. Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
15. Date proposal was prepared;
16. Data Universal Numbering System (DUNS) number (http://www.dnb.com/get-a-duns-number.html);
17. Taxpayer ID number (https://www.irs.gov/Individuals/International-Taxpayers/Taxpayer-Identification-Numbers-TIN);
18. Commercial and Government Entity (CAGE) code (https://cage.dla.mil/Home/UsageAgree);
19. Proposal validity period

The Government strongly encourages that proposers use the provided MS Excel™ cost proposal spreadsheet (Attachment 5) in the development of their cost proposals. All tabs and tables in MS Excel™ cost proposal spreadsheet should be developed in an editable format with calculation formulas intact to allow traceability of the cost proposal numbers across the spreadsheet. This MS Excel™ cost proposal spreadsheet should be used by the prime organization and all subcontractors. In addition to using the MS Excel™ cost proposal spreadsheet, Volume II still must include all other items discussed below that are not covered by the editable spreadsheet. Subcontractor MS Excel™ cost proposal spreadsheets may be submitted directly to the Government by the proposed subcontractor via e-mail to the address in

Part I of this BAA. Using the provided MS Excel™ cost proposal spreadsheet will assist the Government in a rapid analysis of your proposed costs and, if your proposal is selected for award, speed up the negotiation and award execution process.

(1) Total program, per phase (Phase I (Base), Phase II (Option)) and per task cost broken down by major cost items to include:

i. **Direct labor** – provide an itemized breakout of all personnel, listed by name or TBD, with labor rate (or salary), labor hours (or percent effort), and labor category. All senior personnel must be identified by name.

ii. **Materials and Supplies** – itemized list, which includes description of material, quantity, unit price, and total price. If a material factor is used based on historical purchases, provide data to justify the rate.

iii. **Equipment** – itemized list, which includes description of equipment, unit price, quantity, and total price. Any equipment item with a unit price over $5,000 must include a vendor quote.

iv. **Animal Use Costs** – itemized list of all materials, animal purchases, and per diem costs, associated with proposed animal use; include documentation supporting daily rates.

v. Travel – provide an itemized list of travel costs to include purpose of trips, departure and arrival destinations, projected airfare, rental car and GSA approved per diem, number of travelers, number of days); provide screenshots from travel website for proposed airfare and rental car, as applicable; provide screenshot or web link for conference registration fee and note if the fee includes hotel cost. Conference attendance must be justified, explain how it is in the best interest of the project. **Plan for two (2) DARPA program review meetings per year.**

vi. Other Direct Costs (e.g., computer support, clean room fees) – Should be itemized with costs or estimated costs. Backup documentation and/or a supporting cost breakdown is required to support proposed costs with a unit price over $5,000. An explanation of any estimating factors, including their derivation and application, must be provided. Please include a brief description of the proposers' procurement method to be used.

vii. **Other Direct Costs** – Consultants: provide executed Consultant Agreement that describes work scope, rate and hours.

viii. **Indirect costs** including, as applicable, fringe benefits, overhead, General and Administrative (G&A) expense, and cost of money (see university vs. company specific requirements below).

ix. **Indirect costs specific to a University performer:** (1) **Fringe Benefit Rate** (provide current Department of Health and Human Services (DHHS) or Office of Naval Research (ONR) negotiated rate package; if calculated by other than a rate, provide University documentation identifying fringe costs by position or HR documentation if unique to each person); (2) **F&A Indirect Overhead Rate** (provide current DHHS or ONR negotiated rate package); (3) **Tuition Remission** (provide current University documentation justifying per student amount); and (4) **Health Insurance/Fee** (provide current University documentation justifying per

student amount, if priced separately from fringe benefits with calculations included in the EXCEL cost file).

x. **Indirect costs specific to a Company performer:** (1) **Fee/Profit** (provide rationale for proposed fee/profit percentage using criteria found in DFARS 215.404-70); and (2) **Fringe Benefit/Labor OH/Material OH/G&A Rates** (provide current Forwarding Pricing Rate Proposal (FPRP) or DCMA/DCAA Forward Pricing Rate Recommendation or Agreement (FPRR or FPRA). If these documents are not available, provide company historical data, preferably two years, minimum of one, to include both pool and expense costs used to generate the rates).

(2) A summary of total program costs by Phase I and II and task.

(3) An itemization of Subcontracts. All subcontractor cost proposal documentation must be prepared at the same level of detail as that required of the prime. Subcontractor proposals should include Interdivisional Work Transfer Agreements (IWTA) or evidence of similar arrangements (an IWTA is an agreement between multiple divisions of the same organization). The prime proposer is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO). The proposal must show how subcontractor costs are applied to each phase and task. If consultants are to be used, proposer must provide consultant agreement or other document that verifies the proposed loaded daily/hourly rate.

(4) An itemization of any information technology (IT) purchase (including a letter stating why the proposer cannot provide the requested resources from its own funding), as defined in FAR Part 2.101.

(5) A summary of projected funding requirements by month for all phases of the project.

(6) A summary of tasks that have animal or human use funding.

(7) The source, nature, and amount of any industry cost-sharing. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each.

(8) 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.).

(9) Any Forward Pricing Rate Agreement, DHHS rate agreement, other such approved rate information, or such documentation that may assist in expediting negotiations (if available).

(10) Proposers with a Government acceptable accounting system who are proposing a cost-type contract must submit the DCAA document approving the cost accounting system.

Per FAR 15.403-4, certified cost or pricing data shall be required if the proposer is seeking a procurement contract award per the referenced threshold, unless the proposer requests and is granted an exception from the requirement to submit cost or pricing data. Certified cost or pricing

data" are not required if the proposer proposes an award instrument other than a procurement contract (e.g., a grant, cooperative agreement, or other transaction.)

Subawardee Proposals

The awardee is responsible for compiling and providing all subawardee proposals for the Procuring Contracting Officer (PCO)/Grants Officer (GO)/Agreements Officer (AO), as applicable. Subawardee proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each.

All proprietary subawardee proposal documentation, prepared at the same level of detail as that required of the awardee's proposal and which cannot be uploaded with the proposed awardee's proposal, shall be provided to the Government either by the awardee or by the subawardee organization when the proposal is submitted. Subawardee proposals submitted to the Government by the proposed subawardee should be submitted via e-mail to the address in Section I.

Other Transaction Requests

All proposers requesting an OT must include a detailed list of milestones for each phase of the program (I and II). Each milestone must include the following:

- milestone description,
- completion criteria,
- due date, and
- payment/funding schedule (to include, if cost share is proposed, awardee and Government share amounts).

It is noted that, at a minimum, milestones should relate directly to accomplishment of program technical metrics as defined in the BAA and/or the proposer's proposal. Agreement type, expenditure or fixed-price based, will be subject to negotiation by the Agreements Officer. Do not include proprietary data.

4.2.3. Additional Proposal Information

Proprietary Markings

Proposers are responsible for clearly identifying proprietary information. Submissions containing proprietary information must have the cover page and each page containing such information clearly marked with a label such as "Proprietary" or "Company Proprietary." NOTE: "Confidential" is a classification marking used to control the dissemination of U.S. Government National Security Information as dictated in Executive Order 13526 and should not be used to identify proprietary business information.

Unclassified Submissions

DARPA anticipates that submissions received under this BAA will be unclassified. However, should a proposer wish to submit classified information, an *unclassified* e-mail must be sent to the BAA mailbox requesting submission instructions from the Technical Office Program

Security Officer (PSO). If a determination is made that the award instrument may result in access to classified information, a Security Classification Guide (SCG) and/or DD Form 254 will be issued by DARPA and attached as part of the award.

Disclosure of Information and Compliance with Safeguarding Covered Defense Information Controls

The following provisions and clause apply to all solicitations and contracts; however, the definition of "controlled technical information" clearly exempts work considered fundamental research and therefore, even though included in the contract, will not apply if the work is fundamental research.

DFARS 252.204-7000, "Disclosure of Information"
DFARS 252.204-7008, "Compliance with Safeguarding Covered Defense Information Controls"
DFARS 252.204-7012, "Safeguarding Covered Defense Information and Cyber Incident Reporting"

The full text of the above solicitation provision and contract clauses can be found at http://www.darpa.mil/work-with-us/additional-baa#NPRPAC.

Compliance with the above requirements includes the mandate for proposers to implement the security requirements specified by National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171, "Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations" (see https://doi.org/10.6028/NIST.SP.800-171r1) that are in effect at the time the BAA is issued.

For awards where the work is considered fundamental research, the contractor will not have to implement the aforementioned requirements and safeguards. However, should the nature of the work change during performance of the award, work not considered fundamental research will be subject to these requirements.

Human Subjects Research (HSR)/Animal Use

Proposers that anticipate involving human subjects or animals in the proposed research must comply with the approval procedures detailed at http://www.darpa.mil/work-with-us/additional-baa, to include providing the information specified therein as required for proposal submission.

Approved Cost Accounting System Documentation

Proposers that do not have a Cost Accounting Standards (CAS) compliant accounting system considered adequate for determining accurate costs that are negotiating a cost- type procurement contract must complete an SF 1408. For more information on CAS compliance, see http://www.dcaa.mil/cas.html. To facilitate this process, proposers should complete the SF 1408 found at http://www.gsa.gov/portal/forms/download/115778 and submit the completed form with the proposal.

Small Business Subcontracting Plan

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)) and FAR 19.702(a)(1), each proposer who submits a contract proposal and includes subcontractors might be required to submit a subcontracting plan with their proposal. The plan format is outlined in FAR 19.704.

Section 508 of the Rehabilitation Act (29 U.S.C. § 749d)/FAR 39.2

All electronic and information technology acquired or created through this BAA must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C. § 749d)/FAR 39.2.

Intellectual Property

All proposers must provide a good-faith representation that the proposer either owns or possesses the appropriate licensing rights to all intellectual property that will be utilized under the proposed effort.

(1) For Procurement Contracts

Proposers responding to this BAA requesting procurement contracts will need to complete the certifications at DFARS 252.227-7017. See http://www.darpa.mil/work-with-us/additional-baa for further information. If no restrictions are intended, the proposer should state "none." The table below captures the requested information:

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

(2) For All Non-Procurement Contracts

Proposers responding to this BAA requesting a Cooperative Agreement, Technology Investment Agreement, or Other Transaction for Prototypes 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 the award instrument in question. This includes both Noncommercial Items and Commercial Items. Proposers are encouraged to use a format similar to that described in the section above. If no restrictions are intended, then the proposer should state "NONE."

System for Award Management (SAM) and Universal Identifier Requirements

All proposers must be registered in SAM unless exempt per FAR 4.1102. FAR 52.204-7, "System for Award Management" and FAR 52.204-13, "System for Award Management Maintenance" are incorporated into this BAA. See http://www.darpa.mil/work-with-us/additional-baa for further information.

International entities can register in SAM by following the instructions in this link: https://www.fsd.gov/fsd-gov/answer.do?sysparm_kbid=dbf8053adb119344d71272131f961946&sysparm_search=KB0013221.

4.2.4. Submission Information

DARPA will acknowledge receipt of all submissions and assign an identifying control number that should be used in all further correspondence regarding the submission. DARPA intends to use electronic mail correspondence regarding HR001120S0014. Submissions may not be sent by fax or e-mail; any so sent will be disregarded.

Submissions will not be returned. An electronic copy of each submission 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 by DARPA within five (5) business days after notification that a proposal was not selected.

For abstract and proposal submission dates, see Part I., Overview Information. Submissions received after these dates and times may not be reviewed.

Proposal Abstracts (for any award instrument) and Full Proposals (requesting procurement contracts or other transactions) sent in response to HR001120S0014 may be submitted via DARPA's BAA Website (https://baa.darpa.mil). Visit the website to complete the two-step registration process. Submitters will need to register for an Extranet account (via the form at the URL listed above) and wait for two separate e-mails containing a username and temporary password. After accessing the Extranet, submitters may then create an account for the DARPA BAA website (via the "Register your Organization" link along the left side of the homepage), view submission instructions, and upload/finalize the abstract. Proposers using the DARPA BAA Website may encounter heavy traffic on the submission deadline date; it is highly advised that submission process be started as early as possible.

All unclassified concepts submitted electronically through DARPA's BAA Website must be uploaded as zip files (.zip or .zipx extension). The final zip file should be no greater than 50 MB in size. Only one zip file will be accepted per submission. Classified submissions and proposals requesting or cooperative agreements should NOT be submitted through DARPA's BAA Website (https://baa.darpa.mil), though proposers will likely still need to visit https://baa.darpa.mil to register their organization (or verify an existing registration) to ensure the BAA office can verify and finalize their submission.

Technical support for BAA Website may be reached at BAAT_Support@darpa.mil, and is typically available during regular business hours, (9:00 AM - 5:00 PM EST Monday - Friday).

Proposers using the DARPA BAA Website may encounter heavy traffic on the submission deadline date; it is highly advised that the submission process be started as early as possible.

For Cooperative Agreements only:

Proposers requesting cooperative agreements must submit proposals through one of the following methods: (1) electronic upload per the instructions at https://www.grants.gov/applicants/apply-for-grants.html; or (2) hard-copy mailed directly to DARPA. If proposers intend to use Grants.gov as their means of submission, then they must submit their entire proposal through Grants.gov; applications cannot be submitted in part to Grants.gov and in part as a hard-copy. Proposers using Grants.gov do not submit hard-copy proposals in addition to the Grants.gov electronic submission.

Submissions: Proposers must submit the three forms listed below.

Form 1: SF 424 Research and Related (R&R) Application for Federal Assistance, available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_SF424_2_0-V2.0.pdf. *This form must be completed and submitted.*

To evaluate compliance with Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681 et.seq.), the Department of Defense (DoD) is collecting certain demographic and career information to be able to assess the success rates of women who are proposed for key roles in applications in science, technology, engineering or mathematics disciplines. In addition, the National Defense Authorization Act (NDAA) for FY 2019, Section 1286, directs the Secretary of Defense to protect intellectual property, controlled information, key personnel, and information about critical technologies relevant to national security and limit undue influence, including foreign talent programs by countries that desire to exploit United States' technology within the DoD research, science and technology, and innovation enterprise. This requirement is necessary for all research and research-related educational activities. The DoD is using the two forms below to collect the necessary information to satisfy these requirements. Detailed instructions for each form are available on Grants.gov.

The Research and Related Senior/Key Person Profile (Expanded) form will be used to collect the following information for all senior/key personnel, including Project Director/Principal

Investigator and Co-Project Director/Co-Principal Investigator, whether or not the individuals' efforts under the project are funded by the DoD:

- Degree Type and Degree Year.
- Current and Pending Support, including:
    - A list of all current projects the individual is working on, in addition to any future support the individual has applied to receive, regardless of the source.
    - Title and objectives of the other research projects.
    - The percentage per year to be devoted to the other projects.
    - The total amount of support the individual is receiving in connection to each of the other research projects or will receive if other proposals are awarded.
    - Name and address of the agencies and/or other parties supporting the other research projects
    - Period of performance for the other research projects.

Additional senior/key persons can be added by selecting the "Next Person" button at the bottom of the form. Note that, although applications without this information completed may pass Grants.gov edit checks, if DARPA receives an application without the required information, DARPA may determine that the application is incomplete and may cause your submission to be rejected and eliminated from further review and consideration under the BAA. DARPA reserves the right to request further details from the applicant before making a final determination on funding the effort.

Form 2: Research and Related Senior/Key Person Profile (Expanded), available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_KeyPersonExpanded_2_0-V2.0.pdf. *This form must be completed and submitted.*

Form 3: Research and Related Personal Data, available on the Grants.gov website at https://apply07.grants.gov/apply/forms/sample/RR_PersonalData_1_2-V1.2.pdf. *Each applicant must complete the name field of this form, however, provision of the demographic information is voluntary. Regardless of whether the demographic fields are completed or not, this form must be submitted with at least the applicant's name completed.*

Grants.gov Submissions: Grants.gov requires proposers to complete a one-time registration process before a proposal can be electronically submitted. First-time registration can take between three (3) business days and four (4) weeks. For more information about registering for Grants.gov, see http://www.darpa.mil/work-with-us/additional-baa.

Proposal abstracts will not be accepted if submitted via Grants.gov.

Hard-copy Submissions: Proposers electing to submit cooperative agreement proposals as hard copies must complete the SF 424 R&R form (Application for Federal Assistance,) available on the Grants.gov website (https://apply07.grants.gov/apply/forms/sample/SF424_2_1-V2.1.pdf).

Failure to comply with the submission procedures may result in the submission not being evaluated. DARPA will acknowledge receipt of complete submissions via e-mail and assign control numbers that should be used in all further correspondence regarding proposals.

4.3. FUNDING RESTRICTIONS

Not applicable.

4.4. OTHER SUBMISSION INFORMATION

DARPA will post a consolidated Frequently Asked Questions (FAQ) document. To access the posting go to http://www.darpa.mil/work-with-us/opportunities. A link to the FAQ will appear under the HR001120S0014 summary. Submit your question(s) via e-mail to AWE@darpa.mil.

5. Application Review Information

5.1. EVALUATION CRITERIA

Proposals will be evaluated using the following criteria, listed in descending order of importance: 5.1.1 Overall Scientific and Technical Merit; 5.1.2 Potential Contribution and Relevance to the DARPA Mission; and 5.1.3 Cost Realism.

5.1.1. Overall Scientific and Technical Merit

The proposed technical approach is innovative, feasible, achievable, and complete.
The proposed technical team 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 are relevant to the national technology base. Specifically, DARPA's mission is to make pivotal early technology investments that create or prevent strategic surprise for U.S. National Security.

5.1.3. Cost Realism

The proposed costs are realistic for the technical and management approach and accurately reflect the technical goals and objectives of the solicitation. The proposed costs are consistent with the proposer's Statement of Work and reflect a sufficient understanding of the costs and level of effort needed to successfully accomplish the proposed technical approach. The costs for the prime proposer and proposed subawardees are substantiated by the details provided in the proposal (e.g., the type and number of labor hours proposed per task, the types and quantities of materials, equipment and fabrication costs, travel and any other applicable costs and the basis for the estimates).

It is expected that the effort will leverage all available relevant prior research in order to obtain the maximum benefit from the available funding. For efforts with a likelihood of commercial application, appropriate direct cost sharing may be a positive factor in the evaluation. DARPA recognizes that undue emphasis on cost may motivate proposers to offer low-risk ideas with minimum uncertainty and to staff the effort with junior personnel in order to be in a more competitive posture. DARPA discourages such cost strategies.

5.2. REVIEW OF PROPOSALS

Review Process

It is the policy of DARPA to ensure impartial, equitable, comprehensive proposal evaluations based on the evaluation criteria listed in Section V.A. and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals.

DARPA will conduct a scientific/technical review of each conforming proposal. Conforming proposals comply with all requirements detailed in this BAA; proposals that fail to do so may be

deemed non-conforming and may be removed from consideration. 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, consistent with instructions and evaluation criteria specified in the BAA herein, and availability of funding.

Handling of Source Selection Information

DARPA policy is to treat all submissions as source selection information (see FAR 2.101 and 3.104) and to disclose their contents only for the purpose of evaluation. Restrictive notices notwithstanding, during the evaluation process, submissions may be handled by support contractors for administrative purposes and/or to assist with technical evaluation. All DARPA support contractors performing this role are expressly prohibited from performing DARPA-sponsored technical research and are bound by appropriate nondisclosure agreements.

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

Federal Awardee Performance and Integrity Information (FAPIIS)

Per 41 U.S.C. § 2313, as implemented by FAR 9.103 and 2 CFR § 200.205, prior to making an award above the simplified acquisition threshold, DARPA is required to review and consider any information available through the designated integrity and performance system (currently FAPIIS). Awardees have the opportunity to comment on any information about themselves entered in the database, and DARPA will consider any comments, along with other information in FAPIIS or other systems prior to making an award.

6. Award Administration Information

6.1. SELECTION NOTICES

6.1.1. Proposal Abstracts

DARPA will respond to abstracts with a statement as to whether DARPA is interested in the idea. If DARPA does not recommend the proposer submit a full proposal, DARPA will provide feedback to the proposer regarding the rationale for this decision. Regardless of DARPA's response to an abstract, proposers may submit a full proposal. DARPA will review all conforming full proposals using the published evaluation criteria and without regard to any comments resulting from the review of an abstract.

6.1.2. Full Proposals

As soon as the evaluation of all proposals is complete, the proposer will be notified that (1) the proposal has been selected for funding pending award negotiations, in whole or in part, or (2) the proposal has not been selected. These official notifications will be sent via e-mail to the Technical POC and Administrative 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 in the Arlington, VA vicinity, and all key participants are required to attend. Performers should also anticipate regular program-wide PI meetings and periodic site visits at the Program Manager's discretion in the Arlington, VA vicinity. Proposers shall include within the content of their proposal details and costs of any travel or meetings they deem to be necessary throughout the course of the effort, to include periodic status reviews by the government.

6.2.2. FAR and DFARS Clauses

Solicitation clauses in the FAR and DFARS relevant to procurement contracts and FAR and DFARS clauses that may be included in any resultant procurement contracts are incorporated herein and can be found at http://www.darpa.mil/work-with-us/additional-baa.

6.2.3. Controlled Unclassified Information (CUI) on Non-DoD Information Systems

Further information on Controlled Unclassified Information on Non-DoD Information Systems is incorporated herein can be found at http://www.darpa.mil/work-with-us/additional-baa.

6.2.4. Representations and Certifications

In accordance with FAR 4.1102 and 4.1201, proposers requesting a procurement contract must complete electronic annual representations and certifications at https://www.sam.gov/. In addition, resultant procurement contracts will require supplementary DARPA-specific representations and certifications. See http://www.darpa.mil/work-with-us/additional-baa for further information.

6.2.5. Terms and Conditions

For terms and conditions specific to grants and/or cooperative agreements, see the DoD General Research Terms and Conditions (latest version) at http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions and the supplemental DARPA-specific terms and conditions at http://www.darpa.mil/work-with-us/contract-management#GrantsCooperativeAgreements.

6.3. REPORTING

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

6.4. ELECTRONIC SYSTEMS

6.4.1. Wide Area Work Flow (WAWF)

Performers will be required to submit invoices for payment directly to https://wawf.eb.mil, unless an exception applies. Performers must register in WAWF prior to any award under this BAA.

6.4.2. I-EDISON

The award document for each proposal selected for funding will contain a mandatory requirement for patent reports and notifications to be submitted electronically through i-Edison (http://public.era.nih.gov/iedison).

7. Agency Contacts

Administrative, technical or contractual questions should be sent via e-mail to the mailbox listed below.

Points of Contact
The BAA Coordinator for this effort may be reached at:
AWE@darpa.mil
DARPA/BTO
ATTN: HR001120S0014
675 North Randolph Street
Arlington, VA 22203-2114

For information concerning agency level protests see http://www.darpa.mil/work-with-us/additional-baa#NPRPAC.

8. Other Information

DARPA will host a Proposers Day in support of the AWE program on January 7, 2020, at the Executive Conference Center (ECC; 4075 Wilson Blvd., Suite 300, Arlington, VA 22203). The purpose is to provide potential proposers with information on the NOW program, promote additional discussion on this topic, address questions, provide a forum to present their capabilities, and encourage team formation.

Interested proposers are not required to attend to respond to the AWE BAA, and relevant information and materials discussed at Proposers Day will be made available to all potential proposers in the form of a FAQ posted on the DARPA Opportunities Page.

DARPA will not provide cost reimbursement for interested proposers in attendance. An online registration form and various other meeting details can be found at the registration website, http://events.sa-meetings.com/AWEProposersDay2020.

Participants are required to register no later than **December 27, 2019**. This event is not open to the Press. The Proposers Day will be open to members of the public who have registered in advance for the event; there will be no onsite registration.

Proposers Day Point of Contact:
DARPA-SN-20-18@darpa.mil
ATTN: DARPA-SN-20-18

9. APPENDIX 1 – Volume II checklist

Volume II, Cost Proposal
Checklist and Sample Templates

The following checklist and sample templates are provided to assist the proposer in developing a complete and responsive cost volume. Full instructions appear in Section 4.2.2 of HR001120S0014. This worksheet must be included with the coversheet of the Cost Proposal.

1. Are all items from Section 4.2.2 (Volume II, Cost Proposal) of **HR001120S0014** included on your Cost Proposal cover sheet?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]
   If reply is "No", please explain:

2. Does your Cost Proposal include (1) a summary cost buildup by Phase, (2) a summary cost buildup by Year, and (3) a detailed cost buildup of for each Phase that breaks out each task and shows the cost per month?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

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

   Direct Labor (Labor Categories, Hours, Rates)
   f○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   Indirect Costs/Rates (i.e., overhead charges, fringe benefits, G&A)
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   Materials and/or Equipment
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

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

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

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

   If reply is "No", please explain:

4. Have you provided documentation for proposed costs related to travel, to include purpose of trips, departure and arrival destinations and sample airfare?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

5. Does your cost proposal include a complete itemized list of all material and equipment items to be purchased (a priced bill-of-materials (BOM))?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

6. Does your cost proposal include vendor quotes or written engineering estimates (basis of estimate) for all material and equipment with a unit price exceeding $5000?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

7. Does your cost proposal include a clear justification for the cost of labor (written labor basis-of-estimate (BOE)) providing rationale for the labor categories and hours proposed for each task?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

8. Do you have subcontractors/consultants? If YES, continue to question 9. If NO, skip to question 13.
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

9. Does your cost proposal include copies of all subcontractor/consultant technical (to include Statement of Work) and cost proposals?
   ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

   If reply is "No", please explain:

10. Do all subcontract proposals include the required summary buildup, detailed cost buildup, and supporting documentation (SOW, Bill-of-Materials, Basis-of-Estimate, Vendor Quotes, etc.)?
    ○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

    If reply is "No", please explain:

11. Does your cost proposal include copies of consultant agreements, if available?
○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

12. If requesting a FAR-based contract, does your cost proposal include a tech/cost analysis for all proposed subcontractors?
○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

13. Have all team members (prime and subcontractors) who are considered a Federally Funded Research & Development Center (FFRDC), included documentation that clearly demonstrates work is not otherwise available from the private sector AND provided a letter on letterhead from the sponsoring organization citing the specific authority establishing their eligibility to propose to government solicitations and compete with industry, and compliance with the associated FFRDC sponsor agreement and terms and conditions.
○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

14. Does your proposal include a response regarding Organizational Conflicts of Interest?
○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain:

15. Does your proposal include a completed Data Rights Assertions table/certification?
○ **YES** ○ **NO** **Appears on Page(s)** [Type text]

If reply is "No", please explain: