



S²MARTS Project: 21-10 Neptune Payload Prototype Project Project TalX Question & Answer | Date: June 11, 2021

- 1. Question: Difficulty bidding FFP for Phases 3-4 because the tech is currently not well defined. 1) may we bid Phase 1 only? 2) May we propose a FFP-LOE type of contract?**

Answer: The Government anticipates FFP offer for Phase 1. Other Phases the government anticipates a ROM for planning and budgetary purposes which could potentially be adjusted based on progress and milestones throughout the course of the project. If an offeror proposes an alternative contract type, depending on proposal justifications, alternative contract types may be considered and reviewed.

- 2. Question: How many deliverables are expected in Phase 4? In the Deliv table it indicates 100, but in the text it indicates <=100 and the final number may be negotiated.**

Answer: The quantity of <=100 is the projected number of deliverables identified for Phase 4. This will be dependent on the unit cost of the Phase 4 solution and the budgetary constraints of the project at that time.

- 3. Question: Due to the current timeline and due date- we will have trouble organizing subcontracts in time to bid accurate price for Gov. We recommend extension.**

Answer: An extension was issued extending the closing date to 2 July 2021.

- 4. Question: You indicate ONR looking for 3U solution, but 2.875in is not consistent with this need. Full size 3U will not fit.**

Answer: Reference section 5 of the RFS; Threshold – fits within a cylinder 2.875” in diameter and 8” long and Objective - fits within a cylinder 2.875” in diameter and 4” long.

- 5. Question: The budgetary numbers in the RFS- are the dollar figures per performer, or entire budget?**

Answer: The budgetary numbers in the RFS are the budget estimates for the entirety of each phase referenced.

- 6. Question: Can you define the POP per Phase? Is the expectation that the responses will contain cost for all phases, or just for Phase 1?**

Answer: 1.) The projected schedule will be dependent on the maturity of the proposed designed and the anticipated deliverables/milestones. Notionally: Phase 1 – 125 Days; Phase 2 – 350 Days; Phase 3 – 350 days. 2.) FFP cost for Phase 1, all other Phases the government anticipates a ROM.

- 7. Question: Would you accept a fully sealed solution with no ports. I.E. talk to the device though wireless Bluetooth etc?**

Answer: 1.) Solutions that interact electrically with the host system (see Electrical objectives section of the RFS) are preferred. The payload is expected to be integrated within a customer provided watertight housing.

- 8. Question: Is the estimated budget for Phase 2 and Phase 3 each \$3M, or \$3m total?**

Answer: The budgetary numbers in the RFS are the budget estimates for the entirety of each phase referenced.

- 9. Question: What are the budgetary numbers?**

Answer: Reference Section 7 of the RFS; Phase 1 \$670K, Phase 2-3 \$3M and Phase 4 \$3M



10. Question: Can you provide more details on what you are looking for from the TDD?

Answer: The Government expects the Task Description Document (TDD) to outline the project tasks to be performed along with schedule milestones and delivery dates required for successful completion of the solution proposed.

11. Question: Is there a defined list of Signals of Interest the DSP payload is expected to process?

Answer: No

12. Question: Is Phase 1 required to meet the form factor <3" diameter?

Answer: No, Phase 1 should include a proposed hardware solution and a detailed plan of how the solution will be modified in Phase 2/3 to meet mechanical objectives identified in Section 5 of the RFS.

13. Question: Deliverable 10 (Payload Prototypes) indicates Quantity 3 Prototypes 100 DAA. Is the QTY correct? Are prototypes delivered at the same time as the CDR?

Answer: 1.) Yes, QTY 3 Phase 1 Prototypes 100 DAA the Phase 1 award. 2.) Per Section 6 Project Deliverables (#7) CDR is 100 DAA after award of Phase 2.

14. Question: We submitted a large amount of questions in the round due last week. Could you provide an estimate for when you can release these answers? Thanks.

Answer: First round of Q&A have been provided.

15. Question: Is the radio module required to host the Neptune software? If so, what are the cpu / memory / storage requirements to host that software?

Answer: See the RF/Signal Processing Objectives of the RFS. CPU / memory / storage attributes will vary based on the performer's design to control RF hardware and perform RF signal processing to support multiple RF missions.

16. Question: Will hardware as currently used on the existing system be made available so that test and eval can be performed?

Answer: No

17. Question: What is the approximate size of the Neptune payload in the tube? Would this payload be a piece of custom hardware that would be integrated into the tube.

Answer: 1.) Threshold - cylinder is 2.875" in diameter and 8" long with Objective cylinder 2.875" in diameter and 4" long. 2.) Yes, the Neptune Payload solution will be integrated into the cylinder and dimensions must include mechanical and electrical connections.

18. Question: Are there legacy systems that will be used as a benchmark for functionality and performance of this system?

Answer: No

19. Question: If so, what would be the protocol I/O approx. data rate and interface?

Answer: See the Electrical objectives and RF/Signal Processing objectives sections of the RFS.



20. Question: How does NSTXL understand traditional FP approach (spend until it works) vs a best effort prototype OTA?

Answer: Projects supported and managed by NSTXL reflect a variety of approaches based on the needs and requirements of the sponsoring customer. Resultant awards reflect terms and conditions that allow for streamlined modifications and adjustments to project values (e.g., ceiling amount) based on the project's progress, output, and potential impact. Generally speaking, the contractual language within our S2MARTS Performer Agreement reflects a "best-effort" style of approach (available in the NSTXL Member Portal). However, the guidance may be customized on a project-by-project basis per the Government's direction.

21. Question: Should responses include contractor costs for all 4 phases or just phase 1?

Answer: The Government anticipates FFP cost for Phase 1. Other Phases the government anticipates a ROM for planning and budgetary purposes which could potentially be adjusted based on progress and milestones throughout the course of the project.

22. Question: What would the approx. EIRP of the TX be? We noticed that the max battery load would be 50 watts on surge.

Answer: Performer may assume any transmit power (or a range of transmit powers), transmit efficiency, duty cycle, antenna gain, etc. as needed to articulate their technical solution. Per the RFS, battery composition is negotiable. The threshold operating runtime of 0.1 hrs implies a higher discharge rate may be acceptable.

23. Question: Can we assume that if a RF-transmitters are 50 % efficient that we are looking at a 25 watt max EIRP or can we assume a lower value for TX power?

Answer: . Performer may assume any transmit power (or a range of transmit powers), transmit efficiency, duty cycle, antenna gain, etc. as needed to articulate their technical solution. Per the RFS, battery composition is negotiable. The threshold operating runtime of 0.1 hrs implies a higher discharge rate may be acceptable.

24. Question: New to the SMART. How do we get the written specifications and call for proposals?

Answer: <https://nstxl.org/opportunity/neptune-payload-prototype-project/>

25. Question: How much of the work is expected to be classified?

Answer: The solutions for the Neptune Payload are expected to be unclassified. During Phase 1, the Secret security classification and associated DD254 are intended to support technical exchange of information at the Secret level. Potential classified work areas in Phase 1 and beyond could include mission specific design/analysis, operational software development (vs. test software), demonstration, etc.

26. Question: Are there operational concepts to describe how it will be used?

Answer: See the narrative in the RFS - the payload will be housed by an expendable unmanned system and be capable of performing multiple maritime RF missions.

27. Question: Given the RF Front End is external to the DSP payload, what dynamic range is expected the payload must support?

Answer: Performers are free to assume any architecture or driving parameters necessary to articulate their technical solution. Solutions that minimize the need for external RF accessories are preferred.



28. Question: Will evaluation waveform spec be provided for implementation by performers or are solutions expected to run an existing app within a common SDR framework?

Answer: Performers are free to propose any hardware / software / processing architecture for their system implementation. Use of existing applications / frameworks is not required.

29. Question: Is the expectation to propose all 4 phases in the initial response?

Answer: The Government anticipates FFP offer for Phase 1. Other Phases the government anticipates a ROM for planning and budgetary purposes which could potentially be adjusted based on progress and milestones throughout the course of the project. If an offeror proposes an alternative contract type, depending on proposal justifications, alternative contract types may be considered and reviewed.

30. Question: Is there a cost requirement/target for the Neptune payload?

Answer: Price and Manufacturing objectives are identified in Section 5 of the RFS; \$30,000 / unit in quantities > 100 (threshold) and \$1,000 / unit in quantities > 1000 (objective). Reference Section 7 of the RFS; Phase 1 \$670K, Phase 2-3 \$3M and Phase 4 \$3M are the project budgetary levels for the Neptune Payload project.

31. Question: The large band requirements i.e. higher bands greater than L band would this tube need a master-slave relationship with close proximity TX to i.e. satcom?

Answer: Performers are free to assume any architecture or driving parameters necessary to articulate their technical solution in response to the RFS objectives. This could include an external amplifier if required. However, solutions that minimize the need for external RF accessories are preferred.

32. Question: Is there a requirement to store processed RF signals into long-term storage? If so, what is the anticipated data rate or storage capacity?

Answer: As a component of an expendable system, long term storage of received signals is not a priority. However, storage may be required to meet the signal processing objectives and store software / mission configuration data. The data rate and capacity will be driven by the performer's solution. Performers are free to assume driving parameters necessary to articulate their solution.

33. Question: What are the transmission power thresholds? Incident power on the receiver?

Answer: For transmit, performer may assume any transmit power (or a range of transmit powers), transmit efficiency, duty cycle, antenna gain, etc. as needed to articulate their technical solution. The same is true for receiver assumptions.

34. Question: "Zeroization" and "secure storage" are noted in the RFS: Are these part of technology protection (or Anti-Tamper) requirements for the expendable system?

Answer: Yes, however full certification of AT requirements are outside the scope of this effort and are included to ensure there are not implementation conflicts in later phases and development.

35. Question: Is secret clearance required for all phases of the project?

Answer: No, the solutions for the Neptune Payload are expected to be unclassified. The Secret security classification and associated DD254 are intended to support technical exchange of information at the Secret level throughout the project. Potential classified work areas in Phase 1 and beyond could include mission specific design/analysis, operational software development (vs. test software), demonstration, etc.



36. Question: What are the expectations for the 3 prototypes at the end of Phase1 (about 3 months ADD)?

Answer: Existing Commercial off the Shelf (COTS) or high-TRL software defined radio solution, which will be a starting point for each selected vendor's proposed solution. This could be a complete packaged item, a 'breadboard' arrangement of multiple separate items / boards (to be integrated together in Phase 2), or another arrangement if beneficial to evaluate the proposed solution. The Phase 1 solution will then be evaluated by the government as a candidate to be advanced to Phase 2.

37. Question: The project budget clumps the "Phase 2-3" budget as \$3M. Is that intended to be the total across both those phases, and budget per each of those two phases?

Answer: \$3M total across Phase 2 & 3 combined

38. Question: Brooke's e-mail again...slower.

Answer: Brooke Pyne <brooke@nstxl.org>

39. Question: Next time can you increase the question size buffer on this application as we can't ask more than a line? I apologize that our questions are broken.

Answer: N/A

40. Question: In term of a partial solution, would submission of a firm offer for Phase 1 and ROMs for one or more of the follow-on phases 2, 3, and 4 be compliant?

Answer: Yes

41. Question: Can additional technical requirements be provided during the proposal process that could be used to optimize the solution for SWaP/Cost/delivery?

Answer: Additional technical objectives cannot be provided at this time.

42. Question: Is there a desired waterproof IP rating for the payload enclosure?

Answer: No, the payload enclosure (cylinder) is a sealed and rated assembly. Proposed solutions for the Neptune payload are not intended to make contact with sea water or other harsh environmental conditions.

43. Question: Can the same company submit multiple proposals?

Answer: Yes

44. Question: Does the Cost submission need to include all phases, or just phase 1?

Answer: The Government anticipates FFP offer for Phase 1. Other Phases the government anticipates a ROM for planning and budgetary purposes which could potentially be adjusted based on progress and milestones throughout the course of the project. If an offeror proposes an alternative contract type, depending on proposal justifications, alternative contract types may be considered and reviewed.

45. Question: Any chance you can extend the deadline for proposal?

Answer: An extension was issued to extend closing date to 2 July 2021.



46. Question: Deliverable 10 (Payload Prototypes) indicates Quantity 3 Prototypes 100 DAA. Is the QTY correct? Are prototypes are delivered at the same time as the CDR?

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