AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		8

2. AMENDMENT/MODIFICATION NUMBER	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUISITION NUMBER	5. PROJECT NUMBER *(If applicable)*
Amendment Two (2)	See Block 16C	N/A	

6. ISSUED BY CODE 210.I

NASA/Goddard Space Flight Center/Wallops Flight Facility
Wallops Island, VA 23337

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(Number, street, county, State and ZIP Code)*

To All Offerors

CODE FACILITY CODE

(X)

☒ 9A. AMENDMENT OF SOLICITATION NUMBER: NNG17611358R

9B. DATED *(SEE ITEM 11)*: 09/28/2017

☐ 10A. MODIFICATION OF CONTRACT/ORDER NUMBER

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning 3 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
☐	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

This amendment revises 1. Enclosure 4, Representative Task Order (RTO) 2 and 2. Enclosure 5, RTO 3.

Accordingly,

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		Bruce Tsai	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		Bruce Tsai *(Signature of Contracting Officer)*	10/25/2017

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)
Prescribed by GSA FAR (48 CFR) 53.243

1. Enclosure 4, RTO #2, Major Subsystem Upgrade: Mission Graphics, is replaced in its entirety with the following (changes marked in red font):

Enclosure 4

Representative Task Order 2
Major Subsystem Upgrade: Mission Graphics

Background:

The Range is planning a major upgrade to its primary real time display systems used to provide real time situational awareness and decision support in its Range Control Center (RCC) during launches. The system has gone by the name "Mission Graphics" for many years. The Mission Graphics system ingests selected processed parameters associated with real time operations from other systems and displays them in a variety of alphanumerical or graphical format using preselected formats (including text and various 2D plots with or without map or other overlays). The Mission Graphics system is shown in Figure 1 for context within the existing range architecture and is located to the right of center in the diagram. The current system consists of legacy software developed by the government in the late 1980s. The Contractor currently provides operations, maintenance, and sustainment for Mission Graphics system hardware and software.

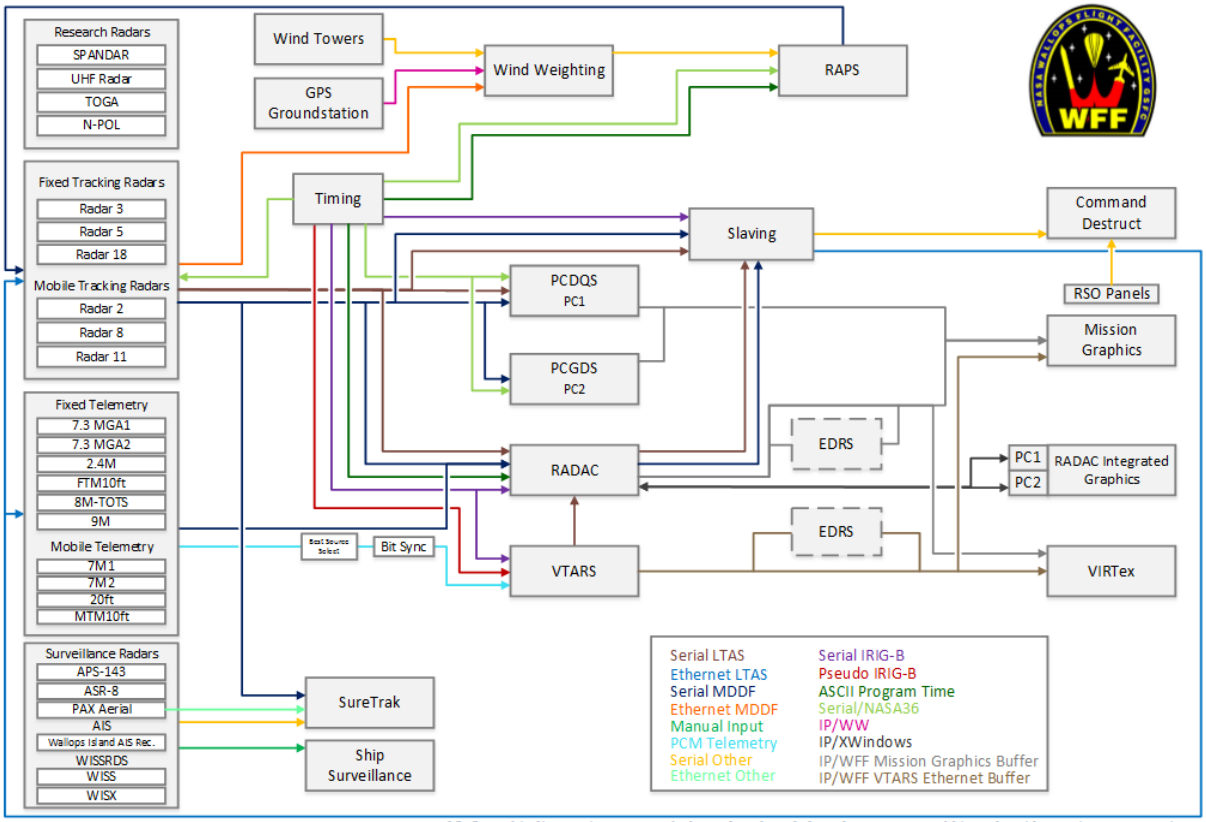

Figure 1. Range Architecture Diagram. Mission Graphics is located to the right of center

The Range has initiated tasks to the Applied Engineering and Technology Directorate (AETD) to explore applicable systems and technologies that could be useful in replacing the current system and has issued the following task to the Contractor.

RTO 2: Mission Graphics Replacement Support

Period of Performance: April 1, 2018 through March 31, 2020.

The Contractor shall provide expert technical assistance in the development of a replacement for the Mission Graphics system, expected to take two years from the initiation of this task. Support will include three elements:

1. Development of operational requirements including functional and human factors related inputs
2. Development of *suggested* technical and other acceptance criteria that the Range will utilize to accept the system into operations (where it will be provided as GFE to the Contractor for ongoing operations, maintenance, and sustainment).
3. Description of other tasks that the Range could request of the Contractor which might increase the quality of the system ultimately delivered.

For this RTO, provide the following:

- A description of the approach that the Contractor will use to meet the requirements of the overall task and how that approach will help ensure a successful and high-value outcome for the Mission Graphics replacement activity.
- A description of:
    - *Suggested* high level requirements that the Range should levy on AETD and its contractors to design and develop the system ("high level" here is left to the RTO respondent's discretion)
    - Method, process, or approach by which the Contractor proposes to fully identify and mature the operational requirements for the Mission Graphics system
    - Any other information the Contractor feels would be relevant to the Range for its consideration with respect to element #1 above.
- A description of:
    - Key technical, documentation, or other requirements (including interim requirements) that the Range should levy as acceptance criteria on the completed system
    - Methods, process, or approach by which the Contractor proposes to fully identify and mature the acceptance criteria for the Mission Graphics system
    - Any other information that the Contractor feels would be relevant to the Range for its consideration with respect to element #2 above
- A description of:
    - Plans, products, processes or approaches that the Range should consider and which would have the effect of increasing the overall quality or value of the Mission Graphics system replacement effort
    - Key risks that the Range should consider as it evaluates:
        - the Contractor's response to this RTO

- the overall Mission Graphics system replacement effort

Assumptions

The Government will not provide an assumption for Travel, Material, and/or Other Direct Costs. The Offeror will determine whether Travel, Material, and/or Other Direct Costs are necessary to perform the task order and propose these costs accordingly.

2. Enclosure 5, RTO #3, Wallops Range Operations, is replaced in its entirety with the following (changes marked in red font):

Enclosure 5

Representative Task Order 3
Wallops Range Operations

Background

The Wallops Research Range routinely supports simultaneous projects. In some cases, these simultaneous projects can strain the existing resources required to meet customer requirements. History has shown that simultaneous demanding projects may require support from the Wallops Research Range in the same time period. This creates the need for creative and innovative staffing approaches, and increases the need for higher quality program and range projects management due to the added risk associated with limited resources.

RTO 3

Under this RTO, the contractor shall provide range systems operations; systems maintenance, personnel training, process improvements and process control services during operations periods; command, control, communications, wide area network communications services, information and computer systems operations; testing, modifying, and installing communications and electronic systems, launch control centers and test facilities required to meet the mission set and deliverables defined in this RTO. The contractor shall also provide qualified personnel, equipment, tools, materials, vehicles, supervision, and other services to meet the mission set and associated requirements detailed or referenced in this RTO and required to meet the performance metrics defined in the Statement of Work (SOW).

Below is the Mission Set for the flight projects and systems to be supported and flight/launch/test dates. Note that some missions have multiple dates indicating they occur multiple times within the two-year period.

Period of Performance

The period of performance shall be April 15, 2019 through April 14, 2021

Mission Set

Mission: Unmanned Aircraft System (UAS) Missions

July 15, 2019
October 15, 2019
March 15, 2020
May 15, 2020
June 15, 2020

The BAT 4 UAS platform will conduct First Flight testing and Operational Test/ Evaluation Flights originating from Wallops Island (WAL) Airport. The platform will then proceed to R6604 to conduct general and Beyond Visual Range (BVR) operations and testing. Upon completion of testing, the BAT-4 will return to WAL and land.

UAS Flight Operations requirements are as follows:

REQUIREMENT	NEED
MOVE communications system	Required
Hand-held LMR radios	Required
CNE/Guest Wi-Fi access (N-159 and Mobile Operation Station)	Required
Meteorological Balloon	Required at 60 minutes prior to take-off for each flight.
Weather brief	Required. Weather brief provided at end of day debrief (normal business hours) for next day mission.
Hanger space for UAS	Required
Ramp operations area for Mobile Operation Station	Required
Access to Runway 04/22	Required
Control Tower Operator	Required
Automated Surface Observation System (ASOS)	Desired
WFF Crash, Fire, Rescue	Required
SureTrak/STING	Required
ASR 8	Required
Still Photography	Only one day's worth of photos required. Date picked by ROC Optics department for most feasible/supportive light and weather conditions
Video	Required
Projector and screen	Required

Printer access	Required
R-6604 Airspace	Required

Table 1. UAS Flight Operations Requirements

Mission: Patuxent River Naval Air Station Aircraft Operations Support (daily operations)

Patuxent River NAS (Pax River) Atlantic Test Range (ATR) uses airspace and surface target areas for test and evaluation of aircraft and for warfighter training missions. In addition to radar and optical tracking systems, fixed and mobile assets provide the necessary capabilities for diverse testing and training scenarios. ATR has real-time connectivity to NASA Wallops Flight Facility.

For daily Pax River operations support, the following are required:

- 1 telemetry antenna (at minimum) to track aircraft flying offshore of Wallops Island
- Optical tracking systems
- NASCOM support
- Arresting gear (The contractor is not responsible for arresting gear requirements)
- Aircraft fueling services (The contractor is not responsible for Aircraft fueling services)

For special Pax River mission events occurring one per month, the following are required in addition to daily operations requirements:

- 1 radar system (at minimum) to track aircraft
- Optical tracking systems
- Meteorological balloon releases as needed

Mission: Navy Target Operations
January 25, 2020
September 25, 2020

The Fleet Tracking Exercise Aegis Readiness Assessment Vehicle-A mission will test the updated capabilities of the U.S. Navy Aegis Ballistic Missile Defense Program using three Terrier-Orion target vehicles launched nearly simultaneously from the NASA Wallops Flight Facility. The launches will be conducted from the MRL, ARC, and Super HAD launchers on Pad 2 on Wallops Island. During the operation, U.S. Navy vessels will simulate track and intercept for completion of system testing.

Navy Target Operational Requirements are as follows:

- 3 C-band Radars
- 3 Telemetry Antennas
- 2 lift-off Cameras
- 2 tracking Cameras
- Range Communications (MOVE, LMR radios, frequencies for surveillance operations)
- Range Control Center Systems
- RADAC System DQCA or DQCB
- Range Timing

- Frequency Monitoring
- Meteorological Operations (Met balloon launches, forecasts, weather monitoring)
- Launchers on Pad 2 – MRL, ARC, and Super HAD
- Blockhouse 2 firing console
- Test Rocket build-up, loading onto launcher, and launch operation
- Surveillance Systems and Operations (surveillance vessels and aircraft, ASR-8, WISSRDS, STING, Ship Surveillance System)

Note: See SOW Sections 5 through 11 for more information on systems listed above.

Mission: National Weather Service Balloon Soundings (daily operations)
The contractor shall release balloons from Wallops twice daily and acquire data and forward to National Weather Service. Balloons are launched every day at 0000Z and 1200Z. The data acquisition system exists at Wallops.

RTO 3 Task Requirements

The contractor shall develop a task plan to address support of the mission requirements defined in this RTO. The contractor shall use the SOW to aid in development of the task plan.

The task plan shall clearly define risks associated with the operations schedule and mission requirements.

The task plan shall include details of mission support implementation approaches required for these complex missions including management and logistics services required to provide comprehensive range operations services for the entire task.

The task plan shall detail how requirements will be managed and controlled from the identification phase to the implementation phase along with detailed systems support architecture, testing approach, identification and management of issues and risks, and detailed implementation, test, and operations schedules given the launch/flight dates defined in this RTO.

The task plan shall define how maintenance and sustainment of systems will be managed, contingency plans implemented, and how personnel proficiency training and process improvements will be implemented during time periods between mission operations.

The task plan shall include a staffing approach with mitigations as necessary (including subtask leads, roles and responsibilities, reporting structure, and formal reporting process).

The task plan shall include optional approaches based on cost, risk, and other factors.

The task plan shall define how the contractor will meet the quality assurance requirements as defined in SOW Section 3.

The list of required reports, plans, procedures, and other deliverables in support of the RTO requirements is included in the table below. These deliverables are further detailed in the SOW

to provide information related to content and purpose. The task plan shall account for the development, review, and approval of below deliverables.

Assumptions:
Travel: $1,000
Materials/Other Direct Costs: $100,000

Assume that the Travel, Materials and Other Direct Costs provided are complete and will be straight-lined across the Period of Performance

RTO 3 Deliverables:

Deliverable	**Schedule/Due**	**Format**	**Notes**
Range Readiness Review Package	For Every Mission (except daily operations)	MS PowerPoint	All at L – 2 Weeks
Weekly Activity Report	Weekly	MSWord	Noon on Thursdays
Monthly Status Report and Data	Monthly	MS PowerPoint	By 5th of each month
Post Mission Services Report	Two weeks post mission	MSWord	
Preventative Maintenance Procedures and Data	Upon Request	MSWord	
Mission Quick Look Data	One hour after mission	Varies	

3. All other terms and conditions remain unchanged and in full force and effect.

(End of Amendment 2)