



Broad Agency Announcement
Topological Excitations in Electronics
Defense Sciences Office

HR001117S0038

June 9, 2017

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PART I: OVERVIEW INFORMATION

- **Federal Agency Name:** Defense Advanced Research Projects Agency (DARPA), Defense Sciences Office (DSO)
- **Funding Opportunity Title:** Topological Excitations in Electronics
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** HR001117S0038
- **Catalog of Federal Domestic Assistance (CFDA) Number(s):** 12.910 Research and Technology Development
- **Dates** (All times listed herein are Eastern Time.)
 - Posting Date: June 9, 2017
 - Proposers Day: June 16, 2017. See Section VIII.C.
 - Abstract Due Date: June 27, 2017, 4:00 p.m.
 - FAQ Submission Deadline: August 9, 2017, 4:00 p.m. See Section VIII.A.
 - Full Proposal Due Date: August 16, 2017, 4:00 p.m.
- **Anticipated Individual Awards:** DARPA anticipates multiple awards.
- **Types of Instruments that May be Awarded:** Procurement contracts, grants, cooperative agreements or other transactions
- **Agency contacts**
 - **Technical POC:** Dr. Rosa Alejandra Lukaszew, Program Manager, DARPA/DSO
 - **BAA Email:** TEE@darpa.mil
 - **BAA Mailing Address:**
DARPA/DSO
ATTN: HR001117S0038
675 North Randolph Street
Arlington, VA 22203-2114
 - **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/opportunities>
- **Teaming Information:** See Section VIII.B for information on teaming opportunities.
- **Frequently Asked Questions (FAQ):** FAQs for this solicitation may be viewed on the DARPA/DSO Opportunities Website. See Section VIII.A for further information.

PART II: FULL TEXT OF ANNOUNCEMENT

I. Funding Opportunity Description

This Broad Agency Announcement (BAA) constitutes a public notice of a competitive funding opportunity as described in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 as well as 2 CFR § 200.203. Any resultant negotiations and/or awards will follow all laws and regulations applicable to the specific award instrument(s) available under this BAA, e.g., FAR 15.4 for procurement contracts.

A. Introduction

The Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals exploring approaches to exploit topological excitations in electronics. The Topological Excitations in Electronics program was created partly as an outgrowth of the responses to the TEXITRONICS Request For Information (DARPA-SN-17-26). The program aims to explore topological excitations that have recently been engineered in solid-state systems that have the potential to overcome fundamental limits faced by present electronic memory, digital logic, sensors, and quantum bits (qubits) as well as other potential applications.

The Topological Excitations in Electronics program aims to advance the state of the field by demonstrating that the performance of such excitations in suitably designed prototype/proof-of-concept devices can be scaled up to make a significant impact in future technology. A particular focus of the program is the development of topological excitations that are nanometer-sized (<10 nm) and capable of being efficiently manipulated at room temperature. It is expected that close collaboration between theoretical modelers, materials scientists, and metrology experts will be needed to design, fabricate, and characterize the properties of the topological excitations proposed and eventually optimize their properties.

B. Background

Developing the ability to design materials with new controllable functionalities is crucial for the future of the nation's economic, energy and defense security. An opportunity exists at the intersection of topology and condensed matter physics where a rich and robust platform emerges for studying novel ground states and quasiparticles with properties beyond that of simple electrons. Many such excitations have topological properties that can be leveraged to engineer superior (e.g., low power and more stable) characteristics compared to the conventionally used charge and spin degrees of freedom. New materials that display novel spin-charge coupling and quantum coherent properties driven by topology at surfaces/interfaces have enormous potential for low power, spin-based, charge based, and quantum coherent technology. The development of this new approach has the prospect of overcoming the natural limits faced by current device technology (e.g., superparamagnetism) and of creating entirely new forms of computation and other applications. For example, topological magnetic skyrmions are promising for low-power memory and/or logic architectures due to their small size and potential for manipulation using ultra-low current densities. On the other hand, topological quantum computation offers revolutionary breakthroughs in coherence stability. Various materials heterostructures may be

leveraged to implement robust quantum logic. Devices based on this phenomenon have the possibility to revolutionize the understanding of quantum matter and materials.

C. Program Description/Scope

Topological Excitations in Electronics is a fundamental science program that seeks to challenge the limits in present electronic components by exploiting topological excitations. The program aims to demonstrate the utility of topological excitations in various applications including memory, logic, sensors, and quantum information processing. By the end of the program, the following goals should be achieved:

1. A determination of what materials or combination of materials that host topological excitations hold the most promise for specific applications.
2. A full characterization of the properties of said excitations (e.g., topology, size, stability, interactions, time-scales) and in particular, a validation of how topology enhances these properties.
3. A demonstration of nanometer scale (<10 nm) room temperature topological excitations for memory and/or logic, as well as efficient write and read protocols.
4. The development of topological qubits and a demonstration of topological operations between them.

D. Program Structure

Topological Excitations in Electronics is a 42-month program composed of two separate but related Technical Areas (TAs): Classical topological excitations (TA1) and quantum topological excitations (TA2). The program is divided into two phases that are the same for all TAs:

- Phase I (18-month duration) – An initial phase in which performers will establish/validate materials and metrics for topological excitations of interest.
- Phase II (24-month duration) – An option phase in which successful approaches will be integrated to demonstrate a prototype device as a proof of principle and to characterize its stability, as well as the parameter space of its interactions for the topological excitations of interest.

Addressing all program requirements, metrics, and milestones and exploring the parameter space (e.g., materials chosen, system architecture, etc.) is expected to require a multidisciplinary approach by a team of materials scientists, physicists, engineers, and/or chemists. Collaborative proposals involving expertise in materials and device fabrication, metrology, ultrafast time-resolved imaging, and modeling are anticipated. Performers will be encouraged to collaborate openly and regularly with other teams in the program. Formal collaboration time will be provided at program review meetings and informal performer-driven information exchange is expected.

E. Technical Area Descriptions

The program has two TAs that explore classical and quantum topological excitations, respectively. Each proposal should address a single TA; proposers who wish to propose in both

areas should submit two separate proposals. These two TAs are as follows:

Technical Area 1- Classical topological excitations: The focus in this area is classical applications of topological excitations such as in memory, binary logic, sensors, etc. Under special circumstances, magnetic materials can support nano-sized topological excitations (e.g., skyrmions) that might emerge as stable excitations even at room temperature. This may potentially overcome the crippling “super-paramagnetic” limit faced by present magnetic storage technology. In addition, such skyrmions can be created, annihilated, and driven more efficiently than competing memory/logic bits, requiring weaker fields (electric and magnetic), lower currents, and achieving comparatively faster speeds. This opens the possibility of implementing denser, non-volatile storage-class memory and spin-logic that is faster and more “power efficient” than presently available. Magnetic nano-scaled skyrmions have been reported at cryogenic temperatures, and there are a few promising reports on larger ones at room temperature. Other non-magnetic materials capable of sustaining similar topological excitations have been predicted and are of interest as well.

Performers working in this TA will predict, model, fabricate, and characterize possible material combinations that host nano-sized topological excitations in terms of their beneficial properties for memory and/or digital logic, and/or other possible applications all at room temperature. Performers will also develop and/or leverage novel metrology to unambiguously assess their existence as well as their properties such as size, stability, energetics, time-scales for interactions, etc. Performers developing materials for memory will need to demonstrate write/read capability. Performers developing materials for spin-logic will need to demonstrate fan-out of two gates. Performers working on other applications must have a proof-of-concept task to assess the potential application other than those described above.

Technical Area 2 - Quantum topological excitations: The focus in this area is application of topological excitations to achieve topologically protected quantum qubits. The theoretical foundations of topological quantum computation (QC) rest on solid ground. However, implementing topological QC using engineered systems to create coherence-stable qubits presents a significant challenge in materials synthesis. Additionally, new concentrated efforts to explore the properties of such hybrid devices and unravel their properties are needed as well. Performers in this TA will implement topological excitations or “non-Abelian anyons” (e.g., localized Majorana states) and define clear evidence and characterization of topological protection. Performers will also demonstrate topological logical operations between qubits (e.g., braid operations).

F. Schedule/Milestones

Topological Excitations in Electronics is structured to provide proof-of-principle demonstrations of the utility of topology in various applications in electronics. Proposers should specify the research and technology development schedule for the full period of performance, split between a base Phase I (18 months) and an option Phase II (24 months). The SOW must provide a detailed task breakdown, citing specific tasks and their connection to interim milestones and metrics, as applicable. Each phase of the program should be separately defined. To the extent practical, the SOW should be organized by the work required to achieve a particular technical objective. The task structure must be consistent across the proposed schedule, Statement of

Work, and cost volume. Proposers should provide a technical and programmatic strategy that conforms to the entire program schedule and presents an aggressive plan to fully address all program goals, metrics, milestones, and deliverables. Schedules will be synchronized across performers, as required, and monitored/ revised as necessary throughout the program. A target start date of February 1, 2018 may be assumed for planning purposes.

The following milestones and metrics will serve as evaluation points during the course of the program; proposers should incorporate these into their Statement of Work (SOW). The successful achievement of end-of-Phase I metrics will be considered when decisions are made on what teams advance to Phase II.

Phase I (18 months): Demonstrate materials that can host topological excitations, e. g. skyrmions, anyons, etc.

Technical Area 1:

- 9 mo: Unambiguously establish the presence of topological excitations with size < 10 nm at room temperature.
- 18 mo: Demonstrate switching excitation on/off with power < 100 fJ

Technical Area 2:

- 9 mo: Unambiguously demonstrate the presence of non-Abelian anyon quantum excitations by two independent methods.
- 18 mo: Demonstrate quantum coherence comparable or better than more traditional qubits at the same temperature.

Phase II (24 months): Demonstrate in prototype/proof-of-principle devices that topological excitations can enable significant improvements over the state of the art.

Technical Area 1:

- 18 mo: If working on memory applications, demonstrate a prototype device that provides a path for fast switching, enabling THz operation at room temperature (if the application requires moving the nanoscale topological excitation, such as with currents or electromagnetic fields, the speed should exceed 1,000 m/sec).
- 24 mo: Teams working on logic applications should demonstrate a prototype circuit of gates that has at least a fan-out of two.
- 24 mo: Teams working on other applications (e.g., sensors) should validate the benefit of the technology over current practice.
- 24 mo: Demonstrate repeatability of working processes and materials, and establish projections for processing and design modification.

Technical Area 2:

- 18 mo: Demonstrate the capability to manipulate and control multiple quantum topological excitations.
- 24 mo: Demonstrate a topologically protected logic operation between topological qubits.

Meetings and Travel

All proposals must include the following meetings and travel in the proposed schedule and costs:

- To continue integration and development between TAs, foster collaboration between teams and disseminate program developments, a two-day Principal Investigator (PI) meeting will be held approximately every six months, with locations split between the East and West Coasts of the United States. For budgeting purposes, plan for seven two-day meetings over the course of 36 months: four meetings in the Washington, D.C. area and three meetings in the San Francisco, CA area.
- Regular teleconference meetings will be scheduled with the Government team for progress reporting as well as problem identification and mitigation. Proposers should also anticipate at least one site visit per phase by the DARPA Program Manager during which they will have the opportunity to demonstrate progress towards agreed-upon milestones.

G. Deliverables

Performers will be expected to provide at a minimum the following deliverables:

- Comprehensive quarterly technical reports due within ten days of the end of the given quarter, describing progress made on the specific milestones as laid out in the SOW.
- A phase completion report submitted within 30 days of the end of each phase, summarizing the research done.
- Other negotiated deliverables specific to the objectives of the individual efforts.
- Reporting as outlined in Section VI.C.

H. Other Program Objectives and Considerations

1. Collaboration

Throughout the course of the program, it is likely to be necessary for all performers—regardless of category—to share relevant information regarding their research and development to support the larger program goals. DARPA expects all program performers to work collaboratively with one another to realize the program objectives outlined herein, so proposers should carefully review the goals for the entire program in order to fully understand the context of each program objective and TA within the overall program structure. All proposals should describe plans for ensuring transparency of their processes to enable interactions with other program performers. Proposals that fail to include these plans may be deemed non-conforming and removed from consideration.

2. Data Management Plan (DMP)

This BAA requires a Data Management Plan (DMP) be included as part of the proposal submission. DARPA/DSO's view of what constitutes the scope of applicable data products to be covered in a DMP is quite broad, potentially encompassing all digital activity related to a project. DARPA's approach to an effective and practical DMP is predicated with two goals:

First, data is increasingly the key product of research and engineering endeavors. To ensure the reproducibility of results and the accessibility of program accomplishments to future users, we

require proposers document the necessary and sufficient scope of data that may be applicable to these goals. Performers will be expected to document both the proprietary and non-proprietary products of the program (including raw unprocessed data, rarified data sets, test data, experimental designs, software source code and executables, build scripts, process sequence, programmatic communication and other collaboration activities, as well as other data) to ensure the retention and potential reusability of this information.

Second, when possible, DARPA may also share some or all of the program-generated data with the broader research community as open data (with permission to access, reuse, and redistribute under appropriate licensing terms) to the extent permitted by applicable law and regulations (e.g., privacy, security, rights in data, and export control). The complete scope of program-generated data described above may go considerably beyond the scope of data to be made public. Hence, it is expected that as part of a DMP proposers delineate their specific data products that are suitable for public release and how they intend to capture and represent this information. In this way, it is DARPA's intention to enable reproducibility of results and establish (or contribute to) digital collections that can advance this and other scientific fields. Note that this provision is not meant to require disclosure of otherwise proprietary internal component or process intellectual property, but to ensure all performers can meet the overall program objectives.

A DMP should include enough detail to ensure that the data products delivered to DARPA (or made public) are adequate for use by an independent third party in recreation and verification of the scientific results. For example, proposed DMPs should address the following:

- Plans for data capture and sharing, including the extent and specific mechanisms to be used during the period of performance for the program;
- Any data management standards, including meta-data standards, and/or community best practices that may apply;
- A data inventory, with rough estimates of data kinds and assets; formats; sizes (e.g., KB, MB, GB, TB), etc. Kinds of data might include:
 - Data sets: experimental, test, and measurement data;
 - Narratives: observational logs, journals, collaborations;
 - Analyses;
 - Decisions: alternatives, exploration branches, determinations
 - Design of experiments and simulations: setup, ingest, outputs;
 - Codes (with build scripts, development history and versions), software (executables with source), algorithms, data consumed or produced by software;
 - Models or simulations (computational or mathematical);
 - Bibliographies and citations used by your research
 - Recordings of various physical phenomena (including images, videos, sensor data, etc.)
- Methods for addressing and protecting sensitive data, to include participant anonymity, privacy or data redaction;
- Anticipated current or future data quality issues;
- How the DMP enhances validation and reproducibility of results;
- How the DMP may support future scientific discoveries and engineering innovation;
- Which elements of the DMP constitute deliverables as part of the program execution

- plan; and,
- Proposer’s access to (and proposed use of) institutional, organizational, or scientific community repositories and archives.

With this approach to DMPs, performers are only asked to explicitly document program data, how much there will be and how they intend to manage it as they execute the program. As this is effort that is required to execute the program, DARPA does not expect the existence of a DMP to produce additional cost burden on performers for data management requirements during or after the period of performance.

II. Award Information

A. General Award Information

DARPA anticipates multiple awards. The level of funding for individual awards made under this BAA will depend on the quality of the proposals received and the availability of funds. Awards will be made to proposers¹ whose proposals are determined to be the most advantageous to the Government, all evaluation factors considered. See Section V for further information.

The Government reserves the right to:

- select for negotiation all, some, one, or none of the proposals received in response to this solicitation;
- make awards without discussions with proposers;
- conduct discussions with proposers if it is later determined to be necessary;
- segregate portions of resulting awards into pre-priced options;
- accept proposals in their entirety or to select only portions of proposals for award;
- fund awards in increments with options for continued work at the end of one or more phases;
- request additional documentation once the award instrument has been determined (e.g., representations and certifications); and
- remove proposers from award consideration should the parties fail to reach agreement on award terms within a reasonable time or the proposer fails to provide requested additional information in a timely manner.

Proposals identified for negotiation may result in a procurement contract, grant, cooperative agreement, or other transaction (OT), depending upon the nature of the work proposed, the required degree of interaction between parties, 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

¹ As used throughout this BAA, “proposer” refers to the lead organization on a submission to this BAA. The proposer is responsible for ensuring that all information required by a BAA--from all team members--is submitted in accordance with the BAA. “Awardee” refers to anyone who might receive a prime award from the Government, including recipients of procurement contracts, grants, cooperative agreements, or Other Transactions. “Subawardee” refers to anyone who might receive a subaward from a prime awardee (e.g., subawardee, consultant, etc.).

with Other Transactions, consult www.darpa.mil/work-with-us/contract-management#OtherTransactions.

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.

B. 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 proposers intending to perform fundamental research and does not anticipate applying publication restrictions of any kind to individual awards for fundamental research that may result from this BAA. Notwithstanding this statement of expectation, the Government is not prohibited from considering and selecting research proposals that, while perhaps not qualifying as fundamental research under the foregoing definition, still meet the BAA criteria for submissions. If proposals are selected for award that offer other than a fundamental research solution, the Government will either work with the proposer to modify the proposed statement of work to bring the research back into line with fundamental research or else the proposer will agree to restrictions in order to receive an award.

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. Appropriate clauses will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This clause can be found at 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 restricted research, their subawardee’s effort may be fundamental research. In those cases, it is the awardee’s responsibility to explain in their proposal why its subawardee’s

effort is fundamental research.

III. Eligibility Information

A. Eligible Applicants

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

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

a. 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 citing the specific authority establishing their eligibility to propose to Government solicitations and compete with industry, and their compliance with the associated FFRDC sponsor agreement's terms and conditions. This information is required for FFRDCs proposing to be awardees or subawardees.

b. 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. This information is required for Government Entities proposing to be awardees or subawardees.

c. 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.

2. Foreign Participation

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. For classified submissions, this includes mitigating any Foreign Ownership Control and Influence (FOCI) issues prior to transmitting the submission to DARPA. Additional information on these subjects can be found at http://www.dss.mil/isp/foci/foci_faqs.html.

B. 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.

C. 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 (e.g., OTs under the authority of 10 U.S.C. § 2371).

IV. Application and Submission Information

Prior to submitting a full proposal, proposers are *strongly encouraged* to first submit an abstract as described below. This process allows a proposer to ascertain whether the proposed concept is: (1) applicable to the Topological Excitations in Electronics BAA and (2) currently of interest. For the purposes of this BAA, applicability is defined as follows:

- The proposed concept is applicable to the technical areas described herein.
- The proposed concept is important to DSO's current investment portfolio. The proposed concept investigates an innovative approach that enables revolutionary advances, i.e., will not primarily result in evolutionary improvements to the existing state of practice.
- The proposed work has not already been completed (i.e., the research element is complete but manufacturing/fabrication funds are required).
- The proposer has not already received funding or a positive funding decision for the proposed concept (whether from DARPA or another Government agency).

Abstracts and full proposals that are not found to be applicable to the Topological Excitations in Electronics BAA as defined above may be deemed non-conforming² and removed from consideration. All abstracts and full proposals must provide sufficient information to assess the validity/feasibility of their claims as well as comply with the requirements outlined herein for submission formatting, content and transmission to DARPA. Abstracts and full proposals that fail to do so may be deemed non-conforming and removed from consideration. Proposers will be notified of non-conforming determinations via letter.

A. Address to Request Application Package

This document contains all information required to submit a response to this solicitation. No additional forms, kits, or other materials are needed except as referenced herein. No request for proposal or additional solicitation regarding this opportunity will be issued, nor is additional information available except as provided at the Federal Business Opportunities website (<http://www.fbo.gov>), the Grants.gov website (<http://www.grants.gov/>), or referenced herein.

² "Conforming" is defined as having been submitted in accordance with the requirements outlined herein.

B. Content and Form of Application Submission

1. Abstract Information

As stated above, 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. The abstract provides a synopsis of the proposed project by briefly answering the following questions:

- What is the proposed work attempting to accomplish or do?
- How is it done today, and what are the limitations?
- Who will care and what will the impact be if the work is successful?
- How much will it cost, and how long will it take?

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.

Proposers should note that a favorable response to an abstract is not a guarantee that a proposal based on the abstract will ultimately be selected for award negotiation.

While it is DARPA policy to attempt to reply to abstracts within thirty calendar days, proposers to this solicitation may anticipate a response within approximately two weeks. These official notifications will be sent via email to the Technical POC and/or Administrative POC identified on the abstract coversheet.

a. Abstract Format

All pages shall be formatted for printing on 8-1/2 by 11-inch paper with 1-inch margins and font size not smaller than 12 point. Font sizes of 8 or 10 point may be used for figures, tables, and charts. Document files must be in .pdf, .odx, .doc, .docx, .xls, or .xlsx formats. Submissions must be written in English. The Abstract Summary slide described herein must be in .ppt or .pptx format and should be attached as a separate file to this document.

To assist in proposal development, various templates have been provided along with the BAA posted at <http://www.fbo.gov/>. Attachment 1 is for the Abstract Summary Slide Template and Attachment 2 is for the Abstract Template. The use of these templates is mandatory.

Abstracts shall not exceed a maximum of 8 pages.

Page limit includes:	Page limit does NOT include:
Figures, tables, charts	Official transmittal letter (optional)
	Cover Sheet
	Table of Contents

	References/Bibliography
	Resumes
	Abstract Summary slide

Abstracts must include the following components:

i. Cover Sheet: Provide the following information:

- (1) Label: "Abstract"
- (2) BAA number (HR001117S0038)
- (3) Technical Area
- (4) Abstract title
- (5) Lead organization name
- (6) Technical point of contact (POC) including name, mailing address, telephone, and email address
- (7) Administrative POC including name, mailing address, telephone number, and email address
- (8) Estimated total cost
- (9) Estimated period of performance
- (10) Primary subawardees (if known/applicable)
- (11) Identify any other solicitation(s) to which this concept has been proposed

ii. Abstract Summary Slide: Using the slide template provided as Attachment 1 to the BAA, provide a summary in PowerPoint that effectively and succinctly conveys the main objective, key innovations, expected impact, and other unique aspects of the proposed project. Include the PowerPoint slide as a separate attachment in the abstract file.

iii. Goals and Impact: Describe what is being proposed and what difference it will make (qualitatively and quantitatively) if successful, clearly explaining the potential applications that it could impact. Describe the innovative aspects of the project in the context of existing capabilities and approaches, clearly delineating the relationship of this work to any other projects from the past and present.

iv. Technical Plan: Describe the materials platform(s) that will be explored and the geometry of the proposed prototype. In particular, address the protocols to create, control, and detect topological excitations. Explain the metrology techniques used to characterize the properties of the excitations. Describe the theoretical modeling and simulation to be used to design materials, topological excitations and/or prototype devices. Outline and address technical challenges inherent in the approach and possible solutions for overcoming potential problems. Provide appropriate measurable milestones (quantitative if possible) at intermediate stages of the project to demonstrate progress, and a plan for achieving the milestones.

v. Capabilities/Management Plan: Provide a brief summary of expertise of the team, including subawardees and key personnel. Teaming arrangements do not need to be finalized at the time of abstract submission; however, mention of potential

teaming/collaboration arrangements is encouraged. Identify a principal investigator for the project and include a description of the team's organization including roles and responsibilities.

vi. Cost and Schedule: Provide a cost estimate for resources (e.g., labor, materials) and any subawardees over the proposed timeline of the project, broken down by Government fiscal year.

vii. Bibliography (Optional): If desired, include a brief bibliography with *links* to relevant papers, reports, resumes of key team members, etc.

2. Full Proposal Information

Proposals consist of Volume 1: Technical and Management Volume, Volume 2: Cost Volume, and Volume 3: Administrative and National Policy Requirements).

To assist in proposal development, the following templates have been provided along with the BAA posted at <http://www.fbo.gov/>:

- Attachment 3: Proposal Slide Templates
 - Slide 1: Proposal Summary
 - Slide 2: Technical Concept
 - Slides 3-4: Schedule and Milestones (Phase I)
 - Slides 5-6: Schedule and Milestones (Phase II)
 - Slide 7: Cost Summary
- Attachment 4: Technical and Management Volume
- Attachment 5: Cost Volume
- Attachment 6: Administrative and National Policy Requirements Volume

The use of all templates is mandatory. ***Proposals not meeting the format prescribed herein may not be reviewed.***

All proposal pages (Volumes 1-3) shall be formatted for printing on 8-1/2 by 11-inch paper with 1-inch margins, single-line spacing, and a font size not smaller than 12 point. Font sizes of 8 or 10 point may only be used for figures, tables, and charts. Document files must be in .pdf, .odx, .doc, .docx, .xls, or .xlsx formats. The Proposal Slides (Attachment 3) described herein must be in .ppt or .pptx format and should be attached as a separate file in the full proposal package. Submissions must be written in English.

Proposers are encouraged to submit concise, but descriptive, proposals. Specific examples of problems, approaches, or goals are preferred to qualitative generalities. The Government will not consider pages in excess of the page count limitations, as described herein. Proposals with fewer than the maximum number of pages will not be penalized. Additional information not explicitly called for in the Technical and Management Volume must not be submitted with the proposal, but may be included as links in the bibliography. Such materials will be considered for the reviewers' convenience only and not evaluated as part of the proposal.

a. Volume 1: Technical and Management Proposal

Volume 1 shall not exceed a maximum of 20 pages.

Page limit includes:	Page limit does NOT include:
Technical figures, tables, charts	Cover Sheet
	Official transmittal letter
	Table of Contents
	Resumes
	References
	Proposal Slides (Technical Summary, Technical Concept, Schedule and Milestones, Cost Summary)

Volume 1 must include the following components:

i. Cover Sheet: Include the following information.

- (1) Label: "Proposal: Volume 1"
- (2) BAA number (HR001117S0038)
- (3) Technical Area
- (4) Proposal title
- (5) Proposer's reference number, if any
- (6) Lead organization (prime proposer) name
- (7) Type of organization, selected from the following categories: Large Business, Small Disadvantaged Business, Other Small Business, Historically Black Colleges and Universities (HBCU), Minority Institution (MI), Other Educational, or Other Nonprofit
- (8) Technical point of contact (POC) including name, mailing address, telephone, and email address
- (9) Administrative POC including name, mailing address, telephone number, and email address
- (10) Total proposed cost separated by base award and any proposed option(s)
- (11) Award instrument requested: procurement contract (specify type), grant, cooperative agreement or OT.
- (12) Place(s) and period(s) of performance
- (13) List all other team members (subawardees and consultants), including Technical POC name, organization and organization type
- (14) Date proposal was prepared
- (15) Proposal validity period

ii. Table of contents

iii. Official Transmittal Letter

iv. Technical Summary

- (1) Discussion:** 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?
- 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?

The summary should include a description of the key technical challenges, a concise review of the technologies proposed to overcome these challenges and achieve the project's goal, and a clear statement of the novelty and uniqueness of the proposed work.

- (2) Proposal Summary Slide:** Using the slide template provided as Slide 1 of Attachment 3 to the BAA, provide a summary in PowerPoint that effectively and succinctly conveys the main objective, key innovations, expected impact, and other unique aspects of the proposed project.

v. Goals and Impact

- (1) Discussion:** Describe what the proposed team is trying to achieve and the difference it will make (qualitatively and quantitatively) if successful, clearly explaining the potential applications that it could impact. 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.
- (2) Technical Concept Slide:** Using the slide template provided as Slide 2 of Attachment 3 to the BAA, provide graphics, plots, conceptual diagrams and/or process flows to highlight the *Goals and Impact* discussion above.

vi. Technical Plan: Describe the materials platform(s) that will be explored and the geometry of the proposed prototype. In particular, address the protocols to create, control and detect topological excitations. Explain the metrology techniques used to characterize the properties of the excitations. Describe the theoretical modeling and simulation to be used to design materials, topological excitations and prototype devices. Outline and address technical challenges inherent in the approach and possible solutions for overcoming potential problems. Demonstrate a deep understanding of the technical challenges and present a credible (even if risky) plan to achieve the project's goal. Discuss mitigation of technical risk. Provide appropriate measurable milestones (quantitative if possible) at intermediate stages of the project to demonstrate progress, and a plan for achieving the milestones. List Government-furnished materials or data assumed to be available.

vii. Management Plan: Provide a summary of expertise of the proposed team, including any subawardees/consultants and key personnel who will be executing the

work. Identify a principal investigator (PI) for the project. Provide a clear description of the team's organization including an organization chart that illustrates, as applicable, the relationship of team members; unique capabilities of team members; task responsibilities of team members; teaming strategy among the team members; and key personnel with the amount of effort to be expended by each person during the project. Provide a detailed plan for coordination including explicit guidelines for interaction among collaborators/subawardees of the proposed project. Include risk management approaches. Describe any formal teaming agreements that are required to execute this project.

viii. Personnel, Qualifications, and Commitments: List key personnel (no more than one page per person), showing a concise summary of their qualifications, discussion of previous accomplishments, and work in this or closely related research areas. Indicate the level of effort in terms of hours to be expended by each person during each contract year and other (current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make substantial time commitment to the proposed activity and the proposal will be evaluated accordingly. It is DARPA's intention to put key personnel conditions into the awards, so proposers should not propose personnel that are not anticipated to execute the work.

ix. Capabilities: Describe organizational experience in relevant subject area(s), existing intellectual property, or specialized facilities. Discuss any work in closely related research areas and previous accomplishments.

x. Statement of Work (SOW): Provide a detailed task breakdown by Government fiscal year (GFY), citing specific tasks and their connection to the interim milestones and metrics, as applicable. Do not include proprietary information. For each defined task/subtask, provide:

- A general description of the objective.
- A detailed description of the approach to be taken to accomplish each defined task/subtask.
- Identification of any tasks/subtasks that will involve human subjects or animals.
- Identification of any tasks/subtasks that will be performed on campus at a university.
- Identification (by name) of the primary organization (prime contractor, subawardee(s), consultant(s)) responsible for task/subtask execution.
- A measurable milestone (e.g., a deliverable, demonstration, or other event/activity that marks task completion).
- A definition of all deliverables (e.g., data, reports, software) to be provided to the Government in support of the proposed tasks/subtasks.]

xi. Schedule and Milestones

(1) Discussion: 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.

(2) Slides: Using the slide templates provided as Slides 3-6 of Attachment 3 to the BAA, provide the above information in graphic form (e.g., Gantt chart).

xii. Cost Summary: Using the template provided as Slide 7 of Attachment 3 to the BAA, provide a summary of total effort costs broken down by phase and major cost items.

xiii. Novelty of Proposed Work: Identify other Government solicitation(s) to which this concept has been proposed. If applicable, state whether funding or a positive funding decision has already been received, and from which agency.

xiv. Bibliography: If desired, include a brief bibliography with *links* to relevant papers, reports, or resumes. Do not include technical papers. This section is optional, and the linked materials will not be evaluated as part of the proposal review.

b. Volume 2 - Cost Proposal

This volume is mandatory and must include all the listed components. No page limit is specified for this volume.

The cost proposal should include a spreadsheet file (.xls or equivalent format) that addresses the applicable cost information requested below and provides formula traceability among all components of the cost proposal. The spreadsheet file must be included as a separate file in the full proposal package. Costs must be traceable between the prime proposer and all subawardees/consultants, as well as between the cost proposal and the SOW. This includes ensuring a consistent task structure across all proposal documents. Cost information must be provided in sufficient detail to substantiate the proposed prices.

i. Cover Sheet:

- (1) Label: "Proposal: Volume 2"
- (2) BAA number (HR001117S0038)
- (3) Technical Area
- (4) Proposal title
- (5) Proposer's reference number, if applicable
- (6) Lead organization (prime proposer) name
- (7) Type of organization, selected from the following categories: Large Business, Small Disadvantaged Business, Other Small Business, HBCU, MI, Other Educational, or Other Nonprofit
- (8) Technical point of contact (POC) including name, mailing address, telephone,

- and email address
- (9) Administrative POC including name, mailing address, telephone number, and email address
 - (10) Total proposed cost separated by base award and any proposed option(s)
 - (11) Award instrument requested: procurement contract (specify type), grant, cooperative agreement, other transaction
 - (12) Place(s) and period(s) of performance
 - (13) List all other team member(s) (subawardees and consultants), if applicable; for each, provide the Technical POC name and organization
 - (14) Data Universal Numbering System (DUNS) number³
 - (15) Taxpayer identification number (TIN)⁴
 - (16) Commercial and Government Entity (CAGE) code⁵
 - (17) Name, address, and telephone number of the proposer's cognizant Defense Contract Management Agency (DCMA) administration office⁶ or Office of Naval Research (ONR) administration office⁷, if known
 - (18) Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office⁸, if known
 - (19) Date proposal was prepared
 - (20) Proposal validity period

ii. Cost Summaries

(1) Cost Summary by Phase: Provide total effort cost by phase broken down by major cost items to include: labor costs, materials, travel, consultants, subawards, other direct charges (ODCs), indirect costs (overhead, fringe, general and administrative (G&A)), and any proposed fee for the project.

(2) Cost Summary by Task: Provide a summary of total effort costs by task.

(3) Cost Summary by Month: Provide a summary of projected funding requirements by month.

iii. Cost Details: Provide the following cost details broken down by phase and month. Include supporting documentation describing the method used to estimate costs.

(1) Direct Labor: Provide individual labor categories or persons, with associated labor hours and direct labor rates.

³ The DUNS number is the Government's contractor identification code for all procurement-related activities. Go to <http://fedgov.dnb.com/webform/index.jsp> to request a DUNS number (may take at least one business day).

⁴ See <http://www.irs.gov/businesses/small/international/article/0,,id=96696,00.html> for information on requesting a TIN. NOTE: requests may take from 1 business day to 1 month depending on the method (online, fax, mail).

⁵ A CAGE Code identifies companies doing or wishing to do business with the Federal Government. See Section VI.B.2 for further information.

⁶ <https://pubapp.dema.mil/CASD/CasdSearch.do>.

⁷ <http://www.onr.navy.mil/Contracts-Grants/Regional-Contacts.aspx>.

⁸ http://www.dcaa.mil/FAQs_Contractor.pdf.

(2) Indirect Costs: Identify all indirect cost rates (Fringe Benefits, Overhead, G&A, Facilities Cost of Money, etc.) and the basis for each.

(3) Materials: Provide an itemized list of all proposed materials including quantities, unit prices, proposed vendors (if known), and the basis of estimate (e.g., quotes, prior purchases, catalog price lists, etc.). Any item that exceeds \$5,000 must be supported with back-up documentation such as a copy of catalog price lists or quotes prior to purchase.

(4) Equipment Purchases: Provide an itemized list of all proposed equipment including quantities, unit prices, proposed vendors (if known) and the basis of estimate (e.g., quotes, prior purchases, catalog price lists, etc.). Any item that exceeds \$5,000 must be supported with back-up documentation such as a copy of catalog price lists or quotes prior to purchase. Include any requests for Government-furnished equipment or information with cost estimates and delivery dates.

(5) Travel: Provide the purpose of the trip, number of trips, number of days per trip, departure and arrival destinations, number of people, etc.

(6) ODCs: Provide an itemized breakdown with costs. Backup documentation must be submitted to support proposed costs. An explanation of any estimating factors, including their derivation and application, must be provided.

(7) Cost Sharing: Provide the source, nature, and amount of any industry cost-sharing.

(8) Consultant Costs: Provide a copy of all consultants' proposed SOWs as well as signed consultant agreements or other documents which verify the proposed loaded daily / hourly rate, hours and any other proposed consultant costs (e.g., travel).

(9) Subawardee Costs: Provide the information requested above in subsections (1)-(7) for each proposed subawardee. *All documentation must be prepared at the same level of detail as that required of the prime.* In addition, prime proposers must provide the following for all proposed subawardees, as applicable:

- A copy of the proposed SOW as well as any documents which verify the proposed loaded daily / hourly rate, hours and any other proposed costs (e.g., travel).
- interdivisional work transfer agreements or evidence of similar arrangements; and
- A cost or price reasonableness analysis of proposed subawardee prices as defined in FAR 15.404-3. Such analysis shall indicate the extent to which the prime proposer has negotiated subawardee prices.

The prime proposer is responsible for the compilation and submission of all non-

proprietary subawardee cost proposals. Proposal submissions will not be considered complete until the Government has received all subawardee cost proposals.

Proprietary subawardee cost proposals may be included as part of Volume 2 or emailed separately (by the subawardee) to TEE@darpa.mil. Email messages must include “Subawardee Cost Proposal” in the subject line and identify the principal investigator, prime proposer organization and proposal title in the body of the message.

iv. Rate Agreements: Provide any available approved rate information or other documentation that may assist in expediting negotiations (e.g., Forward Pricing Rate Agreement, Department of Health and Human Services (DHHS) or Office of Naval Research (ONR) rate agreements).

v. Proposals Requesting a Procurement Contract: Provide the following information where applicable. NOTE: this information is not required for grants, cooperative agreements or other transactions.

(1) Proposals for \$750,000 or more (inclusive of all options): If applicable per FAR 15.403-4, provide “certified cost or pricing data” (as defined in FAR 2.101). If applicable per FAR 52.230-2, provide a Cost Accounting Standards (CAS) Disclosure Statement as required by 48 CFR 9903.202. The disclosure forms may be found at http://www.whitehouse.gov/omb/procurement_casb.

(2) Proposals for \$700,000 or more (inclusive of all options): Applicable proposals that (1) include subawardees and (2) are not exempt per FAR 19.702(b) must include a subcontracting plan pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)) and FAR 19.702(a)(1). The plan format is outlined in FAR 19.704.

(3) Proposals for a cost-type contract: Proposers who do not have a cost accounting system that has been deemed adequate for determining accurate costs must provide the DCAA Pre-award Accounting System Adequacy Checklist in order to facilitate DCAA’s completion of Standard Form (SF) 1408. The checklist may be found at: http://www.dcaa.mil/preaward_accounting_system_adequacy_checklist.html.

c. Volume 3 - Administrative and National Policy Requirements

This volume is mandatory and must include ALL of the following components. If a particular subsection is not applicable, state “NONE” (i.e., do not delete the subsection or leave it blank). No page limit is specified for this volume.

i. Team Member Identification: Provide a list of all team members including the prime, subawardee(s), and consultant(s), as applicable. Identify specifically whether any are a non-US organization or individual, FFRDC and/or Government entity.

Use the following format for this list:

Prime			
Individual Name:	Organization:	Non-U.S. Organization:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Non-U.S. Individual:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		FFRDC:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Government Entity:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Subawardees/Consultants			
Individual Name:	Organization:	Non-U.S. Organization:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Non-U.S. Individual:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		FFRDC:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Government Entity:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Individual Name:	Organization:	Non-U.S. Organization:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Non-U.S.US Individual:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		FFRDC:	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Government Entity:	<input type="checkbox"/> Yes <input type="checkbox"/> No

ii. Requirements for teams that include Government entities and/or Federally Funded Research and Development Centers (FFRDCs): Per Section III.A.1, provide the following information, if applicable.

(1) Proof of Eligibility to Propose: Provide documentation citing the specific authority that establishes the applicable team member’s eligibility to propose to Government solicitations to include: (1) statutory authority; (2) contractual authority; (3) supporting regulatory guidance; and (4) evidence of agency approval for applicable team member participation. For FFRDCs, this documentation must be in the form of a letter on official letterhead from their sponsoring organization and must also include a statement of compliance with the terms and conditions of the associated FFRDC sponsor agreement, as applicable.

(2) Statement of Unique Capability: Provide a statement that demonstrates the work to be performed by the applicable team member is not otherwise available from the private sector.

iii. Organizational Conflict of Interest Affirmations and Disclosure: Per Section III.B, provide the following information for all team members. If not applicable, state “NONE.”

- Affirm whether SETA, A&AS, or similar support is being or was provided to any DARPA office(s) within one calendar year of this proposal submission by any team member (individual or organization).
 - If yes, provide the following information for each applicable team member:
 - 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.

- Identify any other potential OCI involving any of the proposed team members (individual or organization). For each instance, identify the applicable team member and provide an OCI mitigation plan in accordance with FAR 9.5.

iv. Intellectual Property (IP): If no IP restrictions are intended, state “NONE.” The Government will assume unlimited rights to all IP not explicitly identified as restricted in the proposal.

(1) Technical Data and Computer Software: For all technical data or computer software that will be delivered to the Government with other than unlimited rights, provide (per Section VI.B.1) a list describing all proprietary claims to results, prototypes, deliverables or systems supporting and/or necessary for the use of the research, results, prototypes and/or deliverables. Use the following format for these lists:

NONCOMMERCIAL				
Technical Data and/or Computer Software To be Delivered With Restrictions	Summary of Intended Use in the Conduct of the Research	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions

COMMERCIAL				
Technical Data and/or Computer Software To be Delivered With Restrictions	Summary of Intended Use in the Conduct of the Research	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions

(2) Patents: Provide documentation proving ownership or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) to be used for the proposed project. If a patent application has been filed for an invention, but it includes proprietary information and is not publicly available, provide documentation that includes: the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and summary of the patent title, with either: (1) a representation of invention ownership; or (2) proof of possession of appropriate licensing rights in the invention (i.e., an agreement from the owner of the patent granting license to the proposer).]

v. Data Management Plan (DMP):

As outlined in Section I.H.2, provide a detailed plan for achieving reproducibility and interoperability such that an independent third party will be able to recreate the

scientific results. This plan should address:

- Plans for data capture and sharing, including the extent and specific mechanisms to be used during the period of performance for the program;
- Any data management standards, including meta-data standards, and/or community best practices that may apply;
- A data inventory, with rough estimates of data kinds and assets; formats; sizes (e.g., KB, MB, GB, TB), etc. Kinds of data might include:
 - Data sets: experimental, test, and measurement data;
 - Narratives: observational logs, journals, collaborations;
 - Analyses;
 - Decisions: alternatives, exploration branches, determinations
 - Design of experiments and simulations: setup, ingest, outputs;
 - Codes (with build scripts, development history and versions), software (executables with source), algorithms, data consumed or produced by software;
 - Models or simulations (computational or mathematical);
 - Bibliographies and citations used by your research
 - Recordings of various physical phenomena (including images, videos, sensor data, etc.)
- Methods for addressing and protecting sensitive data, to include participant anonymity, privacy or data redaction;
- Anticipated current or future data quality issues;
- How the DMP enhances validation and reproducibility of results;
- How the DMP may support future scientific discoveries and engineering innovation;
- Which elements of the DMP constitute deliverables as part of the program execution plan; and,
- Proposer’s access to (and proposed use of) institutional, organizational, or scientific community repositories and archives.

vii. Human Subjects Research (HSR): If HSR is not a factor in the proposal, state “NONE.”

If the proposed work will involve human subjects, provide evidence of or a plan for review by an institutional review board (IRB). For further information on this subject, see Section VI.B.5.

viii. Animal Use: If animal use is not a factor in the proposal, state “NONE.”

If the proposed research will involve animal use, provide a brief description of the plan for Institutional Animal Care and Use Committee (IACUC) review and approval. For further information on this subject, see Section VI.B.5.

ix. Representations Regarding Unpaid Delinquent Tax Liability or a Felony Conviction under Any Federal Law: Per Section VI.B.3, complete the following statements.

(a) The proposer represents that it is [] is not [] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

(b) The proposer represents that it is [] is not [] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

x. Publication of Grant Awards: Provide a 1-page explanation of the proposed effort as outlined in Section VI.B.9.

3. Proprietary Information

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. See Section V.B.1 for additional information.

4. Security Information

DARPA anticipates that submissions received under this BAA will be unclassified. However, should a proposer wish to submit classified information, an *unclassified* email must be sent to the BAA mailbox requesting submission instructions from the DARPA/DSO Program Security Officer (PSO).

Security classification guidance and direction via a SCG and/or DD Form 254, “DoD Contract Security Classification Specification,” will not be provided at this time, since DARPA is soliciting ideas only. If a determination is made that the award instrument may result in access to classified information, a SCG and/or DD Form 254 will be issued by DARPA and attached as part of the award.

C. Submission Dates and Times

Proposers are warned that submission deadlines as outlined herein are in Eastern Time and will be strictly enforced. When planning a response to this solicitation, proposers should take into account that some parts of the submission process may take from one business day to one month to complete (e.g., registering for a DUNS number or TIN).

DARPA will acknowledge receipt of *complete* submissions via email and assign identifying numbers that should be used in all further correspondence regarding those submissions. If no confirmation is received within two business days, please contact the BAA Administrator at TEE@darpa.mil to verify receipt.

1. Abstracts

Abstracts must be submitted per the instructions outlined herein *and received by DARPA* no later than the due date and time listed in Part One: Overview Information. Abstracts received after this time and date may not be reviewed.

2. Full Proposals

Full proposal packages--full proposal (Technical and Management Volume, Cost Volume, National and Administrative Requirements) and, as applicable, proprietary subawardee cost proposals, classified appendices to unclassified proposals-- must be submitted per the instructions outlined herein *and received by DARPA* no later than the due date and time listed in Part One: Overview Information. Proposals received after this time and date may not be reviewed.

D. Funding Restrictions

Not applicable.

E. Other Submission Requirements

1. Unclassified Submission Instructions

Proposers must submit all parts of their submission package using the same method; submissions cannot be sent in part by one method and in part by another method nor should duplicate submissions be sent by multiple methods. Email submissions will not be accepted. Failure to comply with the submission procedures outlined herein may result in the submission being deemed non-conforming and withdrawn from consideration.

a. Abstracts

DARPA/DSO will employ an electronic upload submission system (<https://baa.darpa.mil/>) for all UNCLASSIFIED abstracts sent in response to this solicitation. *Abstracts must not be submitted via Grants.gov.*

First time users of the DARPA BAA Submission website must complete a two-step account creation process. The first step consists of registering for an extranet account by going to the URL listed above and selecting the “Account Request” link. Upon completion of the online form, proposers will receive two separate emails; one will contain a user name and the second will provide a temporary password. Once both emails have been received, the second step requires proposers to go back to the submission website and log in using that user name and password. After accessing the extranet, proposers may then create a user account for the DARPA BAA Submission website by selecting the “Register your Organization” link at the top of the page. Once the user account is created, proposers will be able to see a list of solicitations open for submissions, view submission instructions, and upload/finalize their abstract.

Proposers who already have an account on the DARPA BAA Submission website may simply log in at <https://baa.darpa.mil/>, select this solicitation from the list of open DARPA solicitations

and proceed with their abstract submission. Note: proposers who have created a DARPA BAA Submission website account to submit to another DARPA Technical Office's solicitations do not need to create a new account to submit to this solicitation.

All abstracts submitted electronically through the DARPA BAA Submission website must meet the following requirements: (1) uploaded as a zip file (.zip or .zipx extension); (2) only contain the document(s) requested herein; (3) only contain unclassified information; and (4) must not exceed 100 MB in size. Only one zip file will be accepted per abstract and abstracts not uploaded as zip files will be rejected by DARPA.

Technical support for the DARPA BAA Submission website is available during regular business hours, Monday – Friday, 9:00 a.m. – 5:00 p.m. Requests for technical support must be emailed to BAAT_Support@darpa.mil with a copy to TEE@darpa.mil. Questions regarding submission contents, format, deadlines, etc. should be emailed to TEE@darpa.mil. Questions/requests for support sent to any other email address may result in delayed/no response.

Since proposers may encounter heavy traffic on the web server, DARPA discourages waiting until the day abstracts are due to request an account and/or upload the submission.

Note: Proposers submitting an abstract via the DARPA BAA Submission site MUST (1) click the "Finalize" button in order for the submission to upload AND (2) do so with sufficient time for the upload to complete prior to the deadline. Failure to do so will result in a late submission.

b. Proposals Requesting a Procurement Contract or Other Transaction

Proposers requesting procurement contracts or other transactions may submit full proposals through ONE of the following methods: (1) electronic upload (DARPA-preferred); or (2) direct mail/hand-carry.

i. Electronic Upload

DARPA/DSO encourages proposers to submit UNCLASSIFIED proposals via the DARPA BAA Submission website at <https://baa.darpa.mil/>.

First time users of the DARPA BAA Submission website must complete a two-step account creation process. The first step consists of registering for an extranet account by going to the URL listed above and selecting the "Account Request" link. Upon completion of the online form, proposers will receive two separate emails; one will contain a user name and the second will provide a temporary password. Once both emails have been received, the second step requires proposers to go back to the submission website and log in using that user name and password. After accessing the extranet, proposers may then create a user account for the DARPA BAA Submission website by selecting the "Register your Organization" link at the top of the page. Once the user account is created, proposers will be able to see a list of solicitations open for submissions, view submission instructions, and upload/finalize their proposal.

Proposers who already have an account on the DARPA BAA Submission website may simply log in at <https://baa.darpa.mil/>, select this solicitation from the list of open DARPA solicitations and proceed with their proposal submission. *Note: proposers who have created a DARPA BAA Submission website account to submit to another DARPA Technical Office's solicitations do not*

need to create a new account to submit to this solicitation.

All full proposals submitted electronically through the DARPA BAA Submission website must meet the following requirements: (1) uploaded as a zip file (.zip or .zipx extension); (2) only contain the document(s) requested herein; (3) only contain unclassified information; and (4) must not exceed 100 MB in size. Only one zip file will be accepted per full proposal and full proposals not uploaded as zip files will be rejected by DARPA.

Technical support for the DARPA BAA Submission website is available during regular business hours, Monday – Friday, 9:00 a.m. – 5:00 p.m. Requests for technical support must be emailed to BAAT_Support@darpa.mil with a copy to TEE@darpa.mil. Questions regarding submission contents, format, deadlines, etc. should be emailed to TEE@darpa.mil. Questions/requests for support sent to any other email address may result in delayed/no response.

Since proposers may encounter heavy traffic on the web server, DARPA discourages waiting until the day proposals are due to request an account and/or upload the submission. Note: Proposers submitting a proposal via the DARPA BAA Submission site MUST (1) click the “Finalize” button in order for the submission to upload AND (2) do so with sufficient time for the upload to complete prior to the deadline. Failure to do so will result in a late submission.

ii. Direct Mail/Hand-carry

Proposers electing to submit procurement contract or other transaction proposals via direct mail or hand-carried must provide one paper copy and one electronic copy on CD or DVD of the full proposal package. All parts of the proposal package must be mailed or hand-carried in a single delivery to the address noted in Section VII below.

c. Proposals Requesting a Grant or Cooperative Agreement

Proposers requesting grants or cooperative agreements may only submit proposals through ONE of the following methods: (1) electronic upload at Grants.gov (DARPA-preferred); or (2) direct mail/hand-carry to DARPA.

i. Electronic Upload

DARPA encourages grant and cooperative agreement proposers to submit their proposals via electronic upload at <http://www.grants.gov/web/grants/applicants/apply-for-grants.html>. Proposers electing to use this method must complete a one-time registration process on Grants.gov before a proposal can be electronically submitted. *If proposers have not previously registered, this process can take up to four weeks so registration should be done in sufficient time to ensure it does not impact a proposer’s ability to meet required submission deadlines.* Registration requirements and instructions are outlined at <http://www.grants.gov/web/grants/register.html>.

Carefully follow the DARPA submission instructions provided with the solicitation application package on Grants.gov. Only the required forms listed therein (e.g., SF-424 and Attachments form) should be included in the submission. *Note: Grants.gov does not accept zipped or encrypted proposals.*

Once Grants.gov has received an uploaded proposal submission, Grants.gov will send two email messages to notify proposers that: (1) the proposal has been received by Grants.gov; and (2) the proposal has been either validated or rejected by the system. *It may take up to two business days to receive these emails.* If the proposal is validated, then the proposer has successfully submitted their proposal. If the proposal is rejected, the submission must be corrected, resubmitted and revalidated before DARPA can retrieve it. If the solicitation is no longer open, the rejected proposal cannot be resubmitted. Once the proposal is retrieved by DARPA, Grants.gov will send a third email to notify the proposer. DARPA will send a final confirmation email as described in Section IV.C.

To avoid missing deadlines, Grants.gov recommends that proposers submit their proposals to Grants.gov 24-48 hours in advance of the proposal due date to provide sufficient time to complete the registration and submission process, receive email notifications and correct errors, as applicable.

Technical support for Grants.gov submissions may be reached at 1-800-518-4726 or support@grants.gov.

ii. Direct Mail/Hand-carry

Proposers electing to submit grant or cooperative agreement proposals via direct mail or hand-carried must provide one paper copy and one electronic copy on CD or DVD of the full proposal package. Proposers must complete the SF 424 R&R form (Application for Federal Assistance, Research and Related) provided at Grants.gov as part of the opportunity application package for this BAA and include it in the proposal submission. All parts of the proposal package must be mailed or hand-carried to the address noted in Section VII below.

V. Application Review Information

A. Evaluation Criteria

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

- **Overall Scientific and Technical Merit**

The proposed technical approach is innovative, feasible, achievable, and complete.

- **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.

The proposed intellectual property restrictions (if any) will not significantly impact DARPA's ability to transition the technology.

- **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).

B. Review and Selection Process

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

The review process identifies proposals that meet the evaluation criteria described above and are, therefore, selectable for negotiation of awards by the Government. DARPA policy is to ensure impartial, equitable, comprehensive proposal evaluations and to select proposals that meet DARPA technical, policy, and programmatic goals. Proposals that are determined selectable will not necessarily receive awards (see Section II). Selections may be made at any time during the period of solicitation. For evaluation purposes, a proposal is defined to be the document and supporting materials as described in Section IV.

1. Handling of Source Selection Information

DARPA policy is to treat all submissions as source selection information (FAR 2.101 and 3.104), and to only disclose their contents to authorized personnel. Restrictive notices notwithstanding, 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), DARPA may also request input on technical aspects of the proposals from other non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements.

Submissions will not be returned. The original of each submission received will be retained at DARPA and all other non-required copies destroyed. A certification of destruction may be requested via email to the BAA mailbox, provided the formal request is received within 5 days after being notified of submission status.

C. Federal Awardee Performance and Integrity Information (FAPIS)

Following the review and selection process described above, but prior to making an award above

the simplified acquisition threshold (FAR 2.101), DARPA is required⁹ to review and consider any information available through the designated integrity and performance system (currently FAPIIS). Selectees have the opportunity to comment on any information about themselves entered in the database. DARPA will consider any comments and other information in FAPIIS or other systems prior to making an award.

VI. Award Administration Information

A. Selection Notices

After proposal evaluations are complete, proposers will be notified as to whether their proposal was selected for award negotiation as a result of the review process. Notification will be sent by email to the Technical and Administrative POCs identified on the proposal cover sheet. If a proposal has been selected for award negotiation, the Government will initiate those negotiations following the notification.

B. Administrative and National Policy Requirements

1. Solicitation Provisions and Award Clauses, Terms and Conditions

Solicitation provisions relevant to DARPA BAAs are listed on the Additional BAA Content page on DARPA's website at www.darpa.mil/work-with-us/additional-baa. This page also lists award clauses that, depending on their applicability, may be included in the terms and conditions of awards resultant from DARPA solicitations. This list is not exhaustive and the clauses, terms and conditions included in a resultant award will depend on the nature of the research effort, the specific award instrument, the type of awardee, and any applicable security or publication restrictions.

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

The above information serves to put potential proposers and awardees on notice of proposal requirements and award terms and conditions to which they may have to adhere.

2. 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 www.darpa.mil/work-with-us/additional-baa for further information.

NOTE: new registrations can take an average of 7-10 business days to process in SAM. SAM registration requires the following information:

⁹ Per 41 U.S.C. 2313, as implemented by FAR 9.103 and 2 CFR § 200.205.

- DUNS number
- TIN
- CAGE Code. If a proposer does not already have a CAGE code, one will be assigned during SAM registration.
- Electronic Funds Transfer information (e.g., proposer's bank account number, routing number, and bank phone or fax number).

3. 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 www.sam.gov/. In addition, resultant procurement contracts will require supplementary DARPA-specific representations and certifications. See www.darpa.mil/work-with-us/additional-baa for further information.

4. Intellectual Property

Proposers should note that the Government does not own the intellectual property or technical data/computer software developed under Government contracts. The Government acquires the right to use the technical data/computer software. Regardless of the scope of the Government's rights, awardees may freely use their same data/software for their own commercial purposes (unless restricted by U.S. export control laws or security classification). Therefore, technical data and computer software developed under this solicitation will remain the property of the awardees, though DARPA will have, at a minimum, Government Purpose Rights (GPR) to technical data and computer software developed through mixed sponsorship.

If proposers desire to use proprietary computer software or technical data or both as the basis of their proposed approach, in whole or in part, they should: (1) clearly identify such software/data and its proposed particular use(s); (2) explain how the Government will be able to reach its program goals (including transition) within the proprietary model offered; and (3) provide possible nonproprietary alternatives in any area that might present transition difficulties or increased risk or cost to the Government under the proposed proprietary solution. Proposers expecting to use, but not to deliver, commercial open source tools or other materials in implementing their approach may be required to indemnify the Government against legal liability arising from such use.

All references to "Unlimited Rights" or "Government Purpose Rights" are intended to refer to the definitions of those terms as set forth in the Defense Federal Acquisition Regulation Supplement (DFARS) 227.

a. Intellectual Property Representations

All proposers must provide a good faith representation of either ownership or possession of appropriate licensing rights to all other intellectual property to be used for the proposed project. Proposers must provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research.

b. Patents

All proposers must include documentation proving ownership or possession of appropriate licensing rights to all patented inventions to be used for the proposed project. If a patent application has been filed for an invention, but it includes proprietary information and is not publicly available, a proposer must provide documentation that includes: the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and summary of the patent title, with either: (1) a representation of invention ownership; or (2) proof of possession of appropriate licensing rights in the invention (i.e., an agreement from the owner of the patent granting license to the proposer).

c. Procurement Contracts

- **Noncommercial Items (Technical Data and Computer Software):** Proposers requesting a procurement contract must list all noncommercial technical data and computer software that it plans to generate, develop, and/or deliver, in which the Government will acquire less than unlimited rights and to assert specific restrictions on those deliverables. In the event a proposer does not submit the list, the Government will assume that it has unlimited rights to all noncommercial technical data and computer software generated, developed, and/or delivered, unless it is substantiated that development of the noncommercial technical data and computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data and computer software generated, developed, and/or delivered, proposers should identify the data and software in question as subject to GPR. In accordance with DFARS 252.227-7013, “Rights in Technical Data - Noncommercial Items,” and DFARS 252.227-7014, “Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation,” the Government will automatically assume that any such GPR restriction is limited to a period of 5 years, at which time the Government will acquire unlimited rights unless the parties agree otherwise. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Section IV.B.2.c.
- **Commercial Items (Technical Data and Computer Software):** Proposers requesting a procurement contract must list all commercial technical data and commercial computer software that may be included in any noncommercial deliverables contemplated under the research project, and assert any applicable restrictions on the Government’s use of such commercial technical data and/or computer software. In the event a proposer does not submit the list, the Government will assume there are no restrictions on the Government’s use of such commercial items. The Government may use the list during the evaluation process to evaluate the impact of any identified restrictions and may request additional information from the proposer to evaluate the proposer’s assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Section IV.B.2.c.

d. Other Types of Awards

Proposers requesting an award instrument other than a procurement contract shall follow the applicable rules and regulations governing those award instruments, but in all cases should appropriately identify any potential restrictions on the Government's use of any intellectual property contemplated under those award instruments. This includes both noncommercial items and commercial items. The Government may use the list as part of the evaluation process to assess the impact of any identified restrictions, and may request additional information from the proposer, to evaluate the proposer's assertions. Failure to provide full information may result in a determination that the proposal is non-conforming. A template for complying with this request is provided in Section IV.B.2.c.

5. 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 www.darpa.mil/work-with-us/additional-baa, to include providing the information specified therein as required for proposal submission.

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

All proposers and awardees will be subject to the DARPA requirements related to Controlled Unclassified Information on Non-DoD Information Systems as detailed at www.darpa.mil/work-with-us/additional-baa.

7. Electronic Invoicing and Payments

Awardees will be required to submit invoices for payment electronically via Wide Area Work Flow (WAWF) at <https://wawf.eb.mil>, unless an exception applies. Registration in WAWF is required prior to any award under this BAA.

8. Electronic and Information Technology

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) and FAR 39.2.

9. Publication of Grant Awards

Per Section 8123 of the Department of Defense Appropriations Act, 2015 (Pub. L. 113-235), all grant awards must be posted on a public website in a searchable format. To comply with this requirement, proposers requesting grant awards must submit a maximum one (1) page abstract that may be publicly posted and explains the program or project to the public. The proposer should sign the bottom of the abstract confirming the information in the abstract is approved for public release. Proposers are advised to provide both a signed PDF copy, as well as an editable (e.g., Microsoft word) copy. Abstracts contained in grant proposals that are not selected for award will not be publicly posted.

10. Disclosure of Information and Compliance with Safeguarding Covered Defense Information Controls

Unless a proposer is performing strictly fundamental research, all proposers receiving FAR-based Procurement Contracts under this BAA shall be compliant with the following:

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, or as authorized by the Contracting Officer, not later than December 31, 2017.

C. Reporting

1. Technical and Financial Reports

The number and types of technical and financial reports required under the contracted project will be specified in the award document, and will include, as a minimum, monthly financial status reports and a yearly status summary. A final report that summarizes the project and tasks will be required at the conclusion of the performance period for the award. The reports shall be prepared and submitted in accordance with the procedures contained in the award document.

2. Patent Reports and Notifications

All resultant awards will contain a mandatory requirement for patent reports and notifications to be submitted electronically through i-Edison (<https://public.era.nih.gov/iedison>).

VII. Agency Contacts

DARPA will use email for all technical and administrative correspondence regarding this solicitation.

- **Technical POC:** Dr. Rosa Alejandra Lukaszew, Program Manager, DARPA/DSO
- **BAA Email:** TEE@darpa.mil
- **BAA Mailing Address:**
DARPA/DSO, ATTN: HR001117S0038
675 North Randolph Street, Arlington, VA 22203-2114

- **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/opportunities>

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

VIII. Other Information

A. Frequently Asked Questions (FAQs)

Administrative, technical, and contractual questions should be emailed to TEE@darpa.mil. All questions must be in English and must include the name, email address, and the telephone number of a point of contact.

DARPA will attempt to answer questions in a timely manner; however, questions submitted within 7 days of the proposal due date may not be answered. DARPA will post an FAQ list at: <http://www.darpa.mil/work-with-us/opportunities>. The list will be updated on an ongoing basis until the BAA expiration date as stated in Part I.

B. Collaborative Efforts/Teaming

DARPA highly encourages teaming before proposal submission and, as such, will facilitate the formation of teams with the necessary expertise. Interested parties should submit a one-page profile including the following information:

- Contact information to include name, organization, email, telephone number, mailing address, organization website (if applicable).
- A brief description of the proposer's technical competencies.
- Desired expertise from other teams, if applicable.

All profiles must be emailed to TEE@darpa.mil no later than 4:00 p.m. June 20, 2017. Following the deadline, the consolidated teaming profiles will be sent via email to the proposers who submitted a valid profile. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the DoD endorses the information and organizations contained in the consolidated teaming profile document, nor does DARPA or the DoD exercise any responsibility for improper dissemination of the teaming profiles.

C. Proposers Day

The Program Proposers Day will be held on June 16, 2017 via webcast. Advance registration is required. See DARPA-SN-17-48 posted at www.fbo.gov for all details. Viewing the Topological Excitations in Electronics Proposers Day webcast is voluntary and is not required to propose to this solicitation.