



Defense Sciences Office
Office-wide
Broad Agency Announcement
HR001117S0040
June 12, 2017

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MANDATORY SUBMISSION TEMPLATES (available with BAA at <https://www.fbo.gov/> and <https://www.grants.gov/>)

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SAMPLE AWARD INSTRUMENTS FOR DISRUPTIONEERING PROPOSALS (available with BAA at <http://www.darpa.mil/work-with-us/opportunities>)

PART I: OVERVIEW INFORMATION

- **Federal Agency Name:** Defense Advanced Research Projects Agency (DARPA), Defense Sciences Office (DSO)
- **Funding Opportunity Title:** DSO Office-wide Broad Agency Announcement (BAA)
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** HR001117S0040
- **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 12, 2017
 - Executive Summary Due Date: April 26, 2018, 4:00 p.m.
 - Abstract Due Date: May 10, 2018, 4:00 p.m.
 - Full Proposal Due Date:
 - General BAA: June 11, 2018, 4:00 p.m.
 - Disruptioneering: As listed in each Disruption Opportunity. See Section IX for further information.
- **Anticipated Individual Awards:** Multiple awards are anticipated; however, the level of funding for individual awards made under this solicitation has not been predetermined and will depend on the scope and quality of the proposals received, as well as the availability of funds. See Section II for further information.
- **Types of Instruments that May be Awarded:** Procurement contracts, grants, cooperative agreements, other transactions, or purchase orders¹
- **Agency contacts**
 - **BAA Email:** HR001117S0040@darpa.mil
 - **BAA Mailing Address:**
DARPA/DSO
ATTN: HR001117S0040
675 North Randolph Street
Arlington, VA 22203-2114
- **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/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.

¹ See Section IX for information on purchase order awards.

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 mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and pursue high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and to transform these initiatives into disruptive technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts that explore Physical and Natural Systems, Human-Machine and Social Systems, and/or Math and Computational Systems through the lens of one or more of the following technical domains: Complexity Engineering, Science of Design, Noosphere, Fundamental Limits, and New Foundations. Each of these domains is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice.

B. Technical Domains and Research Topics of Interest

Complexity Engineering²: Understanding the principles of organization and control, the transformation or harnessing of complexity, and the implications of such methods. Example topics of interest relate to (1) complex sensing networks to protect cities and surrounding metropolitan areas from chemical and biological threats; (2) new strategies to protect natural resources; (3) new concepts in war-gaming and conflict simulation; and (4) design, synthesis and characterization of materials trapped in non-equilibrium states.

Science of Design³: The study of processes and methods of design, i.e., ways in which we transform a given state of the world into a preferred one using tools and technologies. Example topics of interest relate to (1) the creation of novel optics with metamaterials; (2) strategies for building microscopic, distributable cameras; (3) design concepts in synthesis and use of non-linear materials; (4) digital representations of engineering information that can anticipate failure, evolve, and merge with other designs; and (5) mathematical optimization and its use in design.

Noosphere⁴: Creating, measuring, and modeling foundational questions regarding humans,

² For a conceptual framework with which to consider this topic, see “The architecture of complexity,” HA Simon, Proceedings of the American Philosophical Society, 106 (6), 467-482 (1962).

³ For a conceptual framework with which to consider this topic, see Chapter 5 of “The Sciences of the Artificial”, HA Simon, Cambridge, MA: MIT Press (1981).

⁴ For a conceptual framework with which to consider this topic, see Chapter 2 of “The Emergence of Noopolitik: Toward An American Information Strategy,” Arquilla, John and David Ronfeldt. RAND Corporation, 1999.

human-machine interactions, and society. Example topics of interest include: (1) understanding the limits of human perception; (2) developing a more detailed understanding of human variability; and (3) implications and applications of virtual reality and augmented reality technologies.

Fundamental Limits: Creating, measuring, and modeling the boundaries of our current understanding of the natural, physical, mathematical, and computational sciences using rigorous and reproducible, hypothesis-driven, scientific methods. Example topics of interest include: (1) understanding the limits of natural intelligence and boundaries of machine intelligence, (2) establishing the limits of quantum effects, and (3) determining the limits of chemical-based propulsion.

New Foundations: Discovering new natural phenomena or developing entirely new approaches to address scientific or technical challenges. Topics in this area will uncover new scientific or engineering principles. This area of interest differs from Fundamental Limits in that Fundamental Limits seeks to define the boundary conditions of known phenomena, whereas New Foundations is focused on uncovering the unknown. Topics of interest are expected to evolve quickly, but current examples include: (1) correlating effects of uncertainties in materials, (2) development of knowledge and tools associated with designer metals, (3) new human-computer interaction concepts that enable improved human-machine symbiotic decision-making, (4) exploring alternative models to computation⁵, (5) strategies to leverage the Earth’s magnetic field, and (6) new concepts in ultra-rapid and high-magnitude energy transduction.

C. Submissions

Prior to submitting a research concept to any DARPA BAA, proposers should review technical area descriptions for each technical office to ensure the proposed concept is in line with that office’s technology investment portfolio (<http://www.darpa.mil/about-us/offices>). The office-wide BAAs published by each technical office also describe the particular technical areas of interest specific to each office (<http://www.darpa.mil/work-with-us/opportunities>). Since each DARPA BAA addresses different challenges and technical areas, proposers should not simultaneously propose the same research to multiple DARPA BAAs.

Submissions to this DSO Office-wide BAA may be in the form of an executive summary, abstract, or full proposal. Full proposals may be submitted in response to either the general BAA or to a specific Disruption Opportunity (DO).⁶

Prior to submitting an abstract or full proposal in response to the general BAA, proposers are *strongly encouraged* to first submit an executive summary as described in Section IV. This process allows a proposer to quickly ascertain whether the proposed concept is (1) applicable

https://www.rand.org/pubs/monograph_reports/MR1033.html.

⁵ Examples include non-Von Neumann computing architectures, alternative computing substrates and new theoretical ideas. See for example, “Neural and Super-Turing Computing,” H.T. Siegelmann in *Minds and Machines* 13: 103–114, 2003; or “Computability in Analysis and Physics,” M. Pour-El, J. Richards (1989).

⁶ For information on Disruption Opportunities and “Disruptioneering,” see Section IX. Note: unless specified otherwise, all references to “proposals” and “submissions” herein refer to both DO responses and general BAA responses.

to the DSO mission and (2) currently of interest. For the purposes of this BAA, applicability to the DSO mission 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 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).

Submissions that are not applicable to the DSO mission as defined above may be deemed non-conforming⁷ and removed from consideration. Other circumstances under which a submission may be deemed non-conforming include failure to comply with the requirements outlined herein for submission formatting, content and transmission to DARPA, and failure to provide sufficient information to assess the validity/feasibility of proposed claims. Proposers will be notified of non-conforming determinations via letter. See Section IV for detailed information regarding submission requirements.

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 proposers⁸ whose proposals are determined to be the most advantageous to the Government, all evaluation factors considered. See Section V for information on proposal evaluation and selection. See Section IX for award information specific to Disruptioneering.

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.,

⁷ “Conforming” is defined as having been submitted in accordance with the requirements outlined herein. See Section V.B for further information.

⁸ 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.).

- 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, other transaction (OT), or purchase order 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 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 cannot identify whether the work under this BAA may be considered fundamental research and may award both fundamental and non-fundamental research.

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). For more information on potential cost sharing requirements for Other Transactions for Prototype, see <http://www.darpa.mil/work-with-us/contract-management#OtherTransactions>.

IV. Application and Submission Information

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.

B. Content and Form of Application Submission

Various templates containing content descriptions and instructions have been provided as attachments to the BAA posted at <http://www.fbo.gov> and <https://www.grants.gov/>. *Use of these templates is mandatory for all submissions to this BAA.* Do not replicate any of these templates using personal or organizational letterhead or formatting (except as directed in the templates) or submit documents as un-editable image files. Document files must be in .pdf, .ppt, .pptx, .odx, .doc, .docx, .xls, or .xlsx formats. All submissions must be written in English and 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 (8 or 10-point font may be used for figures, tables, and charts).

Complete submission packages are defined as follows:

- Executive summaries consist of the following files, described in Section IV.B.1 below:
 - One document file (Attachment 2)
- Abstracts consist of the following files, described in Section IV.B.2 below:
 - One document file (Attachment 3)
 - One PowerPoint slide (Attachment 1)
- Proposals consist of the following files, described in Section IV.B.3 below:
 - Volume 1 - Technical and Management
 - One document file (Attachment 4 or Attachment 5, as applicable)
 - One PowerPoint slide (Attachment 1)
 - Volume 2 - Cost
 - One document file (Attachment 6)

- One Excel spreadsheet (Attachment 7)
- Any proprietary subcontractor cost proposals
- Volume 3 - Administrative and National Policy Requirements
 - One document file (Attachment 8)

1. Executive Summary Information

The executive summary provides a synopsis of the proposed project by concisely answering the following questions (Note: these questions are a subset of the Heilmeyer Catechism):

- What is the proposed work attempting to accomplish or do?
- How is the work performed today (what is the state of the art or practice), and what are the limitations?
- Who will care and what will the impact be if the work is successful?

All executive summaries must use the template provided as Attachment 2 to the BAA.

DARPA will respond to executive summaries with a brief statement either encouraging or discouraging submission of a follow-on abstract or full proposal. In keeping with the intent of the executive summary, these responses will generally be limited to a statement of interest (or lack thereof), rather than providing detailed feedback. DARPA will attempt to reply to executive summaries via e-mail within thirty calendar days of receipt. Regardless of DARPA's response to an executive summary, proposers may submit an abstract or full proposal.

2. 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 the work performed 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?

All abstracts must use the templates provided as Attachment 1 and Attachment 3 to the BAA.

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.

DARPA will attempt to reply to abstracts within thirty calendar days. These official notifications will be emailed to the Technical POC and/or Administrative POC identified on the abstract cover sheet.

3. Full Proposal Information

All complete proposal packages must include the parts listed above in Section IV.B. The following templates have been provided as attachments to the BAA. Use of these templates is mandatory for all proposal submissions to this BAA.

- Attachment 1: Summary Slide Template
- Attachment 4*: Proposal Template – Vol. 1 Technical and Management
- Attachment 6: Proposal Template – Vol. 2 Cost
- Attachment 7: Proposal Template – Cost Summary Spreadsheet
- Attachment 8: Proposal Template – Vol. 3 Administrative and National Policy Requirements

*Note: Proposals submitted in response to a Disruption Opportunity must use Attachment 5 (Disruptioneering Technical and Management Volume) rather than the template contained in Attachment 4.

4. 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.

5. 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 Security Classification Guide (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. Additional information on these subjects may be found at <http://www.dss.mil/>.

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 (as defined in Section IV) 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 HR001117S0040@darpa.mil to verify receipt.

1. Executive Summaries

Executive summaries 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. Executive summaries received after that deadline may not be reviewed.

2. 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 that deadline may not be reviewed.

3. Full Proposals

Complete proposal packages must be submitted per the instructions outlined herein *and received by DARPA* no later than the due dates and times listed in Part One: Overview Information. Proposals received after the deadlines described herein may not be reviewed.

The published Special Notice for each Disruption Opportunity (DO) will identify a due date and time for proposals responding to that specific DO; these deadlines will be prior to the proposal deadline listed for HR001117S0040. DO proposers are warned that the likelihood of available funding in the targeted area outlined in each DO will be greatly reduced for proposals submitted after the deadline listed in each DO.

D. Funding Restrictions

Not applicable.

E. Other Submission Requirements

1. Instructions for Unclassified Submissions

DARPA will accept submissions to this BAA via electronic upload (DARPA-preferred) on either the DARPA BAA Submission website or the Grants.gov website, or via direct mail/hand-carried to DARPA. Specific instructions and applicability restrictions for each method are outlined below. *Proposers may not email submissions unless granted prior authorization by DARPA.* 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. Failure to comply with the submission procedures

outlined herein may result in the submission being deemed non-conforming and withdrawn from consideration.

a. Electronic Upload via the DARPA BAA Submission Website (BAAT)

i. Applicability

- Required for executive summaries
- Required for abstracts
- DARPA-preferred for proposals requesting procurement contracts or other transactions

ii. Instructions

Proposers who are first time users of the DARPA BAA Submission website (BAAT) 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 BAAs open for submissions, view submission instructions, and finalize/upload their submission.

Proposers who have already created an account in BAAT—for any DARPA BAA, regardless of Technical Office — may simply log in at <https://baa.darpa.mil/>, select this BAA from the list of open DARPA BAAs and proceed with their submission.

Note: Proposers MUST click the “Finalize” button in order for the submission to be officially submitted. Furthermore, submissions must be finalized with sufficient time for the upload to complete prior to the deadline. Failure to do so may result in DARPA not receiving the submission. Proposers are warned they may encounter heavy traffic on the web server; therefore, DARPA discourages waiting until the day submissions are due to request an account and/or upload the submission.

Once the submission has been finalized AND the upload is complete, BAAT will send a confirmation email as described in Section IV.C.

All submissions made through the BAAT 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 submission; submissions not uploaded as zip files will be rejected by DARPA.

Technical support for BAAT 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 HR001117S0040@darpa.mil. Questions regarding submission contents, format,

deadlines, etc. should be emailed to HR001117S0040@darpa.mil. Questions/requests for support sent to any other email address may result in delayed/no response.

b. Electronic Upload via the Grants.gov Website

i. Applicability

- DARPA-preferred for proposals requesting grants or cooperative agreements

ii. Instructions

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.

c. Direct Mail/Hand-carry

i. Applicability

- All proposals regardless of requested award instrument

ii. Instructions

Proposers electing to mail or hand-carry proposals directly to DARPA must provide one paper copy and one electronic copy on CD or DVD of the complete proposal package. Note: proposers requesting a grant or cooperative agreement must include a completed 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.

Complete proposal packages must be mailed or hand-carried to the address noted in Section VII.

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.

- **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 (FAPIIS)

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

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

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:

- 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. 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.

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.

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.

- **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.

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.

5. Data Management Plan (DMP)

This BAA requires proposers to include a Data Management Plan (DMP) 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 proposed project. DARPA’s approach to an effective and practical DMP is predicated by 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, DARPA/DSO requires proposers to document the necessary and sufficient scope of data that

may be applicable to these goals. Awardees will be expected to document both the proprietary and non-proprietary products of the effort (including raw unprocessed data, rarified data sets, test data, experimental designs, software source code and executables, build scripts, process sequence, effort-related 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 data generated under the effort 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 data described above may go considerably beyond the scope of data to be made public. Hence, DARPA/DSO expects proposed DMPs will include a delineation of the proposers' specific data products that are suitable for public release and a description of how this information will be captured and represented. In this way, it is DARPA's intention to enable reproducibility of results and establish (or contribute to) digital collections that can advance the scientific field(s) relevant to this BAA. Note that this provision is not meant to require disclosure of otherwise proprietary internal component or process intellectual property, but to ensure all DARPA awardees can meet the overall objectives of their respective efforts.

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, as applicable:

- Plans for data capture and sharing, including the extent and specific mechanisms to be used during the period of performance for the effort;
- 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 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

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

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

DFARS 252.204-7000, “Disclosure of Information”

DFARS 252.204-7008, “Compliance with Safeguarding Covered Defense Information Controls”

DFARS 252.204-7012, “Safeguarding Covered Defense Information and Cyber Incident Reporting”

The full text of the above solicitation provision and contract clauses can be found at

<http://www.darpa.mil/work-with-us/additional-baa#NPRPAC>.

Compliance with the above requirements includes the mandate for proposers to implement the security requirements specified by National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171, “Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations” (see <https://doi.org/10.6028/NIST.SP.800-171r1>) that are in effect at the time the BAA is issued, or as authorized by the Contracting Officer, not later than December 31, 2017.

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

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.

- **BAA Email:** HR001117S0040@darpa.mil

- **BAA Mailing Address**
DARPA/DSO, ATTN: HR001117S0040
675 North Randolph Street, Arlington, VA 22203-2114
- **DARPA/DSO Opportunities Website:** <http://www.darpa.mil/work-with-us/opportunities>

VIII. Other Information

A. Frequently Asked Questions (FAQs)

All administrative, technical, and contractual questions should be emailed to HR001117S0040@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. Agency-level Protests

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

IX. Appendix: Disruptioneering

A. Introduction

The mission of the Defense Advanced Research Projects Agency is to make strategic, early investments in science and technology that will have long-term positive impact on our nation's national security. The Defense Sciences Office's (DSO's) role in this mission is to make high risk, high reward investments in science and technology that have the potential to disrupt current understanding and/or approaches. The pace of discovery in both science and technology is accelerating worldwide, resulting in new fields of study and the identification of scientific areas ripe for disruption. While DSO's existing investment strategy continues to yield success, in order to capitalize on these new opportunities, its approach to investing must include faster responses with more small, targeted investments. This new approach is called Disruptioneering. Disruptioneering will enable DSO to initiate a new investment in less than 90 days from idea inception.

B. Disruption Opportunities (DOs)

Disruption Opportunities (DOs) will be announced via Special Notices requesting proposals under this DSO Office-wide BAA, HR001117S0040. These DOs will be open for at least 30 days from publication at <https://www.fbo.gov/>.¹⁰ DOs will describe rapid (6 to 18 month)

¹⁰ Following publication on <https://www.fbo.gov/>, Disruption Opportunities will be posted on the DARPA/DSO

projects addressing two phases as described below. During these periods of performance, very high risk, high reward topics will be investigated with the goal of determining feasibility and clarifying whether the area is ready for increased investment. Proposals submitted in response to DOs will be evaluated and selected in accordance with Section V of this BAA.

C. DO Proposal and Award Information

Proposals submitted in response to a Disruption Opportunity must be UNCLASSIFIED and must address two independent and sequential project phases: a 6-month Feasibility Study (Phase 1) and a 12-month Proof of Concept (Phase 2). For any proposal selected for award, the Government reserves the right to award only Phase 1 or a combined Phase 1 and 2 effort. In cases where only a Phase 1 award is made at the outset, the Government may award a follow-on effort for Phase 2 depending on the outcome of the Phase 1 effort. Due to the potential for awarding follow-on Phase 2 efforts, DARPA is requesting a proposal validity period of 365 days.

Individual awards for Phase 1 are limited to \$150,000 or less. If the Government decides to limit an award to Phase 1, that award will be made as a firm-fixed price purchase order. Phase 2 awards for follow-on efforts may be made as procurement contracts (either cost reimbursement or fixed price), grants, cooperative agreements, or other transactions. The amount of individual Phase 2 awards will be based on the requested award instrument and is limited to \$550,000 or less for procurement contracts and \$850,000 or less for grants, cooperative agreements, and other transactions.

Combined Phase 1 and 2 efforts may be awarded as procurement contracts (either cost reimbursement or fixed price), grants, cooperative agreements, or other transactions. The amount of combined awards will be based on the requested award instrument and is limited to \$700,000 or less for procurement contracts and \$1,000,000 or less for grants, cooperative agreements, and other transactions. Regardless of requested award instrument, the Phase 1 portion of the combined award shall not exceed \$150,000.

Proposers should view the following sample award instruments on the DARPA/DSO Opportunities website at <http://www.darpa.mil/work-with-us/opportunities>.

- Phase 1-only Purchase Order
- Combined Phase 1 and 2 Grant
- Combined Phase 1 and 2 Cooperative Agreements
 - Educational and non-profit organizations
 - For-profit organizations
- Combined Phase 1 and 2 Procurement Contracts
 - Cost Reimbursement
 - Fixed Price
- Combined Phase 1 and 2 Other Transactions
 - Technology Investment Agreement (Fixed Price)
 - Other Transaction For Prototypes (Fixed Price)

Opportunities page at <http://www.darpa.mil/work-with-us/opportunities>.