

**Evolved Expendable Launch Vehicle (EELV)  
Phase 1A Competitive Acquisition  
for GPS III Launch Services**

**Attachment 5  
Instructions to Offerors**

**3 August 2016**

# **1 PROGRAM STRUCTURE AND OBJECTIVES**

The Air Force Space and Missile Systems Center (SMC) anticipates the award of a launch services contract for delivering a Global Positioning System III (GPS III), satellite to orbit. The general requirements for the launch services are defined in the Performance Work Statement (PWS) and Contract Data Requirements List (CDRLs), while mission-specific requirements are defined in the Mission Requirements Annex (MRA). This contract is for the procurement of a GPS III mission only; therefore, requirements in the PWS and Contract Data Requirements List (CDRL) with specific National Reconnaissance Office (NRO)-only references are not applicable and appear in grey text.

## **2 GENERAL INSTRUCTIONS**

The Offeror's proposal must include all data and information requested by this Request for Proposal (RFP) and must be submitted in accordance with these instructions. In developing the proposal, the Offeror shall ensure that their proposed offer complies with all the requirements contained in the RFP, to include the PWS, MRA, and CDRLs. Noncompliance with the instructions provided in this RFP may result in an unfavorable proposal evaluation.

The Offeror's proposal shall be clear and concise and shall include sufficient detail for effective evaluation and for substantiating the validity of stated claims. The proposal should not simply rephrase or restate the Government's requirements, but shall provide convincing rationale to address how the Offeror intends to meet these requirements. Offerors shall assume that the Government has no prior knowledge of their capabilities and experience and will base its evaluation on the information presented in the Offeror's proposal. If the Government enters into discussions, it reserves the right to make a written request for proposal updates to incorporate any directly relevant information from ongoing early integration studies. Elaborate brochures or documentation, binding, detailed art work, or other embellishments are unnecessary and are not desired. The proposal validity date must be specified and the proposal must be valid for at least 180 days after date of submission. In accordance with Federal Acquisition Regulation (FAR) Subpart 4.8 (Government Contract Files), the Government will retain one copy of all unsuccessful proposals. Unless the Offeror requests otherwise, the Government will destroy extra copies of such unsuccessful proposals.

## **3 GENERAL INFORMATION**

### **3.1 POINT OF CONTACT**

The Procuring Contracting Officer (PCO), Ms. Dzung Dom, is the sole point of contact for this acquisition. Address any questions or concerns you may have to the PCO at [dzung.dom@us.af.mil](mailto:dzung.dom@us.af.mil) or 310-653-3696. Written requests for clarification may be sent to the PCO at the address for SMC/LEK located on the front page of the model contract/solicitation.

### **3.2 DEBRIEFINGS**

The PCO will promptly notify Offerors of any decision to exclude them from the competitive range, whereupon they may request and receive a debriefing in accordance with FAR 15.505. In addition, the PCO will notify unsuccessful Offerors in the competitive range of the source selection decision in accordance with FAR 15.506. Upon such notification, unsuccessful

Offerors may request and receive a debriefing. Offerors desiring a debriefing must make their request in accordance with the requirements of FAR 15.505 or 15.506, as applicable.

### **3.3 DISCREPANCIES**

If an Offeror believes that the requirements in this RFP contain an error or omission, or are otherwise unsound, the Offeror shall immediately notify the PCO in writing with supporting rationale as well as the remedies the Offeror is asking the PCO to consider as related to the omission or error.

### **3.4 ELECTRONIC REFERENCE DOCUMENTS**

Referenced documents for this solicitation are available at <http://www.fedbizopps.gov>. Potential Offerors are encouraged to subscribe for real-time e-mail notifications when information has been posted to the website for this solicitation.

### **3.5 EXCHANGES**

Exchanges of source selection information between the Government and Offerors will be controlled by the PCO. Source selection information will be transmitted in person or via certified mail, delivery service, or facsimile.

### **3.6 DISCUSSIONS**

The Government reserves the right to award without discussions. However, the Government may conduct discussions with Offerors after establishing a competitive range based on the ratings of each proposal against all evaluation criteria.

### **3.7 USE OF NON-GOVERNMENT ADVISORS**

Offerors are advised that data submitted to the Government in response to this solicitation will be released to individuals who work for the following companies as non-Government advisors for review and analysis:

<u>Company Name</u>	<u>Address</u>
The Aerospace Corporation	PO BOX 92957, Los Angeles, CA 90009-2957
Tecolote Research, Inc	2120 E. Grand Avenue, Suite 200, El Segundo, CA 90245

Offerors are advised that data submitted to the Government in response to this solicitation may be released to individuals who work for the following companies as non-Government advisors for administrative support.

<u>Company Name</u>	<u>Address</u>
Business and Technology Solutions	3572 Dayton-Xenia Rd, Suite 210, Beavercreek, OH 45432
ARRAY Information Technology	7474 Greenway Center Dr, Suite 600, Greenbelt, MD 20770

Individuals from the above support contractors have signed individual non-disclosure agreements with the Government which strictly prohibits any release or disclosure of information outside of the source selection team.

### 3.8 ALTERNATIVE PROPOSALS

Alternative proposals will not be considered. Alternative proposals are those that do not meet the terms and conditions of the RFP, including attachments.

## 4 PROPOSAL FORMAT/LIMITS

### 4.1 ORGANIZATION/NUMBER OF COPIES/PAGE LIMITS

The Offeror shall prepare the proposal as set forth in Table 4-1: Proposal Organization. The titles and contents of the volumes shall be as defined in this table, all of which shall be within the required page limits. The Volumes identified in the table shall be separately bound in three-ring, loose-leaf binders, plus each Volume’s electronic copy shall be saved on a separate compact disc (CD) or digital video disc (DVD). For Volume II, provide page separation tabs for each Performance subfactor. The Offeror shall provide two hard copies of the proposal and two electronic copies of the proposal on CDs or DVDs. The contents of each proposal volume are described in the paragraph as noted in the table below:

**Table 4-1: Proposal Organization**

Volume	Title	Hard Copies	Electronic Copies	Page Limit
I	Executive Summary	2	2	10
II	Factor 1: Performance	2	2	150
	Factor 2: Schedule	2	2	Unlimited
III	Price Volume	2	2	Unlimited
IV	Model Contract Volume	2	2	Unlimited

### 4.2 PAGE LIMITATIONS

Page limitations shall be treated as maximums. If exceeded, the excess pages will not be read or considered in the evaluation of the proposal, and excess paper copies will be returned to the Offeror as soon as practicable. If the Government issues Evaluation Notices (ENs) for discussions, page limitations may be placed on responses to ENs. The specified page limits for EN responses will be identified in the letters sent along with the ENs to the Offerors. Unless otherwise specified, each page shall be counted except the following: cover pages, table of contents, tabs, and glossaries. Additionally, for Factor 2 the Offeror may include a narrative to articulate the proposed schedule, which is not limited by the page count.

### **4.3 PAGE SIZE AND FORMAT**

A page is defined as each face of a sheet of paper containing information. When both sides of a sheet display printed material, it shall be counted as two pages. Page size shall be 8.5 by 11 inches, not including foldouts. Except for the reproduced sections of the solicitation document, the text size shall be no less than 12 point using Times New Roman font type. Tracking, kerning, and leading values shall not be changed from the default values of the word processing or page layout software. Use at least 1-inch margins on the top and bottom and 3/4-inch side margins. Pages shall be numbered sequentially by volume. These page size and format restrictions shall also apply to responses to ENs.

Legible tables, charts, graphs and figures shall be used wherever practical to depict organizations, systems and layout, implementation schedules, plans, etc. These displays shall be uncomplicated and legible, and shall not exceed 11 by 17 inches in size. Foldout pages shall fold entirely within the volume and each face of the foldout containing information will be counted as a single page. Foldout pages may only be used for large tables, charts, graphs, diagrams, and schematics, not for pages of text. For tables, charts, graphs, and figures, the text may be in the Offeror's preferred format.

### **4.4 CLASSIFIED INFORMATION**

The Government does not expect that classified information will be required. If you require classified information in your proposal, please contact the PCO as soon as possible but no later than 14 calendar days prior to the deadline for proposal receipt.

### **4.5 CROSS-REFERENCING**

To the greatest extent possible each volume shall be written on a stand-alone basis so that its contents may be evaluated with a minimum of cross-referencing to other volumes of the proposal. Information required for proposal evaluation which is not found in its designated volume will be assumed to have been omitted from the proposal. Cross-referencing within a proposal volume is permitted where its use would conserve space without impairing clarity.

### **4.6 INDEXING**

Each volume shall contain a table of contents with more detail than the master table of contents included in the Executive Summary Volume, to delineate the subparagraphs within that volume. Tab indexing shall be used to identify sections.

### **4.7 GLOSSARY OF ABBREVIATIONS AND ACRONYMS**

Each volume shall contain a glossary of all abbreviations and acronyms used with a definition for each.

### **4.8 BINDING AND LABELING**

Each volume of the proposal shall be separately bound in a three-ring, loose-leaf binder, permitting the volume to lie flat when open. Staples shall not be used. A cover sheet shall be bound in each volume, clearly marked as to volume number, title, copy number, solicitation identification, and the Offeror's name. The same identifying data shall be placed on the spine of

each binder. All unclassified document binders shall have a color other than red or other applicable security designation colors. Be sure to apply all appropriate markings including those prescribed in accordance with FAR 52.215-1(e) (Restriction on disclosure and use of data) and FAR 3.104-4 (Disclosure, Protection, and Marking of Contractor Bid or Proposal Information and Source Selection Information).

#### **4.9 ELECTRONIC OFFERS**

The content and page size of electronic copies must be identical to the hard copies. All CDs shall be placed in plastic sleeves that open on the top in one separate binder, with the volume number and title indicated on each disc. Hypertext links shall be used to facilitate navigation within the document. Use separate files to permit rapid location of all portions, including factors, exhibits, annexes, and attachments, if any. If files are compressed, the necessary decompression program must be included. The electronic copies of the proposal shall be submitted in a format readable by Microsoft (MS) Office Word 2007/2010, MS Office Excel 2007/2010, MS Office Project 2007/2010, and MS Office Power Point 2007/2010, as applicable. In the event that hard copies and electronic copies of a proposal are submitted and there are discrepancies between the hard copies and the electronic copies of the proposal, the electronic copies will be used for evaluation.

#### **4.10 DISTRIBUTION**

The "original" proposal shall be identified. Proposals received after the date and time specified will be treated in accordance with FAR 52.212-1(f). Delivery of proposals shall be coordinated with the PCO at least 24 hours in advance of the due date and time. Early deliveries of proposals shall also be coordinated with the PCO. Electronic and hard copies of proposals are due 19 September 2016 by 4:00 pm Pacific Daylight Time. Proposals shall be addressed to the PCO and mailed or hand carried to:

SMC/LEK  
Attn: Ms. Dzung Dom  
483 N. Aviation Blvd.  
El Segundo, CA 90245

### **5 VOLUME I – EXECUTIVE SUMMARY**

The purpose of the Executive Summary Volume is to provide a complete overview of the Offeror's proposal. The Executive Summary Volume will not be evaluated, scored, or used to clarify other discrepant information in other volumes. Any summary material presented in the Executive Summary Volume will not be considered as meeting the requirements for any portions of other volumes of the proposal. Do not include cost information. The Offeror shall provide the following information in the Executive Summary:

#### **5.1 NARRATIVE SUMMARY**

The narrative summary of the entire proposal shall be concise, to include addressing any risk areas and mitigations, and highlighting any key or unique features. The salient features shall tie in with the evaluation factors in Attachment 6, Evaluation Criteria.

## 5.2 OFFEROR’S PROPOSED TEAM

The Offeror shall briefly identify the Offeror’s team, including the prime and teammates.

## 5.3 MASTER TABLE OF CONTENTS

The Offeror shall include a master table of contents of the entire proposal.

## 5.4 CROSS REFERENCE MATRIX

The Offeror shall fill in the proposal column of the cross reference matrix below with the volume, sections, and paragraph numbers from their proposal that correspond with the paragraph numbers from Attachment 5 and Attachment 6 listed below.

<b>Cross Reference Matrix</b>			
<b>Attachment 5: Instructions to Offerors</b>	<b>Attachment 6: Evaluation Criteria</b>	<b>Counted Towards Maximum Page Limitation (Y/N)</b>	<b>Proposal Volume, Section, Paragraphs</b>
5.1	N/A	Y	*
5.2	N/A	Y	*
5.3	N/A	N	*
5.4	N/A	N	*
6.1.1	6.1.1.1	Y	*
6.1.1.1	6.1.1.1	Y	*
6.1.1.2	6.1.1.2	Y	*
6.1.1.2	6.1.1.3	Y	*
6.1.1.2	6.1.1.4	Y	*
6.1.1.3	6.1.1.5	Y	*
6.1.1.3	6.1.1.6	Y	*
6.1.2	6.1.2.1	Y	*
6.1.2.1	6.1.2.2	Y	*
6.1.2.2	6.1.2.3	Y	*
6.1.2.3	6.1.2.4	Y	*
6.1.2.4	6.1.2.5	Y	*
6.1.2.5	6.1.2.6	Y	*
6.1.3.1	6.1.3.1	Y	*
6.1.3.2	6.1.3.2	Y	*
6.1.3.3	6.1.3.3	Y	*
6.1.3.4	6.1.3.4	Y	*
6.2.1.1	6.2.1.1.1	N	*
6.2.1.2	6.2.1.1.2	N	*
6.2.1.1	6.2.1.1.3	N	*
6.2.1.3	6.2.1.1.4	N	*
6.2.2.1	6.2.2.1	N	*
6.2.2.2	6.2.2.2	N	*
7.1	7.1	N	*

\* To be filled in by Offeror

## 6 VOLUME II – PERFORMANCE AND SCHEDULE

Volume II addresses the Offeror’s technical approach and solution for meeting the Government’s threshold requirements for each Technical subfactor. The Offeror shall describe their proposed approach to meeting the requirements of each subfactor. Offeror responses will be evaluated against the Technical criteria defined in Attachment 6, Evaluation Criteria, Section 6.

### 6.1 FACTOR 1: PERFORMANCE

#### 6.1.1 SUBFACTOR 1: ORBITAL ACCURACY

The Offeror shall complete the Proposed GPS III 3-Sigma Injection Accuracy column in Table 6-1 for the proposed launch vehicle system of the GPS III mission. 3-sigma for Injection Accuracy is defined as 99.73% probability at 50% confidence.

**Table 6-1: GPS III Space Vehicle (SV) Osculating Orbit Injection Target and Accuracy Requirements (see note 1)**

Parameter	Target Requirement	Accuracy Requirement	Proposed GPS III 3-sigma Injection Accuracy
Apogee Altitude (km) (see note 2)	20,181 km	± 100 km	
Perigee Altitude (km) (see note 4)	≥1,000 km	± 25 km	
Inclination (deg)	55 deg	± 0.1 deg	
Right Ascension of Ascending Node (deg)	257.78 deg (Plane A) (see note 3)	± 0.25 deg	
Argument of Perigee (deg)	270 deg	± 0.5 deg	

- (1) Orbital parameters correspond to SV following separation including the effects of separation delta-V
- (2) The apogee altitude is the altitude of the SV at first apogee after transfer orbit injection
- (3) RAAN target of 257.78 deg corresponds to Plane A in the MRA adjusted to 15 Feb 2019 at 0000Z.
- (4) Perigee altitude must be ≥1000 km after accounting for proposed 3-sigma injection accuracy

**6.1.1.1** The Offeror shall provide a detailed description of their approach to meet all orbital injection targets and accuracy requirements described in Table 6-1 while complying with all separation parameters detailed in Table 6-3. The description shall provide clear linkages between the approach to meet requirements and the demonstrated performance of the proposed launch vehicle system. The description shall also include the following:

- a) Identification of the launch vehicle system and configuration proposed.
- b) Approach to meeting a Right Ascension of the Ascending Node (RAAN) accuracy requirement as described in Table 6-1.
- c) A detailed description of the methodology(ies) (Monte Carlo and/or Covariance) used to establish the injection accuracies from Table 6-1. If Monte Carlo methodology is chosen, a minimum of 10,125 runs must be performed.
- d) Complete Table 6-2 with a list of all dispersions used in the methodology for establishing the injection accuracies and separation parameters from Table 6-1 and 6-3 respectively, including justifications.

Dispersions are defined as variations on performance and navigation input parameters (e.g., thrust, Isp, sensor bias/scale factors, etc.) used to generate injection accuracy and separation

parameter results. Dispersions shall be listed in Table 6-2 with required data to describe the dispersions used, including statistical distribution type (e.g., Gaussian, uniform, etc.).

**Table 6-2: Dispersions List**

Dispersion	-3 sigma value	Nominal	+3 sigma value	Statistical Distribution Type
Parameter (subscript i)				
Parameter 2 (subscript i=n)				

**6.1.1.2** The Offeror shall complete the Proposed GPS III Separation Parameter Accuracy column in Table 6-3 for the GPS III mission with the following assumptions:

- a) The spin direction shall be from  $-Y_{sv}$  axis to  $+X_{sv}$  axis, about  $+Z_{sv}$  axis
- b) Pre-SV Separation Visibility  $\geq 25$  minutes after 5 degrees elevation angle line of sight from any AFSCN asset.

**Table 6-3: GPS III Separation Parameters**

Parameter	Requirement	Accuracy	Proposed GPS III Separation Parameter Accuracy
Spin Rate (deg/sec)	+ 0.6	$\pm 0.3$	
Pointing Accuracy of $+Z_{sv}$ axis (deg)	NEN	$\leq 5$	
Transverse Angular Rate (Root Sum Square [RSS]) of the rates about the $X_{sv}$ and $Y_{sv}$ axes) (deg/sec)	0	$\leq 1.8$	

At separation the Launch Vehicle (LV) shall be capable of orienting the SV positive Z-axis ( $+Z_{sv}$ ) to any of the attitudes listed below. There are two possible separation attitudes to cover injections on any date or plane. The two attitudes are:

- Negative Ecliptic Normal (NEN)
- Positive Ecliptic Normal (PEN)

The desired attitude for a specific mission will be provided after each SV call-up. The separation attitudes are defined in the MRA. For the purposes of this proposal only, the Offeror shall use a NEN separation attitude. There is no constraint on the orientation of the SV X-axis or Y-axis at separation.

**6.1.1.3** The Offeror shall provide a completed Table 6-4, Historical Orbital Injection Accuracy, for each of the 4 most recent elliptical transfer orbit launches of a launch vehicle system similar to the proposed launch vehicle system. If the launch history does not include four elliptical transfer orbit launches, then the Offeror shall complete Table 6-4 with data from as many elliptical transfer orbit launches as flown and supplement with data for the most recent launches, for a total of 4 missions. Historical launches should not include those that had a burn-to-depletion mission design for spacecraft injection. The Offeror shall provide detailed supporting rationale behind any changes to the dispersions or methodology used in generating the predicted accuracies for either the historical elliptical transfer orbit launches or the most recent launches.

**Table 6-4: Historical Orbital Injection Accuracy**

Reference Missions	Apogee Altitude (km)	Perigee Altitude (km)	RAAN (deg)	Inclination (deg)	Argument of Perigee (deg)
3-Sigma Requirement (Min, Target, Max)					
3-Sigma Prediction (Min, Mean, Max)					
Actual					

Notes: deg = degrees, km = kilometers, RAAN = Right Ascension of Ascending Node

**6.1.2 SUBFACTOR 2: MASS-TO-ORBIT**

The Offeror shall provide a detailed description of the mass-to-orbit capability associated with the proposed launch vehicle system for the GPS III mission based on launching from the Eastern Range for the Target and Accuracy Requirements in Table 6-1. The Offeror shall provide an analysis and a description of the methodology used to generate the final mass-to-orbit for the GPS III mission. At a minimum, the launch vehicle shall have the capability of injecting the Total Mass, described on Table 6-5, to the Target Requirements defined on Table 6-1. This analysis and methodology shall be based on either demonstrated flight performance or analysis.

**6.1.2.1** The Offeror shall provide the upper stage performance margin to the GPS III Target Requirements detailed in Table 6-1 with the Total Mass as defined in Table 6-5. The Offeror shall fill in the vehicle specific payload equivalent masses in Table 6-5. The “Max SV Mass Used” in Table 6-5 shall be greater than or equal to the maximum SV mass indicated in MRA section III.K (Mass Properties [separated SV]) for the Offeror’s selected integration type (vertical or horizontal) with the appropriate adjustment to the SV mass for the Offeror’s selected perigee value. The Offeror shall also provide the performance reserves as specified below.

- a) 3-sigma Flight Performance Reserve value (defined as 99.865% probability at 50% confidence) calculated by Monte Carlo methodology with a minimum of 10,125 runs performed.

b) Description and quantification of any additional reserves held

**Table 6-5 Mass-to Orbit**

Description	Mass	Units
Max SV Mass Used		lbs
Payload Adapter Mass (See Note 1)		lbs
2% Propellant Mass Margin (See Note 2)		lbs
Instrumentation Margin	75	lbs
Total Mass		lbs

Note 1: Payload Adapter (PLA) Mass is the mass of the PLA hardware including all associated harnesses, the separation system and attached hardware required for flight.

Note 2: 2% Propellant Mass Margin is 2% of the proposed launch vehicle system performance capability to the reference orbit in Table 6-1 with ODMSP compliance.

**6.1.2.2** The Offeror shall provide the planned GPS III Mission Profile including upper stage disposal approach (Orbital Debris Mitigation Standard Practices – ODMSP compliance is not waivable). The Offeror shall provide methodology and results demonstrating  $\geq 90\%$  probability of success for completing the planned upper stage disposal. The mission profile shall include the proposed launch site and significant sequence of events to include times with respect to liftoff. At a minimum, the sequence of events shall include the following mission profile events listed below (a-i).

- a) First stage engine start
- b) Solid rocket motor burnout and jettison sequence (if applicable)
- c) First stage engine cutoff and separation
- d) Payload fairing jettison
- e) Upper stage engine burn ignition(s), cutoff(s) and coast time(s)
- f) Upper stage and SV separation
- g) Initiation of upper stage Contamination and Collision Avoidance Maneuvers (CCAMs)
- h) Upper stage disposal initiation
- i) End of mission for upper stage, where end of mission is defined as the completion of passivation with no further planned maneuvers, or through upper stage impact after controlled reentry

Additionally, the Offeror shall provide osculating orbital parameters (as defined in Table 6-1 for the selected plane/date) of the SV at separation (including the effects of separation  $\Delta V$ ).

**6.1.2.3** The Offeror shall provide evidence for any portion of the GPS III mission profile that has been flight demonstrated (T-0 to disposal burn) by the proposed launch vehicle system. Examples of evidence could include a table of demonstrated burn durations vs.

planned burn durations; demonstrated coast durations vs. planned; re-entries achieved vs. planned; etc. The Offeror shall also identify on which flight the mission profile portion was demonstrated. The Offeror shall identify any portion of the mission profile that has not yet been flight demonstrated by proposed launch vehicle system. Undemonstrated portions of a mission profile may include, but are not specifically limited to:

- a) Total proposed mission duration from launch to End of Mission as defined in Section 6.1.2 [2(i)] is greater than 10 minutes longer than a previously flown mission
- b) Number of proposed upper stage engine relights is greater than previously flown
- c) Coast duration between upper stage engine relights is greater than 5 minutes from a previously flown mission
- d) Booster or upper stage throttle settings have not been previously flown
- e) Proposed CCAM or upper stage disposal solution have not been previously flown (per EELV System Performance Requirements Document [SPRD], Rev. A)
- f) Radiation environments not previously demonstrated

If any of the Offeror's previous flights do not demonstrate portions of the GPS III mission profile to include, but not limited to 3. a-f, then the Offeror shall provide a detailed engineering and risk analysis of the affected launch vehicle subsystems and components, and any risks or limiting factors associated with the design or configuration of the affected subsystems. The Offeror shall provide a mitigation approach that addresses the identified risks associated with the undemonstrated portion of the proposed mission profile.

**6.1.2.4** The Offeror shall provide the ground trace and instantaneous impact point trace through end of mission or through upper stage impact if conducting a controlled reentry, with identification of nominal jettisoned body impacts. The nominal jettisoned body impacts shall occur over water. Nominal jettisoned bodies include those planned under a controlled recovery operation. If the Offeror plans to de-orbit the upper stage, they shall provide the impact ellipse. The upper stage reentry location shall be in a broad ocean area. Casualty expectation value and supporting analysis including mission reliability and failure scenarios shall be provided.

**6.1.2.5** The Offeror shall provide historical data, from T-0 launch through upper stage disposal, on the final mission design trajectory predictions and flight data for mission profiles (including sequence of events and osculating SV orbital parameters at separation) and for vehicle acceleration comparison plots for the 4 most recent launches of a launch vehicle system similar to the proposed launch vehicle system, or as many as have been launched if fewer than 4 launches have taken place. Individual acceleration plots shall be provided for each burn of each stage. If historical flight data does not support predictions, the Offeror shall provide acceptable supporting rationale to explain differences.

### **6.1.3 SUBFACTOR 3: LAUNCH OPERATIONS CONCEPT OF OPERATIONS (CONOPS)**

The Offeror shall provide a Launch Operations CONOPS which includes the following elements:

- 6.1.3.1** A description of the proposed launch operations flow from the time the Government provides the SV to the Offeror as Government property for encapsulation through liftoff, to include any contingency procedures;
- 6.1.3.2** SV processing and encapsulation procedures which are oriented to the processing facility the United States Government (USG) has required the Offeror to use for an East coast launch;
- 6.1.3.3** An access provision report and technical drawings showing access platforms to the payload fairing access doors on the integrated LV/SV stack in accordance with the requirements defined in the MRA, paragraph XIV section E, G, and H; and
- 6.1.3.4** A description and diagrams of propellant-compatible interface plumbing and aspirator in accordance with the contingency offload requirements defined in the MRA, paragraph XIV section G, and H.

## **6.2 FACTOR 2: SCHEDULE**

### **6.2.1 SUBFACTOR 1: INTEGRATED MASTER SCHEDULE (IMS)**

The Offeror shall provide a Microsoft Project Integrated Master Schedule (IMS) and Schedule Risk Assessment (SRA) for the GPS III launch services proposed IAW the following:

- 6.2.1.1** The Offeror shall construct the GPS III IMS as follows:
  - 6.2.1.1.1** The IMS shall include the following elements at a minimum:
    - a) Discrete tasks consistent with all proposed work;
    - b) Task durations based on an approximation of required resources;
    - c) Relationships/dependencies that identify how predecessor and successor tasks and milestones are logically linked;
    - d) Milestones;
    - e) Total float/slack;
    - f) Task and milestone descriptions that clearly identify the scope and deliverable of the work being accomplished, including Level of Effort (LOE) tasks;
    - g) Identified Critical Path
    - h) Identified Near Critical Path
  - 6.2.1.1.2** The IMS shall be an integrated, logically driven network constructed at the lowest level of tasks that form the network to identify a valid critical path.
  - 6.2.1.1.3** The IMS shall identify the near Critical Path(s) based on tasks with “1-14 calendar days” of total slack.
  - 6.2.1.1.4** The IMS tasks shall have traceability to the Work Breakdown Structure (WBS) with a text field which maps the task to the WBS section (Appendix A). For every WBS section in the IMS, the level of detail shall be at least one level lower than the lowest WBS element to create an integrated network of tasks to support the full scope of work of the proposed GPS III launch services, GPS III Work Breakdown Structure.

- 6.2.1.1.5 The IMS task durations shall be supported by the resource-loading of workforce (labor) resources. The task durations shall be based on the Offeror's estimation of the personnel/skillsets required to accomplish the scope of each task. The resource sheet shall identify the specific workforce resources at the lowest level required to demonstrate credibility of the task duration with a description of the personnel/skillsets required for each task. The Offeror shall not assign resources to milestone events.
- 6.2.1.1.6 The Offeror shall support IMS task durations excluding Level of Effort (LOE) tasks, Schedule Visibility Tasks (SVTs) and milestones with at least one or more of the following: actual historical performance data; rationale/lessons learned; and statement of assumptions. The Offeror shall provide a summary of the historical performance data, rationale/lessons learned, and statements of assumptions used to determine all task durations. The Offeror shall provide actual data and basis of estimation (historical performance data, rationale/lessons learned and statements of assumptions) for all Critical Path and near Critical Path within the schedule narrative.
- 6.2.1.1.7 The Offeror shall identify all schedule margin within the IMS.
- 6.2.1.2** The IMS shall reflect the following activities sufficient to support the GPS III launch services as follows:
  - 6.2.1.2.1 The IMS shall reflect either a start date no earlier than 1QFY17 or the date needed to begin procurement of the longest lead hardware, and support an ILC of 15 Feb 2019.
  - 6.2.1.2.2 The IMS shall encompass all tasks required to accomplish the GPS III launch services proposed from contract award to contract completion, to include activities to accomplish the tasks in the PWS and CDRLs, in accordance with the WBS.
  - 6.2.1.2.3 The IMS shall identify all critical events to include but not limited to the following: LV production with identification of the longest lead hardware; testing at the component, subsystem, system, and integrated level; major reviews; encapsulation; transport; integrated testing; LV/SV mate; and, Initial Launch Capability (ILC).
  - 6.2.1.2.4 If applicable, the IMS shall include tasks sufficient to accomplish the non-recurring engineering work as described in paragraph 6.2.2.1 in support of the GPS III launch services, to include appropriate durations. Non-recurring engineering work closure plan tasks do not need to be resource loaded.
  - 6.2.1.2.5 The Offeror's proposal shall include the ILC of all forecasted launches during the timeframe of contract start to the GPS III ILC as part of the schedule narrative. The Offeror's proposal shall also provide a summary of critical milestone events (booster, upperstage, and fairing ship dates) for the Offeror's other launches during the timeframe of contract start to ILC for the GPS III launch services proposed as part of the schedule narrative.
- 6.2.1.3** Schedule Risk Assessment (SRA) – The Offeror shall perform a SRA of the GPS III launch services IMS to predict the probability of project completion to support the GPS III ILC in accordance with the sub-criteria below:
  - 6.2.1.3.1 The Offeror shall perform a 10,000-iteration Monte Carlo simulation-based SRA, and provide the results of the SRA in the Schedule Narrative.

- 6.2.1.3.2 The SRA results shall provide a cumulative probability distribution (S-curve) for ILC including specific completion dates for every 10<sup>th</sup> percentile from 10% - 90%.
- 6.2.1.3.3 The Offeror shall develop individual three-point estimates (best case, most likely, and worst case) for all tasks on the Critical Path, near Critical Path, non-recurring engineering work, and medium or high risk tasks captured in the Offeror's Risk Management Plan IAW paragraph 6.2.2.2 below. The Offeror shall provide fields within the Microsoft Project File listing the three-point estimates.
- 6.2.1.3.4 The three-point estimates shall be supported by the Offeror's actual historical performance data if the task has been previously performed. If the task has not been previously performed, the Offeror shall provide rationale to justify three-point estimates. The Offeror shall provide a summary within the schedule narrative to explain the use of historical performance data, rationale, lessons learned, and assumptions used to determine all three-point estimates.
- 6.2.1.4 DCMA 14 Point Schedule Assessment** – The Offeror shall construct the IMS IAW with the DCMA 14 Point Schedule Assessment guidelines as described in paragraphs 6.2.1.4.1-6.2.1.4.10 excluding Invalid Dates, Resources, Missed Tasks, and Baseline Execution Index. The Offeror shall provide justification for each component of the IMS that falls beyond the guideline thresholds. This analysis shall exclude Completed Tasks, Level of Effort (LOE) tasks, Summary Tasks, and Milestones.
- 6.2.1.4.1 Logic – The number of activities that are missing a predecessor, a successor or both should not exceed the threshold of 5% of the activities within the Offeror's IMS. Provide justification for each activity that is missing a predecessor/successor beyond the 5% threshold of all activities within the Offeror's IMS.
- 6.2.1.4.2 Leads – The number of activities with leads (negative lag) should not exceed the threshold of 0% of the activities within the IMS. Provide a field within the Microsoft Project File that contains a summary justification for each lead relationship used in the IMS.
- 6.2.1.4.3 Lags – The total number of activities with lags should not exceed the threshold of 5% of the activities within the Offeror's IMS. Provide a field within the Microsoft Project File that contains a summary justification for each lag relationship used in the IMS beyond the 5% threshold for all activities within the Offeror's IMS.
- 6.2.1.4.4 Relationship Types – The total number of activities with Finish to Start (FS) logic links should be at least 90%. Tasks with all other logic links [Start-to-Finish (SF); Start-to-Start (SS); and Finish-to-Finish (FF)] should be less than the threshold of 10% of total tasks within the IMS. Provide a field within the Microsoft Project File that contains a justification for each logic link other than (FS) relationships over the 10% threshold for all activities within the Offeror's IMS.
- 6.2.1.4.5 Hard Constraints – The number of activities with hard constraints [Must-Finish-On (MFO), Must-Start-On (MSO), Start-No-Later-Than (SNLT), & Finish-No-Later-Than (FNLT)] should not exceed the threshold of 5% of the activities within the Offeror's IMS. Provide a field within the Microsoft Project File that contains a justification for hard constraint used that falls beyond the 5% threshold for all activities within the Offeror's IMS. If soft constraints are needed other than As-Soon-As-Possible

(ASAP); [Start-No-Earlier-Than (SNET); and, Finish-No-Earlier-Than (FNET)] the Offeror shall provide a field within the Microsoft Project File that contains a summary justification of these constraints used in the IMS.

- 6.2.1.4.6 High float – The number of activities with a total float greater than two (2) months (44 working day) should not exceed the threshold of 5% of the activities within the Offeror’s IMS. Provide a field within the Microsoft Project File that contains a justification for each activity with a total float greater than 2 months that exceeds the 5% threshold of the activities within the Offeror’s IMS.
- 6.2.1.4.7 Negative Float – The number of activities with a total float of less than zero (0) days should not exceed the threshold of 0% of the activities within the Offeror’s IMS. Provide a field within the Microsoft Project File that contains a justification for each activity with a total float of less than 0 days within the Offeror’s IMS.
- 6.2.1.4.8 Long Duration – The number of activities with a duration greater than two (2) months (44 working days) should not exceed the threshold of 5% of the activities within the Offeror’s IMS. Provide a field within the Microsoft Project File that contains a justification for each activity with a duration greater than 2 months that exceeds the 5% threshold of the activities within the Offeror’s IMS.
- 6.2.1.4.9 Critical Path Test – When an activity’s duration on the critical path is intentionally slipped by “X” amount of days (assuming zero float), where “X” is equal to a gross increase in duration (i.e. 600 days), the critical path within the Offeror’s IMS should demonstrate a corresponding extension of “X” amount of days to the project completion date. If the project completion date is not delayed in direct proportion to the amount of intentional slip that is introduced into the critical path, then there is broken logic somewhere in the Offeror’s schedule network. The Offeror’s IMS should not contain broken logic (missing predecessors and/or successors).
- 6.2.1.4.10 Critical Path Length Index – The Critical Path Length Index (CPLI) is equal to the Critical Path Length (CPL) in days + the Total Float (TF) in days divided by the CPL in days. The ratio of the critical path length plus the total float to the critical path length within the Offeror’s IMS should = 1, with > 1 being favorable, and < 1 being unfavorable. Provide a field within the Microsoft Project File that contains a justification if the CPLI of the Offeror’s IMS is < 1.

## **6.2.2 SUBFACTOR 2: RISK MITIGATION PLANS**

- 6.2.2.1. The Offeror shall provide a schedule with task durations to complete all remaining open non-recurring engineering (NRE) work. All NRE tasks shall support closure of open items by L-12 months. The Offeror shall also identify NRE tasks on the critical path for this GPS III mission. The schedule shall include any applicable analysis, development, fabrication, and qualification testing.
- 6.2.2.2 The Offeror shall provide a risk mitigation plan for the launch system proposed to address any Government identified risks (Low-Medium, Medium, and High) to include risks identified by EELV Engineering Review Boards, EELV Flight Readiness Reviews, and other technical reviews. Risk ratings are defined by the Technical Issue

Resolution Process (TIRP). The Offeror shall identify any Low-Medium risks previously accepted by the Government via EELV Spaceflight Worthiness Certification in lieu of a risk mitigation plan. The risk mitigation plan shall support low risk rating as defined by the TIRP prior to ILC. Should an anomaly occur during RFP evaluation, the Government reserves the right to require a risk mitigation plan specifically for that anomaly.

## 7 VOLUME III – PRICE

### 7.1 FACTOR 3: PRICE

The Offeror shall fill in prices for Table 7-1 as instructed in paragraphs 7.1 through 7.4 below. The Offeror shall not include price information in any other portion of the proposal, except the Price Volume or Model Contract. When completing Table 7-1, the Offeror shall fill in the same prices as those proposed in the model contract for CLINs 0001, 0002, and 0003.

**Table 7-1**

CLIN	DESCRIPTION	PRICE
0001	LAUNCH VEHICLE PRODUCTION	
0002	MISSION INTEGRATION/LAUNCH OPS/ SPACEFLIGHT WORTHINESS CERTIFICATION	
0003	MISSION UNIQUE	
	QUICK REACTION/ANOMALY RESOLUTION (SMC/LE--H005) _____ (FIXED PRICE RATE) * 10,000 HOURS	
	RENTAL EQUIVALENCY OF GOVERNMENT PROPERTY	
<b>TOTAL EVALUATED PRICE</b>		

### 7.2 QUICK REACTION/ANOMALY RESOLUTION

For Quick Reaction/Anomaly Resolution, the Offeror shall provide a wrap rate within SMC/LR-H005 of the model contract. The same rate shall then be filled in on Table 7-1, and multiplied by 10,000 hours for the total Quick Reaction / Anomaly Resolution Price. The contractor shall provide the rate for Quick Reaction/Anomaly Resolution in calendar years.

### 7.3 GOVERNMENT PROPERTY (GP)

#### 7.3.1 GP IN TOTAL EVALUATED PRICE

If the Offeror requires the use of GP, the Offeror shall complete Table 7-2 in Microsoft Excel format using the acquisition cost information from Attachment 8 and the rental equivalency method described in FAR 52.245-9(e)(2) as laid out below:

- In Column (A), identify the requested GP
- In Column (B), identify the acquisition cost from Attachment 8 and list the dollar value

- In Column (C), multiply column (B) by 2% (round to the nearest dollar) to determine the monthly acquisition cost of the item and list the dollar value
- In Column (D), divide column (C) by 720 to determine the hourly rental rate (round to the nearest cents) and list the dollar value
- In Column (E), propose the rental time required (round to the nearest whole hour) and list the value; “rental time” is defined in 52.245-9(a)
- In Column (F), multiply column (D) by (E) (round to the nearest dollar) to determine the total rental charge for the requested item and list the dollar value
- Add the sum of Rental Charges in Column (F) and add the resulting dollar value to the Total Evaluated Price (TEP)

**Table 7-2: Rental Equivalency for Government Property Use**

(A) Item Requested	(B) Acq Cost (\$)	(C) Monthly Acq Cost (Multiply B *2%) (\$)	(D) Hourly Rental Rate (Divide C by 720) (\$)	(E) Rental Time	(F) Rental Charge (Multiply D*E) (\$)
Item A	\$100,000	\$2,000	\$2.78	400	\$1,112
Item B	\$77,777	\$1,556	\$2.16	250	\$540
<b>Sum of Rental Charges for All GP Items: (Insert Sum into the Total Evaluated Price)</b>					<b>\$1,652</b>

*\* Notional cost figures are included in the table as examples only*

#### **7.4 ROUNDING**

All dollar amounts provided shall be rounded to the nearest dollar. All labor rates shall be rounded to the nearest dollar.

## **8 VOLUME IV – MODEL CONTRACT**

### **8.1 GENERAL INSTRUCTIONS**

The purpose of this volume is to provide information to the Government for preparing the contract document and supporting file. The Offeror’s proposal shall include one (1) signed and dated copy of the Standard Form (SF) 1449, delivered with the SF1449 Continuation pages, the Addendum, the Contract Documents, and Exhibits and Attachments. The original should be clearly marked and should be provided without any punched holes. The SF1449 shall not have any proprietary markings. Fill in all blanks in the Solicitation. Specifically, complete the following:

## **8.2 SF1449 SOLICITATION/CONTRACT FORM**

The Offeror shall complete blocks 12, 17, and 30 on the Standard Form (SF) 1449 – Solicitation/Contract/Order for Commercial Items. The Offeror shall use the SF 1449 Continuation in place of completing blocks 19, 20, 21, 22, and 23. The signature by the Offeror on the SF1449 constitutes an offer, which the Government may accept. The “original” copy shall be clearly marked under separate cover and shall be provided without any punched holes.

## **8.3 SF1449 CONTINUATION SUPPLIES OR SERVICES AND COSTS/PRICES:**

The Offeror shall provide prices on all CLINs except for CLINs 9001-9003, which are not separately priced.

## **8.4 ADDENDUM**

For SMC/LR -- H005 QUICK REACTION AND ANOMALY RESOLUTION, the Offeror must propose a fixed price composite hourly rate.

## **8.5 CONTRACT DOCUMENTS, EXHIBITS AND ATTACHMENTS**

### **8.5.1 ATTACHMENT 3: SMALL BUSINESS PLAN**

The Offeror shall provide a small business plan in accordance with FAR 52.219-9 and AFFARS 5319.704, which must include an established goal for small business with a minimum participating level of 4% of the total contract value. This plan will become an attachment to the contract.

### **8.5.2 ATTACHMENT 8: GOVERNMENT PROPERTY**

If the Offeror requires the use of GP, the Offeror shall complete and submit Attachment 8, Government Property, in accordance with procedures and definitions detailed in DFARS 245.103-72 and 245.201-70. For more information, see the Department of Defense (DoD) Procurement Toolbox at <http://www.dodprocurementtoolbox.org/site/detail/id/26>. Failure to complete each applicable data field in Attachment 8 may render the Offeror non-responsive and unawardable. For each item of GP requested, the “Use As Is” column shall be filled in as “true.”

For each item of GP requested, the Offeror shall provide a written authorization of availability from the cognizant Administrative Contracting Officer (ACO). GP proposed without an authorization from the cognizant ACO may render the Offeror non-responsive and unawardable. All supporting documentation associated with GP shall be submitted outside of the model contract but within Volume IV.

### **8.5.3 ATTACHMENT 9: PAYMENT PLAN**

The Offeror shall fill in the dollar amount associated with each payment milestone in Table 1 of Attachment 9, Payment Plan. This plan will become an attachment to the contract. In accordance with FAR 32.204 alternative financing terms shall not be accepted.

### **8.5.4 POTENTIAL ORGANIZATIONAL CONFLICT OF INTEREST (OCI)**

1) In accordance with FAR 9.5, Organizational and Consultant Conflicts of Interest, the Contracting Officer has analyzed the planned acquisition and determined that no known actual

or potential OCI situations exist with respect to this solicitation.

- 2) The Offeror shall perform its own OCI analysis and submit the results of that analysis as part of its proposal. Specifically, the Offeror shall analyze the planned acquisition for actual or potential OCI situations associated with its or any of its teammate's or subcontractor's performance under any contract it or any of its teammates or subcontractors has been or may be awarded by any federal agency or other entity. The Offeror shall describe in detail the methodology used to identify actual or potential OCI issues. If the Offeror identifies any actual or potential OCIs with respect to the performance of itself or its subcontractors or teammates, the Offeror shall provide an OCI Mitigation Plan to be incorporated as Attachment 10 to any resulting contract. At a minimum, the plan shall address all of the items identified in the most current version of SMC's OCI Mitigation Plan Checklist provided in the Bidder's Library. Any proposed avoidance or mitigation techniques shall be consistent with FAR 9.5 and the most recent decisions of the Government Accountability Office and the U.S. Court of Federal Claims.
- 3) If award is made to the Offeror, the resulting contract may include an organizational conflict of interest limitation applicable to subsequent Government work, at either a prime contract level, at any subcontract tier, or both. During evaluation of proposals, the Government may, after interactions with the Offeror and consideration of ways to mitigate or avoid identified actual or potential conflicts of interest, insert a clause or term and condition in the resulting contract which disqualifies the Offeror from further consideration for award of future contracts.
- 4) Resolution of OCI issues are treated in a manner similar to the Contracting Officer's contractor responsibility determination. Any communications necessary to resolve OCI issues shall not be considered discussions. As such, the Contracting Officer may issue Evaluation Notices to the Offeror prior to any decision to enter into discussions in order to resolve questions or concerns with the Offeror's OCI analysis or mitigation plan.

## **8.6 SOLICITATION PROVISIONS**

All representations and certifications must be completed in accordance with FAR 52.212-3, Offeror Representations and Certifications- Commercial Items.

## **8.7 SIGNATURE**

The Offeror's signature on the SF 1449 constitutes an offer, which the Government may or may not accept. Proposals without signatures may warrant a rejection of the proposal submittal. Offerors are required to meet all solicitation requirements, including terms and conditions, representations and certifications, and technical requirements. Therefore, any tailoring to the solicitation is not allowed and may warrant a rejection of the proposal.

## APPENDIX A: Work Breakdown Structure

1.0	Launch Vehicle System (GPS III)
1.1	Mission Integration
1.1.1	Mission Standard Integration
1.1.2	Mission Unique Integration
1.2	Mission Assurance
1.3	Supplier Readiness
1.4	Mission Unique Development/Design
1.5	System Engineering, Integration, Test, Program Management
1.5.1	Program Management
1.5.2	System Engineering
1.5.3	Factory Support
1.5.4	Special Studies
1.6	Transportation
1.7	Launch Operations
1.7.1	Launch Support
1.7.1.1	Launch Crew (mate, checkout, launch)
1.7.1.2	P/L Encapsulation
1.7.2	Launch Operations SEPM
1.7.2.1	Launch Operations Program Management
1.7.2.2	Launch Operations System Engineering
1.7.3	Site Maintenance
1.7.3.1	Sustainment Propellants
1.7.3.2	Other Maintenance
1.7.4	Base Support
1.7.5	Range Operations Services
1.7.6	Propellants (Vehicle)

1.8	Launch Vehicle
1.8.1	Propulsion
1.8.1.1	Booster Engine
1.8.1.2	Upper Stage Engine
1.8.1.3	Solid Rocket Motors
1.8.2	Payload Accommodations
1.8.2.1	Payload Fairing
1.8.2.2	Payload Attach Fitting (Adapter)
1.8.2.3	Mission Unique Hardware
1.8.3	Core Vehicle
1.8.3.1	Booster Structure
1.8.3.2	Intertank Adapter & Skirts
1.8.3.3	Aft Transition Structure
1.8.3.4	Heat Shield
1.8.4	Upper Stage
1.8.4.1	Upper Stage Structure
1.8.4.2	Interstage Adapters, Stub Adapters, Forward Adapters
1.8.5	Mission Assurance Instrumentation
1.8.6	Guidance and Control (Avionics)
1.8.7	Integration, Assembly, Test & Checkout (IAT&C)
1.9	Training
1.10	Other