

SINTRA Q&A

Round 3, IARPA-BAA-22-02

105. After reading Dr Truitt's doctoral thesis and associated papers about the soliton formation around space debris, we are interested if there has been any follow up studies confirming the ability to detect the soliton around space debris and if the detection has been confirmed via another method?

Answer: To learn of research involving space plasma interaction with debris, offerors should refer to recent journal publications, or Proposer's Day lightning talks on the IARPA SINTRA page. Please note, SINTRA is not limited to soliton phenomenology, and will consider any new, innovative method to detect, track, and characterize debris 0.1 – 10 cm in size.

106. To help appropriately budget with concern to data storage:

a. What is the estimated size of the T&E development dataset?

Answer: Please refer to BAA Section 1.D.1.1. and 1.D.1.2. Each Performer is required to plan and carry out debris dataset development efforts. The size of the development datasets provided by IARPA will be limited in comparison to the database created by Performers. The size of the development dataset provided by IARPA will likely be less than 10 TB in size, however, this will be dependent on the selected proposed solutions. Development datasets will be chosen according to each proposed solution and may be coordinated across multiple sensors.

b. Will the Offeror be expected to store the development data for their investigators or will IARPA have a centralized database for the Offerors to query and access the data?

Answer: IARPA will have a centralized database for Performers to query and access development datasets. This database will also include curated pointers to external data sources.

107. Pertaining to the space surveillance complex data in the T&E development dataset:

a. Will it contain optical data from telescopes, imaging radar data from HAX and HUSIR, or radar data from Millstone Radar?

Answer: Yes, please refer to BAA Section 1.D.1.1. The development datasets will include new collections from the radar and optical systems currently used to develop debris models, as detailed in BAA Figure 1, to validate measurements by proposed systems. The new collections will be dependent on proposed solutions and may be coordinated across multiple sensors to ensure maximum utility to the performers.

b. What is the classification of the T&E dataset? Controlled Unclassified Information (CUI)?

Answer: It is CUI.

108. BAA Section 1.F Program Metrics (pgs. 12-13): We do not understand the sr/km metric. This implies we multiply the given value by the distance of an object to get a value in units of sr, which results in values greater than 4π sr. Please give an example calculation of this requirement.

Answer: Please refer to Question #30 and Question #45. A steradian (sr) is a solid angle unit. The surface area of a sphere is 4π steradians. The coverage metric is given in steradians per kilometer. Each orbital altitude, given in kilometers, can be represented by a sphere with a surface area of 4π steradians.

For example, for an orbital altitude of 400 km, there are 4 pi steradians. Also, for an orbital altitude of 36,000 km, there are 4 pi steradians.

109. BAA Section 1.F Program Metrics (pgs. 12-13): Is 4 pi sr coverage defined with respect to an earth inertial frame or a celestial frame?

Answer: The Offeror may propose to use any coordinate system.

110. BAA Section 1.F Program Metrics (pgs. 12-13): Is your coverage requirement instantaneous or cumulative over the revisit requirement? For example, is it satisfactory to cover 1.1 pi sr for the LEO orbital regime every 167 hrs?

Answer: The coverage metric is instantaneous.

111. BAA Section 1.F Program Metrics (pgs. 12-13): Is the debris density requirement for a particle, or for a debris cloud? It is currently stipulated as a particle. How should a density of 0 be interpreted?

Answer: Debris density should be measured for individual particles. The proposed solution must be able to characterize the difference between foam, insulation, metals, and other man-made materials. The debris density metric is rounded from 0 – 22000 kg/m³ to account for the span of common densities. It is not a requirement to measure zero density.

112. BAA Section 1.F Program Metrics (pgs. 12-13): Your velocity requirement is 1.4-10.2 km/s. Does this range account for collision events and/or is it intended solely for ballistic orbit (Circular, Elliptical) requirements? Can you give an example of orbit condition that would have such a low velocity of 1.4 km/s?

Answer: The velocity range includes highly elliptical orbits including Geostationary transfer orbit (GTO).

113. Is the PM, Dr. Truitt, available to meet with potential proposers prior to the submission deadline/source selection?

Answer: Please see Question #104. Unfortunately, we are prohibited from talking to anyone directly during the open BAA period. All questions must be submitted through the process described in the BAA and all answers will be published on SAM.gov.

114. Is the SOW included in the 30 page limitation of the Technical volume?

Answer: Yes - Please refer to the BAA section 4.B.1.c for specific details relating to the Statement of Work (SOW).

115. How detailed should the Work Breakdown structure be in the SOW?

Answer: Please refer to the BAA section 4.B.1.c for specific details relating to the Statement of Work (SOW).

116. Should Consultants be listed in the Other Team Members section of the proposal cover sheet (Appendix A) and in the IDEAS system?

Answer: Yes, any/all subcontractor(s), Consultant(s), team members, etc... should be included.