



## S<sup>2</sup>MARTS Project 20-09 SCOC

### *Request For Solutions (RFS) Questions & Answers | Posted March 25, 2021*

1. **Question:** Is SCOS a full and open competition?

**Response:** Yes

2. **Question:** As this OTA calls for something other than repurposed satellite sensors. Will there be money available to spend on optimizing or redesigning of existing sensors? NOTE: Scope of work could be substantial to increase range and/or to optimize deployment on a stratospheric Balloon or solar UAS for sensors/subcomponents such as: A) Radar B) EO/IR sensor C) Directional Communication Antenna D) Optimized Gimbal system E) Lasers (for telecommunication)

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

3. **Question:** Will there be any money available for redesigning or optimizing solar panel and battery payload so as to provide greater energy potential and management which has long been one of the limiting factors of Stratospheric balloons?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem, the purpose of this project is for rapid experimentation and development of stratospheric technologies.

4. **Question:** Will there be any money available for the development/prototyping of AI-optimized Architectures capable of outperforming existing AI Architectures by 10X or more?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem, the purpose of this project is for rapid experimentation and development of stratospheric technologies.

5. **Question:** What would be considered as an acceptable turn-around time to deliver a prototype ready for testing?

**Response:** Refer to the timeline. Testable prototype balloon system and UAS should be delivered 12 months after award with a subset of desired payloads. Additional testable prototype payload packages should be delivered 24 months after award.

6. **Question:** Is/are interchangeable payload(s) desirable?

**Response:** Yes, Open architecture practices should be followed everywhere possible, including but not limited to complying with FACE, MOSA, MISB.

7. **Question:** Would you clarify the time period of Phase 1 and 2?

**Response:** Phase 1 will be completed with the flight test approximately 12M ARO, Phase 2 will follow Phase 1.

8. **Question:** It seems the initial deliverables in the Page 6 table, 1st 12 months are about balloons and UAS. Are the payloads required?

**Response:** Available payloads should be integrated for the first flight test in Phase 1, additional payloads are expected for follow-on flight tests.

9. **Question:** Would you clarify or specify balloon "maximum altitude"?

**Response:** Objective is altitude > 70,000 ft.

10. **Question:** is it required for the proposers to provide solution for all the payloads or partial is OK? "Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radio (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI)".

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem, partial is acceptable.

11. **Question:** My company has developed the world's first stitch-free 360 degree camera (EO/IR sensor). From a stratospheric balloon, we can enable hemispheric 360 x 180 degree video capture, with ultra-high resolution for advanced C5ISR. Would this technology be of interest for this application?

**Response:** Yes

12. **Question:** Is the proposal response suppose to cover both phases 1 & 2?

**Response:** Yes

13. **Question:** What are the lengths of phase 1 and phase 2?

**Response:** Phase 1 will be completed with the flight test approximately 12M ARO, Phase 2 will follow Phase 1.

14. **Question:** Is the USG still open for 1-on-1 discussions related to this RFS?

**Response:** No

15. **Question:** : Is both a HAB and a UAS solution required for a response or one or the other?

**Response:** Would like offerer to be able to provide both types of platforms but the government may pursue teaming solutions.

16. **Question:** Are respondents needing to supply a full payload with all desired objectives or focus on certain areas?

**Response:** Some payloads will be provided GFE, some will be off-the-shelf and we expect some will need development efforts.

17. **Question:** Phase 1 (\$1 Million) Deliverables include an initial architectural framework concept study which documents strategies, concepts and identify a plan for how the objectives will be met. Do you expect that Phase 1 also include additional efforts for design and development of the autonomy framework, followed by the integration/flight test of framework elements onto a subset of candidate payloads?

**Response:** Yes

18. **Question:** Do you have a notional Period of Performance in mind for Phase 1 and Phase 2?

**Response:** Phase 1 will be completed with the flight test approximately 12M ARO, Phase 2 will follow Phase 1.

19. **Question:** Is the government looking for a Prime integrator for this effort?

**Response:** The government may pursue teaming solutions but Gov is looking for a provider that can meet the requirements in the RFS.

20. **Question:** The list of project Deliverables does not specify technical data related to the stratospheric balloon and UAS, such as design documents and specifications. Does the Government require those items to be delivered.

**Response:** Only efforts related to this agreement will need to be provided, if bringing off-the-shelf designs those documents and specifications would not need to be provided.

21. **Question:** Do we need 100% station keeping or can we drift for highest winds (i.e. 80% coverage)?

**Response:** Gov would like to maximize coverage percentage.

22. **Question:** Where will the flight demonstration originate from (i.e. what airfield will we be operating from)?

**Response:** To be determined but demonstrations for the first two flight tests are planned to be CONUS, possibly Yuma Proving Ground or White Sands Missile Range. Additional flight test is planned to be OCONUS.

23. **Question:** Is a new platform the objective of the RFS?

**Response:** Not necessarily, existing platforms that can meet the threshold/objectives are acceptable.

24. **Question:** For Phase 2 demonstrations, is one platform capable of carrying objective payload acceptable.

**Response:** As stated in the RFS, persistent ISR may be best optimized with combined balloon and UAS operations.

25. **Question:** The KSA for maintenance references the turret. Are these requirements only for the turret? Please define Turret

**Response:** Turret in this case refers to any payload, would desire not to have a requirement for specialized maintenance equipment for normal operation (calibration, boresight, alignment, ...).

26. **Question:** Is the plan for a fully contractor operated operational assessment or Government operated flight of the UAS?

**Response:** Would prefer to have contractor operated flight operations but will consider all options.

27. **Question:** For item #6 of the deliverables, is the Qty 3 with adequate sparing a requirement for the platforms? Please define adequate sparing in regards to flight test duration.

**Response:** No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

28. **Question:** Are the Deliverables in the table only for Phase 2?

**Response:** No, Phase 1 will go through the first flight test, Phase 2 deliverables follow.

29. **Question:** Are 3 UAS required for Flight Test Plan 1 or is 1 aircraft capable of reaching the Stratosphere acceptable?

**Response:** As stated in the RFS, persistent ISR may be best optimized with combined balloon and UAS operations.

30. **Question:** For estimating the flight test and operational assessments will the contractor be required to perform all flight and maintenance operations staffing?

**Response:** Would prefer to have contractor operated flight operations but will consider all options.

31. **Question:** For estimating purpose, where will each flight test be performed?

**Response:** To be determined but demonstrations for the first two flight tests are planned to be CONUS, possibly Yuma Proving Ground or White Sands Missile Range. Additional flight test is planned to be OCONUS.

32. **Question:** Should we plan a full award for phase 1 and phase 2 or will phase 2 award be based on the outcome of phase 1?

**Response:** It will be a full award for Phase 1, it is anticipated Phase 2 will be funded as funding becomes available.

33. **Question:** Are the Phase deliverables in parallel or series? 22 Will the Operational Assessment be a flying event and if so will it require an Interim Flight Clearance? What is the Procedure(s) for this IFC? 23 Will the Government cover the cost of shipping the UAV to theater for Flight Test 3?

**Response:** Phases are in series. Operational Assessment will be a flying event, flight clearance will be required. For flight clearance vendors need to comply with NAVAIRINST 13034.1F Airworthiness and Cybersecurity Safety Policies for Air Vehicles and Aircraft Systems or equivalent. Vendor should include shipping cost in their proposal.

34. **Question:** Will the Government cover the cost of shipping the UAV from MacDill to Flight Test 1 locations?

**Response:** Yes.

35. **Question:** Are the platforms expected to be in full compliance of NAVAIRINST 13034.1F?

**Response:** Yes, NAVAIRINST 13034.1F or equivalent.

36. **Question:** Threshold and objective levels of performance are identified across a number of trials characteristics. Is it intended that responses to the RFS should provide separate plans for both? How is this intended to be used when assessing responses to the RFS?

**Response:** Responses will be analyzed on a best value basis, thus responses that can address objective levels of performance will be rated higher than other responses only with levels of performance at threshold levels.

37. **Question:** Is the Government able to provide the specific locations, (calendar month) timing and during expected for the flight trials? The RFS identifies that aircraft/balloons are to be delivered to Tampa – is this expected to be the flight location?

**Response:** To be determined but demonstrations for the first two flight tests are planned to be CONUS, possibly Yuma Proving Ground or White Sands Missile Range. Additional flight test is planned to be OCONUS.

38. **Question:** Could the Government explain what is meant by the term ‘autonomous’, what capability is expected to be demonstrated by the air vehicle? What is the expectation behind the exploration of ‘machine learning’ and ‘artificial intelligence’?

**Response:** In relation to this effort the Government is looking for advancements in autonomous operation such as reduction in manning; AI/ML related advancements such as, precise targeting and environmental sensing, automated processing, exploitation, and dissemination (PED) of tactically relevant information, airborne architectural elements for rapid integration of new sensors, and alternate position, navigation and timing protocol. Vendors are encouraged to submit any unique solution that addresses the problem.

39. **Question:** Can Government provide an outline intended Conops/ test plan covering how the balloons and aircraft are expected to operate together in the trials as this will affect the trial and ability to perform it from both asset perspectives?

**Response:** The platforms are intended to interact to provide networked communications and sensing between platforms, ground stations, and other military assets in LOS and BLOS.

40. **Question:** Which payloads are a priority to be trialled and which will be provided GFE by the Government? For those priority sensors not GFE is it expected that the proposer should include procurement cost in the RFS response?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

41. **Question:** Is the intent that the government own the assets within the budget?

**Response:** No, the government will assess based on the most cost effective mix of deliverable methods. If vendor is required to procure material then this material (i.e., payload...) will be provided to the Gov.

42. **Question:** If the requested task is to manage a suite of platforms, sensors and activities, does the proposer need to identify all of the proposed elements and initiate preliminary agreements to access such assets within the schedule of the proposal or is it sufficient to identify options for all elements?

**Response:** Required to only identify options for all elements.

43. **Question:** S2MARTS CFISR SCOS DD-FORM 254 Block 11.f. Should DD254 block 11.f be checked "yes" since user evaluations would be outside US territories, i.e., CENTCOM AOR?

**Response:** Yes, agree, DD-254 will need to be updated.

44. **Question:** Will the government confirm all the platforms, sensors, and facilities (i.e. test ranges) will be provided as GFE, or will the government provide all required platform and sensors details to allow for offerors to accurately price?

**Response:** Some payloads will be provided GFE, some will be off-the-shelf and we expect some will need development efforts.

45. **Question:** S2MARTS CFISR SCOS DD-FORM 254 Block 10.a. Given the types of communications, should COMSEC be included in the DD254?

**Response:** Not required at this time but could be added if necessary.

46. **Question:** S2MARTS CFISR SCOSS RFS Section 13.b, p.14 Considering the complexity of the RFS, would the Government consider extending the proposal due date an additional 30 days?

**Response:** Gov extended the proposal due date by an additional 15 days, new date is 9 April 2021.

47. **Question:** Can the government clarify if this response is for Phase 1 alone and Phase 2 will be bid once the concept study is complete? If offerors are to bid on both Phases will the government confirm which deliverables are tied to which Phases and/or clarify that an offeror can propose their own deliverables for each phase?

**Response:** It will be a full award for Phase 1, it is anticipated Phase 2 will be funded as funding becomes available, for the proposal an estimate (ROM) is acceptable for the Phase 2 effort. Phase 1 will go through the first flight test, Phase 2 deliverables follow.

48. **Question:** Will the government confirm all the platforms, sensors, and facilities (i.e. test ranges) will be provided as GFE, or will the government provide all required platform and sensors details to allow for offerors to accurately price?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

49. **Question:** If the requested task is to manage a suite of platforms, sensors and activities, does the proposer need to identify all of the proposed elements and initiate preliminary agreements to access such assets within the schedule of the proposal or is it sufficient to identify options for all elements?

**Response:** Required to only identify options for all elements.

50. **Question:** Does the government view OEM platform providers as being OCI'd out of priming this effort, given that the RFS requires multiple platform types? In which case does the government intend to provide all platforms as GFE?

**Response:** No, offerer will not be OCI'd. Would prefer offerer to be able to provide both types of platforms but will consider all proposals.

51. **Question:** Is the intent that the government own the assets within the budget?

**Response:** Depends, the government will assess based on the most cost effective mix of deliverable methods. If vendor is required to procure material then this material (i.e., payload...) will be provided to the Gov.

52. **Question:** Which payloads are a priority to be trialed and which will be provided GFE by the Government? For those priority sensors not GFE is it expected that the proposer should include procurement cost in the RFS response?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

53. **Question:** Can Government provide an outline intended CONOPS/ test plan covering how the balloons and aircraft are expected to operate together in the trials as this will affect the trial and ability to perform it from both asset perspectives?

**Response:** The platforms are intended to interact to provide networked communications and sensing between platforms, ground stations, and other military assets in LOS and BLOS.

54. **Question:** Could the Government explain what is meant by the term ‘autonomous’, what capability is expected to be demonstrated by the air vehicle? What is the expectation behind the exploration of ‘machine learning’ and ‘artificial intelligence’?

**Response:** In relation to this effort the Government is looking for advancements in autonomous operation such as reduction in manning; AI/ML related advancements such as, precise targeting and environmental sensing, automated processing, exploitation, and dissemination (PED) of tactically relevant information, airborne architectural elements for rapid integration of new sensors, and alternate position, navigation and timing protocol. Vendors are encouraged to submit any unique solution that addresses the problem.

55. **Question:** Is the Government able to provide the specific locations, (calendar month) timing and during expected for the flight trials? The RFS identifies that aircraft/balloons are to be delivered to Tampa – is this expected to be the flight location?

**Response:** To be determined but demonstrations for the first two flight tests are planned to be CONUS, possibly Yuma Proving Ground or White Sands Missile Range. Additional flight test is planned to be OCONUS.

56. **Question:** Threshold and objective levels of performance are identified across a number of trials characteristics. Is it intended that responses to the RFS should provide separate plans for both? How is this intended to be used when assessing responses to the RFS ?

**Response:** Responses will be analyzed on a best value basis, thus responses that can address objective levels of performance will be rated higher than other responses only with levels of performance at threshold levels.

57. **Question:** Given the unknowns associated with technology demonstration and maturation efforts, will the government consider a cost reimbursable contract type? Without a concept study, offerors cannot accurately propose technology demonstrations on a FFP basis without considerable risk.

**Response:** No, Contract type will be Firm Fixed Price.

58. **Question:** Without the concept study complete and an understanding of CFP or GFP, an offeror cannot assess if Government Purpose Rights are feasible or accurately make the required assertions?

**Response:** Only efforts related to this agreement will need to be provided with GPR, if bringing off-the-shelf designs those documents and specifications would not need to be provided with GPR.

- 59. Question:** Dependent upon answers provided to the questions and the complexity of a complete solution, offerors will need a minimum of 30 days upon receipt of answers to complete the technical and price submission. Is this RFS able to be extended?

**Response:** Agree, Gov extended the proposal due date by an additional 15 days.

- 60. Question:** . S2MARTS CFISR SCOSS RFS Section 4, p.2 Can the Government confirm that the reference to Synthetic Aperture Radio (SAR) should be Synthetic Aperture Radar (SAR) instead?

**Response:** Yes, Synthetic Aperture Radar.

- 61. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.2 Will the Government provide the parameters for the Extended User Evaluations?

**Response:** Not at this time. Parameters will be derived from KPPs and KSAs found in the RFS.

- 62. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.3 Does the Government intend to procure three UAS for contractor use or for them to be Contractor-Owned / Contractor-Operated (COCO)?

**Response:** Depends, the government will assess based on the most cost effective mix of deliverable methods. If vendor is required to procure material then this material (i.e., payload...) will be provided to the Gov.

- 63. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.3 Would the Government define what “technically mature” means, e.g., a specific or range of Technology Readiness Levels (TRL)?

**Response:** Acceptable TRL ranges for payload packages will be determined at a later time. A majority of payloads will be provided by the Government.

- 64. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.3 Are there specific objectives, waveforms, or spectrum coverage desired for communication relay?

**Response:** A majority of payloads will be provided by the Government. Link-16 and the following frequencies will be of interest: UHF, X-band, L-band, C-band, and Ku-band. Vendors are encouraged to submit any unique solution that addresses the problem.

- 65. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.3; Section 6, Del. 10, 11 pp.6-7 The RFS focus is on sensor payload without context to PED and/or software requirements. The only exception is in the management suite. Would the Government clarify if unprocessed data is the desired output, and/or an intended integration endpoint (e.g, DCGS)? Is the management suite performing processing, exploitation and product dissemination, or is sensor output for processing directed to another endpoint?

**Response:** In relation to this effort the Government is looking for advancements in autonomous operation such as reduction in manning; AI/ML related advancements such as, precise targeting and environmental sensing, automated processing, exploitation, and dissemination (PED) of tactically relevant information, airborne architectural elements for rapid integration of new sensors, and alternate position, navigation and timing protocol. Vendors are encouraged to submit any unique solution that addresses the problem.

- 66. Question:** S2MARTS CFISR SCOSS RFS Section 5, p.3; Section 6, Del. 5, p.6; Section 9.b.iii., p.12 Would the Government define what "sparing" means for the one-time use balloons and what “sparing” means for UAS, i.e., the UAV, the payload, or both?

**Response:** No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

67. **Question:** S2MARTS CFISR SCOSS RFS Section 5, p.4; Phase 2 Del. 6, p.6 Would the Government specify the categories for the UAS? Specifically, does the UAS have to be solar-powered as there may be other UAS options that can achieve the KPP/KSA stratospheric requirements?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem.

68. **Question:** S2MARTS CFISR SCOSS RFS Section 5, p.4; Phase 2 Del. 12, p.7 What are the requirements for the communication link between solar UAS / stratospheric balloon to ground station?

**Response:** Link-16 and the following frequencies will be of interest: UHF, X-band, L-band, C-band, and Ku-band. Vendors are encouraged to submit any unique solution that addresses the problem.

69. **Question:** S2MARTS CFISR SCOSS RFS Section 5, p.4; Phase 2 Del. 17, p.7 Would the Government specify the travel requirements and arrangements?

**Response:** To be determined but demonstrations for the first two flight tests are planned to be CONUS, possibly Yuma Proving Ground or White Sands Missile Range. Additional flight test is planned to be OCONUS.

70. **Question:** S2MARTS CFISR SCOSS RFS Section 5, p.5 If the contractor supplies the balloons and UAS, how is NAVAIRINST 13034.1F applied, particularly the cybersecurity requirement when this is a demo effort?

**Response:** For flight clearance vendors need to comply with NAVAIRINST 13034.1F Airworthiness and Cybersecurity Safety Policies for Air Vehicles and Aircraft Systems or equivalent.

71. **Question:** S2MARTS CFISR SCOSS RFS Section 6, p.6 For Phase 1 and Phase 2 what are the start dates the contractors should use and what are the Periods of Performance (PoP)?

**Response:** Phase 1 is anticipated to be complete with the first flight test approximately 12M ARO, Phase 2 will follow Phase 1.

72. **Question:** S2MARTS CFISR SCOSS RFS Section 6, Del. 3, p.6 For Phase 2 Del. 3 is it the Government's intent that the "Aircraft Design Review" is a "UAS and Balloon Platform Readiness Review"?

**Response:** The aircraft design review should include a readiness review.

73. **Question:** S2MARTS CFISR SCOSS RFS Section 6, Del. 7, p.6 Since the platforms are supposed to be "mature technology" and delivered prior to the payload packages, can the Government clarify the purpose of platform-only testing for "Aircraft assessment flight in the stratosphere"?

**Response:** Aircraft assessment flight will include a subset of desired payloads resulting from approved concept study.

74. **Question:** S2MARTS CFISR SCOSS RFS Section 6, Del. 10, p.6 Is it the Government's intent that they will be the Lead Systems Integrator for the Autonomous Mission Planning/Management Suite and/or payloads?

**Response:** The government may pursue teaming solutions but will have a single award.

**75. Question:** S2MARTS CFISR SCOSS RFS Section 6, Del. 7-12, pp.6-7 Can the Government clarify what are the activities being conducted after the first stratospheric platform testing (~12 months ARO) until payload delivery (~24 months ARO)?

**Response:** Anticipate vendor developing AI/ML algorithms for improved persistent ISR and integrating additional payloads to enhance stratospheric operations.

**76. Question:** S2MARTS CFISR SCOSS RFS Section 6, p.7; Section 9.b.iii., p.12 Would the Government confirm that the RFS requires pricing for Phase 1 only and a budgetary estimate for planning purposes only is required for Phase 2?

**Response:** Yes, for the proposal an estimate (ROM) is acceptable for the Phase 2 effort.

**77. Question:** The Government has identified the need to conform to Navairinst 13034 airworthiness and cyber security. Is the intent that this is necessary for all of the trials or the final trial only?

**Response:** All of the trials, vendors need to comply with NAVAIRINST 13034.1F Airworthiness and Cybersecurity Safety Policies for Air Vehicles and Aircraft Systems or equivalent..

**78. Question:** Page 1, Section (4) Project Background & Current Capability: Paragraph 1. “These platforms offer the opportunity to enhance the mission for persistent operations in non-permissive environments.” Please provide your definition of “non-permissive environments?”

**Response:** “Non-permissive” refers to locations where uncertainty, instability, inaccessibility or insecurity constrain the ability to operate safely and effectively.

**79. Question:** Page 1, Section (4) Project Background & Current Capability: Paragraph 3. This paragraph refers to both “operating area” and “station keep”. Please provide your definition of “Operating Area”, size in radius of nautical miles from a center point. Please provide your definition of “Station Keep”, size in radius of nautical miles from a station location.

**Response:** “Station Keeping” is defined as maintaining position relative to others in a fleet or to a fixed position. Refer to the values presented in the KPPs and KSAs.

**80. Question:** Page 1, Section (4) Project Background & Current Capability: Paragraph 3. (and other sections) of the RFS. This paragraph refers to “stratospheric balloons” and “solar UAS”. Will the SCOS team entertain other approaches or hybrid approaches toward meeting the objectives of improve state-of-the-art persistent, long-duration flight? In several locations the RFS refers to a solar UAV. Is a solar powered UAV required or can any type of UAV be proposed that meets the duration and payload requirements? Of specific interest: Would the sponsor consider a solution that integrates high altitude balloons with low altitude (15K and below) conventionally powered long endurance UAS platforms that meet their UAS endurance KPP (> 7 days endurance) and also meet their payload KPP’s?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem.

**81. Question:** Page 1, Section (4) Project Background & Current Capability: Paragraph 4. This paragraph refers to “candidate sensor payloads”. Page 2, Section (5) Desired End State Objectives and Success Criteria: Paragraph 3. In Particular, the DOD has determined devices in the categories of Comms Relay, SAR, GMTI, SIGNIT, and EO/IR are the most practical and advancement and integration onto existing stratospheric balloons and solar UAS platforms. Are there specific candidate sensor payloads that have already been identified that are expected or preferred to part of the Concept Study and Demonstration ?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT),

Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

- 82. Question:** Page 3, Section (5) Desired End State Objectives and Success Criteria: Key Systems Attributes (KSA) and Key Performance Parameters (KPP) Tables. The KSA for the Stratospheric Balloon lists “Station Seeking Capability”. Please define the parameters of “station keeping”. Is this within a specific number of nautical miles of a ground point? Is this 100% of the time or for a percentage of the time? The KSA for the Stratospheric UAS has Threshold of >7 days and Objective of >45 days. This presents a duration difference for the UAS. The KSA for the Stratospheric Balloon lists the Threshold as >15 days and Objective for Station Seeking Capability as >15 days. No duration difference is presented for the balloon. Would the government consider a duration difference between the Threshold and Objective for the Stratospheric Balloon?

**Response:** Vendors are encouraged to submit any unique solution that addresses the problem. “Station Keeping” is defined as maintaining position relative to others in a fleet or to a fixed position. The values presented in KPPs and KSAs have been predetermined based on state-of-the-art.

- 83. Question:** Page 5, Section (5) Desired End State Objectives and Success Criteria: In addition, the performer will need to provide the following as technology experimentation & prototype development is carried out: 3. Operational Assessment in Combatant Command (COCOM) area of responsibility that demonstrate full system operations. Operational environmental conditions can vary by location on the planet and time of the year. Will the government define expected demonstration areas, time of year, exposure diurnal cycles, nominal and maximum wind speeds and durations, etc.?

**Response:** No, the government will not define demonstration parameters at this time.

- 84. Question:** Page 6, Section (6) Project Deliverables: Phase 1 Deliverable: The initial Phase 1 Deliverable will be an architectural framework concept study to determine strategies and concepts that will enable this prototype to be successful. Is the only Phase 1 Deliverable a concept study document? Will results of the concept study that drive additional efforts be considered part of Phase 1 or Phase 2?

**Response:** No Phase 1 includes a concept study and an initial flight test with candidate payloads. Concept study will also drive additional efforts in Phase 2.

- 85. Question:** Page 6, Section (6) Project Deliverables: Phase 2 Deliverable: Phase 2 Deliverables will include the candidate sensors / comm payloads in the categories comms relay, ASR, GMTI, SIGINT and EO/IR for integration onto existing stratospheric balloons and solar UAS platforms. Will the Government provide selected candidate sensors / comm payloads as Government Furnished Equipment or must the performer acquire these as part of the performer supplied scope?

**Response:** Some payloads will be provided GFE, some will be off-the-shelf and we expect some will need development efforts. Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

**S<sup>2</sup>MARTS Project: 20-09**  
**Project TalX Question & Answer | Date: March 12, 2021**

1. Question: Proposal is currently due March 25; is it possible to grant an extension of 30 days?

Answer: Gov extended the proposal due date by an additional 15 days, new date is 9 April 2021.

2. Question: Will the government update the proposal requirements to only require pricing and technical deliverables through Phase 1, as Ph 2 is dependent on that phase?

Answer: No, It will be a full award for Phase 1, it is anticipated Phase 2 will be funded as funding becomes available, for the proposal an estimate (ROM) is acceptable for the Phase 2 effort.

3. Question: If Phase 2 pricing is required, and Ph 2 is contingent on Phase 1 results, can Phase 2 pricing be submitted as a Rough Order of Magnitude (ROM) estimate?"

Answer: Yes

4. Question: Will the Government provide a list of GFE sensors that will be provided?"

Answer: Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration.

5. Question: Are there datalink requirements; if so, what is the presumed waveform / digital structure?"

Answer: There are no datalink requirements other than those presented in KPPs and KSAs. A majority of payloads will be provided by the Government. Link-16 and the following frequencies will be of interest: UHF, X-band, L-band, C-band, and Ku-band. Vendors are encouraged to submit any unique solution that addresses the problem.

6. Question: If there are datalink requirements, what is the assumed ground C2 and/or airborne relay interface requirements?"

Answer: There are no datalink requirements other than those presented in KPPs and KSAs. A majority of payloads will be provided by the Government. Link-16 and the following frequencies will be of interest: UHF, X-band, L-band, C-band, and Ku-band. Vendors are encouraged to submit any unique solution that addresses the problem.

7. Question: Should pricing information be contained only in the Excel file, with the 5 pages devoted to a Word document Basis of Estimate narrative?"

Answer: Price volumes may be submitted in an editable, unlocked Excel file as a substitute for the Word/PDF.

8. Question: Does the Excel file apply to the 5-page count – if so, how is that determined?"

Answer: Price volumes may be submitted in an editable, unlocked Excel file as a substitute for the Word/PDF.

9. Question: What are the deliverables in Phase 1 vs Phase 2?"

Answer: Refer to the deliverable table in the RFS, Phase 1 deliverables will go through the first flight test, Phase 2 deliverables follow.

10. Question: Do you have a feel for the timing of award of Phase 1?

Answer: Current schedule has an award nominally in the June/July 2021 timeframe.

11. Question: Is there a specific timeline for Phase 1 noted in the RFS?"

Answer: Expect Phase 1 to go through the first flight test, approximately 12M ARO.

12. Question: Are there specific products you would like to see, regarding the balloon and the UAVS?

Answer: No, Vendors are encouraged to submit any unique solution that addresses the problem.

13. Question: Are non-solar UASs under consideration if they can meet the threshold/objective UAS requirements?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem.

14. Question: Will an attendee list be made available?

Answer: This would need to be requested from NSTXL.

15. Question: Is it expected contractor will develop/provide a solution for payloads, or will there be GFE? SWAP requirements? Are there any specific ICDs?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem. Sensor and communications payloads of particular interest are Communications Relay, Signals Intelligence (SIGINT), Synthetic-Aperture Radar (SAR), Electro-Optical/Infra-Red (EO/IR), and Moving Target Indication (MTI). A majority of payloads will be provided by the Government, while vendors will be responsible for integration. SWAP requirements are in the RFS. ICDs will be provided as GFE sensors become available.

16. Question: Are there any specific threat sets for the payload, i.e. people, buildings, vehicles, slow moving targets, cruise missiles, (all the above) etc.?

Answer: No specific threats have been identified.

17. Question: Is there a requirement for payload return/retrieval?

Answer: No but vendors are encouraged to submit unique solutions that address the problem.

18. Question: Is there a requirement for processing at the sensor, on the vehicle or just on the ground, etc.?

Answer: All requirements are listed in the KPPs and KSAs. Vendors are encouraged to submit any unique solution that addresses the problem.

19. Question: Is there a designated Ground Segment?

Answer: No, there is not a designated ground segment at this time.

20. Question: Is there a company or group of companies NSWC is looking to respond to the RFS?

Answer: No

21. Question: Any specific analytical requirements, i.e. What questions is NSWC attempting to answer?

Answer: Refer to the RFS for requirements.

22. Question: The requirement to deliver 3 aircraft 12months ARO is costly. Would the gov't consider 1 aircraft, or are they interested in purchasing the aircraft?

Answer: Would like offerer to be able to provide both types of platforms. The government will assess based on the most cost effective mix of deliverable methods. Would prefer to have the contractor operated flight operations but will consider all options.

23. Question: How long is initial phase 1? Is the budget \$1M for just multiple providers?

Answer: Expect Phase 1 to go through the first flight test, approximately 12M ARO. Initial Phase 1 budget is ~\$1.5M, it will be a full and open competition.

24. Question: Are you looking for a fully integrated team with platforms and payloads or will the government be selecting piece parts and being lead systems integrator?

Answer: The government may pursue teaming solutions but will have a single award. The government will assess based on the most cost effective mix of deliverable methods.

25. Question: If we can only supply part of the total solution can we still propose? I'm particular we have a Hyperspectral sensor payload that would be ideal for SCOS.

Answer: Yes, The government may pursue teaming solutions but will have a single award.

26. Question: Does a proposed solution need to include both a balloon and a UAS, or can it focus on only one of these?

Answer: Would like offerer to be able to provide both types of platforms. The government may pursue teaming solutions but will have a single award.

27. Question: Will your Comms Payload require NSA Type 1 encryption? Or will Type 2 solutions (like NSA's CSfC) be acceptable?

Answer: A majority of payloads will be provided by the Government. All payloads should align with applicable DOD encryption standards.

28. Question: What comm payload is desired to start with?

Answer: Communications payloads will be determined during project execution.

29. Question: What is the threshold accuracy of alternative PNT?

Answer: No threshold has been established. Vendors are encouraged to submit any unique solution that addresses the problem.

30. Question: Please clarify the request for platform deliverables with the Govt intent to not own the platforms.

Answer: The government will assess based on the most cost effective mix of deliverable methods to achieve the objectives of the project.

31. Question: Must a proposer provide both balloon and UAS or either one is OK?

Answer: Would like offerer to be able to provide both types of platforms. The government may pursue teaming solutions but will have a single award.

32. Question: You mention quantities (3 for balloons, 3 USVs) in RFS, but we were just told that gov does not want to own them...is this just min quantities required for demo?

Answer: The government will assess based on the most cost effective mix of deliverable methods to achieve the objectives of the project.

33. Question: How many performers are expected to be funded?

Answer: One provider will be funded.

34. Question: What is most important part of the alternative PNT desired P, N or T?

Answer: Importance of Position, Navigation, and Timing have not been defined.

35. Question: Will the Government entertain proposals that respond to a subset of the requirements - e.g., Phase I Concept Study for AI/ML approaches, specific sensors?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem. The government may pursue teaming solutions but will have a single award.

36. Question: Are proposals for payloads of interest independent of the full solution?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem. The government may pursue teaming solutions but will have a single award.

37. Question: Ph1 study validates potential solutions. Providing specific OEM platforms at this stage of the response seems premature based on Ph1 study. Can govt clarify?

Answer: Many OEM platforms are fairly mature, emphasis for this program is to improve effectiveness of stratospheric platforms (AI/ML), integrate new and existing payloads and assist with developing a CONOPS for stratospheric operations.

38. Question: Does the Government anticipate a single Phase I awardee, or multiple awardees, for that ~\$1.5M budget?

Answer: The government may pursue teaming solutions but will have a single award.

39. Question: A previous question mentions quantities/spares. Is the assumption the primary vehicles are all collocated or geographically separated? Significant spare differences.

Answer: No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

40. Question: How many awards are you anticipating for Phase 1 and Phase 2?

Answer: The government may pursue teaming solutions but will have a single award.

41. Question: Where do I find the SCOS message boards?

Answer: Please address with NSTXL.

42. Question: Do we need to include Phase 2 in the technical response when Phase 1 leads to Phase 2 solutioning?

Answer: It will be a full award for Phase 1, it is anticipated Phase 2 will be awarded as funding becomes available, for the proposal an estimate (ROM) is acceptable for the Phase 2 effort.

43. Question: RFS mentions on-board msn planning/analysis - does this mean limited intent to use DGS interface for processing?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem.

44. Question: Will you publish a list of participants for teaming purposes?

Answer: Please address with NSTXL.

45. Question: Will any of the payloads require more than a Secret clearance?

Answer: No, do not expect any at this time.

46. Question: Can you discuss the desired IP rights? The solicitation specifies Government Purpose Rights for hardware and software. To what IP does this (GPR) apply?

Answer: Only efforts related to this agreement will need to be provided with GPR, if bringing off-the-shelf designs those documents and specifications would not need to be provided with GPR.

47. Question: A previous question mentions quantities/spares. Is the assumption the primary vehicles are all collocated or geographically separated? Significant spare differences...

Answer: No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

48. Question: RFS mentions on-board msn planning/analysis - does this mean limited intent to use DGS interface for processing?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem.

49. Question: Does the Government anticipate operating multiple platforms simultaneously during flight test/demonstration?

Answer: The government has not defined demonstration parameters at this time.

50. Question: Does the Government anticipate operating multiple platforms simultaneously during flight test/demonstration?

Answer: The government has not defined demonstration parameters at this time.

51. Question: Are you looking to provide 1 award with a team capability of completing the scope, or does the Government plan to pursue several awards that would collaborate?

Answer: The government may pursue teaming solutions but will have a single award.

52. Question: Why is CENTCOM involved in this project and not INDOPACOM?

Answer: No comment.

53. Question: I do not see anything associated with SCOS in the community board.

Answer: Please address with NSTXL.

54. Question: RFS mentions on-board msn planning/analysis - does this mean limited intent to use DGS interface for processing?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem.

55. Question: A previous question mentioned quantities/spares. Is the assumption the primary vehicles are all collocated or geographically separated?

Answer: No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

56. Question: A previous question mentions quantities/spares. Is the assumption the primary vehicles are all collocated or geographically separated? Significant spare differences.

Answer: No specific requirements for spares but would like vendor to anticipate failure modes and have adequate sparing for successful demonstrations.

57. Question: The RFS mentions on-board mission planning/analysis - does this mean limited intent to use DGS interface for processing?

Answer: Vendors are encouraged to submit any unique solution that addresses the problem.

58. Question: It seems obvious that \$1.5M of funding for Phase 1 is inconsistent (not enough money) with delivering the first 7 items and the first flight test?

Answer: The government will assess based on the most cost effective mix of deliverable methods.

59. Question: Can you confirm that this is not a 2-step process, whitepaper followed by proposal/firm costing?

Answer: Gov is expecting a proposal w/firm costing.

60. Question: Is it possible to get a further extension for the responses?

Answer: Gov extended the proposal due date by an additional 15 days, new date is 9 April 2021.

61. Question: Can you provide further clarification about the timing for phases 1 & 2?

Answer: Phase 1 will be completed with the flight test approximately 12M ARO, Phase 2 will follow Phase 1.

62. Question: If a prime is selected but one of its components fails (i.e. the UAS) how do other UAS companies continue to contribute to the effort?

Answer: May be possible for prime to add subcontractors.

63. Question: Will you avoid more than 1 contract to split the work?

Answer: The government may pursue teaming solutions but will have a single award.

64. Question: Are there any restrictions with one company subcontracting under multiple primes?

Answer: No

65. Question: We would like to know is what months/years do you intend for these phases to occur - can you provide a timeline?

Answer: Phase 1 will be completed with the flight test approximately 12M ARO, Phase 2 will follow Phase 1.