



Broad Agency Announcement
Geospatial Cloud Analytics (GCA)
STRATEGIC TECHNOLOGY OFFICE
HR001118S0004

October 11, 2017

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PART I: OVERVIEW INFORMATION

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Strategic Technology Office
- **Funding Opportunity Title** – Geospatial Cloud Analytics (GCA)
- **Announcement Type** – Initial Announcement
- **Funding Opportunity Number** – HR001118S0004
- **Catalog of Federal Domestic Assistance Numbers (CFDA):** Not applicable
- **Dates**
 - Posting Date: **October 11, 2017**
 - Proposer’s Day: **October 18, 2017**
 - Proposal Abstract Due Date: **October 26, 2017 at 4:00PM EST**
 - Questions Due Date: **October 27, 2017**
 - Proposal Due Date: **December 14, 2017 at 4:00PM EST**
 - BAA Closing Date: **April 9, 2018 at 4:00PM EST**
- **Total amount of money to be awarded** – \$28.9 million (for Phases 1 and 2)
- **Anticipated individual awards** - Multiple awards are anticipated.
- **Types of instruments that may be awarded** - Procurement contract or other transaction.
- **Agency contact**
 - The BAA Coordinator for this effort may be reached at:
HR001118S0004@darpa.mil
DARPA/STO
ATTN: HR001118S0004
675 North Randolph Street
Arlington, VA 22203-2114

PART II: FULL TEXT OF ANNOUNCEMENT

1. FUNDING OPPORTUNITY DESCRIPTION

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

The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative proposals in the area of global scale, multimodal geospatial data cloud platform and analytics development. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

1.1. PROGRAM OVERVIEW

The rapid pace of new commercial satellite constellation launches has led to a corresponding increase in the amount and availability of geospatial data. While these constellations largely focus on non-military uses, their data has numerous military applications. For example, the new constellations provide optical, synthetic aperture radar (SAR), and Radio Frequency (RF) data that could provide situational awareness, event detection, monitoring, and tracking capabilities. Unlike traditional geospatial data collection approaches, these constellations provide global coverage at high revisit rates without requiring specific tasking. Further, non-satellite geospatial data is also now widespread, including crowdsourced information such as OpenStreetMap, which provides insight on places and objects. There is currently no comprehensive repository or straightforward way to access and exploit this multimodal data.

The Geospatial Cloud Analytics (GCA) program will develop and demonstrate technology for accessing and analyzing global scale, multimodal geospatial data. It will also pilot an “analytics-as-a-service” business model. The program will develop the software infrastructure to curate and virtually aggregate vast amounts of geospatial information from commercial, satellite constellations. As a result, GCA technology will let data scientists concentrate on analyzing, rather than gathering and curating data from individual sources. GCA will demonstrate analytics capabilities for global indications and warnings through a set of competitive events that consist of a strategic competition (predicting food shortages), an operational competition (locating new fracking construction), and a tactical competition (locating and tracking illegal fishing vessels). In addition, the GCA program will include an open call for new problem areas that will allow investigation of additional capabilities. Figure 1 provides an overview of the GCA program structure.

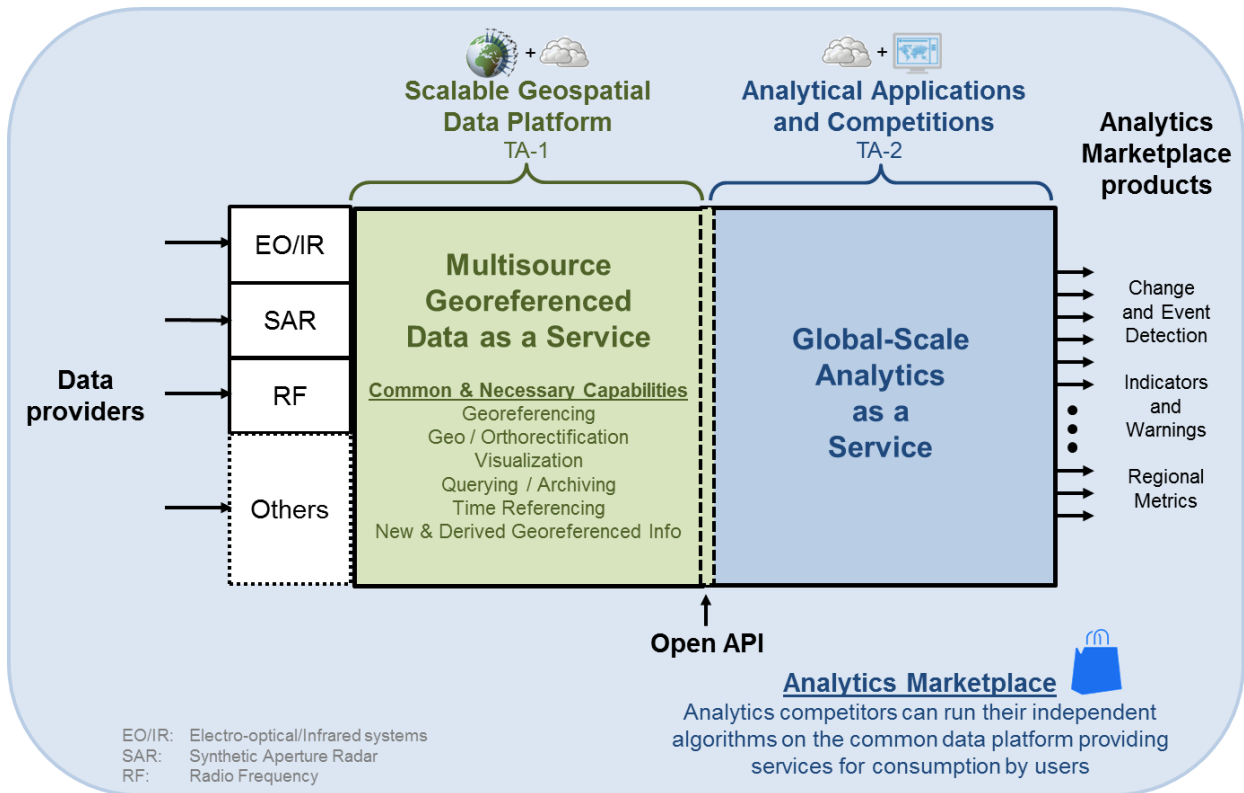


Figure 1 GCA Overview

The DARPA GCA program is soliciting proposals that demonstrate technologies for virtually aggregating, curating, and analyzing commercial and open source geospatial data to provide militarily useful global indicators and warnings on a variety of timescales. DARPA envisions a cloud-based storage and processing platform that scales to accommodate the massive amounts of data anticipated from current and future commercial satellites. The platform will let analytics providers bring their analytics to the data as opposed to the current time-consuming and laborious method that requires analytics providers to download the data to their individual sites. Ultimately, DARPA seeks to use the GCA platform and analytics technologies to bootstrap an analytics marketplace where Government analysts can pose problems and analytics companies can compete to solve them as a commercial service.

1.1.1 Terminology

- Commercial data – data that is available for purchase.
- Geospatial data – data associated with a particular location on earth. In this BAA, the term refers to data collected via satellite-borne sensor(s) or other means including crowdsourcing.
- Metadata – a set of data that describes and gives information about other data.
- Open source data – data that is freely available and may be redistributed.
- Satellite data – data collected by a satellite-borne sensor.

- Satellite data source – Geospatial data collected from a single satellite sensor or constellation of similar sensors.

1.2. PROGRAM STRUCTURE

GCA is a 24-month, three-phase program. At present, DARPA seeks innovative proposals covering the tasks in Phase 1 (6 month base effort) and Phase 2 (12 month costed option) of the program. Proposals must address both Phase 1 and Phase 2. Phase 3 will be the subject of a separate procurement.

For Phases 1 and 2, DARPA seeks proposals in two technical areas (TAs). TA-1 (Scalable Geospatial Data Platform) will provide access to geospatial data and an extensible computing platform on which TA-2 performers can efficiently access and process massive amounts of curated geospatial data. TA-2 (Analytical Applications and Competitions) will create software for use in one or more of the analytics competitions (predicting food shortages, locating fracking construction detection, illegal fishing detection, open call) using data and platforms provided by TA-1 proposers.

In Phase 1, DARPA anticipates making up to three awards for TA-1 and up to 16 awards for TA-2. A proposer may respond to one or both technical areas but a separate proposal is required for each TA. A TA-2 proposer can propose to one or more competition areas, using costed options if proposing to more than one competition.

At the end of Phase 2, DARPA will encourage Phase 1 and 2 performers to propose to Phase 3, which will pilot a commercial analytics marketplace that offers analytical services using commercial geospatial data to Government users. Submissions to this BAA should include a proposed business model for the eventual GCA marketplace, which will be further refined to reflect lessons learned during Phase 1 and 2 activities.

Program Phases

The following sections give a high-level description of each of the three program phases.

1.2.1. Phase 1 (Base effort: 6 months)

The primary goals of Phase 1 are to:

- Develop, through collaboration between TA-1 and TA-2 performers, an open method or Application Programming Interface (API) that TA-1 performers will provide and all TA-2 performers will use to access virtually aggregated geospatial data.
- Validate the ability to use the API to acquire access to the virtually aggregated commercial and open source geospatial and ancillary metadata.
- Substantially implement platform data curation tools in the scalable geospatial data platform.

The TA-2 performers will require a variety of data. TA-1 performers will virtually integrate 10 or more commercial and open source data types, at least three of which are commercial geospatial data sources, including a minimum of EO/IR, SAR, and RF modalities, along with the data use rights necessary to support the program.

Geospatial data providers offer different data formats and APIs to access their data, which slows the implementation of analytics. TA-1 performers, in consultation with TA-2 performers, will collaborate to define an open interface to the geospatial data to facilitate programming and to make it easier for analytics programmers to port their work and analytics algorithms among the TA-1 platforms. During Phase 1, the TA-2 effort will be of limited scope and will entail working with TA-1 performers to develop the open API and begin to architect their analytics algorithms to reach global scale. Table 1 and Table 2 list the Phase 1 events for TA-1 and TA-2, respectively.

Phase 1 TA-1 Events	Venue	Month After Contract Award
Program kickoff	Arlington, VA	1
Quarterly program review (QPR)	Performer facility	4
Initial platform demonstration	Performer facility	6
Biweekly open API meetings	Teleconference	Biweekly

Table 1 Phase 1 TA-1 Events

Phase 1 TA-2 Events	Venue	Month After Contract Award
Program kickoff	Arlington, VA	1
QPR	Teleconference	4
Biweekly open API meetings with TA-1 performers	Teleconference	Biweekly

Table 2 Phase 1 TA-2 Events

By the end of Phase 1, the TA-1 performers should meet the Phase 1 metrics listed in Section 1.4 including demonstrating that their platform provides 10 or more sources of geospatial data of varying modalities. Further, TA-1 performers will deliver an open interface and documentation to support use of the data by the TA-2 performers. The Government will assess whether individual TA-1 performers and the program itself should move forward to Phase 2 based on successful completion of these milestones. Table 3 and Table 4 list the deliverables for Phase 1 for TA-1 and TA-2, respectively.

Phase 1 TA-1 Deliverables	Format	Month After Contract Award
Initial details of open API	Document	3
Initial description of sources and types, properties, and interrelationships of the data on platform	Document	3
Documentation of initial platform demonstration, to include description of current and planned future platform capabilities	Slide presentation, document	6
Final description of sources and types, properties, and interrelationships of the data sources available on platform	Document	6
Final details of open API	Document	6
Updated business model for GCA	Document	6

marketplace		
Monthly reports	Document	Monthly

Table 3 Phase 1 TA-1 Deliverables

Phase 1 TA-2 Deliverables	Format	Month After Contract Award
List of sources and metadata needed from TA-1 to support algorithm development	Document	Initial at Program kick-off meeting, revised at 1, final at 6
QPR presentations, to include plan to scale algorithms for global monitoring	Slide presentation	4
Updated business model for GCA marketplace	Document	6
Monthly reports	Document	Monthly

Table 4 Phase 1 TA-2 Deliverables

1.2.2. Phase 2 (Option: 12 months)

The goals of Phase 2 are to:

- Continue to refine the platform API, geospatial data, and computing platform tools and capabilities; support analytics competitions (TA-1).
- Refine analytics algorithms and software to work at global scale (TA-2).
- Demonstrate TA-1 platforms and TA-2 analytics on the competition problems.

At the beginning of Phase 2, TA-1 performers will make their platforms available for experimentation by the TA-2 performers.

Table 5 and Table 6 list the Phase 2 events for TA-1 and TA-2, respectively. Three months after the start of Phase 2, TA-1 performers shall demonstrate their data agreements are in place, their platforms are robust, and they are ready to support the competitions. At that time, TA-2 performers may use the platforms for test runs, including algorithm testing and verifying that the implementations are scalable to global-sized data. They will have full access to the platforms and the geospatial data for the regions selected for the competitions.

The competitions begin six months after the start of Phase 2. The strategic competition will entail detecting specific crops and forecasting crop production, which could alert analysts to potential food shortages. The operational competition’s goal is to locate the construction of oil fracking sites, which, in turn, help predict trends in the energy ecosystem. The goal of the tactical competition will be to find and track ships that appear to be fishing illegally. The goal(s) of the open competition will depend on the proposal(s) chosen. For all competitions, the competitors will use the data provided on the TA-1 platforms.

Phase 2 TA-1 Events	Venue	Month After Contract Award
Phase 2 kickoff	Arlington, VA	1
QPR 1	Performer facility	3
QPR 2	Performer facility	6
QPR 3	Performer facility	9

QPR 4 and final demonstration	Performer facility	12
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Table 5 Phase 2 TA-1 Events

Phase 2 TA-2 Events	Venue	Month After Contract Award
Phase 2 kickoff	Arlington, VA	1
QPR 1	Teleconference	3
QPR 2	Teleconference	6
QPR 3	Teleconference	9
QPR 4 and final demonstration	Teleconference	12
Monthly status meetings	Teleconference	Monthly

Table 6 Phase 2 TA-2 Events

By the end of Phase 2, the TA-1 performers will have demonstrated that their platforms can disseminate geospatial data from 10 or more commercial and open data sources that provide global coverage and will also have demonstrated the ability for continuous ingest of new data. The TA-2 performers will have demonstrated their ability to meet challenge problem metrics and that their approaches are scalable to provide global coverage. Further, the program will have established that there is a plausible commercial model for analytics services based on performer business models and anticipated DoD user price constraints. At the end of Phase 2, the Government will assess whether the performers have met these expectations. Table 7 and Table 8 list the deliverables for Phase 2 for TA-1 and TA-2, respectively.

Phase 2 TA-1 Deliverables	Format	Month After Contract Award
Updated list of sources available on platform	Document	3
Updated details of open API	Document	3
Presentations from QPRs	Slide presentation	3, 6, 9, 12
Monthly reports	Document	Monthly
Business model for use during Phase 3	Document	12
Final report	Document	12

Table 7 Phase 2 TA-1 Deliverables

Phase 2 TA-2 Deliverables	Format	Month After Contract Award
Initial results from testing	Slide presentation, Document	7, 10
Results from competition testing	Slide presentation, document	12
Presentations from QPRs	Slide presentation	3, 6, 9, 12
Monthly reports	Document	Monthly
Business model for use during Phase 3	Document	12
Final report	Document	12

Table 8 Phase 2 TA-2 Deliverables

1.2.3. Phase 3 (6 months)

Phase 3 will be the subject of a separate procurement but is envisioned as follows. DARPA will invite performers to propose on Phase 3. Those performers that did well in Phases 1 and 2 of the program are the most likely candidates, but DARPA may choose others based on the Government team evaluation results and user community feedback. DARPA will negotiate contracts similar to GSA services contracts with performers to continue providing their analyses on incoming data for a six-month period, with the intention being that Government agencies that need this capability could use this contracting mechanism with performers in the future. In Phase 3, the performers will be responsible for obtaining access to the required data and processing, for example, by entering into an agreement with another performer for data and platform services.

Sections 1.2.4 and 1.2.5 detail the Technical Areas of the program.

1.2.4. Technical Area 1: Scalable Geospatial Data Platform

TA-1 performers will be responsible for obtaining access to virtually aggregate satellite and other geospatial data, preprocessing and curating the data, providing an extensible platform for easy addition of new analytics applications and data sources, and providing support functions. It is advantageous for a TA-1 performer's platform to be used by many TA-2 performers because it increases the chances that the TA-1 performer will have a role in Phase 3, where the selected TA-2 performers will be able to choose the TA-1 platform they will use. Proposers can describe additional capabilities not mentioned in the BAA that they propose to provide in order to attract TA-2 performers to their platform.

The GCA program's TA-2 competitions will each require different types of data to achieve the program goals of global coverage at various time scales. Even for the same competition, it is likely that different TA-2 performers' algorithms will require different types of data. Because of these factors, DARPA anticipates that TA-1 performers will need to provide many types of geospatial data from a variety of sources.

A TA-1 platform should provide satellite data and a variety of other geospatial data sources. TA-1 performers will supply 10 or more sources of varying data types including a minimum of EO/IR, SAR and RF modalities. At least three of the sources should be commercial satellite sources and have the data use rights necessary to support the program. The geospatial data may include publicly available data that is likely to be useful to the TA-2 performers, for example, data from crowdsourcing efforts such as OpenStreetMap.

TA-1 proposers should provide an initial accounting of the satellite and other geospatial data they plan to provide. Specifically, TA-1 proposers should include lists of the data that they already have as well as data they could provide at no cost, for example through existing Government contracts, noting (where applicable) the resolution, spectral bands, coverage area, and revisit rate. TA-1 proposers should also include as costed options a list of the geospatial data that they would likely acquire in order to satisfy TA-2 requirements, noting the same specifications as above. The Government will not necessarily fund all data on the lists. These lists will be a starting point for discussions in Phase 1; it is up to TA-2 performers to negotiate

the final data set with TA-1 performers in Phase 1 in time for TA-1 to put data agreements in place in a timely fashion.

TA-1 performers will be responsible for providing common and necessary capabilities that support TA-2 performers' use of the data. For example, TA-1 accelerates TA-2 analytics development by offering preprocessed geospatial data ready for analytics use. Also, providing accurate georeferencing and georectification is critical for multi-source analytics. Proposals should state the level of accuracy the system will provide, which may be dependent on the type of data and the source. Imagery must be orthorectified, resulting in a planimetrically correct image, and data must be time referenced, i.e., the data's timestamp must be synced to the time it was collected. The preprocessing must not pose a bottleneck that prevents timely access to the data; proposals should state how quickly the processed data will be available to TA-2 performers from the time a TA-1 performer receives the raw data.

TA-1 performers will, at a minimum, provide query, and archiving support capabilities. They may also provide additional support capabilities of their choosing. Users and applications will use the query capability to determine, in real time, available data for use in solving a problem. For example, an analytics developer should be able to input a physical area of interest, and timeframe, and receive back a list of available data with details such as resolution, as well as a quick preview of the data. Further, TA-1 platforms should provide a query capability callable from applications. The TA-1 platform will also support data archiving in a manner that allows TA-2 performers to easily find and retrieve older data when needed. Proposals may suggest additional performance metrics for assessing TA-1.

GCA will demonstrate the ability to scale geospatial data processing to global scales. DARPA believes that widely available cloud-based systems can support these requirements. While we recognize that TA-1 performers will not know TA-2 processing requirements until the program is underway, TA-1 performers are responsible for ensuring that TA-2 performers can obtain accounts to access the cloud and that the Government team is able to access the cloud and the geospatial data they need to evaluate the competitions. The TA-1 performer is responsible for the costs associated with acquiring geospatial data (approaches that minimize pass-through costs are preferred), preprocessing it, and storing it. TA-2 performers are responsible for all temporary storage, processing, and bandwidth costs they incur during testing and competition.

GCA's geospatial data will likely come from multiple sources, and may therefore reside in multiple locations. TA-1's platform capability should not require a single, physical repository. Proposers' platform descriptions should explain how TA-2 performers will access virtually centralized, but possibly physically distributed geospatial data sources. The Government recognizes that processing throughput needs may dictate co-location of certain analytics processes with the data.

The virtual aggregation of geospatial data sources will create tempting attack surfaces for cyber criminals. Therefore, security is crucial. TA-1 performers are responsible for ensuring that platform interfaces used by GCA participants meet security needs. DARPA encourages proposers to review BAA section 6.2.2 for specific requirements.

Proposals should briefly describe a potential business model Government entities may use to quickly and cost effectively purchase analytics services. As a simple example, the Government may ask for the answer to a specific question about crop growth trends over the past 10 years in a particular region, then competitively procure an answer to the question through the GCA marketplace. Near the end of Phases 1 and 2, each TA-1 performer will be required to provide a short report elaborating on a suggested business model.

1.2.5. Technical Area 2: Analytical Applications and Competitions

Technical Area 2 will create analytical applications that use one or more of the TA-1 platforms and focus on one or more of the following timescales – strategic, operational, or tactical – with an additional open category to capture other innovative analytical problems. During Phase 2, TA-2 performers will participate in event detection and monitoring competitions. DARPA anticipates basing Phase 3 performer selections on results against proposed and Government performance metrics, performance against the Statement of Work, Government team evaluation, and user community feedback.

TA-2 proposers should indicate in their proposal any satellite or other geospatial data required to solve their chosen problem(s). Note, however, that the Government will not necessarily provide all requested data. At the end of Phase 1, TA-2 performers should specify which TA-1 platform(s) they will use going forward. TA-2 performers should identify possible substitute data sources (if any) and a rough estimate of the performance impact of the alternative for each data source they request.

During the program, TA-2 performers will obtain an account on the TA-1 cloud provider's site(s) with access to the data needed to run their software. The TA-2 performer is responsible for all scratch storage and processing costs incurred during their testing and during the actual competitions. While TA-2 performers can use multiple platforms and clouds, they are responsible for processing and storage costs on all platforms and clouds they use.

GCA will seek to develop and demonstrate technology to access and analyze global scale, multimodal geospatial data. Therefore, it is imperative that TA-2 proposers describe in detail how their algorithm(s) scale to provide global coverage on multiple timescales.

Proposals should briefly describe a potential business model Government entities may use to quickly and cost effectively purchase analytics services. Near the end of Phases 1 and 2, each TA-1 performer will be required to provide a short report refining their suggested business model. As another simple example along the lines of that above in section 1.2.4, the Government may seek to identify the construction of new fracking sites anywhere in a chosen area of interest every day, and then competitively procure an answer to that question through the GCA marketplace.

DARPA encourages TA-2 performers to use a spiral or agile development cycle to reduce risk and to maintain evolving compatibility with TA-1 platform(s).

While DARPA encourages collaboration with TA-1 performers to acquire training data, TA-2 performers are ultimately responsible for obtaining training data. TA-2 proposers should describe what data sources or other capabilities they will use to train and run their algorithms.

Competitions

Each TA-2 analytics performer will compete against their specific problem description and metrics they propose, as well as the metrics in Section 1.4. Because the program seeks to pilot an analytics marketplace, TA-2 proposers should propose problems and metrics that will be of value to the eventual DoD end users in each of the marketplace (competition) areas.

1.2.5.1. Strategic Competition

The strategic competition area will address the problem of predicting food supply trends for a crop in a specific region of the world on a timescale of weeks to months. Proposers should describe the details of the problem they propose to solve in this area by identifying the crop(s) and the region(s) of the world they plan to monitor as well as the expected output (e.g., production and supply trend graphs). Proposers should outline their approach to the problem including the geospatial data (such as optical, SAR, and meteorological data) needed to solve the problem, how they will monitor the crop(s), how they will obtain ground truth, and the frequency/type of reports their software will produce.

1.2.5.2. Operational Competition

The operational competition area will address the problem of locating the construction of oil fracking sites on a timescale of days to weeks. Proposers should describe the details of the problem they propose to solve in this area by outlining their method for detecting these sites and the region of the world they plan to monitor. Proposers should also describe the expected output of the algorithm (e.g., locations, confidence estimates), what geospatial data (e.g., optical, SAR) is needed to solve the problem, how they will monitor the region, how they will obtain ground truth, and the frequency/type of reports their algorithms will produce.

1.2.5.3. Tactical Competition

The tactical competition area will address illegal fishing on a timescale of minutes to hours. Proposers should explain the details of the problem they intend to solve in this area by outlining their method for detecting and/or tracking vessels fishing illegally in a restricted area. Proposers should also describe the expected output of the algorithm (e.g., locations, confidence estimates), the geospatial data (such as optical, SAR, AIS, VMS) needed to solve the problem, how they will monitor the region, how they will obtain ground truth, and the frequency/type of reports the algorithm will produce.

1.2.5.4. Open Competition

The open competition allows proposers to propose a specific analytical challenge area not mentioned above. The proposer should detail the extent of the problem, where it occurs, who is interested, why they are interested, their proposed solution, the solution's scalability, how they will obtain ground truth, and the output of their proposed software. Proposers should also detail required satellite and other geospatial data sources necessary to solve the challenge.

1.2.5.5. Evaluation of Competitions

In addition to the general TA-2 metrics found in Section 1.4, proposers should provide additional performance metrics for Phase 2. Performers should detail their performance metrics and associated scoring methodology, and include a summary table similar to that below (modifications are permissible to align with the proposal narrative).

	Threshold	Objective	Scoring Methodology
Metric 1			
Metric n			

The Government team will evaluate these metrics and, based on user community feedback, may propose to modify or add additional metrics once the program begins. During the program, there will be monthly meetings with interested Government stakeholders and the user community to discuss the capabilities, metrics, and scoring methodology details.

The Government will invite TA-2 performers to propose to Phase 3 based on a number of criteria including, but not limited to, performance against the stated capabilities and metrics, the proposed Statement of Work, and feedback from the user community.

Note that the open competition testing, results, evaluation, and user assessments will be problem dependent.

1.3. SCHEDULE

The GCA program is planned as a three phase, 24 month effort as seen in Figure 2. This single, unclassified BAA solicits proposals for Phases 1 and 2, discussing required analysis, methods, technical justifications, and the statement of work necessary to create innovative solutions that satisfy overall program objectives. The program will consist of a 6-month effort for Phase 1, a optional 12-month effort for Phase 2, and a 6-month effort for Phase 3. Awards for Phase 3 will be the result of a separate acquisition.

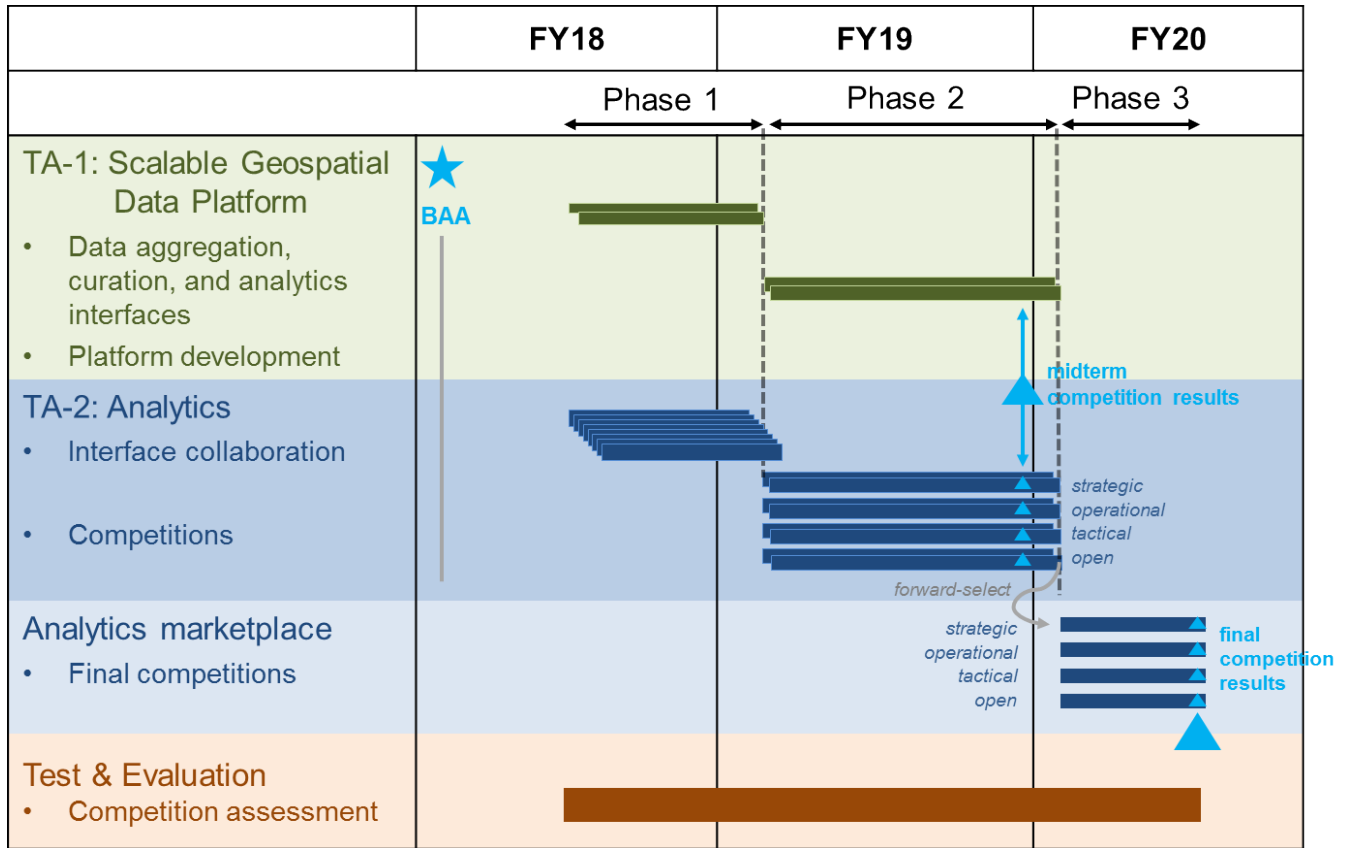


Figure 2 GCA Schedule

1.4. PROGRAM METRICS

In order for the Government to evaluate the effectiveness of a proposed solution in achieving the stated program objectives, proposers should note that the Government hereby promulgates the following program metrics that may serve as the basis for determining whether satisfactory progress is being made to warrant continued funding. Although the BAA specifies the following program metrics, proposers should note that the Government has identified these goals with the intention of bounding the scope of effort, while affording the maximum flexibility, creativity, and innovation in proposing solutions to the stated problem. TA-2 metrics are only provided for Phase 2 given the limited scope of effort these performers will have in Phase 1.

Proposals should cite the quantitative and qualitative success criteria that the proposed effort will achieve by the time of each Phase’s program metric measurement.

Metric / Capability	Objective
Data sources	Ability for platform to sustain 10 or more data sources (3 commercial) of varying types, including a minimum of EO/IR, SAR, and RF modalities
API	Open application programming interface (API) for analytics users

Table 9 Phase 1 TA-1 Metrics

Metric / Capability	Objective
Data sources	Ability for platform to maintain 10 or more data sources (3 commercial) of varying types, including a minimum of EO/IR, SAR, and RF modalities
Data ingest rate	Ability to make new data available to TA-2 performers at an average of > 200 TB/day
Access throughput	Support a cloud platform with an aggregate bandwidth of > 150 GB/s
Preprocessing delay	Time between when a TA-1 performer receives raw data and when its preprocessed version is available to TA-2
Interface	Intuitive interface for analytics developers
Browsing performance	Latency of < 1 second from area selection to display of data availability for the selected area
API	Open application programming interface (API) for analytics users

Table 10 Phase 2 TA-1 Metrics and Capabilities

Metric / Capability	Objective
Accuracy of predictions	Comparable to ground truth (e.g., USDA FAS reports)
Timeliness of detections/predictions	90% accurate N months before ground truth released
Algorithm scalability	Ability to detect/predict globally, without specific regional dependencies
Implementation scalability	Implementation exhibits good weak scaling, i.e., the time to solve a problem of size 2X on 2X servers is reasonably close to the time to solve a problem on size X on X servers
Indicators and warnings	Persistently run in the background, alert user to changes

Table 11 TA-2 Strategic Competition Phase 2 Metrics and Capabilities

Metric / Capability	Objective
Accuracy of detections	Comparable to state of the art
Timeliness of detections/predictions	New construction found and report generated on the order of hours after data becomes available on TA-1 platform
Algorithm scalability	Ability to find new construction sites globally, without regional dependencies
Implementation scalability	Implementation exhibits good weak scaling
Indicators and warnings	Persistently run in the background, alert user to detections

Table 12 TA-2 Operational Competition Phase 2 Metrics and Capabilities

Metric / Capability	Objective
Accuracy of detections	Comparable to state of the art
Timeliness of detections/predictions	Ships found and report generated rapidly, better than an hour after data becomes available on TA-1 platform
Implementation scalability	Implementation exhibits good weak scaling
Indicators and warnings	Persistently run in the background, alert user to detections

Table 13 TA-2 Tactical Competition Phase 2 Metrics and Capabilities

1.5. REQUESTED TECHNICAL INFORMATION

TA-1 proposal submissions should include:

1. A description of a flexible, scalable, and secure system architecture that is
 - a. Capable of supporting multiple simultaneous analytics applications (to be written by TA-2 performers)
 - b. Capable of ingesting terabytes/day of data from geospatial data (e.g., satellite) providers
 - c. Capable of preprocessing geospatial data and storing this co-registered, orthorectified, time-synched geospatial data and associated metadata
 - d. Capable of providing high throughput, on-demand access to the geospatial data by humans or automated software applications
2. A description of the anticipated geospatial data access methods (e.g., API) and capabilities
3. A description of other capabilities to be provided that will assist TA-2 developers in accessing, processing, storing and/or displaying the data, if any
4. A list of the data that the proposer is currently able to provide, detailing the resolution, spectral bands, coverage area, revisit rate and any other relevant specifications
5. A list of the data that the proposer will be able to provide at no cost (e.g., through existing Government contracts), detailing the resolution, spectral bands, coverage area, revisit rate and any other relevant specifications
6. A list of data, as costed options, that the proposer is likely to acquire to satisfy TA-2 requirements, detailing the resolution, spectral bands, coverage area, revisit rate and any other relevant specifications
7. Metrics suggested for assessing TA-1 (optional)
8. An brief description of a suggested commercial cost model for Phase 3

TA-2 proposal submissions should include:

1. A description of the problem(s) to be solved and the proposed solution
 - a. Suggested metrics and scoring methodology
2. A list of the data requested for use in solving the problem
3. A backup plan if the data described in #2 is unavailable
4. A description of why the analytical application will scale to global coverage
5. How any necessary training data will be obtained
6. Suggested commercial cost model for Phase 3

2. AWARD INFORMATION

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

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation and to make awards without discussions with proposers. The Government also reserves the right to conduct discussions if it is later determined to be necessary. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that proposer. The Government reserves the right to fund proposals in phases with options for continued work, as applicable.

The Government reserves the right to request any additional, necessary documentation once it makes the award instrument determination. Such additional information may include but is not limited to Representations and Certifications (see Section 6.2.10, “Representations and Certifications”). The Government reserves the right to remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions, and/or cost/price within a reasonable time, and the proposer fails to timely provide requested additional information. Proposals identified for negotiation may result in a procurement contract or other transaction, depending upon the nature of the work proposed, the required degree of interaction between parties, whether or not the research is classified as Fundamental Research, and other factors.

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

In all cases, the Government contracting officer shall have sole discretion to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program. For more information on publication restrictions, see the section below on Fundamental Research.

2.1. 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 either cannot be met by proposers intending to perform fundamental research or the proposed research is anticipated to present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Therefore, the Government anticipates restrictions on the resultant research that will require the awardee to seek DARPA permission before publishing any information or results relative to the program.

Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to select award instrument type and to negotiate all instrument terms and conditions with selectees. 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 <http://www.darpa.mil/work-with-us/additional-baa>.

For certain research projects, it may be possible that although the research being performed by the awardee is restricted research, a subawardee may be conducting fundamental research. In those cases, it is the awardee's responsibility to explain in their proposal why its subawardee's effort is fundamental research

3. ELIGIBILITY INFORMATION

3.1. ELIGIBLE APPLICANTS

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

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

3.1.1.1. 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.

3.1.1.2. 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.

3.1.1.3. Authority and Eligibility

At the present time, DARPA does not consider 15 U.S.C. § 3710a to be sufficient legal authority to show eligibility. While 10 U.S.C. § 2539b may be the appropriate statutory starting point for

some entities, specific supporting regulatory guidance, together with evidence of agency approval, will still be required to fully establish eligibility. DARPA will consider FFRDC and Government entity eligibility submissions on a case-by-case basis; however, the burden to prove eligibility for all team members rests solely with the proposer.

3.1.2. Non-U.S. Organizations

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

3.1.3. Applicants Considering Classified Submissions

For classified proposals, applicants will ensure all industrial, personnel, and information systems processing security requirements are in place and at the appropriate level (e.g., Facility Clearance Level (FCL), Automated Information Security (AIS), Certification and Accreditation (C&A), and any Foreign Ownership Control and Influence (FOCI) issues are mitigated prior to submission. Additional information on these subjects can be found at <http://www.dss.mil>.

3.2. ORGANIZATIONAL CONFLICTS OF INTEREST

FAR 9.5 Requirements

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

Agency Supplemental OCI Policy

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

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

- The name of the DARPA office receiving the support;
- The prime contract number;
- Identification of proposed team member (subawardee, consultant) providing the support; and

- An OCI mitigation plan in accordance with FAR 9.5.

Government Procedures

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

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

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

3.3. COST SHARING/MATCHING

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

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

3.4. OTHER ELIGIBILITY CRITERIA

3.4.1. Collaborative Efforts

Collaborative efforts/teaming are encouraged.

4. APPLICATION AND SUBMISSION INFORMATION

4.1. ADDRESS TO REQUEST APPLICATION PACKAGE

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

4.2. CONTENT AND FORM OF APPLICATION SUBMISSION

4.2.1. Security And Proprietary Issues

NOTE: If proposals are classified, the proposals must indicate the classification level of not only the proposal itself, but also the anticipated award document classification level.

a. 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”. 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.

b. Security Information

Classified submissions shall be transmitted in accordance with the following guidance. Additional information on the subjects discussed in this section may be found at <http://www.dss.mil/>.

If a submission contains Classified National Security Information as defined by Executive Order 13526, the information must be appropriately and conspicuously marked with the proposed classification level and declassification date. Similarly, when the classification of a submission is in question, the submission must be appropriately and conspicuously marked with the proposed classification level and declassification date. Submissions requiring DARPA to make a final classification determination shall be marked as follows:

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

NOTE: Classified submissions must indicate the classification level of not only the submitted materials, but also the classification level of the anticipated award.

Proposers submitting classified information must have, or be able to obtain prior to contract award, cognizant security agency approved facilities, information systems, and appropriately cleared/eligible personnel to perform at the classification level proposed. All proposer personnel performing Information Assurance (IA)/Cybersecurity related duties on classified Information Systems shall meet the requirements set forth in DoD Manual 8570.01-M (Information Assurance Workforce Improvement Program).

Proposers choosing to submit classified information from other collateral classified sources (i.e., sources other than DARPA) must ensure (1) they have permission from an authorized individual at the cognizant Government agency (e.g., Contracting Officer, Program Manager); (2) the proposal is marked in accordance with the source Security Classification Guide (SCG) from which the material is derived; and (3) the source SCG is submitted along with the proposal.

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 Technical Office 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.

Confidential and Secret Information

Use transmission, classification, handling, and marking guidance provided by previously issued SCGs, the DoD Information Security Manual (DoDM 5200.01, Volumes 1 - 4), and the National Industrial Security Program Operating Manual, including the Supplement Revision 1, (DoD 5220.22-M and DoD 5200.22-M Sup. 1) when submitting Confidential and/or Secret classified information.

Confidential and Secret classified information may be submitted via ONE of the two following methods:

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

OR

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

The inner envelope shall be addressed to:

Defense Advanced Research Projects Agency
ATTN: Tara Burnette, STO Program Security Representative
Reference: HR001118S0004
675 North Randolph Street
Arlington, VA 22203-2114

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

Defense Advanced Research Projects Agency
Security & Intelligence Directorate, Attn: CDR
675 North Randolph Street
Arlington, VA 22203-2114

Top Secret Information

Use transmission, classification, handling, and marking guidance provided by previously issued SCGs, the DoD Information Security Manual (DoDM 5200.01, Volumes 1 - 4), and the National Industrial Security Program Operating Manual, including the Supplement Revision 1, (DoD 5220.22-M and DoD 5200.22-M Sup. 1) when submitting Top Secret classified information. Top Secret information must be hand-carried by an appropriately cleared and authorized courier to the DARPA CDR. Prior to traveling, the courier shall contact the DARPA CDR at 703-526-4052 to coordinate arrival and delivery.

Sensitive Compartmented Information (SCI)

SCI must be marked, managed and transmitted in accordance with DoDM 5105.21 Volumes 1 - 3. Questions regarding the transmission of SCI may be sent to the DARPA Technical Office PSO via the BAA mailbox or by contacting the DARPA Special Security Officer (SSO) at 703-812-1970.

Successful proposers may be sponsored by DARPA for access to SCI. Sponsorship must be aligned to an existing DD Form 254 where SCI has been authorized. Questions regarding SCI sponsorship should be directed to the DARPA Personnel Security Office at 703-526-4543.

Special Access Program (SAP) Information

SAP information must be marked in accordance with DoDM 5205.07 Volume 4 and transmitted by specifically approved methods which will be provided by the Technical Office PSO or their staff.

Proposers choosing to submit SAP information from an agency other than DARPA are required to provide the DARPA Technical Office PSO written permission from the source material's cognizant Special Access Program Control Officer (SAPCO) or designated representative. For clarification regarding this process, contact the DARPA Technical Office PSO via the BAA mailbox or the DARPA SAPCO at 703-526-4102.

Additional SAP security requirements regarding facility accreditations, information security, personnel security, physical security, operations security, test security, classified transportation plans, and program protection planning may be specified in the DD Form 254.

NOTE: prior to drafting the submission, if use of SAP Information Systems is to be proposed, proposers must first obtain an Authorization-to-Operate from the DARPA Technical Office PSO (or other applicable DARPA Authorization Official) using the Risk Management Framework (RMF) process outlined in the Joint Special Access Program (SAP) Implementation Guide (JSIG), Revision 3, dated October 9, 2013 (or successor document).

4.2.2. Proposal Abstract Information

Proposers are strongly encouraged to submit a proposal abstract in advance of a proposal. This procedure is intended to minimize unnecessary effort in proposal preparation and review. The time and date for submission of proposal abstracts is specified in Section 4.4.1 below. DARPA will acknowledge receipt of the submission and assign a control number that should be used in

all further correspondence regarding the proposal abstract. DARPA will attempt to reply to abstracts in writing within 30 calendar days of receipt.

Unclassified abstracts sent in response to HR001118S0004 may be submitted via DARPA's BAA Website (<https://baa.darpa.mil>). Note: If an account has already been created for the DARPA BAA Website, this account may be reused. If no account currently exists for the DARPA BAA Website, visit the website to complete the two-step registration process. Submitters will need to register for an Extranet account (via the form at the URL listed above) and wait for two separate e-mails containing a username and temporary password. After accessing the Extranet, submitters may then create an account for the DARPA BAA website (via the "Register your Organization" link along the left side of the homepage), view submission instructions, and upload/finalize the abstract. Proposers using the DARPA BAA Website may encounter heavy traffic on the submission deadline date; it is highly advised that the submission process be started as early as possible.

Proposal abstracts may not be submitted by fax or e-mail; any so sent will be disregarded.

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

4.2.3. Proposal Information

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

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

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

Unclassified full proposals sent in response to this BAA may be submitted via DARPA's BAA Website (<https://baa.darpa.mil>). Note: If an account has already been created for the DARPA BAA Website, this account may be reused. If no account currently exists for the DARPA BAA Website, visit the website to complete the two-step registration process. Submitters will need to register for an Extranet account (via the form at the URL listed above) and wait for two separate e-mails containing a username and temporary password. After accessing the Extranet, submitters may then create an account for the DARPA BAA website (via the "Register your Organization" link along the left side of the homepage), view submission instructions, and upload/finalize the proposal. Proposers using the DARPA BAA Website may encounter heavy traffic on the submission deadline date; it is highly advised that submission process be started as early as possible.

All unclassified concepts submitted electronically through DARPA's BAA Website must be uploaded as zip files (.zip or .zipx extension). The final zip file should be no greater than 50 MB

in size. Only one zip file will be accepted per submission, and submissions not uploaded as zip files will be rejected by DARPA

Classified submissions should NOT be submitted through DARPA's BAA Website (<https://baa.darpa.mil>), though proposers will likely still need to visit <https://baa.darpa.mil> to register their organization (or verify an existing registration) to ensure the BAA office can verify and finalize their submission.

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

DARPA will acknowledge receipt of the unclassified submission and assign a control number that should be used in all further correspondence regarding the submission.

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, provided the formal request is received at this office within 5 days after notification that a proposal was not selected.

For a proposal that includes both classified and unclassified information, the proposal may be separated into an unclassified portion and a classified portion. The proposal should use the unclassified portion to the maximum extent reasonable. The unclassified portion can be submitted through the DARPA BAA Website, per the instructions above. The classified portion must be mailed separately, according to the instructions outlined in the "Security Information" section above. If a classified proposal may not be partitioned into classified and unclassified portions, then submit according to the instructions outlined in the "Security Information" section above.

When a proposal includes a classified portion, and when able according to security guidelines, we ask that proposers send an e-mail to HR001118S0004@darpa.mil as notification that there is a classified portion to the proposal. When sending the classified portion via mail according to the instructions outlined in the "Security Information" section above, proposers should submit six (6) hard copies of the classified portion of their proposal and two (2) CD-ROMs containing the classified portion of the proposal as a single searchable Adobe PDF file. Please ensure that all CDs are well-marked. Each copy of the classified portion must be clearly labeled with HR001118S0004, proposer organization, proposal title (short title recommended), and Copy _ of

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All administrative correspondence and questions on this solicitation, including requests for information on how to submit a proposal to this BAA, should be directed to one of the administrative addresses below; e-mail is preferred.

BAA Administrator
E-mail: HR001118S0004@darpa.mil

DARPA/STO
ATTN: HR001118S0004
675 North Randolph Street
Arlington, VA 22203-2114
Office Website: <http://www.darpa.mil/about-us/offices/sto>
Opportunities Page: <http://www.darpa.mil/work-with-us/opportunities>

DARPA intends to use electronic mail for correspondence regarding HR001118S0004. Proposals and proposal abstracts may not be submitted by fax or e-mail; any so sent will be disregarded. DARPA encourages use of the Internet for retrieving the BAA and any other related information that may subsequently be provided.

4.2.4. Restrictive Markings on Proposals

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

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

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

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

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

Markings like "Company Confidential" or other phrases that may be confused with national security classifications shall be avoided.

4.3. FORMATTING CHARACTERISTICS

4.3.1. Proposal Abstract Format

Proposal abstracts are encouraged in advance of proposals in order to provide potential proposers with a rapid response to minimize unnecessary effort. Proposal abstracts should follow the format provided below. The cover sheet should be clearly marked "PROPOSAL ABSTRACT" and the total length should not exceed 3 pages, excluding cover page and official transmittal letter. All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. The page limitation for proposal

abstracts includes all figures, tables, and charts. No formal transmittal letter is required. All proposal abstracts must be written in English.

4.3.1.1. {Does not count toward page count} Cover sheet to include:

1. BAA number
2. Technical area (see Sec 1.2)
3. Lead Organization Submitting proposal
4. Type of organization, selected among the following categories: "LARGE BUSINESS," "SMALL DISADVANTAGED BUSINESS," "OTHER SMALL BUSINESS," "HBCU," "MI," "OTHER EDUCATIONAL," or "OTHER NONPROFIT"
5. Proposer's reference number (if any)
6. Other team members (if applicable) and type of organization for each
7. Abstract title
8. Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
9. Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
10. Estimated funds requested from DARPA for each phase proposed and the total estimated proposed cost; and the amount of cost share (if any)
11. Date abstract was prepared.

Abstracts may be structured as you wish. The proposer may choose any combination of suggested portions listed below; however, the total length must not exceed 3 pages.

4.3.1.2 Executive Summary:

Includes a title and an abstract that provides a concise summary of work to be performed and basic approaches to be used.

4.3.1.3 Summary of Innovative Claims for the Proposed Research:

Succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art and alternative approaches.

4.3.1.4 Summary of Technical Approach:

The technical rationale, technical approach, and constructive plan for accomplishments of technical goals in support of innovative claims and deliverable production should be summarized.

4.3.1.5 Organization and Teaming Chart:

A clearly defined organization chart for the program team that includes, as applicable:

1. programmatic relationship of team members;
2. unique capabilities of team members;
3. task responsibilities of team members;
4. teaming strategy among the team members;

5. key personnel along with the amount of effort to be expended by each person during each year.

4.3.1.6 Summary of Deliverables and Approach to Intellectual Property:

Deliverables associated with the proposed research and the plans and capability to accomplish technology transition and commercialization. Include in this section all proprietary claims to results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are no proprietary claims, this should be stated. This section should list all technical data, computer software, or computer software documentation to be provided with other than unlimited rights in accordance with DFARS Clause 252.227-7017 IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUNE 1995).

4.3.1.7 Summary of Estimated Cost, Schedule, and Milestones:

Summarize, in table form, estimated cost, schedule, and milestones for the proposed research.

4.3.1.8 Discussion of Other Research:

Compare the proposed effort with other ongoing research in this area. Describe the advantages and disadvantages of the proposed effort in comparison with other relevant research.

4.3.2. Proposal Format

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

4.3.2.1 Volume I, Technical and Management Proposal

Section I. Administrative {No more than 2 pages}

- A. Cover sheet to include:
 - (1) BAA number
 - (2) Technical area
 - (3) Lead Organization Submitting proposal
 - (4) Type of organization, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT"
 - (5) Proposer's reference number (if any)
 - (6) Other team members (if applicable) and type of organization for each

- (7) Proposal title
 - (8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
 - (9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
 - (10) Total funds requested from DARPA, and the amount of cost share (if any)
 - (11) Date proposal was submitted
- B. Official transmittal letter

Section II. Summary of Proposal {No more than 8 pages}

- A. Innovative claims for the proposed research. This section is the centerpiece of the proposal and should succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art alternate approaches.
- B. Deliverables associated with each phase of the proposed research and the plans and capability to accomplish technology transition and commercialization. Include in this section all proprietary claims to the results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are not proprietary claims, this should be stated.
- C. Technical rationale, technical approach, and constructive plan for accomplishment of technical goals in support of innovative claims and deliverable production for the concepts listed in Section 1.2. (In the proposal, this section should be supplemented by a more detailed plan in Section III.)
- D. General discussion of other research in this area.
- E. A clearly defined organization chart for the program team which includes, as applicable: (1) the programmatic relationship of team member; (2) the unique capabilities of team members; (3) the task of responsibilities of team members; (4) the teaming strategy among the team members; and (5) the key personnel along with the amount of effort to be expended by each person during each year.
- F. A three slide summary of the proposal in PowerPoint that quickly and succinctly indicates the concept overview, key innovations, expected impact, and other unique aspects of the proposal. The format for the summary slides is included as APPENDIX 1 to this BAA and does not count against the page limit.

Section III. Detailed Proposal Information {No more than 25 pages for TA-1 proposals and 20 pages for TA-2 proposals (3 additional pages per competition area are permitted for TA-2 if more than one competition is proposed).}

- A. Statement of Work (SOW) - Clearly define the technical tasks/subtasks to be performed in each phase of the program, their durations, and dependencies among them. For each task/subtask, provide:
 - A general description of the objective (for each defined task/activity);
 - A detailed description of the approach to be taken to accomplish each defined task/activity);
 - Identification of the primary organization responsible for task execution (prime, sub, team member, by name, etc.);

- The completion criteria for each task/activity - a product, event or milestone that defines its completion.
- Define all deliverables (reporting, data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities.

Reporting Deliverables	
Item	Date/Frequency
(LIST)	(LIST)

Tech Deliverables		
Item	Deliverable Date	Deliverable Location
(LIST)	(LIST)	(LIST)

IP Claims	(LIST)
Data Restrictions	(LIST)

Note: It is recommended that the SOW be developed so that each Phase of the program is separately defined.

Do not include any proprietary information in the SOW.

- B. Description of the results, products, transferable technology, and expected technology transfer path enhancing that of Section II. B. This should also address mitigation of life-cycle and sustainment risks associated with transitioning intellectual property for U.S. military applications, if applicable. See also Section 8.1 “Intellectual Property.”
- C. Detailed technical rationale enhancing that of Section II.
- D. Detailed technical approach enhancing and completing that of Section II.
- E. Comparison with other ongoing research indicating advantages and disadvantages of the proposed effort.
- F. Identify key risks inherent in the proposed approach and methods to mitigate them.
- G. Discussion of proposer’s previous accomplishments and work in closely related research areas.
- H. Any additional Government Furnished Equipment, Information or Resources requested by the proposer.
- I. Description of the facilities that would be used for the proposed effort. This section should address how safeguarding of materials will be handled at each facility to include classified materials when applicable.
- J. Detail support enhancing that of Section II, including formal teaming agreements which are required to execute this program.
- K. Cost schedules and measurable milestones for the proposed research, including estimates of cost for each task in each year of the effort delineated by the awardee and major subawardees, total cost, and any company cost share. Note: Measurable milestones should capture key development points in tasks and should be clearly articulated and defined in time

relative to start of effort. These milestones should enable and support a decision for the next part of the effort. Additional interim non-critical management milestones are also highly encouraged at regular intervals. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. Additionally, proposals should clearly explain the technical approach(es) that will be employed to meet or exceed each program metric and provide ample justification as to why the approach(es) is/are feasible. The milestones must not include proprietary information.

- L. A cost breakdown table by task, delineated by primes and major subcontractors, should be included that summarizes:
 - Prime labor hours by labor category, labor cost, materials cost, and travel costs
 - Subcontractor hours, labor category, labor cost, materials cost, and travel costs

Table 14 provides an example of the single-table summary. Labor categories shown in the table are for illustration purposes only. Proposers are free to combine labor categories but should clearly delineate an overall breakdown with senior level and junior level staff. In addition, the table should reflect the hours, labor costs, materials, data costs, and travel for each proposed subcontractor.

	Program Management	Principal Investigator	Senior / Systems Engineer	Software Engineering	Software Developer	Software Test Engineer	Usability Tester	System Administrator	Other Technical Support	Administrative Support	Total Prime Hours	Prime Labor Costs	Prime Materials and Data	Prime Travel	Subcontractor Hours	Subcontractor Labor Costs	Subcontractor Materials	Subcontractor Travel	Totals	
GCA Program																				
Phase 1																				
Task 1	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Task 2	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Task N	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Phase 1 Estimated Totals	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Phase 2																				
Task 1	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Task 2	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Task N	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Phase 2 Estimated Totals	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	\$	\$	\$	Hrs	\$	\$	\$	\$	\$
Program Totals																				

Table 14 Single Table Cost Summary Example

Section IV. Additional Information {No more than 12 pages}

A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas upon which the proposal is based. These papers or research notes will not be formally reviewed against the evaluation criteria, but should allow technical understanding of the claims made. Copies of not more than three (3) relevant papers can be included in the submission.

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

All proposers, including FFRDCs, must submit the following:

Cover sheet to include:

- (1) BAA number;
- (2) Technical area;
- (3) Lead Organization Submitting proposal;
- (4) Type of organization, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
- (5) Proposer’s reference number (if any);
- (6) Other team members (if applicable) and type of organization for each;
- (7) Proposal title;
- (8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
- (9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
- (10) Award instrument requested: cost-plus-fixed-fee (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), or other transaction;
- (11) Place(s) and period(s) of performance;
- (12) Total proposed cost separated by basic award and option(s) (if any);
- (13) Name, address, and telephone number of the proposer’s cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- (14) Name, address, and telephone number of the proposer’s cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- (15) Date proposal was prepared;
- (16) DUNS number
- (17) TIN number
- (18) Cage Code
- (19) Subawardee Information
- (20) Proposal validity period

The Government strongly encourages that tables included in the cost proposal also be provided in an editable (e.g., MS Excel) format with calculation formulas intact to allow traceability of the cost proposal numbers across the awardee and subawardees. This includes the calculations and adjustments that are utilized to generate the Summary Costs from the source labor hours, labor costs, material costs, etc. input data. The Government prefers receiving cost data as Excel files; however, this is not a requirement. If the PDF submission differs from the Excel submission, the PDF will take precedence. Each copy must be clearly labeled with the DARPA BAA number, proposer organization, and proposal title (short title recommended).

The Government also strongly encourages that the proposer provide a detailed cost breakdown to include:

- (1) total program cost broken down by major cost items to include:

- i. direct labor, including individual labor categories or persons, with associated labor hours and numbered direct labor rates
 - ii. If consultants are to be used, proposer must provide consultant agreement or other document which verifies the proposed loaded daily/hourly rate
 - iii. Indirect costs including Fringe Benefits, Overhead, General and Administrative Expense, Cost of Money, etc. (Must show base amount and rate)
 - iv. Travel – Number of trips, number of days per trip, departure and arrival destinations, number of people, etc.
 - v. Other Direct Costs – Should be itemized with costs or estimated costs. Backup documentation will be submitted to support proposed costs. An explanation of any estimating factors, including their derivation and application, must be provided. Please include a brief description of the proposers' procurement method to be used
- (2) major program tasks by fiscal year
 - (3) an itemization of major subcontracts and equipment purchases, to include: a cost proposal as detailed as the Proposer's cost proposal
 - (4) an itemization of any information technology (IT) purchase, as defined in FAR Part 2.101
 - (5) a summary of projected funding requirements by month
 - (6) the source, nature, and amount of any industry cost-sharing. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each
 - (7) identification of pricing assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Expert/s, etc.)

The proposer should include supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates and should include a description of the method used to estimate costs and supporting documentation. Tables included in the cost proposal should be in an editable (e.g. MS Excel) format with calculation formulas intact. NOTE: If PDF submissions differ from the Excel submission, the PDF will take precedence.

Per FAR 15.403-4, certified cost or pricing data shall be required if the proposer is seeking a procurement contract award per the referenced threshold, unless the proposer requests and is granted an exception from the requirement to submit cost or pricing data. Certified cost or pricing data are not required if the proposer proposes an award instrument other than a procurement contract (e.g., other transaction.)

Subawardee Proposals

The awardee is responsible for compiling and providing all subawardee proposals for the Procuring Contracting Officer (PCO). Subawardee proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. NOTE: for IT and equipment purchases, include a letter stating why the proposer cannot provide the requested resources from its own funding.

All proprietary subwardee proposal documentation, prepared at the same level of detail as that required of the awardee and which cannot be uploaded with the proposed awardee's proposal), shall be provided to the Government either by the awardee or by the subawardee organization when the proposal is submitted. Subawardee proposals submitted to the Government by the prime awardee should be submitted in a sealed envelope that the proposed awardee will not be allowed to view. The subawardee must provide the same number of hard copies and/or electronic proposals as is required of the awardee.

Other Transaction Requests

All proposers requesting an Other Transaction for Prototypes (OT) agreement must include a detailed list of milestones. Each milestone must include the following: milestone description, completion criteria, due date, and payment/funding schedule (to include, if cost share is proposed, contractor and Government share amounts). It is noted that, at a minimum, milestones should relate directly to accomplishment of program technical metrics as defined in the BAA and/or the proposer's proposal. Agreement type, fixed price or expenditure based, will be subject to negotiation by the Agreements Officer. Do not include proprietary data.

NOTE: PROPOSERS ARE CAUTIONED THAT PROPOSALS MAY BE REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.

4.4. SUBMISSION DATES AND TIMES

4.4.1. Proposal Abstract Submission Deadline

The proposal abstract must be submitted via the DARPA BAA website on or before 4:00 p.m., EST, October 26, 2017. Proposal abstracts received after this time and date may not be reviewed.

4.4.2. Full Proposal Submission Deadline

The full proposal must be submitted via the DARPA BAA website on or before 4:00 p.m., EST December 14, 2017 in order to be considered during the initial round of selections; however, proposals received after this deadline may be received and evaluated up to six months (180 days) from date of posting on FedBizOpps (<https://www.fbo.gov>). Full proposals submitted after the due date specified in the BAA or due date otherwise specified by DARPA after review of proposal abstracts may be selected contingent upon the availability of funds. Proposers are warned that the likelihood of available funding is greatly reduced for proposals submitted after the initial closing date deadline. Failure to comply with the submission procedures may result in the submission not being evaluated.

DARPA will acknowledge receipt of complete submissions via email and assign control numbers that should be used in all further correspondence regarding proposals.

DARPA will post a consolidated Question and Answer list in response to any relevant and/or BAA clarification question(s) after November 13, 2017, before final full proposals are due. In order to receive a response to your question, submit your question by October 27, 2017 to HR001118S0004@darpa.mil.

4.5. FUNDING RESTRICTIONS

Not Applicable.

4.6. OTHER SUBMISSION REQUIREMENTS

Not Applicable.

5. APPLICATION REVIEW INFORMATION

5.1. EVALUATION CRITERIA

Proposals will be evaluated using the following criteria, listed in descending order of importance: 5.1.1 Overall Scientific and Technical Merit; 5.1.2 Potential Contribution and Relevance to the DARPA Mission; 5.1.3 Cost Realism; and 5.1.4 Proposer's Capabilities and/or Related Experience.

5.1.1. Overall Scientific and Technical Merit

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

Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed deliverables clearly defined such that a final product that achieves the goal can be expected as a result of award. The proposal clearly identifies major technical risks and clearly defines feasible planned mitigation strategies and efforts to address those risks. The proposal clearly explains the technical approach(es) that will be employed to meet or exceed each program goal and system metric listed in Section 1.4 and provides ample justification as to why the approach(es) is feasible. The Government will also consider the structure, clarity, and responsiveness to the statement of work; the quality of proposed deliverables; and the linkage of the statement of work, technical approach(es), risk mitigation plans, costs, and deliverables of the prime contractor and all subcontractors through a logical, well structured, and traceable technical plan.

5.1.2. Potential Contribution and Relevance to the DARPA Mission

The potential contributions of the proposed effort are relevant to the national technology base. Specifically, DARPA's mission is to make pivotal early technology investments that create or prevent strategic surprise for U.S. National Security.

5.1.3. Cost Realism

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

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

5.1.4. Proposer's Capabilities and/or Related Experience

The proposer's prior experience in similar efforts must clearly demonstrate an ability to deliver products that meet the proposed technical performance within the proposed budget and schedule. The proposed team has the expertise to manage the cost and schedule. Similar efforts completed/ongoing by the proposer in this area are fully described including identification of other Government sponsors.

TA-1 proposers should describe prior experience providing regular access to or deliveries of preprocessed geospatial data on a cloud-based platform. TA-2 proposers should describe prior experience developing and implementing change detection and monitoring algorithms on cloud or parallel processing systems. For both technical areas, describing experience with commercial customers is preferred.

5.2. 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

Award(s) will be made to proposers whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work to the overall research program and the availability of funding for the effort.

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

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

entered in the database, and DARPA will consider any comments, along with other information in FAPIIS or other systems prior to making an award.

6. AWARD ADMINISTRATION INFORMATION

6.1. SELECTION NOTICES AND NOTIFICATIONS

6.1.1. Abstracts (delete if abstracts are not requested)

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 full proposals submitted using the published evaluation criteria and without regard to any comments resulting from the review of an abstract.

6.1.2. Proposals

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

6.2. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

6.2.1. Meeting And Travel Requirements

There will be a program kickoff meeting in the Arlington, VA vicinity and all key participants are required to attend. Performers should also anticipate regular program-wide PI meetings and periodic site visits at the Program Manager's discretion to the Arlington, VA vicinity. Proposers shall include within the content of their proposal details and costs of any travel or meetings they deem to be necessary throughout the course of the effort, to include periodic status reviews by the government.

6.2.2. 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.

6.2.3. FAR and DFARS Clauses

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

6.2.4. Human Research Subjects/Animal Use

Proposers that anticipate involving Human Research Subjects or Animal Use must comply with the approval procedures detailed at <http://www.darpa.mil/work-with-us/additional-baa>.

6.2.5. Approved Cost Accounting System Documentation

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

6.2.6. Small Business Subcontracting Plan

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

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

All electronic and information technology acquired or created through this BAA must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C § 794d)/FAR 39.2.

6.2.8. System for Award Management (SAM) and Universal Identifier Requirements

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

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

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

6.2.10. Representations and Certifications

If a procurement contract is contemplated, prospective awardees will need to be registered in the SAM database prior to award and complete electronic annual representations and certifications consistent with FAR guidance at 4.1102 and 4.1201; the representations and certifications can be found at www.sam.gov. Supplementary representations and certifications can be found at <http://www.darpa.mil/work-with-us/additional-baa>.

6.3. REPORTING

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

6.4. ELECTRONIC SYSTEMS

6.4.1. Wide Area Work Flow (WAWF)

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

6.4.2. i-EDISON

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

7. AGENCY CONTACTS

Administrative, technical or contractual questions should be sent via e-mail to HR001118S0004@darpa.mil. All requests must include the name, email address, and phone number of a point of contact.

Points of Contact

The BAA Coordinator for this effort may be reached at:

HR001118S0004@darpa.mil.

DARPA/STO

ATTN: HR001118S0004

675 North Randolph Street

Arlington, VA 22203-2114

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

8. OTHER INFORMATION

8.1. INTELLECTUAL PROPERTY

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

8.1.1. PROCUREMENT CONTRACT

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

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

8.1.2. NONPROCUREMENT CONTRACTS

Proposers responding to this BAA requesting an Other Transaction for Prototypes shall follow the applicable rules and regulations governing these various award instruments, but, in all cases, should appropriately identify any potential restrictions on the Government’s use of any Intellectual Property contemplated under the award instrument in question. This includes both Noncommercial Items and Commercial Items. Proposers are encouraged use a format similar to that described in Paragraph 8.1.1 above. If no restrictions are intended, then the proposer should state “NONE.”

9. APPENDIX 1: PROPOSAL SLIDE SUMMARY

Organization Name	Concept
Describe How It Works / Innovative Claims	

Organization Name	Contract/Proposal Specifics
	<ul style="list-style-type: none"><input type="checkbox"/> Intellectual Property<input type="checkbox"/> Data rights summary<input type="checkbox"/> Deliverables

Organization Name Schedule/Cost		
Phase 1	6 Months	##M
Phase 2	12 Months	##M
Program Total	18 Months	##M

- **Proposed award type [i.e. Cost Plus Fixed Fee (CPFF), Cost Plus Award Fee (CPAF), Cost Plus Incentive Fee (CPIF), Fixed Firm Price (FFP), etc.]**

10. APPENDIX 2: VOLUME 1 COVER SHEET TEMPLATE

**Volume I, Technical and Management Proposal
Cover Sheet**

- (1) BAA Number: _____
- (2) Technical Area: _____
- (3) Lead Organization Submitting Proposal: _____
- (4) Type of Organization, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”
- (5) Other team members (if applicable) and type of organization for each:
Company 1 (Other Small Business)
Company 2 (Large Business)
Company 3 (Large Business)
University (Other Educational)
- (6) Contractor’s reference number (if any): _____
- (7) Proposal Title: _____
Proposal directed to the attention of (if applicable): _____
- (8) Technical point of contact to include:
Salutation, last name first name
Street Address
Street Address 2
City, State, Zip Code
Telephone, Fax (if available)
Electronic mail (if available)
- (9) Administrative point of contact to include:
Salutation, last name first name
Street Address
Street Address 2
City, State, Zip Code
Telephone, Fax (if available)
Electronic mail (if available)
- (10) Date proposal submitted: _____
- (11) Total funds requested from DARPA, and the amount of cost share (if any): _____

**11. APPENDIX 3: VOLUME 2 COVER SHEET, CHECKLIST AND SAMPLE
TEMPLATES**

**Volume II, Cost Proposal
Cover Sheet**

- (1) BAA Number: _____
- (2) Technical Area: _____
- (3) Lead Organization Submitting Proposal: _____
- (4) Type of Organization, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”
- (5) Other team members (if applicable) and type of organization for each:
Company 1 (Other Small Business)
Company 2 (Large Business)
Company 3 (Large Business)
University (Other Educational)
- (6) Contractor’s reference number (if any): _____
- (7) Proposal Title: _____
Proposal directed to the attention of (if applicable): _____
- | | |
|--|---|
| (8) Technical point of contact to include: | (9) Administrative point of contact to include: |
| Salutation, last name first name | Salutation, last name first name |
| Street Address | Street Address |
| Street Address 2 | Street Address 2 |
| City, State, Zip Code | City, State, Zip Code |
| Telephone, Fax (if available) | Telephone, Fax (if available) |
| Electronic mail (if available) | Electronic mail (if available) |
- (10) Award Instrument Requested: cost-plus-fixed-fee (CPFF), cost-contract – no fee, cost sharing contract – no fee, or other type of procurement contract (specify), or other transaction
- (11) Place and period of performance: _____
- (12) Total proposed cost separated by basic award and option(s) (if any): _____
- (13) Proposer’s Cognizant Defense Contract Management Agency (DCMA), Defense Contract Audit Agency (DCAA) Information:
- | | |
|--|----------------------------------|
| DCMA Administration Office (if known): | DCAA Audit Office (if known): |
| Salutation, last name first name | Salutation, last name first name |
| Street Address | Street Address |
| Street Address 2 | Street Address 2 |

City, State, Zip Code
Telephone, Fax (if available)

City, State, Zip Code
Telephone, Fax (if available)

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

(15) Date proposal submitted: _____

(16) DUNS number: _____

(17) TIN (Tax Information Number): _____

(18) CAGE Code: _____

(19) Subcontractor Information: _____

(20) Proposal validity period: _____

**Volume II, Cost Proposal
Checklist and Sample Templates**

The following checklist and sample templates are provided to assist the proposer in developing a complete and responsive cost volume. Full instructions appear in Section 4.3.2.2 beginning on Page 34 of HR001118S0004 This worksheet must be included with the coversheet of the Cost Proposal.

1. Are all items from Section 4.3.2.2 (Volume II, Cost Proposal) of HR001118S0004 included on your Cost Proposal cover sheet?

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

If reply is “No”, please explain:

2. Does your Cost Proposal include (1) a summary cost buildup by Phase, (2) a summary cost buildup by Year, and (3) a detailed cost buildup of for each Phase that breaks out each task and shows the cost per month?

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

If reply is “No”, please explain:

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

Direct Labor (Labor Categories, Hours, Rates)

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

Indirect Costs/Rates (i.e., overhead charges, fringe benefits, G&A)

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

Materials and/or Equipment

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

Subcontracts/Consultants

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

Other Direct Costs

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

Travel

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

If reply is “No”, please explain:

4. Have you provided documentation for proposed costs related to travel, to include purpose of trips, departure and arrival destinations and sample airfare?

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

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

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

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

If reply is “No”, please explain:

13. Have all team members (prime and subcontractors) who are considered a Federally Funded Research & Development Center (FFRDC), included documentation that clearly demonstrates work is not otherwise available from the private sector AND provided a letter on letterhead from the sponsoring organization citing the specific authority establishing their eligibility to propose to government solicitations and compete with industry, and compliance with the associated FFRDC sponsor agreement and terms and conditions.

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

If reply is “No”, please explain:

14. Does your proposal include a response regarding Organizational Conflicts of Interest?

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

If reply is “No”, please explain:

15. Does your proposal include a completed Data Rights Assertions table/certification?

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

If reply is “No”, please explain:

SAMPLE – SUMMARY PROPOSAL BUDGET (One per Phase)

SAMPLE: COST ELEMENT SUMMARY

Phase 1			
COST ELEMENT	BASE	RATE	AMOUNT
DIRECT LABOR (List each direct labor category separately)	Hours		\$
TOTAL DIRECT LABOR			\$
FRINGE BENEFITS	\$	%	\$
TOTAL LABOR OVERHEAD	\$	%	\$
SUBCONTRACTOR(S), CONSULTANT(S) (List Each Separately)			\$
MATERIALS & EQUIPMENT			\$
MATERIAL OVERHEAD	\$	%	\$
TRAVEL			\$
OTHER DIRECT COSTS (ODC)			\$
General and Administrative (G&A)	\$	%	\$
Independent Research and Development (IR&D)/Bid and Proposal (B&P)	\$	%	\$
SUBTOTAL COSTS			\$
COST OF MONEY (See DD Form 1861)			\$
TOTAL COST			\$
PROFIT/FEE	\$	%	\$
TOTAL PRICE/COST			\$
GOVERNMENT SHARE			\$
RECIPIENT SHARE (if applicable)			\$

Phase 2			
BASE	RATE	AMOUNT	TOTAL PROPOSED AMOUNT
Hours			
	\$	\$	
		\$	
\$	%	\$	
\$	%	\$	
		\$	
		\$	
\$	%	\$	
		\$	
\$	%	\$	
		\$	
		\$	
\$	%	\$	
		\$	
		\$	
\$	%	\$	
		\$	
		\$	

SAMPLE: SUBAWARDEES & CONSULTANTS PRICE SUMMARY

A	B	C	D	E	F
Subawardee or Consultant Name	SOW Tasks to be performed*	Type of Award	Subawardee of Consultant Quoted Price	Cost Proposed by Prime for the Subawardee or Consultant	Difference (Column D - Column E) IF APPLICABLE
TOTALS					
<p>* Identify Statement of Work, Milestone or Work Breakdown Structure paragraph or provide a narrative explanation as an addendum to this Table that describes the effort to be performed.</p>					