

## Task Order Statement of Work (SOW)

Date: 9/2/2020

Task Name: Resolve Instrument Project System Engineering Support

Task No. / Mod: 106/3

Task Monitor (TM): Mellani Edwards

Contract number: NNG15CR66C

Contract SOW Reference: Function 2- Implementation Phase Services

### **Change Log**

Mod 1- Extending the POP to September 30, 2019. 2/20/19

Mod 2- Extending the POP to September 30, 2020. 7/2/19

Mod 3- Extending the POP to April 14, 2021.

### **I. Scope**

- a. Background – XRISM is a GSFC in-house Instrument being built and integrated by the Engineering and Technology Directorate (ETD). The current instrument delivery date is January 2020. The purpose of this task order is to procure contractor support to provide System Engineering support to the XRISM/Resolve instrument team. The contractor shall work with the Code 490.2 to support the Resolve instrument managers and subsystem managers in the development effort.
- b. Summary of work – This task shall provide the following systems engineering support for the Resolve Instrument Project:
  1. Support the planning, organizing, scheduling, managing and directing of efforts from development, fabrication and assembly, integration and test, launch, and on-orbit activation of the Resolve Instrument.
  2. Support instrument and mission level interface requirements management, validation, and verification.
  3. Support trade-studies for the instrument.
  4. Monitor and manage external interface documentation and requirements.

5. Participate in instrument design reviews/meetings.
6. Review instrument and project documentation and submit comments and recommendations.
7. Prepare and present technical information for technical meetings/reviews/briefings.
8. Provide written and oral reports as requested.
9. Support the development and management of system engineering documentation and products.
10. Provide support for package development for, attend, and participate in instrument status meetings, telecons, peer reviews, and major project reviews for the instrument.
11. Review and provide comments on instrument, schedule, system, subsystem, software, safety verification, and testing documentation.
12. Support responses to and in closing requests for action from major system, subsystem, and peer reviews.
13. Support in the generation, review and response to waivers and deviations.
14. Analyze configuration, design, and procedural changes submitted to change control boards.
15. Identify risk elements, develop and execute mitigation steps; participate in the project and element risk board meetings.
16. Prepare detailed functional and environmental test plans and procedures for the instrument and witness test execution.
17. Prepare for shipment of the instrument and GSE to JAXA.
18. Prepare for JAXA instrument level integration and launch site checkout.
19. Participate in instrument Failure Review Boards.
20. Support “lessons learned” presentations post-launch.

- c. Required skills/knowledge – At a minimum of twenty years of Systems Engineering experience is required to support the Resolve Instrument Project. In addition to the minimum experience a BS or MS (preferred) is required.

II. Period of Performance

The period during which the work for this task order shall be performed is from task award through **April 14, 2021**

III. Subtask Description

Not Applicable

IV. Deliverables/Schedules/Milestones

<i>Ref#</i>	<i>Deliverables</i>	<i>Due Date</i>
1	Status Reports	Weekly/Bi-weekly
2	Inputs to Monthly Status Reviews	Monthly
3	Inputs to Quarterly Status Presentations	Quarterly
4	Monthly Progress Report (MPR) Previous Month-Accomplishments issues/concerns, and travel Following Month-Planned activities, planned travel (2-months)	Monthly, by the 15th
5	Foreign Travel Reports	Immediately upon trip completion
6	Final Task Report	30 days within task completion

V. Management Approach

- a. Staff Allocation, Expertise, and Skill Mix

The contractor shall staff this work item with the appropriate skill mix and staffing level for the work.

b. Configuration Management

Systems and documents will be covered under the Project Configuration Management Plan.

c. Facilities

Appropriate IT devices to support the analyses, specification development, and report development are required. It shall be the contractor's responsibility to provide and set up local workstations and network connections at the contractor's off-site facilities as required, and to install any required tools and utilities on the contractor's equipment.

d. Risk Management and Best Practices

The contractor shall manage schedule, cost, and technical risk through monitoring and reporting of progress and performance metrics, identifying issues well in advance of negative consequences, recommending corrective action to the TM, and implementing corrective actions with the compliance of the TM.

e. Performance Metrics

The work performed for this task will be evaluated by the TM based on the technical merit. Technical evaluation of the task performance is a subjective combination of performance metrics, technical quality of deliverables, cost control, significant events, innovations and meeting requirements set forth in the SOW.

f. Government Furnished Facilities, Equipment, Software and Other Resources

The Government will provide account and passwords to government-furnished workstations where existing versions of various relevant software packages shall be maintained. It shall be the contractor's responsibility to complete any GSFC required security-related training courses.

g. Quality Assurance Requirements

The contractor providing technical services shall comply with all CMMI Level 2 processes established for the Project and deliverable products. Applicable requirements include, but not limited to:

1. NID 7120.99- NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements
2. NPR 7123.1B-NASA Systems Engineering Processes and Requirements
3. GPR 7123.1B- Goddard Systems Engineering

4. GPR 7150.4- Goddard Software Safety and Software Reliability Process

VI. ODC (Travel and Procurement)

*EXAMPLE:*

<u>Location</u>	<u>Duration</u>	<u>Dates</u>
Japan (five trips per year)	3 trips at 7days; 2 trips at 14 days	TBD

VII. Work Location

This work shall be performed primarily at the Goddard Space Flight Center (On-site), but the contractor may be required to perform some work at the contractor's facility (Off-site).

VIII. Reporting Requirements

a. Weekly or Bi-weekly status report

The contractor shall generate Performance Reports every week or bi-weekly. The report shall include, as a minimum, a summary of the weeks highlights/accomplishments, milestones/schedule/deliverables, risks and customer meetings.

b. Monthly performance report

The contractor shall provide monthly technical and schedule progress reporting to adequately describe the activities of the contractor team to the TM. The contractor shall provide monthly cost reporting in accordance with the WBS. The contractor, including subcontractors, shall be available to attend monthly status meetings.

IX. Security Requirements

The contractor shall comply with Information Technology Security procedures and requirements as defined by NPG 2810.1A in the performance of this task. In addition, the contractor shall comply with all applicable federal rules and regulations and agency directives.

X. Data Rights

This SOW shall adhere to all Data Rights Clauses as stated in the SEAS contract.

XI. Applicable Documents

1. NPR 7150.B- NASA Software Engineering Requirements
2. GPR 7150.1- Goddard Software Engineering Requirements

XII. References

Not Applicable