
Program Solicitation

# Space-domain Wide Area Tracking and Characterization (Space-WATCH)

## TA1: Commercially Hosted Sensing & Detection

DARPA STRATEGIC TECHNOLOGY OFFICE (STO)

DARPA-PS-23-06

January 10, 2023

# PROGRAM SOLICITATION OVERVIEW INFORMATION

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Strategic Technology Office (STO)
- **Funding Opportunity Title** – Space-domain Wide Area Tracking and Characterization (Space-WATCH) TA1: Commercially Hosted Sensing & Detection
- **Announcement Type** – Initial Announcement
- **Funding Opportunity Number** – DARPA-PS-23-06
- **Dates**
  - Posting Date: January 10, 2023
  - Virtual Proposer's Information Session: January 18, 2023
  - Abstracts Due Date and Time: February 02, 2023 by 5:00 PM (ET)
  - Oral Presentations Due Date and Time: By Government request, estimated 4 weeks after Abstract submission

- The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative approaches to address challenges in the following technical areas: low earth orbit (LEO), space domain awareness (SDA), dynamic market models, market-driven command and control, data pre-processing for heterogenous data fusion and anomaly detection. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems.
- **Multiple awards are anticipated**.
- **Types of instruments that may be awarded** – Other Transaction (OT)
- **Proposer Requirements** – proposers must have satellites on orbit by January 1, 2025 capable of participating in Space-WATCH.

- **Agency Contact**

  The Solicitation Coordinator for this effort can be reached at:
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**PROGRAM SOLICITATION**
**Defense Advanced Research Projects Agency (DARPA)**
**Space-domain Wide Area Tracking and Characterization (Space-WATCH)**
**TA1: Commercially Hosted Sensing & Detection**

# 1. PROGRAM INFORMATION

## 1.1. Background

The goal of the Space-WATCH program is to provide real-time persistent tracking of all objects in low earth orbit (LEO) so that when an anomalous action occurs, operators can be notified in a timely fashion, allowing them to plan and execute appropriate actions. To accomplish this, Space-WATCH aims to capitalize on the enormous volume of low-cost in-situ sensors in LEO on both commercial and Government satellites that can contribute to continuous detection and tracking of nearby objects, identify when an anomaly or unexpected event/movement occurs, and then provide relevant details in a timely fashion to ground-based operators who can then direct appropriate action. Critical to this process will be the establishment of an "as-a-service" model to incentivize data collection from non-Government owned sensors that can be processed to form a single operational picture of LEO.

The U.S. Government, specifically the Department of Defense (DoD) and Department of Commerce (DoC), continue to make significant investments in addressing the Space Domain Awareness (SDA) mission. As the proliferated LEO (pLEO) commercial and defense ecosystems grow the need for understanding the environment is growing along with it. At its most fundamental level SDA is required to ensure safe satellite operations and good stewardship of space, much in the same way that the Federal Aviation Administration (FAA) fulfills this role for air traffic. Currently, sensing and tracking of space objects is conducted by the Space Surveillance Network (SSN), which primarily uses ground-based radars. Space-WATCH seeks to overcome the limitations of these ground-based sensors and add capability and capacity by moving observations from the ground to constellations of satellites throughout LEO. Specifically, Space-WATCH seeks to leverage the growing number of commercial LEO constellations carrying low-cost but highly proliferated sensor technology to gain situational awareness throughout LEO at a fraction of the cost of the existing ground-based approaches. This will provide the opportunity for commercial LEO operators to capitalize on an additional revenue stream by providing on-orbit observations that will make the LEO environment safer for all participants.

This Program Solicitation (PS) calls specifically for Abstracts to be submitted by February 2, 2023 5:00PM (ET). Abstracts will be reviewed by the Government; if selected, the proposer will be asked to provide an oral presentation. Oral presentations will be reviewed by the Government, and if selected, may result in a Phase 0 award of an Other Transaction (OT) and eligibility to participate in future Phases of the program. The Phase 0 portion of the Space-WATCH program is a six-month period of performance to a) do an engineering study/reference architecture, and b) work with the Government team to better understand overall objectives for, and to develop, an initial dynamic pricing model for how to compensate commercial operators for sensor data sold to Space-WATCH.

This PS encourages solutions from all responsible sources capable of satisfying the

Government's needs, including large and small businesses, and nontraditional defense contractors as defined in 10 U.S.C. § 3014, and research institutions as defined in 15 U.S.C. § 638(e)(8).

### 1.2. Program Description/Scope

**Overall Space-WATCH Program Scope**

Space-WATCH will explore the opportunity to present an alternative revenue to commercial satellite operators interested in selling the situational awareness data they collect as a part of their routine mission to potential buyers, while also providing incentives to encourage them to enhance those capabilities. To accomplish this, Space-WATCH consists of three major components: two distinct Technical Areas (TAs), and a Working Group. The first TA (TA1) is a wide-area tracking layer via commercially-hosted sensing and detection. The second TA (TA2) is real-time automated data fusion and exploitability capability that will ingest and process data collected from TA1. The Working Group (WG) will work with TA1 and TA2 to develop a dynamically priced, data-as-a-service marketplace to incentivize TA1 performers to sell collected data to the Government. Figure 1 (below) illustrates how these three major program components will interact with each other. The Space-WATCH vision is for acquisition planners and operators to provide context for what makes an observation valuable, and the WG to then translate that intent into a dynamic marketplace construct that incentivizes collection capabilities and activities and provides value to both the Government and commercial operators.

TA1 (Commercially Hosted Sensing and Detection) performers use their existing or modified sensors on orbit to observe their surroundings and then sell those data products as a Data-as-a-Service Product Offering (DaaSPO) that is consistent with their business model. The Government will not own nor operate the sensor equipment; they will only purchase the data products those sensors generate. These data products will then be ingested and processed by TA2 for Real-Time Automated Data Fusion and Exploitation, whereby finished products are provided to operators and results are fed back into the marketplace to adjust the pricing model.

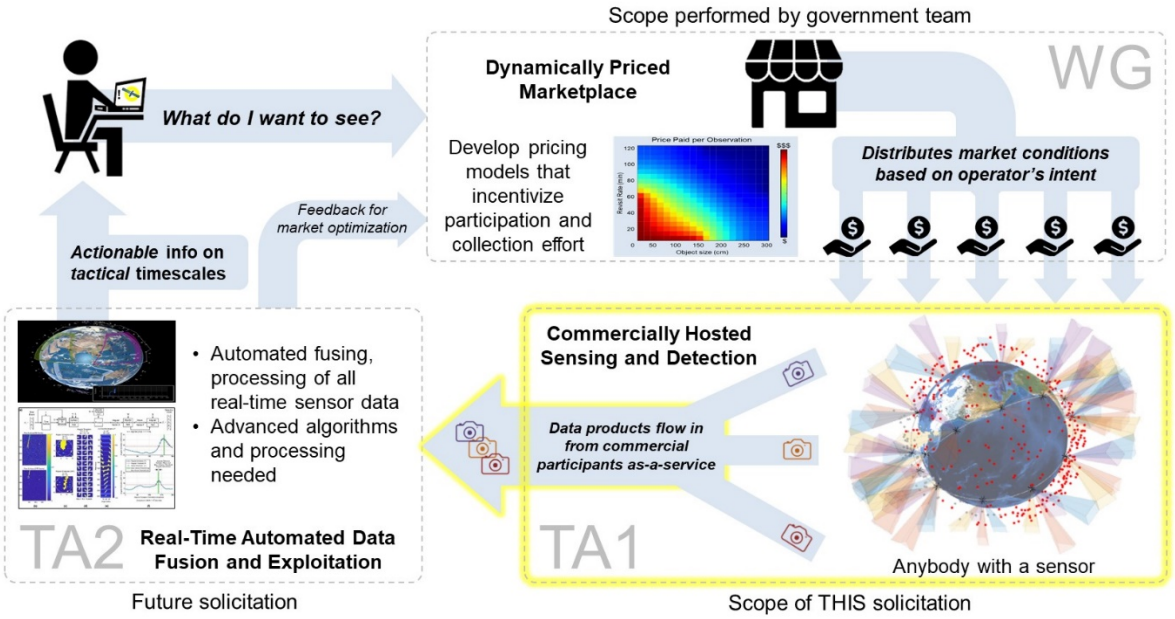


*Figure 1 (U) Only TA1 Phase 0 is solicited in this PS, TA2 and WG interfaces are shown for context. A future solicitation will be released for TA2 and the WG scope will be conducted by a Government Team.*

Throughout the program, the Space-WATCH Government team will work with commercial performers to design upgrades and/or modifications to their existing sensors (such as star trackers collecting data on the light side of their orbit), and then develop alternative sensors (such as long wave infrared (LWIR)) to serve as hosted payloads on commercial satellites that can collect data on the dark side of the orbit. TA1 Performers can offer data from any sensor, regardless of performance or modality, that can contribute observational information of value to the fused state. The data gathered from these proliferated, heterogeneous sensors will then, in TA2, be collected, processed, and fused into a single operational picture of space in order to maintain custody of all objects in orbit and search for deviations from expected behavior.

The primary risk in TA1 will be finding sensors consistent with commercial constellation business models that are able to provide useful information to the Government. As such, the purpose of TA1 Phase 0 is to determine if viable market conditions exist to support a healthy set of DaaSPOs capable of contributing valuable SDA capabilities.

***Only TA1 Phase 0 is solicited in this PS; TA2 and future phases are shown and described for context but are outside the scope of this solicitation.*** TA2 will be solicited independently in the future.

### 1.3. Acquisition Strategy

The Government's aim is to lower the administrative burden to entry, reduce program risk, foster competition, and have performing teams get to work quickly. To facilitate this objective the Government will use the following acquisition process:

1. **Abstracts:** Through this solicitation, the Government requests performers to submit Abstracts (see Section 3.2) in response to TA1. The Government will review all submitted Abstracts for technical comprehension and ability (see Section 3.3). Selected performers will be invited to provide an Oral Presentation (see Section 3.4) to the

Government.

2. **Oral Presentations:** Upon the Government's request, proposers will have the opportunity to present their proposal to the DARPA program team. The Government will review all Oral Presentations (see Section 3.5) and anticipates that selected performers will be given a Phase 0 award for $600,000 with a 6-month period of performance to develop a refined system architecture.
3. **Phase 0 (6 months):** Performers will do an engineering study and build out architecture designs according to a fixed milestone and pricing schedule (see Figure 4), working with the Government toward a design review to be executed roughly 5 months after the Phase 0 agreement award. Phase 0 performers will be provided details regarding the expectations for and an invitation to submit proposals, including updated cost estimates, for Phase 1 of the program at the end of Phase 0.
4. **Phase 1 (12 months) and Phase 2 (16 months):** Each phase will be individually solicited and negotiated using an Other Transaction (OT) mechanism for award.

The anticipated timeline and major milestones for the acquisition strategy laid out above is illustrated in the figure below:

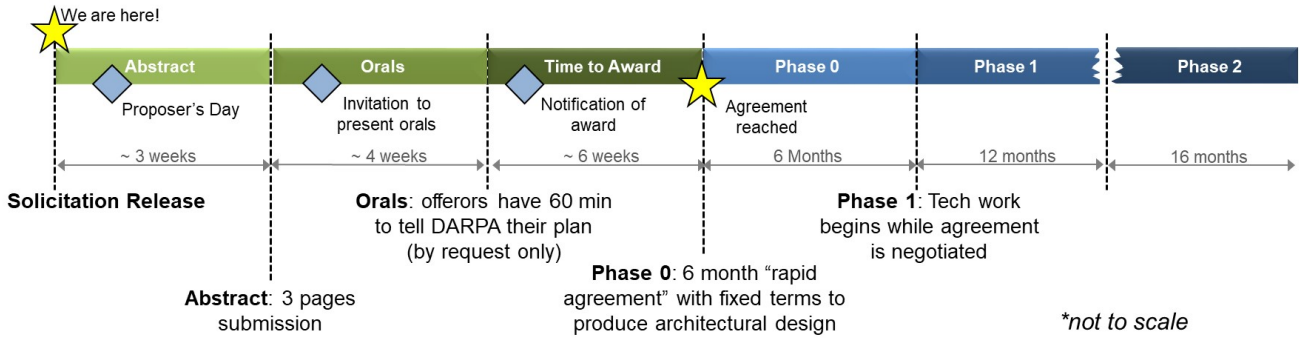


*Figure 2: Acquisition Strategy Timeline*

The process and requirements for Abstract and Oral submissions are detailed in Section 2.1 of this PS. Complete descriptions of the Space-WATCH program objectives and structure are provided within the PS to give proposers as much context as possible to inform Abstract and Oral submissions.

### 1.4. Program Structure

As shown in Figure 3, Space-WATCH is a three-phase program (including Phase 0) spanning 34 months across two Technical Areas (TAs) and a Working Group (WG). TA1 and the WG each begin with a 6-month Phase 0 to produce an initial architectural design. Following Phase 0, there will be a 12-month Phase 1 for TA1 to implement the design from Phase 0. At the beginning of Phase 2 of the program (if not earlier), Space-WATCH enabled satellites will begin providing data, which will implement the data-as-a-service model for a 16-month pilot. Continual launches of Space-WATCH enabled satellites are anticipated throughout the 16-month Phase 2.

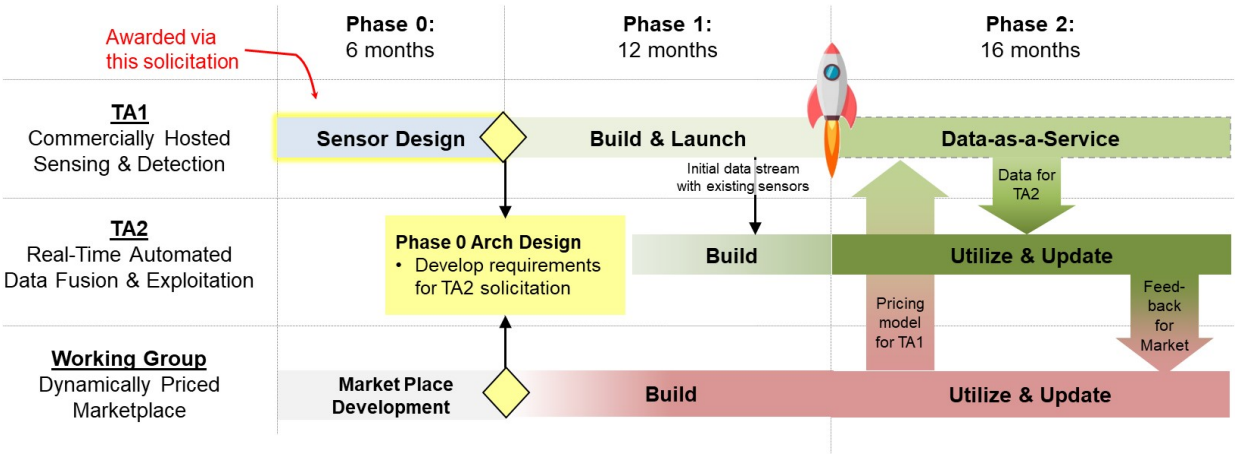


*Figure 3: Program Technical Areas and Phasing*

In Phase 0, the TA1 Performers and the WG will work together to determine whether or not suitable DaaSPOs and dynamic pricing models close in a way that benefits both parties. The WG will represent Government acquisition and operational community interests, while TA1 performers will represent their own and those of the commercial community. TA1 performers can expect the WG to provide the "demand signal" and feedback for their DaaSPO development effort. The WG will also be informing TA2 acquisition scope based on the types of DaaSPOs expected to be provided under the Phase 2 Data-as-a-Service (DaaS) model.

TA1 Phase 0


*Figure 4: TA1 Phase 0 Fixed Milestone Schedule*

In Phase 0, TA1 performers will develop architecture designs in support of their respective DaaSPOs. A design review will be conducted approximately one month prior to the conclusion of Phase 0. For each DaaSPO (performers are able/encouraged to submit multiple), the design will at a minimum consist of:

- **Performance:** Sensor selection, modality/specifications, performance expectations, proliferation expectations (deployed to entire constellation, partial deployment, etc). Note that specific performance metrics will not be provided for each potential modality – the Government is interested in what you can see, where and when you can see it, and how well you can see it. The information will be reflected against a roll-out strategy illustrating which capabilities are resident/existing as opposed to which modifications or upgrades would unlock future on-orbit capability and when such capability is anticipated.

- **Data Management:** A complete architecture for data processing and management including, processing/routing expectations, on-orbit versus ground processing, latency expectations, amount of time to observation availability. Is data raw (high volume) or processed (lower volume); is there flexibility on this continuum?
- **Representative/synthetic version of data products:** Performers will deliver representative products or detailed characterizations of data products for ingestion into the TA2 fusion center.
- **Business CONOPS:** Proposer will provide an initial pricing model to go along with their DaaSPO. This includes what will be offered, various ways it could be packaged and priced, and what is the price under specific conditions or assumptions. This CONOPs is intended to give the Government insight into what commercial industry believes to be viable, sustaining market structures.

If invited to provide an Oral Presentation, proposers are expected to present their preliminary thoughts for each of these elements. If selected, the Performer will iterate the design throughout the 6-month Phase 0 and develop it with further analytic substantiation by the design review. Performers are expected to propose and carry multiple DaaSPO designs throughout Phase 0 that can correspond to different modalities (for example star-trackers for sun side observations and LWIR sensors for dark side, or separate sensors for low fidelity wide-area search and higher fidelity sensors for characterization).

The presentation and accompanying written material of the performer's system architecture at the design review will be assessed to determine which performing teams will continue into Phase 1. In addition to a technical design, performers will present a not-to-exceed cost and a data rights plan for Phase 1. More detail on expectations for data-rights can be found in Section 4.5 and 4.6.

TA1 Phase 1 (provided for context, budget estimation)

In Phase 1 (12 months), TA1 performers will develop and implement hardware/software modifications in support of their respective DaaSPOs. It is also anticipated that performers will begin to provide initial data products (either synthetic or from on-orbit assets) for ingestion into TA2. By the conclusion of Phase 1, any Government funded modifications should be complete, pricing models should be developed/agreed upon and the format will shift to a DaaS acquisition model in Phase 2.

TA 1 Phase 2 (provided for context, budget estimation)

In Phase 2 (16 months), TA1 performers will begin providing data products from Space-WATCH enabled satellites, and move to a DaaS model, with DARPA acting as the first market customer. It is expected that new Space-WATCH incentivized sensors will be deployed on orbit before or during this Phase and data from these systems will be ingested into the TA2 fusion system. Performers are expected to continue to add/modify capability throughout Phase 2. During Phase 2 the entire system (shown in Figure 1) will be exercised and improved upon. Dynamic pricing will establish market conditions which are provided to TA1 Performers who respond with data products that are ingested into the TA2 fusion center for processing, state determination, and anomaly detection. It is anticipated that during Phase 2 additional customers will begin purchasing data from the Space-WATCH marketplace. These new customers will eventually become the primary customer as the DARPA program ends.

### 1.5. TA1 Program Goals/Metrics

The objective of Space-WATCH, simply stated, is to see everything in LEO all the time. For the purposes of this program, these program metrics are defined as having less than a 30-minute revisit time coupled with less than 10 km position uncertainty (see Figure 5). These particular metrics are program objectives spanning all of the satellites contributing to Space-WATCH – no individual performer is anticipated to meet these objectives. Hence, TA1 metrics focus on sensor/data quality from an individual satellite that is part of the Space-WATCH enterprise, and the marketplace developed by the WG provides the incentive structure to determine how many satellites a performer should have participate. It is expected that there will be reasonable justifications for individual performers to focus on specialized orbits, altitudes, light/dark offerings based on how they align to the strengths of their primary missions. The intent is to allow performers to play to their strengths and capitalize off of their previous investment – not try to be all things and cover down inefficiently in areas that are not commercially feasible.

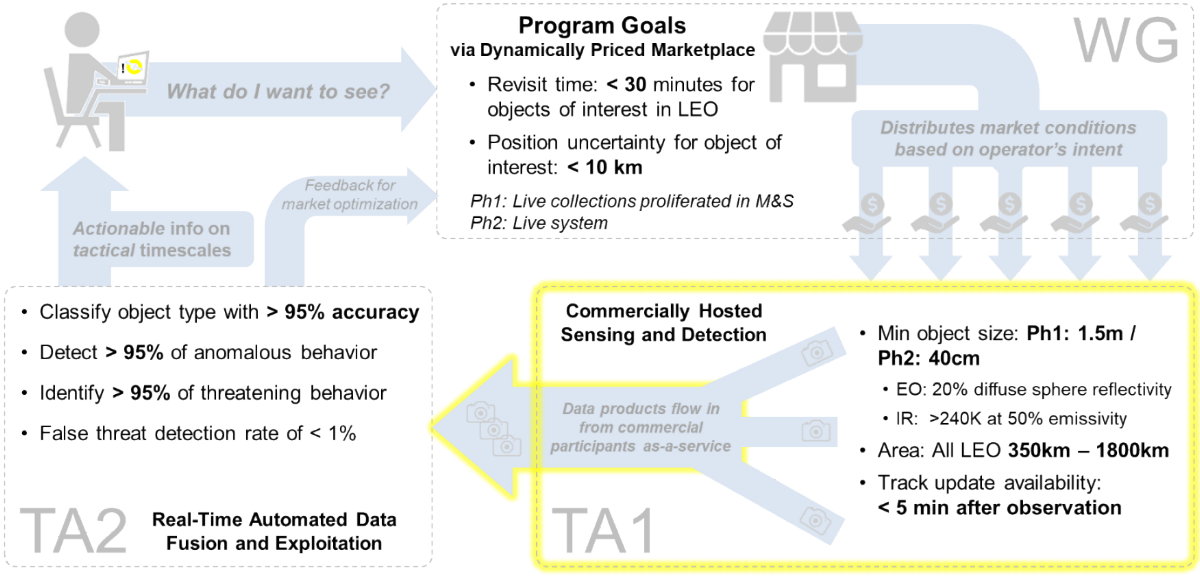


*Figure 5: Program Goals/Metrics are provided for context, TA1 performers are expected to provide offerings that contribute to these goals in aggregate. Payment will be directly coordinated with level of contribution.*

TA1 program metrics Space-WATCH are fundamentally concerned with three things:

- *What can you see and how well can you see it?* A simple metric proxy here is minimum object size, and what can be resolved, likely as a function of range.
- *Where, when, and how often can you see it?* Marries what you can see with orbitology and proliferation expectations – this should define a potential area of regard, per satellite and then per constellation.
- *How quickly can you get that information to someone who can do something with it?* Based on your data processing and networking expectations on when the data product can be provided.

In line with this being a DARPA program, one key point is that there are *no hard requirements.* The values shown above are objectives, and each performer's proposed solution will be

evaluated based on how well it meets Space-WATCH's overall goals.

Eventually, market conditions will drive the incentivized development of new data products such as faster or higher quality, different modalities, orbital regimes, etc. in service of desired outcomes and Program Goals. In Phase 0, TA1 Performers will work with the WG to establish appropriate metrics to characterize the value of their DaaSPOs contribution to the aggregate Program Goals and develop corresponding pricing models to ensure they are compensated accordingly.

TA2 metrics are provided for contextual purposes to illustrate how the major elements interact. Two things are worth pointing out:

1. It is anticipated that the data processing burden is shared across TA1 and TA2. In other words, there are no specific processing requirements levied on TA1 performers. Ultimately this will be part of the role of the marketplace – to define and drive the value of data product maturity in accordance with the Government's priorities. For example, one can imagine scenarios in which raw data is desired and others in which the converse is true, and likely everywhere in between. Again, it's up to the Performer to determine the DaaSPOs they are best positioned to provide given the market conditions provided by the Government.
2. Based on what the fusion center is (or is not) able to determine given aggregated DaaSPO inputs, the market may modify pricing conditions to drive desired outcomes and meet its objectives. In other words, feedback regarding the utility of certain data will drive the demand signal (i.e., future market conditions) to generate inputs it needs to meet its performance goals and the overall program goals.

# 2. PS AUTHORITY

This PS may result in the award of an OT for Prototype Projects, which can include not only commercially-available technologies fueled by commercial or strategic investment, but also concept demonstrations, pilots, and agile development activities that can incrementally improve commercial technologies, existing Government-owned capabilities, and/or concepts for broad defense and/or public application(s). The Government reserves the right to award an OT for Prototypes under 10 U.S.C. § 4022, or make no award at all. In all cases, the Government Agreements Officer (AO) shall have sole discretion to negotiate all agreement terms and conditions with selected proposers. The OT agreement will not require cost-sharing unless the proposer is a traditional defense contractor who is not working with a non-traditional defense contractor participating in the program to a significant extent.

## 2.1. PS Procedure

In response to this solicitation proposers are asked to submit a 3-page Abstract as described in Section 3.2. This process allows DARPA to ascertain (1) whether the proposers understand the key challenges of the Space-WATCH program, and (2) whether they are capable of executing a proposed concept. Specific evaluation criteria used to make the assessment can be found in Section 3.3. If DARPA finds that both of these conditions are met, it may request the proposer participate in an Oral Presentation to DARPA, as described in Section 3.4, where the proposed technical solution will be evaluated. Specific evaluation criteria used to make the assessment can

be found in Section 3.5. After the Oral Presentations, DARPA will make a determination as to which proposers may be asked to participate in Phase 0 of the program. The Government will not pay proposers responding to this PS for the costs associated with Abstract submissions or Oral Presentations.

Abstracts (result if successful: invitation to participate in Oral Presentations)

Abstracts shall be submitted as specified in Section 3 of this PS. The Government will evaluate abstracts against the criteria stated in this PS.

It is important to note that proposers must submit an Abstract(s) in response to this solicitation to be considered for participation in the Space-WATCH program. Proposers will not be invited to provide an Oral Presentation, or be included in any further progression of the program, without participating in the Abstract phase of the solicitation.

Oral Presentations (result if successful: Phase 0 Award, $600,000, 6-month Period of Performance)

Proposers responding to this PS may be invited to further explain their proposed approach and solution via an Oral Presentation. Oral Presentations will take place approximately three weeks after notification from the Government that an Oral Presentation is requested. Additional instructions (to include content due date and presentation date/time) will be provided within the official invitation to participate in Oral Presentations. For planning purposes, the contents of the Oral Presentation are provided in Section 3.4 of this PS, and proposers can expect to present this content should they be invited to provide an Oral Presentation.

Awards (for Phase 0)

DARPA will review Oral Presentations to determine which proposed solutions sufficiently meet the evaluation criteria stated in Section 3.5. Upon favorable review, and subject to the availability of funds, the Government may award an OT for Prototypes under 10 USC §4022 with fixed milestones totaling $600,000 for Phase 0 selectees.

Proposals (result if successful: Phase 1 award, amount and PoP determined by proposal)

Performers selected for Phase 0 awards will be provided instructions to submit a full proposal for Phase 1 during Phase 0.

# 3. GUIDELINES FOR ABSTRACTS, ORAL PRESENTATIONS, AND PROPOSALS

## 3.1. General Guidelines

a. Do not include elaborate brochures or marketing materials; only include information relevant to the submission requirements or evaluation criteria.

b. Use of a diagram(s) or figure(s) to depict the essence of the proposed solution is permitted

c. All Abstracts, Oral Presentations, and Proposals shall be unclassified.

d. Proposers are responsible for clearly identifying proprietary information. Submissions containing proprietary information must have the cover page and each page containing such information clearly marked with a label such as “Proprietary”

or "Company Proprietary." NOTE: "Confidential" is a classification marking used to control the dissemination of U.S. Government National Security Information as dictated in Executive Order 13526 and should not be used to identify proprietary business information.

e. Questions can be sent to DARPA-PS-23-06@darpa.mil by January 20, 2023 5:00PM (ET)

f. Send Abstracts to DARPA-PS-23-06@darpa.mil by February 2, 2023 5:00PM (ET)

g. Submissions sent through other mediums, channels, or after the prescribed PS deadline will not be considered, reviewed, nor evaluated.

h. Proposers providing Abstracts that are not invited to an Oral Presentation will be notified in writing as soon as practical.

### 3.2. Abstract Content

a. Abstracts should not exceed three (3) single-sided written pages using 12-point Times New Roman font with 1" margins all around.

b. Abstracts must include the following:

1. ***Title page*:** Proposer Name, Title, Date, Point of Contact Name, E-Mail Address, Phone, and Address. (The Title Page does not count against page limits).

   - The proposer shall include a statement that no people on the proposer's team work for DARPA as Scientific Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS) or similar support services, as DARPA has a policy prohibiting such people from working as a technical performer. Include this statement on the title page; it will NOT count as part of the three (3) written pages limit.

2. ***Technical Understanding*:** Provide a summary of the technical problem the Space-WATCH program seeks to solve. This summary shall be stated in the proposer's own words without any "copy and paste" of this solicitation. The goal is for the proposer to demonstrate clear understanding of Space-WATCH's purpose and goals. The summary is included in the three (3) written pages limit.

3. ***Technology Challenges*:** Identify specific technical challenges faced in Space-WATCH and how the proposer solutions may address these challenges. The proposer should include what they think the primary risks are to successful development of the Space-WATCH program. In other words, what are the most significant challenges in developing DaaSPOs that close within your business constraints? The is included in the three (3) written pages limit.

4. ***Technical Ability*:** Detail why the proposer believes their team and organization has the ability to be successful at achieving the Space-WATCH program goals. The proposer may include past experience, organizational capabilities, on-orbit capabilities (present and planned satellite/constellation sizes, contributing payloads/sensors), team members' or subcontractor qualifications, or anything else that demonstrates competence in designing and contributing to the Space-WATCH system. The summary is included in the three (3) written pages limit.

### 3.3. Abstracts – Process and Basis of Evaluation

Abstract evaluation criteria are listed in order of importance. Individual Abstracts will be evaluated against the evaluation criteria described below:

a. **Technical Comprehension**: The proposed technical understanding is accurate, and key technical challenges and risks are identified.

b. **Technical Ability:** The proposers demonstrate an ability, if selected, to achieve the goals of the Space-WATCH program.

Abstracts will be evaluated by DARPA using the evaluation criteria listed above,and not against other Abstracts submitted in response to this PS. The Government will endeavor to complete the evaluation of Abstracts within 10 business days of the closing of the submittal period. As stated above, proposers are required to submit an Abstract for evaluation by DARPA to minimize effort and reduce the potential expense of preparing an unsuccessful proposal. DARPA will respond to the 3-page Abstract with a statement as to whether DARPA is interested in seeing a 1 hour (approximately 40 minutes presentation, 20 minutes question and answer period) Oral Presentation. If DARPA is not interested in an Oral Presentation, it will state this in an email to the proposer. Upon review of Abstracts, the Government may elect to invite all, some, or none of the proposers into the Oral Presentations. *Only Abstract proposers invited by DARPA to participate in the Oral Presentations are eligible to provide one.*

### 3.4. Oral Presentation Content

If DARPA expresses interest in an Oral Presentation, the proposers will be asked to provide a presentation to provide further details on their proposed solution. Specific instructions (including content submission guidelines) will be provided in the invitation to participate. If selected, proposers can expect to be asked to provide the following information (proposer can address them in any order they choose):

a. Company introduction/overview: Provide information regarding company and key personnel dedicated to the program and how their past performance and qualifications will contribute to the technical approach. Identify and explain efforts of similar scope and complexity.

b. Technical Approach: Provide a technical approach for each DaaSPO you intend to develop and offer for the Space-WATCH program, to include:

    1. Performance: Sensor selection, modality/specifications, performance expectations, proliferation expectations (deployed to entire constellation, partial deployment, etc). Note that specific performance metrics are not provided for each potential modality – DARPA is interested in what you can see, where, when, and how often you can see it, and how well you can see it; it is expected that your proposal quantifies this and its potential contribution to the Space-WATCH aggregate in the terms that make the most sense for your technology.

    2. Anticipated Data Products: Performers will propose representative products or detailed characterizations of data products for ingestion into the (eventual) fusion center. Proposals should address data quality, integrity, signal/noise, addressing false positive/negatives, what will be dealt with within your DaaSPO versus what will left to the fusion engine to deal with.

3. Data Management: An initial architecture for data processing and management to include processing/routing expectations, on-orbit versus ground processing, latency expectations, and amount of time to observation availability. The proposal should also characterize data expectations -- data raw (high volume) or processed (lower volume), and what flexibility is available on this continuum?
4. Business CONOPS: Proposer will provide an initial pricing model to go along with their DaaSPO to include what will be offered, various ways it could be packaged and priced, and what the price is under specific conditions. This CONOPs is intended to give the Government insight into what commercial industry believes to be viable, sustaining market structures.
5. Roll-out Strategy / Roadmap: The information for major elements of each section above should be reflected against a roll-out strategy illustrating when each capability could be expected to be deployed – from Phase 0 through Phase 2. DARPA wants to know when we could expect data to begin flowing and novel ideas for accelerating that timeline (for example, using resident/existing sensor data even if it's not of ideal performance/quality while modifications or upgrades are developed in parallel).

c. Budget estimation for Phase 1 and Phase 2

d. Teaming/subcontractors: Identify any teammates or subcontractors expected to comprise the team. Identify their roles, any key personnel, and how their past performance and qualifications will contribute to the technical approach.

e. Data Rights: Identify any components of the proposed technical solution that will be subject to IP or data rights. Declare the anticipated level of IP protection to be asserted and clearly identify the scope of assertion.

In addition to the above required areas, the Government may request the proposer provide additional information or detail with respect to its Abstract. Proposers should expect to have approximately 40 minutes for presentation and approximately 20 minutes to address any questions from the Government panel. Oral Presentations are subject to the following constraints:

- No more than 15 slides in PDF or PowerPoint format
- No smaller than 10-point font
- Video demonstrations are allowed
- All presented material is to be submitted to DARPA-PS-23-06@darpa.mil at least 48 hours before start of the first Oral Presentation

### 3.5. Oral Presentations – Process and Basis of Evaluation

Oral presentation evaluation criteria are listed in order of importance. Individual presentations will be evaluated against the evaluation criteria described below:

a. **Technical Approach**

The proposed technical approach is reasonable, feasible, and innovative. The approach demonstrates an innovative yet feasible approach to address the identified technical risks and challenges, and meet TA metrics.

b. **Relevant Qualifications**

Personnel and/or company experience and qualifications are accurate, relevant, and demonstrate the ability of the proposer to meet the technical goals of the program.

The Government intends for Oral Presentations to be done virtually; the Government reserves the right to record presentations. The Government will evaluate information provided in the content submission (documentation), the Oral Presentation, and Q&A session as basis for evaluation. All material to be presented should be sent to the Government at least 48 hours in advance of the presentation. Oral Presentations will be evaluated by the Space-WATCH Program Manager with support from a panel composed of Government and (Federally Funded Research and Development Center (FFRDC) subject matter experts (SMEs).

After completing evaluation of Oral Presentations, DARPA will: 1) make a six-month award for architecture development (Phase 0 of the program); or 2) inform the proposer that its proposed concept/technology/solution is not of continued interest to the Government and they are no longer considered for participation in the program. If DARPA does not intend to issue an award for the Phase 0 effort to an proposer, DARPA will provide brief feedback to the proposer regarding the rationale for this decision.

# 4. AWARDS

## 4.1. General Guidelines

Upon favorable review of the proposal and subject to the availability of funds, the Government may choose to award an OT for Prototypes agreement for Phase 0.

The AO reserves the right to negotiate directly with the proposer on the terms and conditions prior to execution of the resulting OT agreement, including payment terms, and will execute the agreement on behalf of the Government. Be advised, only a Government AO has the authority to enter into, or modify, a binding agreement on behalf of the United States Government.

In order to receive an award:

a. Proposers must have a Dunn and Bradstreet (DUNS) number and must register in the System for Award Management (SAM) at SAM.gov. Proposers are advised to commence SAM registration upon notification of entry to Phase 0 of the competition.

b. Proposers must also register in the prescribed Government invoicing system (Wide Area Work Flow: https://wawf.eb.mil/xhtml/unauth/registration/notice.xhtml). The AO will provide assistance to those proposers from whom a proposal is requested.

c. Proposers must be determined to be responsible by the Agreements Officer and must not be suspended or debarred from award by the Federal Government nor be prohibited by Presidential Executive Order and/or law from receiving an award.

d. Being asked to submit a proposal does not guarantee that an proposer will receive an award. The Government reserves the right not to make an award.

## 4.2. Controlled Unclassified Information (CUI) and Controlled Technical Information (CTI) on Non-DoD Information Systems

Further information on Controlled Unclassified Information identification, marking, protecting and control, to include processing on Non-DoD Information Systems, is incorporated herein and can be found at www.darpa.mil/work-with-us/additional-baa. A program-specific CUI Guide has been established, and will be provided with the solicitation, to help proposers determine CUI

thresholds for information relevant to, and technologies developed under the program. As CTI is anticipated for this program, foreign proposers are encouraged to understand U.S. export law and have a plan in place to obtain export licenses when necessary. Possible methods include teaming with a U.S. prime and/or having a U.S. subsidiary/parent company.

### 4.3. Competition Sensitive Information

DARPA policy is to treat all submissions as competition sensitive, 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. Input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements.

### 4.4. Phase 0/1 Intellectual Property / Data Rights

The Government will require, at a minimum, limited rights to data in order to facilitate programmatic reviews and testing. While not required, less restrictive rights in data, such as Government Purpose Rights, will be considered advantageous.

### 4.5. Phase 2 Intellectual Property / Data Rights

During Phase 2 the program will transition from a developmental effort to a DaaS model. Accordingly, the data rights posture is expected to change. By the end of Phase 1, the Government intends to come to an agreement on the Phase 2 data rights posture. A draft End User License Agreement (EULA) will be provided to selected performers during Phase 0 of the program. The terms of this agreement will be negotiated throughout Phases 0/1 to be finalized prior to the execution of Phase 2.

### 4.6. Former Procurement Integrity Act (PIA)

All awards under this PS shall be treated as Federal Agency procurements for purpose of 41 U.S.C. Chapter 21. Accordingly, the PS competitive solicitation process and awards made thereof must adhere to the ethical standards required by the former PIA.

## 5. PS DEFINITIONS

**"Data"** refers to recorded information, regardless of form or method of recording, which includes but is not limited to, technical data, software, mask works and trade secrets. The term does not include financial, administrative, cost, pricing or management information and does not include inventions.

**"Government Purpose**" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.

**"Government Purpose Rights"** means the rights to use, duplicate, or disclose Data, in whole or in part and in any manner, for Government Purposes only, and to have or permit others to do so for Government Purposes only.

**"Limited Rights"** means the rights to use, modify, reproduce, release, perform, display, or disclose Data, in whole or in part, only within the Government for the limited purpose of evaluation of satisfying the requirements of the Agreement. The Government may not, without the written permission of the party asserting limited rights, release or disclose the Data outside these limited rights, use the Data for manufacture, or authorize the Data to be used by another party, except that the Government may reproduce, release, or disclose such Data or authorize the use or reproduction of the Data by persons outside the Government if—

(i) The reproduction, release, disclosure, or use is—

(A) Necessary for emergency repair and overhaul; or

(B) A release or disclosure to—

(1) A covered Government support contractor in performance of its covered Government support contract for use, modification, reproduction, performance, display, or release or disclosure to a person authorized to receive limited rights technical data; or

(2) A foreign Government, of technical data other than detailed manufacturing or process data, when use of such data by the foreign Government is in the interest of the Government and is required for evaluation or informational purposes;

(ii) The recipient of the Data is subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and

(iii) The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.

**"Nontraditional Defense Contractor"** is defined in 10 U.S.C. § 3014 as an entity that is not currently performing and has not performed, for at least the one-year period preceding the solicitation of sources by the DoD for the procurement or transaction, any contract or subcontract for the DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to 41 U.S.C. § 1502 and the regulations implementing such section. This includes all small business concerns under the criteria and size standards in 15 U.S.C. § 632 and 13 C.F.R. Part 121.

**"Other Transaction"** refers to the type of OT that may be awarded as a result of this PS. This type of OT is authorized by 10 U.S.C. § 4022 for prototype projects directly relevant to enhancing the mission effectiveness of military personnel and the supporting platforms, systems, components, or materials proposed to be acquired or developed by the DoD, or for the improvement of platforms, systems, components, or materials in use by the armed forces.

**"Prototype Project"** is described in the DoD Other Transactions Guide (Version 1, Nov. 2018) issued by the Office of the Under Secretary of Defense for Acquisition and Sustainment: https://www.dau.edu/guidebooks/Shared%20Documents/Other%20Transactions%20(OT)%20Guide.pdf.

**"Small Business Concerns"** is defined in the Small Business Act (15 U.S.C. § 632).

## 6. ACRONYMS

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| AO: | Agreements Officer |
| CMO: | Contracts Management Office |
| CTI: | Controlled Technical Information |
| CUI: | Controlled Unclassified Information |
| DARPA: | Defense Advanced Research Projects Agency |
| DaaS: | Data as a Service |
| DaaSPOs: | Data as a Service Product Offerings |
| EULA: | End User License Agreement |
| FFRDC: | Federally Funded Research & Development Center |
| IP: | Intellectual Property |
| LEO: | Low Earth Orbit |
| pLEO: | Proliferated Low Earth Orbit |
| OT: | Other Transaction |
| PIA: | Procurement Integrity Act |
| PS: | Program Solicitation |
| SDA: | Space Domain Awareness |
| SETA: | Scientific Engineering Technical Assistance |
| SSN: | Space Surveillance Network |
| TA: | Technical Area |