

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE 01	PAGE OF PAGES 1 6
2. AMENDMENT/MODIFICATION NO. 003	3. EFFECTIVE DATE July 2, 2007	4. REQUISITION/PURCHASE REQ. NO. 42000190940	5. PROJECT NO. (If applicable)
6. ISSUED BY CODE		7. ADMINISTERED BY (If other than Item 6) CODE	PS40
Office of Procurement, PS40 George C. Marshall Space Flight Center National Aeronautics and Space Administration Marshall Space Flight Center, AL 35812			

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and Zip Code)	<input checked="" type="checkbox"/> (a)	9A. AMENDMENT OF SOLICITATION NO. NNM07190940R
	<input type="checkbox"/> (b)	9B. DATED (SEE ITEM 11) June 6, 2007
	<input type="checkbox"/> (c)	10A. MODIFICATION OF CONTRACT/ORDER NO.
	<input type="checkbox"/> (d)	10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE	

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 telegram 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 telegram or letter, provided each telegram or letter 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 NO. AS DESCRIBED IN ITEM 14.

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, 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 (Organize by UCF section headings, including solicitation/contract subject matter where feasible.)

See attached pages. Note that the due date for proposals has not changed.

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)	
		Emil L. Posey Contracting Officer	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA Original signed by BY <u>Emil L. Posey</u> (Signature of Contracting Officer)	16C. DATE SIGNED July 2, 2007
(Signature of person authorized to sign)			

NSN 7540-01-152-8070

PREVIOUS EDITION UNUSABLE

30-105

STANDARD FORM 30 (Rev. 10-83)

Prescribed by GSA
FAR (48 CFR) 53.243

The purpose of this amendment is to make revisions as listed below, to provide replacement pages to be incorporated into the RFP, and to provide a comprehensive list of questions and answers in Attachment 1. Offerors shall include the replacement pages in their proposal as appropriate. Change-bars have been used to indicate areas that have been revised. All due dates for proposal submittals remain unchanged from the original RFP.

1. The model contract has been amended to incorporate the following changes:
 - a. Page B-4, Clause B.7, deleted Award Fee Availability Schedule row 13.
 - b. Section I revisions incorporates updated property clauses as follows:
 1. Page I-4, Clause 52.245-1 revised from "Property Records" to "Government Property" and a date change of June 2007.
 2. Page I -4, Clause 52.245-5 was deleted in its entirety.
 3. Page I-4, Clause 52.245-9 was updated to June 2007.
 4. Page I-4, Clause 52.245-18 was deleted in its entirety.
 5. Page I-32, Clause I.22 Government Property Installation Operations Services (52.245-2) (June 2007) was added.
2. Section J-1 has been amended to incorporate the following changes:
 - a. Page J-1-18, Section 4.6.2 a. deleted reference to MIL-STD-1388 and replaced with USO-CLV-LS-25401.
 - b. Page J-1-21, Section 5.1, has been amended to incorporate a new paragraph n., and shifts the original paragraph n. to o.
 - c. Page J-1-27, Section 5.2.2 a. deleted CxP 70065 Constellation Software Management Policies and Planning Document.
 - d. Page J-1-29, Section 5.4.e. was amended to state "Rehabilitations Act of 1973" and deleted "American Disabilities Act."
 - e. Page J-1-30, Section 5.4.2 b. deleted CxP 70065 Constellation Software Management Policies and Planning Document.

- f. Attachment J-1.1 is replaced in its entirety incorporating changes to the quantities within SIS – Operational Flight Instrumentation and name changes within the SIS – Motion Imagery System.
3. Section J-2 has been amended to incorporate the following changes:
 - a. Pages J-2-1 through J-2-3, dates have been revised to July 02, 2007.
 - b. Page J-2-13, DRD 1152LS-003 has been changed from “D” to “P” and modified the “other” field. In addition, DRD 1152MA-002 has added DCR and FRR.
 - c. Page J-2-58, Item 14. has been changed from “SOW paragraph 5.5” to “SOW paragraphs 5.2.1 and 5.5.1.”
 - d. Page J-2-77, added 3.1.3 to Item 14.
 - e. Page J-2-108 in items 15.2 and 15.3.b changed document number from “MSFC-STD-6016” to “NASA-STD-6016.”
 - f. Page J-2-118, added 5.2.1 to Item 14.
 - g. Page J-2-119, added 5.2.1 to Item 14.
 - h. Page J-2-138, Items 11 and 12 were revised to “Per Data Requirements Matrix.”
 - i. Page J-2-158, deleted 4.2 from Item 14.
 - j. Page J-2-159, added 4.2 to Item 14.
 - k. Page J-2-208, added 4.1 to Item 14.
 - l. Page J-2-214, changed from 5.5 to 5.5.1 in Item 14.
4. Section J-6 has been revised to incorporate the following changes:
 - a. Page J-6-5, added CxP 70065 Constellation Program Computing System Requirements.
 - b. Page J-6-10, deleted MIL-STD-1388, Logistics Support Analysis

5. Section J-16, pages J-16-1 and J-16-2, were revised to delete Year 7.
6. Section J-19, page J-19-2, revised the definition of Architecture and page J-19-11 revised the definition of Model.
7. Section L is revised to incorporate the following changes:
 - a. Pages L-16 through L-18 were revised to incorporate the revisions of Amendment 002 for Clause L.18 with change-bar notation and delete page 16a.
 - b. Page L-28, TA4 changed the DRD reference from “DRD 1152MP-004” to “DRD 1152MP-003.”
 - c. Pages L-30 and L-31 were revised to incorporate the revisions of Amendment 002 for SB1 Small Business (SB) Utilization with change-bar notation.
 - d. Page L-39, paragraph I, is revised to note “within the EPM” and add “The OPM shall be priced by the Offeror’s fiscal year.”
 - e. Pages L-47 through L-49 revised Table 8 to delete CY7.
 - f. Page L-54, paragraph 2, items a) and b) deleted the words “by SOW.”
 - g. Page L-56, paragraph 4, replaced the first two sentences.
 - h. Page L-57, added paragraph 7 “Article & Vehicle Summary.”
 - i. Page L-58 reflects no change in content; only allows for roll over from page L-57.
 - j. Page L-60 changed Clause numbering from “I.19” to “I.20.”
8. Attachment L-6, Pages L-6-2 through L-6-4 are revised in their entirety.
9. Attachment L-8, Page L-8-2 was revised to update the CEI titles.
10. The IU Avionics Project Summary Template has been amended to reflect the maximum values in Clause B.5.

11. The dates within the CLIN 3 Production Cost Template, ICT Tab, have been amended to accurately reflect the contract's period of performance.
12. The example labor category, "Professional", has been changed to "Technical" within the ILCT Tab of CLIN 1 DDT&E Cost Template and CLIN 3 Production Cost Template, to be aligned with the three categories (Administration, Technical, and Crafts).
13. References to major/minor subcontractors have been eliminated from the Article & Vehicle Summary (CLINs 1 & 3).
14. The WBS references in the ILCT and ICT Tabs have been corrected within CLIN 1 DDT&E Cost Template and CLIN 3 Production Cost Template.
15. The CLIN 5 Option Unit Cost Template has been modified from "Fee" to "NTE Fee Rate" and from "NTE Cost" to "Cost."
16. Section M, Pages M-8 and M-9 are revised to incorporate the revisions of Amendment 002 by reflecting change-bar notation and deleting page M-8a.

Based on the above the following pages are replaced and the replacement pages included as Attachment 1 to this amendment.

Page(s) Deleted	Page(s) Added
B-4	B-4
I-4	I-4
I-32	I-32
J-1-18	J-1-18
J-1-21	J-1-21
J-1-27	J-1-27
J-1-29 and J-1-30	J-1-29 and J-1-30
J-1.1-1 through J-1.1-5	J-1.1-1 through J-1.1-5
J-2-1 through J-2-3	J-2-1 through J-2-3
J-2-13	J-2-13
J-2-58	J-2-58
J-2-77	J-2-77
J-2-108	J-2-108
J-2-118 and J-2-119	J-2-118 and J-2-119
J-2-138	J-2-138
J-2-158 and J-2-159	J-2-158 and J-2-159

Page(s) Deleted	Page(s) Added
J-2-208	J-2-208
J-2-214	J-2-214
J-6-5	J-6-5
J-6-10	J-6-10
J-16-1 and J-16-2	J-16-1 and J-16-2
J-19-2	J-19-2
J-19-11	J-19-11
L-16 through L-18	L-16 through L-18
L-28	L-28
L-30 and L-31	L-30 and L-31
L-39	L-39
L-47 through L-49	L-47 through L-49
L-54	L-54
L-56	L-56
L-57 and L-58	L-57 and L-58
L-60	L-60
L-6-2, L-6-3, and L-6-4	L-6-2, L-6-3, and L-6-4
L-8-2	L-8-2
M-8, M-8a, and M9	M-8 and M-9

The following templates (Excel files) have been revised:

1. CLIN 1 DDT&E Cost Template
2. CLIN 3 Production Cost Template
3. CLIN 4 IDIQ (Production) Cost Template
4. CLIN 5 Option Unit Cost Template
5. IU Avionics Project Summary Template
6. Article & Vehicle Summary (CLINs 1 & 3)

RFP NNM07190940R Amendment 003

Replacement Pages

B.7 AWARD FEE AVAILABILITY SCHEDULE

a. The award fee available for each evaluation period for CLIN 1 and CLIN 2 is as follows:

Period or Milestone	Evaluation Period Schedule	Available Fee	Earned Fee
1.	12/1/07-5/31/08	\$*	\$
2.	6/1/08-11/30/08	\$*	\$
3.	12/1/08-5/31/09	\$*	\$
4.	6/1/09-11/30/09	\$*	\$
5.	12/1/09-5/31/10	\$*	\$
6.	6/1/10-11/30/10	\$*	\$
7.	12/1/10-5/31/11	\$*	\$
8.	6/1/11-11/30/11	\$*	\$
9.	12/1/11-5/31/12	\$*	\$
10.	6/1/12-11/30/12	\$*	\$
11.	12/1/12-5/31/13	\$*	\$
12.	6/1/13-11/30/13	\$*	\$

b. The end item award fee available for each evaluation period for CLIN 3 and CLIN 4 is as follows:

Period or Milestone	Evaluation Period Schedule	Available Fee	Interim Award Fee
1.	March 2014	\$*	\$
2.	September 2014	\$*	\$
3.	March 2015	\$*	\$
4.	September 2015	\$*	\$
5.	March 2016	\$*	\$

		Total Available Fee	Earned Award Fee
6. Final	March 2014 - September 2016	\$*	\$

*To be completed by the Contractor and submitted with proposal. Offerors are cautioned that the fee distribution shall be consistent with the level of effort for each period.

Note: The End Item Award Fee table above will be modified as the options per Attachment J-5 are exercised.

(End of Clause)

RFP NNM07190940R

Amendment 3

52.242-4	Certification of Final Indirect Costs	JAN 1997
52.242-13	Bankruptcy	JUL 1995
52.243-6	Change Order Accounting	APR 1984
52.243-7	Notification of Changes (Insert "7" in paragraph (b) and "15" in paragraph (d))	APR 1984
52.244-2	Subcontracts (Fill-ins at paragraphs (e) and (k) to be completed prior to contract award) (Alternate I) (JAN 2006)	AUG 1998
52.244-5	Competition in Subcontracting	DEC 1996
52.244-6	Subcontracts for Commercial Items	MAR 2007
52.245-1	Property Records	JUN 2007
52.245-5	Government Property (Cost- Reimbursement, Time-And-Material or Labor-Hour Contracts)	JUN 2007
52.245-9	Use and Charges	JUN 2007
52.246-23	Limitation of Liability	FEB 1997
52.246-24	Limitation of Liability-High-Value Items (Alternate I)	FEB 1997 APR 1984
52.247-1	Commercial Bill Of Lading Notations	FEB 2006
52.247-63	Preference for U.S.-Flag Air Carriers	JUN 2003
52.248-1	Value Engineering	FEB 2000
52.249-6	Termination (Cost-Reimbursement)	MAY 2004
52.249-14	Excusable Delays	APR 1984
52.251-1	Government Supply Sources	APR 1984
52.253-1	Computer Generated Forms	JAN 1991

(End of Clause)

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
1852.203-70	Display of Inspector General Hotline Posters	JUN 2001
1852.216-89	Assignment and Release Forms	JUL 1997
1852.219-74	Use of Rural Area Small Businesses	SEP 1990
1852.219-75	Small Business Subcontracting Reporting	MAY 1999
1852.223-74	Drug and Alcohol-Free Workforce	MAR 1996
1852.227-14	Rights in Data--General **Modifies FAR Clause**	OCT 1995
1852.235-70	Center for Aerospace Information	FEB 2003

(End of Clause)

the new amount allotted to the contract. Until this modification is made, the Contractor shall not be obligated to continue performance or incur costs beyond the point established in the Limitation of Cost or Limitation of Funds clause of this contract.

(End of Clause)

I.22 Government Property Installation Operation Services (52.245-2) (Jun 2007)

(a) This Government Property listed in paragraph (e) of this clause is furnished to the Contractor in an "as-is, where is" condition. The Government makes no warranty regarding the suitability for use of the Government property specified in this contract. The Contractor shall be afforded the opportunity to inspect the Government property as specified in the solicitation.

(b) The Government bears no responsibility for repair or replacement of any lost, damaged or destroyed Government property. If any or all of the Government property is lost, damaged or destroyed or becomes no longer usable, the Contractor shall be responsible for replacement of the property at Contractor expense. The Contractor shall have title to all replacement property and shall continue to be responsible for contract performance.

(c) Unless the Contracting Officer determines otherwise, the Government abandons all rights and title to unserviceable and scrap property resulting from contract performance. Upon notification to the Contracting Officer, the Contractor shall remove such property from the Government premises and dispose of it at Contractor expense.

(d) Except as provided in this clause, Government property furnished under this contract shall be governed by the Government Property clause of this contract.

(e) Government property provided under this clause:

(End of clause)

[END OF SECTION]

The Contractor shall provide producibility engineering support to the LSI IPT as defined in SOW Section 4.1 and including the following:

- a. Support the development of an Integrated Logistics Support (ILS) System designed to meet the Ares I system support requirements, and minimize life cycle cost.
- b. Support the NDT in the identification of new / unique packaging, shipping, handling and transportation (PSH&T) stage-level equipment required for MAF, MSFC, KSC, and Stennis Space Center (SSC.)
- c. Support the NDT in the development of requirements for NASA facilities for the assembly, and checkout of the integrated Instrument Unit.
- d. Support the identification and certification of new and unique Upper Stage GSE required for stage-level integrated activities at MAF, MSFC, KSC, and SSC.
- e. The Contractor shall provide Human Factors Engineering support through participation in the AIT.
- f. The Contractor shall perform Human Factors Engineering Analysis and design reporting in accordance with DRD 1152DE-008.

4.6.2 Logistics Infrastructure and Implementation

- a. Upon the successful completion of the transition of the responsibility for the logistics, the Contractor shall conduct logistics modeling, analysis, logistics engineering and data integration, Human Factors Engineering and management for all Contractor-provided hardware.
- b. The Contractor shall conduct an ILS analysis and Logistics Support Analysis (LSA) program in accordance with the Integrated Logistics Support Plan (ILSP) (USO-CLV-LS-25401). The LSA database shall be compliant with USO-CLV-LS-25401. The Contractor shall develop and maintain operations and maintenance manuals in accordance with 1152OP-002.
- c. Deliveries of Unit Testers, CEI simulator models, Software Development Units, Brassboards, and Engineering Development Units, per the quantities and milestones identified in Attachments J-1.1 and J-1.2, shall be delivered to the NDT, accompanied by an as-built drawing package, and a copy of the procedure or report certifying that the unit meets applicable requirements.
- d. For avionics hardware installed onto the Instrument Unit, the Contractor shall provide replacement or repair parts, and materials to support assembly and checkout through DD250 of the integrated Instrument Unit in accordance with the ILSP. These items are not spares, and shall be attributed to CLIN 1, CLIN 3, or CLIN 5. The

- e. The Contractor shall develop, maintain, and implement a Structural Assessment Plan in accordance with DRD 1152DE-009.
- f. The Contractor shall provide inputs to the US Structural Dynamics Analysis Loads and Vibroacoustics in accordance with DRD 1152DE-007.
- g. The Contractor shall develop, maintain, and implement a Fracture Control Plan in accordance DRD 1152DE-005.
- h. The Contractor shall provide inputs to the NDT's US Manufacturing and Assembly (M&A) Plan (USO-CLV-MP-25500).
- i. The Contractor shall implement an Electrical, Electronics, and Electromechanical (EEE) parts control program to meet the requirements of CxP72053, EEE Parts Management and Control Plans for the CLV.
- j. If the Contractor or any subcontractors chooses to develop sub-tiered EEE Parts Control Plans these plans shall be developed in accordance with CxP72053 and DRD 1152DE-002.
- k. The Contractor shall be responsible for electrical integration of the Upper Stage Avionics Subsystem, generating cable harness assembly drawings, manufacturing, testing and installing of these harnesses within the IU. Harnesses manufactured by the Contractor for installation outside the IU will be installed by the USPC.
- l. For avionics hardware produced by the Contractor that will be installed by the USPC, including spares, the Contractor shall transfer the CEI hardware to NASA via DD250 with a complete Acceptance Data Package in accordance with DRD 1152CM-001. Following acceptance of the CEIs, NASA will then complete the transfer to the USPC.
- m. The Contractor shall support operations of the System Integration Test Facility (SITF), per SOW Section 5.5, in support of certification of the avionics system design.
- n. The Contractor shall meet the requirements CxP 70065, Constellation Program Computing System Requirements.
- o. The Contractor shall support of the Umbilical Plates Subsystem, Main Propulsion System, First Stage Roll Control System, Upper Stage Reaction Control System, and the Structures and Thermal Subsystem via the support to the Avionics and Software IPT and the AIT thru:
 - 1. Supporting the NDT in the definition and specification of electrical and electronic Source Controlled Items (SCIs), such as embedded instrumentation and electrical wiring, contained within these other subsystems. The acquisition, test, and installation of these SCI will be the responsibility of the USPC.

5.2.2 Embedded Software (Firmware)

a. The Contractor shall develop and maintain software and firmware in accordance with NPR 7150.2, NASA Software Engineering Requirements for the appropriate software classes; NASA-STD-8739.8, and NASA Software Assurance Standard (chapters 6 and 7).

b. The Contractor shall plan the software development and integration effort, including a description of the software development organization and its interaction with other program organizations. The Contractor shall produce, maintain, and follow a Software Development Plan in accordance with DRD 1152SW-002, to describe the software development process, software development lifecycle model, development environment, software re-use plan, products, standards, policies, schedules, milestone reviews, dependencies and agreements with interface groups (e.g., hardware, algorithms, test beds), peer reviews, manpower, margins, metrics, quality assurance, configuration management and definition of software technical, cost, and schedule risks.

c. The Contractor shall plan the software development effort to qualify the reuse of existing software, modify existing software, and develop new software and provide supporting rationale or justification for its final selections.

d. The Contractor shall provide information and access to products under development to provide the government with insight into software development and test activities, including monitoring integration and Verification adequacy, auditing the software development process and participation in each software and system reviews. The Contractor shall support the implementation of the overall risk management process as well as program status and progress reviews for the software development process. The Contractor shall support software Technical Interchange Meetings and other status meetings

e. The Contractor shall coordinate with the NDT to establish a plan for the participation of the NASA IV&V Facility in accordance with NPD 2820.1, NASA Software Policy.

f. The Contractor shall develop and maintain all software and software development tools under configuration management in accordance with DRD 1152SW-004. The Contractor shall implement software Configuration Management (CM) providing the following: (1) configuration identification, (2) configuration control, (3) configuration status accounting, and (4) configuration audits and reviews.

g. The Contractor shall perform software problem reporting, corrective action, re-evaluation, and re-work.

h. The Contractor shall perform software requirements analysis based on flowed-down and derived requirements from the top-level systems engineering

c. Support the NDT for resolution of any US specific integration, Verification, analysis, and/or testing issues.

5.4 Electrical Ground Support Equipment (136905.08.05.08.09)

a. The Contractor shall be responsible for the implementation of technical, operational, and certification requirements of the EGSE for the IU, Core Stage, Interstage, and integrated US, including the J2-X engine.

b. The Contractor shall support technical reviews and meetings as required, including the Logistics IPT's US GSE Component Development Team (CDT) and Logistics Support Infrastructure (LSI) team activities.

c. The Contractor shall produce the EGSE System Test Plan in accordance with 1152VR-008.

d. The Contractor shall perform the procurement, fabrication, test, acceptance, and delivery of manufactured EGSE in response to USO-CLV-DE-25135, "Upper Stage EGSE Subsystem Requirements Document" and NDT approved specifications developed in Sections 5.4.1 and 5.4.2.

e. EGSE IT hardware and software shall comply with Subpart B: standard 1194.26 of the Rehabilitation Act of 1973, Section 508 (as amended 1998.)

5.4.1 EGSE Hardware

a. The Contractor shall develop hardware specifications, in accordance with DRD 1152SE-002, in response to the requirements of USO-CLV-DE-25135, "Upper Stage EGSE Subsystem Requirements Document." These specification shall include:

1. Power Control Rack Specification
2. Upper Stage Checkout Computer System Specification
3. Electrical Simulators Specification
4. RF/Communication Test Set Specification
5. Integration Rack Specification
6. EGSE Cable Harness Specification

b. The Contractor shall produce, at a minimum, the following engineering drawings for the EGSE, per the requirements of USO-CLV-DE-25135:

1. EGSE Advanced Electrical System Schematic
2. EGSE Cable Interconnect Diagram
3. EGSE Grounding Schematic

c. The Contractor shall provide documentation associated with the EGSE hardware in accordance with DRDs 1152SE-002 and 1152CM-006. This shall include engineering design drawings and specifications for non-commercial items, procurement specifications for procured items or systems, and documentation required to support certification of all EGSE items delivered to the Upper Stage project.

d. The Contractor shall deliver US EGSE to support the flight manifest in accordance with Attachment J-1.1

e. The deliverable US EGSE shall include, but not be limited to the following:

1. Power Control Rack
2. Upper Stage Checkout Computer
3. Electrical Simulators
4. RF/Communication Test Set
5. Integration Rack
6. EGSE code & executables
7. EGSE Cable Harnesses and Ancillary Supporting Equipment

5.4.2 EGSE Software

a. The Contractor shall perform the design, code, Verification, Validation, and delivery of all EGSE code and executables in response to USO-CLV-DE-25135, "Upper Stage EGSE Subsystem Requirements Document."

b. The Contractor shall develop and maintain software and firmware in accordance with NPR 7150.2, NASA Software Engineering Requirements for the appropriate software classes; and NASA-STD-8739.8, NASA Software Assurance Standard (chapters 6 and 7).

c. The Contractor shall plan the software development effort to qualify the reuse of existing software, modify existing software, and develop new software and provide supporting rationale or justification for its final selections.

d. The Contractor shall coordinate with the NDT to establish a plan for the participation of the NASA IV&V Facility in accordance with NPD 2820.1, NASA Software Policy.

e. The Contractor shall perform software problem reporting, corrective action, re-evaluation, and re-work.

f. The Contractor shall provide EGSE software documentation in accordance with the following DRDs:

Attachment J-1.1

Deliverable Avionics and EGSE Quantities

Components	Specification	Other Deliverables - CLIN 1			Engineering Development Units - CLIN 1							Flight Qualified Units			
		CEI Simulator Models	SW Dev Unit	Brass-boards for SDF	SIL	SDF	Ares Simulator @ JSC	SITF	MPTA	Facility EU Replacements	Qualification Units - CLIN 1	Each Flight Test Ship Set - CLIN 1	Each Operational Flight Ship Set - CLIN 3	Each Optional Flight Ship Set - CLIN 5	
Upper Stage C&DH															
Flight Computer (FC)	USO-CLV-DE-25114	Yes	1	5	4	5	4	4	1	2	1	4	4	4	
Command & Telemetry Computer (CTC)	USO-CLV-DE-25115	Yes	1	3	2	3	2	2	1	2	1	2	2	2	
Data Acquisition and Control Unit (DACU)	USO-CLV-DE-25116	Yes	0	0	4	0	0	4	4	2	1	4	4	4	
Data Bus Isolation Amplifier (DBIA)	USO-CLV-DE-25137	Yes	0	0	5	0	0	5	0	2	1	6	6	6	
Data Bus Isolation Amplifier (DBIA)	USO-CLV-DE-25138	Yes	0	0	3	0	0	3	0	2	1	2	2	2	
GN&C and Control Electronics															
Inertial Measurement Unit (IMU)	USO-CLV-DE-25117	Yes	0	0	4	0	0	4	0	2	1	4	4	4	
Rate Gyro Assembly (RGA)	USO-CLV-DE-25120	Yes	0	0	8	0	0	4	0	2	1	8	8	8	

Components	Specification	Other Deliverables - CLIN 1			Engineering Development Units - CLIN 1							Flight Qualified Units			
		CEI Simulator Models	SW Dev Unit	Brass-boards for SDF	SIL	SDF	Ares Simulator @ JSC	SITF	MPTA	Facility EU Replacements	Qualification Units - CLIN 1	Each Flight Test Ship Set - CLIN 1	Each Operational Flight Ship Set - CLIN 3	Each Optional Flight Ship Set - CLIN 5	
Main Propulsion System Electronics (MPSE)	USO-CLV-DE-25121	Yes	0	0	4	0	0	4	1	2	1	4	4	4	
Upper Stage Reaction Control System Electronics (ReCSE)	USO-CLV-DE-25118	Yes	0	0	4	0	0	4	0	2	1	4	4	4	
First Stage Roll Control System Electronics (RoCSE)	USO-CLV-DE-25119	Yes	0	0	4	0	0	4	0	2	1	4	4	4	
Upper Stage RF															
S-band Transmitter	USO-CLV-DE-25122	No	0	0	2	0	0	2	0	2	1	2	2	2	
S Band Power Amp (50 W)	USO-CLV-DE-25125	No	0	0	4	0	0	4	0	2	1	4	4	4	
S Band Antennas (50 Watts)	USO-CLV-DE-25123	No	0	0	2	0	0	2	0	4	1	4	4	4	
S-band Hybrid (10 Watts)	USO-CLV-DE-25126	No	0	0	2	0	0	2	0	1	1	2	2	2	
S-band Bandreject Filter (Tx Filter = 50W)	USO-CLV-DE-25124	No	0	0	4	0	0	4	0	1	1	4	4	4	
Coax	USO-CLV-DE-25127	No	0	0	1	0	0	1	0	2	1	1	1	1	
Electrical Power System															
Battery Module Unit - IU	USO-CLV-DE-25131	No	0	0	2	0	0	2	0	2	1	2	2	2	
Battery Module Unit - Aft	USO-CLV-DE-25131	No	0	0	2	0	0	2	0	2	1	2	2	2	
Battery Module Unit - Interstage	USO-CLV-DE-25131	No	0	0	2	0	0	2	0	2	1	2	2	2	
Power Distribution Control Unit - IU	USO-CLV-DE-25132	No	0	0	2	0	0	2	0	2	1	2	2	2	
Power Distribution Control Unit - Aft	USO-CLV-DE-25132	No	0	0	2	0	0	2	0	2	1	2	2	2	

Components	Specification	Other Deliverables - CLIN 1			Engineering Development Units - CLIN 1							Flight Qualified Units			
		CEI Simulator Models	SW Dev Unit	Brass-boards for SDF	SIL	SDF	Ares Simulator @ JSC	SITF	MPTA	Facility EU Replacements	Qualification Units - CLIN 1	Each Flight Test Ship Set - CLIN 1	Each Operational Flight Ship Set - CLIN 3	Each Optional Flight Ship Set - CLIN 5	
Power Distribution Control Unit – Interstage	USO-CLV-DE-25132	No	0	0	2	0	0	2	0	2	1	2	2	2	
US Pump Inverter Unit	USO-CLV-DE-25133	No	0	0	2	0	0	2	0	2	1	2	2	2	
Primary Power cabling	USO-CLV-DE-25134	No	0	0	1	0	0	1	0	2	1	1	1	1	
FS Roll Control Cabling/Harness	USO-CLV-DE-25134	No	0	0	1	0	0	1	0	2	1	1	1	1	
Electrical Integration															
Upper Stage Electrical Integration	USO-CLV-DE-25134	No	0	0	1	0.8	0.5	1	1	1	1	1	1	1	
Sensors and Instrumentation (SIS)															
SIS – Operational Flight Instrumentation															
<i>Does not include instrumentation embedded within CEIs; Includes both instrumentation for IU (approximately 35%) & non-IU Upper Stage (approximately 65%)</i>															
Calorimeters	USO-CLV-DE-25157	Yes	0	0	2	0	0	2	2	2	1	2	2	2	
Pressure Transducer, 10 Hz	USO-CLV-DE-25151	Yes	0	0	58	0	0	58	58	5	1	58	58	58	
Liquid Level, (event, temp based)	USO-CLV-DE-25156	Yes	0	0	24	0	0	24	24	5	1	24	24	24	
Temperature Sensor	USO-CLV-DE-25158	Yes	0	0	324	0	0	324	324	15	1	324	324	324	
Flowmeter	USO-CLV-DE-25154	Yes	0	0	1	0	0	1	1	1	1	1	1	1	

Components	Specification	Other Deliverables - CLIN 1			Engineering Development Units - CLIN 1							Flight Qualified Units			
		CEI Simulator Models	SW Dev Unit	Brass-boards for SDF	SIL	SDF	Ares Simulator @ JSC	SITF	MPTA	Facility EU Replacements	Qualification Units - CLIN 1	Each Flight Test Ship Set - CLIN 1	Each Operational Flight Ship Set - CLIN 3	Each Optional Flight Ship Set - CLIN 5	
Rate (Angular)	USO-CLV-DE-25150	Yes	0	0	6	0	0	6	6	5	1	6	6	6	
Force (load Cell)	USO-CLV-DE-25153	Yes	0	0	4	0	0	4	4	2	1	4	4	4	
Speed Sensor	USO-CLV-DE-25161	Yes	0	0	8	0	0	8	8	2	1	8	8	8	
Displacement/Position	USO-CLV-DE-25160	Yes	0	0	10	0	0	10	10	5	1	10	10	10	
Liquid Level Sensor	USO-CLV-DE-25152	Yes	0	0	2	0	0	2	2	1	1	2	2	2	
Current Sensor	USO-CLV-DE-25155	Yes	0	0	23	0	0	23	23	5	1	23	23	23	
Accelerometer	USO-CLV-DE-25159	Yes	0	0	2	0	0	2	2	1	1	2	2	2	
SIS – Motion Imagery System															
High Speed Cameras	USO-CLV-DE-25128	No	0	0	4	0	0	2	0	2	2	2	2	2	
Standard Cameras	USO-CLV-DE-25129	No	0	0	12	0	0	6	3	6	2	4	4	4	
Standard Cameras (*Ship sets for Ares-2, Orion 3 /4/5/6 only)	USO-CLV-DE-25129	No	0	0	0	0	0	0	0	0	0	2**	2**	0	
Camera Controller	USO-CLV-DE-25130	No	0	0	4	0	0	2	1	1	1	2	2	2	
Interstage Lighting	USO-CLV-DE-25136	No	0	0	2	0	0	2	2	2	1	2	2	2	
Large Wide Field Camera Lens	USO-CLV-DE-25139	No	0	0	2	0	0	2	2	2	2	2	2	2	
Small Wide Field of View Camera Lens	USO-CLV-DE-25140	No	0	0	3	0	0	3	3	3	3	3	3	3	

Components	Specification	Other Deliverables - CLIN 1			Engineering Development Units - CLIN 1							Flight Qualified Units			
		CEI Simulator Models	SW Dev Unit	Brass-boards for SDF	SIL	SDF	Ares Simulator @ JSC	SITF	MPTA	Facility EU Replacements	Qualification Units - CLIN 1	Each Flight Test Ship Set - CLIN 1	Each Operational Flight Ship Set - CLIN 3	Each Optional Flight Ship Set - CLIN 5	
Medium Field Camera Lens	USO-CLV-DE-25141	No	0	0	3	0	0	3	3	3	3	3	3	3	

Table J-1.1a: Avionics Deliverables

Specification	CLIN - 1			CLIN - 3
	SIL Support	MPTA Support	Vehicle Support	Vehicle Support
EGSE				
Upper Stage Avionics EGSE	USO-CLV-DE-25135	2	1	3

Table J-1.1b: EGSE Deliverables

NNM07190940R

CONTRACT/RFP

EXHIBIT NUMBER

J-2

ATTACHMENT NUMBER

Instrument Unit Avionics Contract

PROJECT/SYSTEM

DATA PROCUREMENT DOCUMENT

Contractor

CONTRACTOR

July 2, 2007

DATE

National Aeronautics and Space Administration					DATA PROCUREMENT DOC.	
DOCUMENT CHANGE LOG					NO. ISSUE	
					1152 RFP	
INCORPORATED REVISIONS OUTSTANDING REVISIONS				AS OF: 07-02-07		SUPERSEDING:
						PAGE:
AUTHORITY	PORTION AFFECTED - PAGE NO./NO.				REMARKS	
	INTRO	SGR	DRL	DRD		

National Aeronautics and Space Administration			DATA PROCUREMENT DOC.		
PAGE REVISION LOG			NO.	ISSUE	
			1152	RFP	
NOTE: The current revision is denoted by a vertical line in the outer margin adjacent to the affected text.		AS OF: 07-02-07	SUPERSEDING:		PAGE:
INSERT LATEST REVISED PAGES.			DISCARD SUPERSEDED PAGES.		
ITEM	PAGE	STATUS	ITEM	PAGE	STATUS

RFP NNM07190940R
Amendment 3

DRD	Title	Data Type	OPR	Proposal	Contract Awarded ±30	Contract Awarded ±60	Contract Awarded ±90	PDR	CDR	DCR	AR	FRR	Other
1152DE-012	Structural Strength and Fatigue Analysis Report	2	EV31/EI13					X	X	X		X	Update as required
1152DE-013	Design Definition Document	2	JP30										As directed to support the Upper Stage Design Analysis Cycles
1152DE-014	Computer Hardware to Software Interface Document	2	EI30						F		U		Update as required
1152DE-015	Programmable Devices Design Documentation	3	EI31					X*					*Three weeks prior ; Three weeks prior to each major review; as part of an Acceptance Data Package; as requested
1152DE-016	As-Built EEE Parts List	3	EI42								X		At configuration inspection. Update as required
1152DE-017	Electronic Parts Application Analysis	3	EI42						X*				*Thirty days prior; One time, update as required
1152LS-001	Government Property Management Plan	2	AS41				P*						*Three months after; Final one year after Contract Award; Revise as required
1152LS-002	Integrated Supportability Plan	2	EV12		X								Update semi-annually and to be provided for formal reviews; deliveries at formal reviews each take place of one semi-annual delivery.
1152LS-003	Warehouse/Storage Requirements Plan	2	AS40				P						Semiannually for first year (annually thereafter). Update as new requirements are determined.
1152LS-004	Special Handling and Storage Requirements Documents	2	AS42				X	X*					Packaging, Handling, Storage and Transportation (PHS&T) Plan and update parts b, c, d, and e and detailed handling/moving procedures 30 days before each program critical hardware move. *Updated PHS&T Plan and parts 15.3b, c, d, e and f; updates as required
1152LS-005	Annual and Monthly Financial Reporting of NASA Property in the Custody of Contractors	3	AS41/RS22										Due Date for the annual submission of the NF 1018 from NESS is October 15 per NFS 1852.245-73. Due Dates for the monthly submittals from CHATS reporting contracts are the 21 st day after the close of the month, e.g. Augus21 for the month ending July 31. September for the month ending August 31.
1152MA-001	Project Management Plan	1	CS40		X								Update as required
1152MA-002	Cost Analysis Data Requirement (CADRe)	1	CS50				X*	X*	X*			X*	*90 prior to Key Decisions Points (PDR, CDR, DCR, FRR) The first submission shall contain a higher level of program and technical information than contained in the full CADRe. 180 days after launch and End of Mission
1152MA-003	Planning, Programming, , Budget, and Execution (PPBE))	2	JP30										Per Program/Project direction As required
1152MA-004	Integrated Master Schedule	2	CS40/JP30			X							Initial - first calendar month following the end of the first full month after Contract Award. Monthly
1152MA-005	Work Breakdown Structure (WBS) and WBS Dictionary	2	CS40/JP30		X								Update as required. Revised pages shall be submitted 10 calendar days after contract WBS changes (following Government approval)
1152MA-006	Continuous Risk Management	2	QD40										This DRD consist of multiple deliverable documents. See below for submission requirements for each document.
	Continuous Risk Management Plan	2	QD40		X								Update as required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152DE-010**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Test Reports
7. **DESCRIPTION/USE:** To report the results of the test activities.
8. **OPR:** JP30 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** DRD 1152VR-009, *Test Procedures*. SOW paragraphs 5.2.1 and 5.5.1.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Test Reports (i.e., procedure, memo, assessment, test reports, inspection reports) document the results of each test activity.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Test Reports shall contain the following:
 - a. Conclusions and recommendations relative to success of the development test activity.
 - b. Description of deviations from nominal results, failures, approved corrective actions and procedures, and retest.
 - c. Traceability back to the requirement.
 - d. Copy of as-run procedure (as appropriate).
 - e. Identification of test configuration.
 - f. Specific results of each procedure including automated test segments and associated analyses.
 - g. Performance data, plots, and pictures (as appropriate).
 - h. Identification of all software used during testing or data analysis.
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152MA-001**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Project Management Plan
7. **DESCRIPTION/USE:** To provide an overall description of the process and methods planned for accomplishing the Statement of Work.
8. **OPR:** CS40 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** SOW paragraph 3.1.2, and 3.1.3.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Project Management Plan provides the basic planning document which describes the contractor's overall plan for performing the contracted scope of work.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Project Management Plan shall provide a description of the contractor's management concepts, practices, approaches, plans, and schedules necessary for accomplishing (managing and controlling) the project tasks described in the Statement of Work. In addition, the plan shall present those management systems to be utilized to define and delegate task assignments and shall define the organizational relationships of the contractor, subcontractors, and the Government.
Management Overview - A brief description of the project objectives, the system to be furnished, and the equipment (systems), and software that is to be provided. Include a concise summary of the contractor's management organization responsible for performance of the contract, including interrelationships with the Work Breakdown Structure (WBS), within the company and with other contractors, and proposed relationships with the NASA project management.
Management Systems - This plan shall briefly describe how the various management systems are to be integrated and used for the overall project management and reporting of:
 - a. Project management.
 - b. Contract management.
 - c. Financial management.
 - d. Data requirements management.
 - e. Schedules (planning and control).
 - f. Performance management (cost/schedule/technical).
 - g. Configuration management.
 - h. Engineering management.
 - i. Logistics management.
 - j. Test/verification management.
 - k. Subcontractor/vendor management.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152MP-003**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Manufacturing and Assembly Plan
7. **DESCRIPTION/USE:** To establish a plan for manufacturing and assembly leading to electrical and mechanical integration and test of the Instrument Unit.
8. **OPR:** EM03 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** DRDs 1152CM-EDAL, *Engineering Drawings and Associated Lists*, 1152MP-CCP, *Contamination Control Plan (CCP)* and 1152MP-MPCP, *Materials and Processes Selection, Implementation, and Control Plan*. SOW paragraphs 4.5.4 and 5.12. USO-CLV-MP25500, *Upper Stage Manufacturing and Assembly Plan*.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Manufacturing and Assembly Plan is applicable to hardware developer(s), subcontractor(s), and vendor(s).
- 15.2 **APPLICABLE DOCUMENTS:**
NASA-STD-6016 *Standard, Materials and Processes Requirements for Spacecraft*
- 15.3 **CONTENTS:** The Manufacturing and Assembly Plan shall define the objective, methods and procedures to be used in the manufacture and assembly of the deliverable hardware. Specifically the plan shall contain:
 - a. Organization - A description of the manufacturing and assembly organizations and policies, as well as the organizational relationships between these and the other key organizations supporting the deliverable hardware manufacturing effort.
 - b. Systems and Controls - The systems and controls to be used by the fabrication and assembly organization for procurements, inspection and testing, nonconformance reporting, material control, configuration control, manufacturing and assembly documentation shall be defined and shall meet the intent of NASA-STD-6016.
 1. Procurements - Major components and assemblies to be procured rather than manufactured and/or assembled in-house, long lead time procurements, and risks associated with sole or proprietary sources shall be identified.
 2. Inspection and Test - Requirements for inspection and test stations, as well as procedures shall be provided for each control point in the manufacturing and assembly sequence.
 - c. Producibility Plan - The plan shall define the producibility analysis process to be used in the development of deliverable hardware. Flight hardware design documentation shall be reviewed to assure the ability to fabricate, inspect, and assemble hardware as depicted by the engineering design drawings.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152OP-002**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Operations and Maintenance Manuals
7. **DESCRIPTION/USE:** To provide operation and maintenance instructions for deliverable flight hardware and ground support equipment (GSE).
8. **OPR:** JP30 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** SOW paragraphs 4.6.2, 4.6.4 and 5.2.1
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Operations and Maintenance Manuals define operating and maintenance instructions for flight hardware and associated GSE, including detailed operating procedures and any preventive and corrective maintenance procedures which may be required effectively operate and maintain the system.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Operations and Maintenance Manuals shall contain:
 - a. Hardware description.
 - b. Detailed operation procedures for each item.
 - c. Periodic and preventive maintenance requirements and procedures.
 - d. Troubleshooting instructions and associated schematics.
 - e. Identification of required tool and equipment.
 - f. Storage, handling, and transportation constraints.
 - g. Identification of hazards and associated safety precautions.
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152QE-001**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Quality Plan
7. **DESCRIPTION/USE:** To define the contractor's planned methods for accomplishing the applicable tasks required to satisfy the quality requirements of NPD 8730.5, and the Quality Assurance requirements of CxP 70059, for the specific Flight and/or Flight associated hardware being procured.
8. **OPR:** QD10 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:** Reference is made to CxP 70055, *Constellation Safety, Reliability and Quality Assurance Plan*. See also MWI 5330.1
14. **INTERRELATIONSHIP:** SOW paragraph 4.5.4 and 5.1.2.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Quality Plan shall identify, as applicable, the specific quality activities (implementation) related to the design and development, procurement of materials/subcomponents, fabrication, test, shipping, flight operations, refurbishment, and reuse to assure the quality of the items delivered. The plan shall reference the contractor's quality manual and procedures as necessary to fully describe the contractor's quality system. The Quality Plan shall reflect that the Contractor shall support the NDT Quality Engineering activity. In addition, the Contractor's quality system shall assure that all processes are capable of delivering products that meet design specifications through the right mix of process design and integrated process controls including process characterization, such as Cp and Cpk best practices, process monitoring, process improvements and process sampling.
- 15.2 **APPLICABLE DOCUMENTS:**

ANSI/ISO/ASQ Q9001-2000	<i>American National Standard Quality Management Systems Requirements</i>
ISO/IEC 17025	<i>General Requirements for the Competence of Testing and Calibration Laboratories</i>
SAE AS9100	<i>Quality Systems Aerospace – Model for Quality Assurance in Design, Development, Production, Installation, and Servicing</i>
SAE AS9003	<i>Inspection and Test Quality System</i>
NPD 8730.5	<i>NASA Quality Assurance Program Policy</i>
CxP 70059	<i>Constellation Program Safety, Reliability and Quality Assurance Requirements</i>
- 15.3 **CONTENTS:** Each quality element of SAE AS9100, Revision B, and as applicable the NASA Quality Assurance requirements per CxP 70059, or as applicable either ANSI/ISO/ASQ Q9001-2000 or SAE AS9003, shall be addressed to describe the philosophy and approach for implementation. This can be satisfied by contractor's existing quality manual and procedures. A copy of the Quality System Manual and 1st tier procedures shall be submitted with any required quality plan.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152RM-005**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Probabilistic Risk Assessment Plan
7. **DESCRIPTION/USE:** To define and document the contractor's plan to fully implement and perform a Probabilistic Risk Assessment (PRA).
8. **OPR:** QD40 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** SOW paragraph 4.5.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Probabilistic Risk Assessment Plan defines the specific process to be used in carrying out the PRA to assess whether the system design (as currently defined in the program phase) meets Program Level I and Level II loss of crew, loss of mission, and any program determined performance risk requirements, per CxP 70017, Probabilistic Risk Assessment Methodology..
- 15.2 **APPLICABLE DOCUMENTS:**

NPR 8705.5	<i>Probabilistic Risk Assessment (PRA) Procedures for NASA Programs and Projects</i>
ASME RA-S-2002	<i>Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications</i>
CxP 70017	<i>Probabilistic Risk Assessment Methodology</i>
- 15.3 **CONTENTS:** The Probabilistic Risk Assessment Plan shall identify the process details to meet requirements of the applicable documents in 15.2 and include: ground rules and assumptions, mission(s) to be analyzed, values to be calculated, model/data sources, phases to be analyzed, PRA software to be used, and validation. The plan shall address the Contractor's method for performing PRA in accordance with NPR 8705.5. The method shall include a standard set of ground rules, assumptions, and limitations. The method shall clearly outline the scope of the PRA by providing a detailed description of the end states that shall be modeled. The plan shall define the level of PRA modeling detail to be accomplished during each program phase. The Plan shall cover the following items:
 - a. During conceptual development, PRA shall be used to model potential accident scenarios during a reference mission to determine the reliability and risk of each major design concept.
 - b. Success or failure of a mission shall be directly related to "end states" in the PRA analysis. Additional end states can be included in the analysis as desired by the program.
 - c. Comprehensive functional analysis shall be performed to identify all system functions necessary for the system to achieve its operational objectives for the reference missions in the specified mission environments. Functional analysis shall include functions that are to be performed by hardware, software, and people.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152SE-002**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Specifications
7. **DESCRIPTION/USE:** A technical document used to describe the functional and physical characteristics of a Component End Item (CEI) and how these characteristics are met.
8. **OPR:** QD02/EV62 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** SOW paragraphs 4.1, 5.2.1 and 5.4.1
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** Specifications provide the performance, design detail, and verification requirements for a CEI.
- 15.2 **APPLICABLE DOCUMENTS:**
MIL-STD-961 *Department of Defense Standard Practices for, Defense Specifications*
MSFC-STD-3394 *Standard for Contractor Configuration Management, MSFC Programs/Projects*
- 15.3 **CONTENTS:** The specifications shall be prepared in accordance with MIL-STD-961.
- 15.4 **FORMAT:** The format shall be in accordance with the instructions in MIL-STD-961.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by complete reissue. When a specification is placed under Government configuration control, proposed changes shall be submitted by Engineering Change Proposal (ECP) in accordance with MSFC-STD-3394.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152SE-003**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/4
6. **TITLE:** Interface Control Documents
7. **DESCRIPTION/USE:** To provide documentation in the form of drawings and/or written records to identify for each side of an interface those necessary design definitions between designing organizations to provide control of and assure an agreeable and compatible interface for Component End Items (CEIs).
8. **OPR:** EV62 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:** Attachment A to this DRD contains a sample Interface Control Document outline.
14. **INTERRELATIONSHIP:** ICD content is traceable to the requirements found in the system specifications (DRD 1152CM-002). SOW paragraph 4.1 and 4.2.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Interface Control Documents (ICD's) identify design definitions for each side of an interface that shall assure design control and compatibility.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** ICD's shall address all physical, functional, and procedural requirements necessary to describe the interfaces that must be met to ensure project, hardware, and software compatibility. These interfaces shall include the following:
 - a. Physical - Interfaces involving physical mating and spatial relationships between interconnecting parts of interfacing end items, including clearance envelopes established to avoid interferences and to permit access.
 - b. Functional - Interfaces involving the interaction or influence of conditions imposed by one subsystem or component upon another or by external sources such as fluids, thermal, electrical, environmental, data, and loads.
 - c. Procedural - Interfaces involving critical sequence of events occurring in assembly, disassembly, alignment, service operations, and computer programs.
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated as approved by Engineering Change Proposal (ECP).

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152VR-005**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Verification/Validation Procedures
7. **DESCRIPTION/USE:** To document and provide procedures for performing test, inspection, or demonstration verification/validation activities.
8. **OPR:** EV62 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:** Reference is made to MSFC-HDBK-2221, *Verification Handbook, Volume I: Verification Process*, and *Volume II: Verification Documentation Examples*. Volume II provides examples of verification documentation as specified in Volume I that can be used as a guide in the development of or in the assessment of similar documentation.
14. **INTERRELATIONSHIP:** DRDs 1152VR-001, *Verification/Validation Planning*, and 1152VR-004, *Verification/Validation Success Criteria*. SOW paragraphs 4.1 and 4.2
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Verification/Validation Procedures define the detail instructions to be followed in conducting the identified verification/validation activities (test, inspection, or demonstration).
 - 15.2 **APPLICABLE DOCUMENTS:** None
 - 15.3 **CONTENTS:** Each Verification/Validation Procedure shall contain the following:
 - a. Identification of item/article being subjected to test, inspection, or demonstration.
 - b. Identification of objectives established for the particular test, inspection, or demonstration.
 - c. Characteristics and criteria to be verified, including values, with tolerances, for acceptance or rejection and traceability back to the applicable verification success criteria.
 - d. Description of steps and operations, in sequence, to be taken.
 - e. Identification of measuring and recording equipment to be used, specifying range, accuracy, and type and any special instructions for operating such equipment.
 - f. Confirmation that required support equipment has been calibrated and certification of the calibration is still valid.
 - g. Identification that any support equipment has been verified prior to use with flight hardware.
 - h. Layouts, schematics, or diagrams showing identification, location, and interconnection of item/article, support equipment, and measuring equipment.
 - i. Identification of hazardous situations or operations.
 - j. Precautions and safety instructions to ensure safety of personnel and prevent degradation of verification article and supporting equipment.
 - k. Environmental and/or other conditions to be maintained with tolerances.
 - l. Constraints on test, inspection, or demonstration.
 - m. Instructions for handling non-conformances and anomalous occurrences during activity.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1152 **ISSUE:** RFP
2. **DRD NO.:** **1152VR-009**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Test Procedures
7. **DESCRIPTION/USE:** To provide documentation and procedures for performing component and subsystem tests and test series. A series is defined as a set of tests with a unique objective that take place at a specific facility with unique requirements.
8. **OPR:** ET01/JP30 9. **DM:** JP30
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Per Data Requirements Matrix
12. **SUBMISSION FREQUENCY:** Per Data Requirements Matrix
13. **REMARKS:**
14. **INTERRELATIONSHIP:** SOW paragraphs 5.2.1 and 5.5.1
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** Each Subsystem and Component Test Procedure will define the detail instructions to be followed in conducting the identified Test activities. Test Procedures will be established before start of testing to ensure Test Objectives can be obtained per the Test Plan.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Test Procedure shall be provided for each test or test series that is delegated by the NASA team to the contractor. Each Test Procedure shall include the following:
 - a. Criteria, objectives, assumptions, and constraints.
 - b. Test setup, including drawings and schematics.
 - c. Initialization requirements.
 - d. Input data.
 - e. Test instrumentation and instrumentation location.
 - f. Expected intermediate results.
 - g. Requirements for output data.
 - h. Minimum requirements for valid data to consider the test successful.
 - i. Pass-fail criteria for evaluating results.
 - j. Safety considerations and hazardous conditions.
 - k. Customer(s) for the test results.
 - l. Identification of item/article being subjected to test, inspection, or demonstration.
 - m. Characteristics and criteria to be verified, including values, with tolerances, for acceptance or rejection and traceability back to the applicable test success criteria.
 - n. Description of steps and operations, in sequence, to be taken.
 - o. Identification of measuring and recording equipment to be used, specifying range, accuracy, rate of data collection, and type and any special instructions for operating such equipment.

RFP NNM07190940R
Amendment 3

CxP 70059	Constellation Program Safety, Reliability and Quality Assurance Requirements
CxP 70065	Constellation Program Computing System Requirements
CxP 70068	Constellation Program Problem Reporting, Analysis and Corrective Action (PRACA) Methodology
CxP 70080	Electromagnetic Environmental Effects (E3) Requirements
CxP 70087	Constellation Reliability, Availability, and Manufacturing Plan
CxP 70092	C&T Networks Interface Requirements Document
CxP 70128	Software Assurance Plan
CxP 70133	Constellation Program Electrical, Electronic, and Electromechanical Parts Plan
CxP 70135	Constellation Program Structural Design and Verification Requirements
CxP 72015	Exploration Launch Vehicles Configuration Management Plan
CxP 72019	Exploration Launch Projects (ELP) Risk Management Plan
CxP 72020	Exploration Launch Projects System Safety, Reliability and Quality Assurance Plan
CxP 72032	Ares I Crew Launch Vehicle Operational Concepts Document
CxP 72034	CLV Systems Requirement Document (SRD)
CxP 72036	First Stage (FS) to Upper Stage (US) IRD
CxP 72038	USE to Upper Stage (US) IRD
CxP 72050	Mass Properties
CxP 72051	Crew Launch Vehicle Software Management Plan
CxP 72053	Constellation Program Electrical, Electronic and Electromechanical (EEE) Parts Management and Control Plan for the CLV
CxP 72068	Thermal Environments Data Book
CxP 72070	Integrated Vehicle Design Definition Document
CxP 72121	CLV Ground Support Equipment Requirements Document
CxP 72160	Range Safety Requirements for the Ares Launch Vehicle
Upper Stage Element Documents	
USO-CLV-DE-25106	Upper Stage Avionics Development Plan
USO-CLV-DE-25107	Ares I US Avionics and Software Subsystem Specifications
USO-CLV-DE-25114	Flight Computer (FC)
USO-CLV-DE-25115	Command & Telemetry Computer (CTC)
USO-CLV-DE-25116	Data Acquisition and Control Unit (DACU)

RFP NNM07190940R
Amendment 3

SE-S-0073	Fluid Procurement and Use Control, Space Shuttle
SN-C-0005	Contamination Control Requirements for the Space Shuttle Program
MIL Standards Documents	
AFSPCMAN 91-710	Range Safety User Requirements Manual
DoD 5000.2	Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs
FED-STD-313	Material Safety Data, Transportation Data, and Disposal Data For Hazardous Materials Furnished to Government Activities
MIL-C-22992	Connectors, Plugs and Receptacles, Electrical, Waterproof, Quick Disconnect, Heavy Duty Type, General Specification for
MIL-DTL-16878	Wire, Electrical, Insulated, General Specification for
MIL-DTL-38999	Connectors, Electrical, Circular, Miniature, High Density, Quick Disconnect (Bayonet, Threaded, and Breech Coupling), Environment Resistant, Removable Crimp and Hermetic Solder Contacts, General Specification for
MIL-DTL-5015	Connectors, Electrical, Circular Threaded, AN Type, General Specification for
MIL-I-6870	Inspection Program Requirements, Nondestructive for Aircraft and Missile Materials and Parts
MIL-PRF-49506	Logistics Management Information
MIL-STD-100	Engineering Drawings Practices
MIL-STD-1246	Count Method PRODUCT CLEANLINESS LEVELS AND CONTAMINATION CONTROL PROGRAM
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Department of Defense Standard Practice Identification Marking of U.S. Military Property
MIL-STD-1472B, 31 December 1974	Department of Defense Design Criteria Standard, Human Engineering
MIL-STD-1522	Standard General Requirements for Safe Design and Operation of Pressurized Missile and Space Systems
MIL-STD-1523	Age Controls of Age Sensitive Elastometric Materials
MIL-STD-1541	Electromagnetic Compatibility Requirements for Space Systems
MIL-STD-1553	Department of Defense, Interface Standard for Digital Time Division Command/Response Multiplex Data Bus
MIL-STD-1576	Electro Explosive Subsystem Safety Requirements and Test Methods for Space Systems

ATTACHMENT J-16

IDIQ MATRIX

**Contract Fully Burdened Hourly Labor Rate (Excluding Award Fee)
By Contract Year
CLIN 2**

Offeror shall propose three separate IDIQ Labor Rates assuming (1) MSFC/MAF on-site/Government-provided facilities, (2) off-site Huntsville, and (3) at the location of the Offeror's facilities.

<u>CONTRACT Not to Exceed Pricing RATES (MINUS FEE)</u>	Contract	Contract	Contract	Contract	Contract	Contract
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	11/30/07 - 11/29/08	11/30/08 - 11/29/09	11/30/09 - 11/29/10	11/30/10 - 11/29/11	11/30/11 - 11/29/12	11/30/12 - 11/29/13
NASA Standard Labor Category (SLC)						
Program Management	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Management	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Business	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Clerical	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Engineer 1	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Engineer 2	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Engineer 3	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Engineer 4	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Other Technical	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Information Technology	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Quality Assurance	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Safety	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Technician	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Machinist	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00
Other Crafts	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00

**NOT TO EXCEED AWARD FEE RATES BY IDIQ TASK
 CLIN 2**

Type of IDIQ TASK	Contract Year 1	Contract Year 2	Contract Year 3	Contract Year 4	Contract Year 5	Contract Year 6
DDT&E	11/30/07 - 11/29/08	11/30/08 - 11/29/09	11/30/09 - 11/29/10	11/30/10 - 11/29/11	11/30/11 - 11/29/12	11/30/12 - 11/29/13
Support for Vehicle-Level Integrated Testing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Training	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Special Studies	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Spares	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sustaining Engineering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Active Risk Manager (ARM) database – The risk management database tool that the Upper Stage will transition to for inputting and reporting of risks.

Architecture – The Avionics Architecture is a common reference for an overall shape and form of the Avionics system, external (to Upper Stage) interfaces, fault tolerance approach, the NDT defined flight computer voting scheme, and electrical power depiction for purposes of mission and requirements analysis and generation. This Architecture further provides the Software System with a generalized hardware configuration basis to establish a Software Reference Architecture and is used for design trades and analyses, and modeling to support end to end performance, command, data, interface, margins, growth path, operations, and general logistics assessments. The NASA Design Team architecture for Ares I is defined in USO-CLV-SE-25704.

Brassboard – A unit that provides the function of a flight unit, but does not necessarily meet the form, fit and natural and induced environmental requirements of the flight unit.

Certification – A formal document signed by responsible parties (provider, integrator (if different), and the Project Office) attesting to the satisfactory completion of specified qualification activities, supported by certification records, and authorizing the use of hardware/software for recorded purposes within certified limits. Certification can be accomplished at any level of assembly from the component to the integrated system.

Certification of Flight Readiness – A commitment signed by each NASA project manager and the respective element contractor stating their readiness for launch. This document is signed during the Flight Readiness Review (FRR). Prior to FRR, each project manager is required to assess his readiness for launch by considering vehicle and facility hardware status, problems encountered during pre-launch preparation and their resolution, launch constraints, and open items.

Certificate of Qualification (COQ) – Provides a uniform method for design qualification and certification of US components and subsystems.

Certification Record – A document or documents identifying the certified capability baseline, performance limits and operational constraints for a hardware/software configuration item. The certification record specifies the certified limits that govern usage during its life cycle. The certification record along with the signed certification establishes and illustrates the certified baseline.

CMMI[®] – The Capability Model Maturity Integration is a method for evaluating and measuring the maturity of the software development process of an organization on a scale of 1 to 5. CMMI[®] was developed by the Software Engineering Institute at Carnegie Mellon University in Pittsburgh.

Mission Specific Software – Software that is developed and built for a specific mission function. Software that is unique to a specific mission/flight; either in whole or in part.

Model – A model of a hardware component is a mathematical or software representation of the function or functions of the hardware. Math models are necessary for the NASA Design Team to develop and certify the design of the Guidance, Navigation and Control (GN&C) algorithms.

Operations – The processes, plans, system requirements, procedures, and work to be performed associated with the preparation, launch and flight execution of the US. The scope of Operations concern the activities with equipment once it has been delivered to the government and are in support of the integrated test and operational flights. This is applicable to all types of operations.

Oversight – Surveillance of Contractor that occurs in line with Contractor's processes and where the Government retains the right to nonconcur with Contractor's decisions. Oversight is a continuum that ranges from low to high with high involving Government day-to-day involvement in Contractor's decisions.

Past Performance – Factual information about the performance of a contractor against the performance requirements in past contracts.

Performance Assessment Plan – Describes the Contractor's overall approach to contract performance assessment and the implementation process for accomplishing metric evaluation and reporting.

Performance Management Review – Integrated review of cost, schedule, and technical performance on the contract.

Physical Configuration Audit - Audit to verify that the "as-built" configuration is in accordance with the "as-design". This audit in the past was known as the Configuration Inspection or First Article Configuration Inspection.

Post Flight Analysis – Analysis conducted after flight to ensure technical performance of the US element.

Problem Reporting and Corrective Action (PRACA) – A closed-loop system for reporting, management visibility, and accountability of reportable problems.

Preliminary Design Review (PDR) – Demonstrates that the preliminary design meets all system requirements with acceptable risk. It shows that the correct design option has been selected, interfaces identified, and verifications methods have been satisfactorily described. It also establishes the basis for proceeding with detailed design.

submissions are set forth in solicitation provision 52.215-1, paragraph (c) (3) "Submission, Modification, Revision, and Withdrawal of Proposals." Offerors are further reminded that it is their responsibility to deliver proposals as specified in L.16. Proposals which are sent by commercial carrier are considered to be hand carried, and, if they are received late at the place designated in the solicitation, they will only be considered if it is shown that the sole or paramount cause for the late receipt was some Government impropriety.

(End of Provision)

L.18 SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS, WOMEN-OWNED SMALL BUSINESS, HISTORICALLY UNDERUTILIZED BUSINESS ZONE BUSINESS, VETERAN OWNED SMALL BUSINESS, SERVICE-DISABLED VETERAN OWNED SMALL BUSINESS, AND HISTORICALLY BLACK COLLEGES AND UNIVERSITIES/OTHER MINORITY INSTITUTION CONCERNS PARTICIPATION IN SUBCONTRACT ARRANGEMENTS AND SUBCONTRACTING GOAL (Negotiations)

a. The Offeror, if other than a small business concern, must submit a subcontracting plan in accordance with the clause 52.219-9, Small Business Subcontracting Plan, including subcontracting goals for:

1. Small Business (SB)
2. Small Disadvantaged Business (SDB) ¹
3. Women-Owned Small Business (WOSB)
4. Historically Underutilized Business (HUB) Zone business
5. Veteran Owned Small Business (VOSB)
6. Service-Disabled Veteran Owned Small Business (SDVOSB)
7. Historically Black Colleges and Universities/Other Minority Institutions (HBCU/OMI)

¹ ***This solicitation is for a requirement within North American Industry Classification System (NAICS) industry subsector 541710 (determined by the Department of Commerce to be underrepresented) in accordance with FAR 19.12. For subcontracts to be performed by SDBs, provide targets, expressed as dollars and percentages of total contract value, in the applicable authorized NAICS industry subsectors as determined by the Department of Commerce. Also, provide a total target for SDB participation.***

b. The Contracting Officer's assessment of appropriate goals for this acquisition, expressed as percent of TOTAL CONTRACT VALUE (basic and all options combined) are 12.3 percent for SB concerns, 3.6 percent for SDB concerns (target), 2.4 percent for WOSB concerns, 0.9 percent for HUBZone SB concerns, 0.7 percent for VOSB concerns, 0.7 percent for SDVOSB concerns, and 0.3 percent for HBCUs/OMIs. The goals for SDB, WOSB, HUBZone SB, VOSB, SDVOSB, and HBCUs/OMIs, while stated separately as a percentage of the total contract value, are subsets of the overall SB goal. Offerors shall make an independent assessment of the small business subcontracting opportunities and are encouraged to propose on exceeding the stated goals where practical. The percentage goals are expected to flow down to first tier large business subcontractors. Although these first tier large business subcontractors are encouraged to meet or exceed the stated goals, it is recognized that the subcontracting opportunities available to these subcontractors, based upon the nature of their respective performance requirements, may differ from those suggested in the solicitation or proposed by the prime Offeror.

(End of Provision)

L.19 SUMMARY OF DEVIATIONS / EXCEPTIONS (MSFC 52.215-90)
(APR 1987)

The Offeror will explain any exceptions (including deviations and conditional assumptions) taken with respect to this RFP. Any exceptions must contain sufficient amplification and justification to permit evaluation. Such exceptions will not, of themselves, automatically cause a proposal to be termed unacceptable. A large number of exceptions or one or more significant exceptions not providing any obvious benefit to the Government may, however, result in rejection of such proposal(s) as unacceptable. Highlight exceptions in the margin of the proposal where they appear in the text.

(End of Provision)

L.20 REQUIRED FORMS (52.253-90) (DEC 1997)

a. The form checked below is attached to the end of this solicitation and shall be submitted prior to award of any contract resulting from this solicitation, upon request from the responsible contracting office.

_____ FAR 15.406-2 - Certificate of Current Cost or Pricing
Data

RFP NNM07190940R
Amendment 3

b. The forms checked below are required to be submitted in the performance of any contract awarded as a result of this solicitation. Forms are available in Part 53 of the FAR or NASA FAR Supplement. An information copy of a form may be obtained from the responsible contracting office. See FAR 52.253-1 and 53.105(b) for information on the use of computer generated forms. See FAR 53.107(b) for information on obtaining multiple copies of forms.

- SF 272 - Federal Cash Transaction Report
- SF 294 - Subcontracting Report for Individual Contracts
- SF 295 - Summary Subcontract Report
- SF 298 - Report Documentation Page
- SF 1034 - Public Voucher for Purchases and Services Other Than Personal
- SF 1413 - Statement and Acknowledgment
- SF 1414 - Consent of Surety
- SF 3881 - Payment Information Form ACH Vendor Payment System
- NASA Form 533M - Monthly Contractor Financial Management Report
- NASA Form 533Q - Quarterly Contractor Financial Management Report
- NASA Form 778 - Contractor's Release
- NASA Form 780 - Contractor's Assignment of Refunds, Rebates, Credits and Other Amounts
- NASA Form 1018 - NASA Property in the Custody of Contractors
- DD Form 250 - Material Inspection and Receiving Report
- DD Form 1419 - DOD Industrial Plant Equipment Requisition, if applicable.

(End of Provision)

not limited to, combining or integrating multiple component functions into a single enclosure and/or component. The Offeror shall fully describe any innovative approaches and how the innovation provides flexibility for future evolutions in the Government design. The proposal shall include a separate software development plan in accordance with DRD 1152SW-002, and within the separate page limitation as set forth in L.14, Proposal Page Limitation, to address the Offeror's approach to software development under this contract. The Offeror shall document the certified software CMMI[®] Capability Level for each organization with software development responsibilities under this contract.

TA3 Technical Transition - The proposal shall address the Offeror's proposed technical approach to effectively transition from supporting the NASA led Upper Stage Instrument Unit Avionics design and development activities to performing all required SOW activities to include the logistics support infrastructure, configuration management, and sustaining engineering of the Upper Stage avionics and software.

TA4 Manufacturing Approach – The proposal shall include a draft Manufacturing and Assembly Plan in accordance with DRD1152MP-003, and within the separate page limitation as set forth in L.14 Proposal Page Limitations, which describes the proposed approach for the manufacture and assembly of the Upper Stage Instrument Unit Avionics deliverables.

a. The proposal shall include a description of the approach to minimize proprietary processes, tools, techniques and components in meeting the requirements within this solicitation. The proposal shall describe how the proposed technical approach will positively or adversely affect the Government's ability to compete future Upper Stage Instrument Unit Avionics requirements beyond the period of performance.

b. The proposal shall include the rationale for selection of the proposed processes, tooling, techniques, and component end items. The proposal shall also identify any additional tooling, special test equipment, and/or manufacturing space required to produce, per contract year, the additional quantity option units along with the rationale for such additions. Accordingly, the Offeror shall complete and submit Attachment J-11, Government Furnished Property, and Attachment J-12, Government Furnished Equipment, with the proposal. Any proposed GFP or GFE shall be consistent with the commitment letters provided per Section L, Cost Instructions Part 4, paragraph "j".

c. The proposal shall describe innovative and streamlined manufacturing and assembly approaches and/or supply chain methods that will be used throughout the period of performance, including innovative processes

TA10 Safety & Mission Assurance (S&MA) – The proposal shall include an approach for S&MA and discuss, as a minimum: Systems Safety; Reliability and Maintainability; Quality Assurance; Probabilistic Risk Assessment; Problem Reporting and Corrective Action; Limited Life Items; Alerts; and Software Quality Assurance.

TA11 Technical Risk – The proposal shall address technical risks to include a risk matrix that identifies those risks that are inherent to the Offeror’s approach to this subfactor as well as the approach to mitigating such risks. The proposal shall further provide the approach for continued risk assessment, reporting, and mitigation in the technical aspects of contract performance.

Small Business and Small Disadvantaged Business Utilization Subfactor

These instructions apply to both large and small business Offerors. They apply to SDB Offerors only if the SDB Offeror has waived the price evaluation adjustment factor by completing paragraph(c) of FAR Clause 52.219-23 “Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns” in Section I of this solicitation. The waiver, if elected, makes the SDB Offeror ineligible for the price evaluation factor adjustment but eligible for evaluation credit associated with SDB utilization under this subfactor as described in Section M.

SB1 Small Business (SB) Utilization –

(a) Small Business Subcontracting Plan. The proposal shall provide the approach to achieve or exceed the Contracting Officer’s recommended socioeconomic business goals, per Provision L.18, in the Small Business Subcontracting Plan. It is anticipated that subcontracting during the production phase will be far more aggressive than during DDT&E phase. The goals will be traced and evaluated separately during contract performance utilizing a time-phased approach, and the Government will rely on the Offeror to separate the goals for DDT&E and production before the contract begins. The plan shall address sections (a) and (b) of Mission Suitability Subfactor SB-1 and shall include:

1. The extent of commitment to use socioeconomic businesses to include a listing of all that are proposed.
2. The types, amount, and complexity of work to be performed by socioeconomic businesses.
3. The flow down of socioeconomic business subcontracting requirements to large business subcontractors with their planned approach to meet or exceed the proposed goals.

(b) Small Disadvantaged Business Participation. Although a small business Offeror is not required to submit a Small Business Subcontracting Plan, the Offeror must describe its plans and approach to utilizing small disadvantaged businesses including the types, amount, and complexity of work to be performed in order to receive evaluation credit for small disadvantaged business utilization under this Subfactor. Each offeror shall propose a target for SDB participation by completing the clause at H –22 “Small Disadvantaged Business Participation – Contract Targets (Offeror Fillin)”.

SB2 Small Business Risk – The proposal shall include an approach for identification, mitigation, and reporting of risks inherent to this Subfactor, to include the Offeror’s risk in meeting and sustaining the established goals within this solicitation.

Volume II - Past Performance Factor

a. Volume II Narrative - The Offeror shall provide a description of relevant experience and contracts which the Offeror, any partnering team members, and the proposed major subcontractor(s) have performed (or are performing) during the past 6 years to include a description of how each respective contract is similar in size and complexity to the proposed Instrument Unit Avionics contract. It is not sufficient to state that it is comparable in magnitude and scope. Rationale must be provided to demonstrate that it is relevant. The listings shall identify the contract, project and names, addresses, and telephone numbers of responsible Government technical personnel and Contracting Officers or, if applicable, the responsible non-Government Customer representative who has knowledge of the contractor's performance. The proposal shall address any problems that were encountered in previous contracts and the steps that have been taken to ensure that the problems do not recur. In addition, the Offeror shall provide a listing of all contracts terminated within the last 6 years including reasons thereof. The Offeror shall furnish data from the organization proposing to provide the Instrument Unit Avionics Contract, or, if a new organization is proposed, utilize data from the most comparable company organization in terms of size and function. The Offeror’s Past Performance Volume submittal shall include a table listing the contracts and the corresponding points of contact from whom Past Performance Interview/Questionnaire Forms, as described in paragraph (b) below, were requested. The description of past performance and experience data shall cover the Offeror’s (and major subcontractors) qualifications in all areas of this RFP Statement of Work, including, but not limited to:

1. Past performance/unique capabilities resulting from previous avionics and/or software experience on complex space systems that is relevant to the performance of the contemplated Instrument Unit Avionics effort.

RFP NNM07190940R
Amendment 3

Part 2, 3, and 4 each of the workbooks shall be clearly tabbed. Font and margin requirements apply to the written/narrative portions of this volume, but not the cost and pricing worksheets (EPM or OPM).

g. All dollar amounts provided shall be rounded to the nearest dollar. All labor rates shall be rounded to the nearest penny, \$xx.xx. All rates (indirect percentages) shall be to the second decimal place, xx.xx%.

h. A Work Year Equivalent (WYE) is defined as follows: the proposed productive hours needed to comprise one average full time employee. A WYE may be comprised of one employee or several part time employees. Productive labor hours are defined as follows: the total available hours for productive work in a year, excluding overtime and paid time off (vacation, holiday, etc.).

i. Offerors are to assume and propose associated costs for all major meetings, conferences, and briefings (such as PDR, CDR, and DCR) required in the performance of the effort will be conducted at NASA MSFC in Huntsville, AL.

j. For proposal and estimating purposes, the Government will provide all required facility, telecommunications, office equipment and ODIN seats for contractor personnel that the Offeror chooses to be located at MAF up to the limit specified in Attachment L-5.

k. For proposal and estimating purposes all SE&I, S&MA, and logistics (SOW Section 4 activities) shall be proposed under the Integrated Avionics WBS category.

l. Offerors are to propose all costs on a contract year basis within the EPM. Calendar and Government fiscal year cost break-downs are not required and shall not be submitted with the Cost proposals. The successful Offeror shall be required to submit Government fiscal year cost breakdowns prior to or upon award of the contract in accordance with the Government's written instructions. The OPM shall be priced by the Offeror's fiscal year.

m. The Offeror shall propose costs in real year dollars.

n. Instrument Unit Avionics proposal costs are being "mapped" to NASA's CLV Upper Stage Master WBS schedule as shown in the following table (and in Attachment J-7):

any macros and/or hidden cells. Additionally, the EPM shall not be locked / protected and / or secured by passwords.

g. Offerors can modify the EPM by adding columns and rows to fit their proposal information as necessary. The EPM contains several self-calculating cells and it shall summarize totals. Offerors should pay attention to the notes on each worksheet/tab regarding the instructions relating to formulas already provided by the Government. In general, yellow areas require Offeror input while grey areas either contain a Government provided formula or require a formula to be added by the Offeror. In selective templates, example entries are provided and identified in red text and numbers. These example entries shall be removed prior to the use of a template.

h. The Government provides, as guidance, a range for Producibility Engineering in Table L-8, below. The Offeror shall propose, in accordance with the Offeror’s methodology, a distribution of the skill levels within each WBS Level. The WYE estimates are the inclusive labor effort to be proposed for Producibility Engineering and no additional labor categories or WYE are to be added to the cost estimate for Producibility. This table shall be included in the Cost Volume as well as the Staffing Plan for Mission Suitability.

Producibility Engineering Staffing	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>	<u>CY6</u>
Avionics Total						
MSFC-Integrated Avionics						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Command and Data Handling						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Guidance, Navigation, and Control						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						

RFP NNM07190940R
 Amendment 3

Producibility Engineering Staffing	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>	<u>CY6</u>
Radio Frequency System						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Electrical Power System						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Electrical Integration						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Development Flight Instrumentation						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Sensors and Instrumentation (including both OFI and Motion Imagery Subsystem)						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Electrical Ground Support Equipment						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						

Producibility Engineering Staffing	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>	<u>CY6</u>
Integrated ARES Avionics System Element Testing						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Flight Safety System						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Flight Software System Total						
Engineer 1						
Engineer 2						
Engineer 3						
Engineer 4						
Total Government Estimated Range for Avionics & Software	5-15	5-15	5-10	1-5	1-5	0
Total Proposed for Avionics & Software						

Table L-8. Producibility Engineering Staffing

i. The Government anticipates that some costs may be difficult to estimate due to a lack of historical data or known future requirements. The following Table L-9 is the Government’s estimated annual forecast within the maximum dollar amounts for the IDIQ CLINs only and is provided for informational purposes only to assist the Offeror in determining the magnitude of requirements for which an estimating effort may not be available to adequately provide an accurate cost estimate. The estimates are fully burdened, including all fee.

CLIN^{*,**}	Contract Year 1	Contract Year 2	Contract Year 3	Contract Year 4	Contract Year 5
2.0 IDIQ (DDT&E)	\$5,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000
4.0 IDIQ (Production)				\$30,000,000	\$30,000,000

a) Cost Summary Template (CST): is designed to summarize the total price (profit included) for the contract effort. Input is from the WBS worksheets (tabs).

b) Work Breakdown Structure Costs (WBS): is designed to summarize by WBS all costs and fees. The WBS templates are the source of input for the CST. See Attachment J-7.

c) Labor Pricing Template (LPT): is designed to filter an Offeror's labor categories and hourly labor rates into the NASA Standard Labor Categories (SLC) by WBS by contract year (CY). The SLC hours are multiplied by the Offeror's labor rate by labor categories. The summed SLC costs are divided by the summed SLC labor hours for a SLC labor rate. The total SLC labor costs are summarized in the WBS template.

d) Indirect Labor Cost Template (ILCT): is designed to calculate the indirect labor costs associated with the Offeror's direct labor costs by WBS by CY. The ILCT indirect costs are summarized on the WBS template.

e) Indirect Cost Template (ICT): is designed to calculate the indirect costs associate with the non labor recourses direct costs. The ICT indirect costs are summarized on the WBS template.

f) Indirect Labor Rate Template (ILRT): is designed to calculate the weighted indirect labor rates for the CY based on a distribution of the Offeror's fiscal year. The ILRT rates are used on the ILCT to calculate the indirect labor costs.

g) Indirect Rate Template (IRT): is designed to calculate the weighted indirect non labor rates for the CY based on a distribution of the Offeror's fiscal year. The IRT rates are used on the TCT, MCT, ODCT and WBS template to calculate the indirect non labor costs.

2. CLIN 1 DDT&E Support Data and CLIN 3 Production Support Data Cost Template tabs:

a) Summary Technical Resources Template (STRT): summarizes a prime Offeror's subcontractor WYE by CY. The staffing WYE should be proposed on a WYE not productive labor hours or costs.

b) Subcontractor Cost Template (SCT): identifies the major and minor subcontractor proposed costs by CY. The total Subcontractor Costs shall be the same as the amount shown on the WBS and CST tabs for the CLIN.

subcontractor FBR, prime fee is calculated on the CCST form. Contractor labor categories identified on the LRT are filtered by percentage of usage to arrive at the SLC average labor rates.

- d) Prime Burdens Template (PBT): adjusts a subcontractor's FBR by adding any additional prime contractor burdens to calculate a subcontractor fully burdened rate (SFBR).
- e) Rate Development Template Team (RDT-T): prime FBR and SFBR rates are distributed by prime and subcontractor percentage of usage to calculate the "Contractor Rates" for the CCST tab. These rates are used to calculate the proposed labor costs for the CLIN.
- f) Contract Rate Summary Template (CRST): labor costs, non labor costs, appropriate additional burdens and fee are summarized on this template by WBS and CLIN.
- g) Overhead Template (OH): discloses the Offeror's overhead rate development and discreet elements by the Offeror's fiscal year. The fiscal year rates are converted to CY rates. The CY OH rates should be the same as the ILRT indirect rates.
- h) General and Administrative (GAT): discloses the Offeror's G&A rate development and discreet elements by the Offeror's fiscal year. The fiscal year rates are converted to CY rates. The CY OH rates should be the same as the WBS indirect rates.

4. CLIN 5 Option Unit Cost Template:

Option prices per flight unit by CY for four units priced per CY are to be entered and summed. Both cost and NTE fee amounts per unit are to be identified. The Government shall have the right to order additional flight units in accordance with Clause B.3, Option for Increased Quantity-Separately Priced Line Item.

5. IU Avionics Project Summary Template tabs:

Costs and fees for all CLINs are entered and summed for a total project price. CLINs 2 and 4 shall be proposed at the maximum amount defined in Section B. The Section B maximum amount is an inclusive amount including all cost and fees at the prime contractor level.

6. Cognizant Audit Office Template (CAOT):

This template is designed to capture relevant information concerning (1) the specific location (address or addresses for prime and proposed major subcontractors) where auditable cost information physically resides that supports amounts proposed; (2) the person or persons (name, address, phone number, and e-mail address) who can be contacted by DCAA to provide audit information for the prime Offeror, (3) the person or persons (name, address, phone number, and e-mail address) who can be contacted by DCAA to provide audit information for companies, partners (in a teaming, joint venture or partnership situation) or proposed major subcontractor(s); and (4) the name and address of the cognizant DCAA field audit office to which electronic and hardcopy proposals were sent.

7. Article & Vehicle Summary (CLINs 1 & 3): Fully burdened hardware costs (labor and material) should be provided at the Offeror (Prime) level only.

Cost Volume Part 3, Section 9 – Offeror’s Pricing Model (OPM)

The Offeror’s Pricing Model (OPM) shall be time-phased by Offeror fiscal year, and separated by CLIN. Additionally, it should follow the format specified in Table 15-2 of FAR 15.408. Offerors may incorporate as many of the EPM templates as necessary and/or desired. Unlike the EPM, the OPM is not required to be self-calculating. The Offeror and all major subcontractors shall submit the OPM. Additionally, some minor subcontractors may need to submit the OPM in order to meet the 80% of contract value requirement for detailed cost data. If an Offeror or a subcontractor (major or minor) does not have a Government-approved OPM, the subcontractor may use the EPM templates to meet the EPM and OPM requirements (with a single submission). Otherwise, the Government-approved OPM must be submitted for each applicable entity (in addition to the EPM).

Cost Volume – Part 4, Section 10 Contractor Basis of Estimate (BOE)

The Offeror and proposed major subcontractors shall submit a separate BOE part in the cost volume. The purpose of this part is to give the Government insight into the thought processes and methodologies used by the Offeror in estimating the labor skill mix by labor hours, other direct costs, etc., required for successful performance on this contract for the cost estimates. Emphasis should be placed on a description of the processes and methodologies themselves, and how these relate to the technical approach described in the proposal. The BOE part shall be at the same WBS level as the cost proposal. The Offeror shall include a matrix allowing traceability to the Mission Suitability Volume and other pertinent parts of this Cost Volume. The information provided under this part will be used to assess the reasonableness and realism of the Offeror’s estimate and will be utilized in developing the Government’s most probable cost rationale.

A BOE shall address elements as follows:

- a. Narrative explaining how you arrived at your estimate of labor hours, including: if your estimate was based on similar program(s), in which case, identify and provide a reason why the programs are similar; a standard, in which case, identify the standard and explain if it is from the industry, your company, or a product; or engineering judgment, in which case, explain the philosophies used.
- b. Complexity factors utilized - all factors must be defined; explain the rationale for their use and basis of the factor.
- c. Use of any other cost-estimating relationships to include learning curve analysis; explain the rationale for their use and basis of the factor.
- d. How subcontracts were estimated. Please note if you have experience with the proposed subcontractor(s).
- e. Data to support cost volume labor rates, labor hours by skill, travel requirements, and other direct costs. The BOE should explain the genesis of the labor categories including the rationale for the entire skill mix and evolved skill mix.
- f. Data to support materials costs and the methodology utilized to estimate the types and quantities for these items as they relate to the Cost Volume. Explain the use of decrements to vendor quotes based on historical experiences or other rationale. The Offeror shall complete and submit the Unit (CEI) Cost Breakdown for the third flight set in CLIN 3, Attachment L-8.
- g. Data to support subcontractor costs and the methodology utilized to estimate the types and quantities for these items as they relate to the Cost Volume. Explain the use of decrements to vendor quotes based on historical experiences or other rationale.
- h. Provide a list of subcontractors and an award schedule showing when the subcontract will be awarded and the start or arrival date of the subcontract effort.
- i. With respect to software, explain the rationale for and estimates used for new, modified, re-used and programmer productivity.
- j. As a separate section of their BOE, the Offeror shall include commitment letters from the cognizant Government official authorizing the use of specified Government provided facility, property, or equipment. For property items not listed in RFP Attachment L-5, these commitment letters shall include,

RFP NNM07190940R
Amendment 3

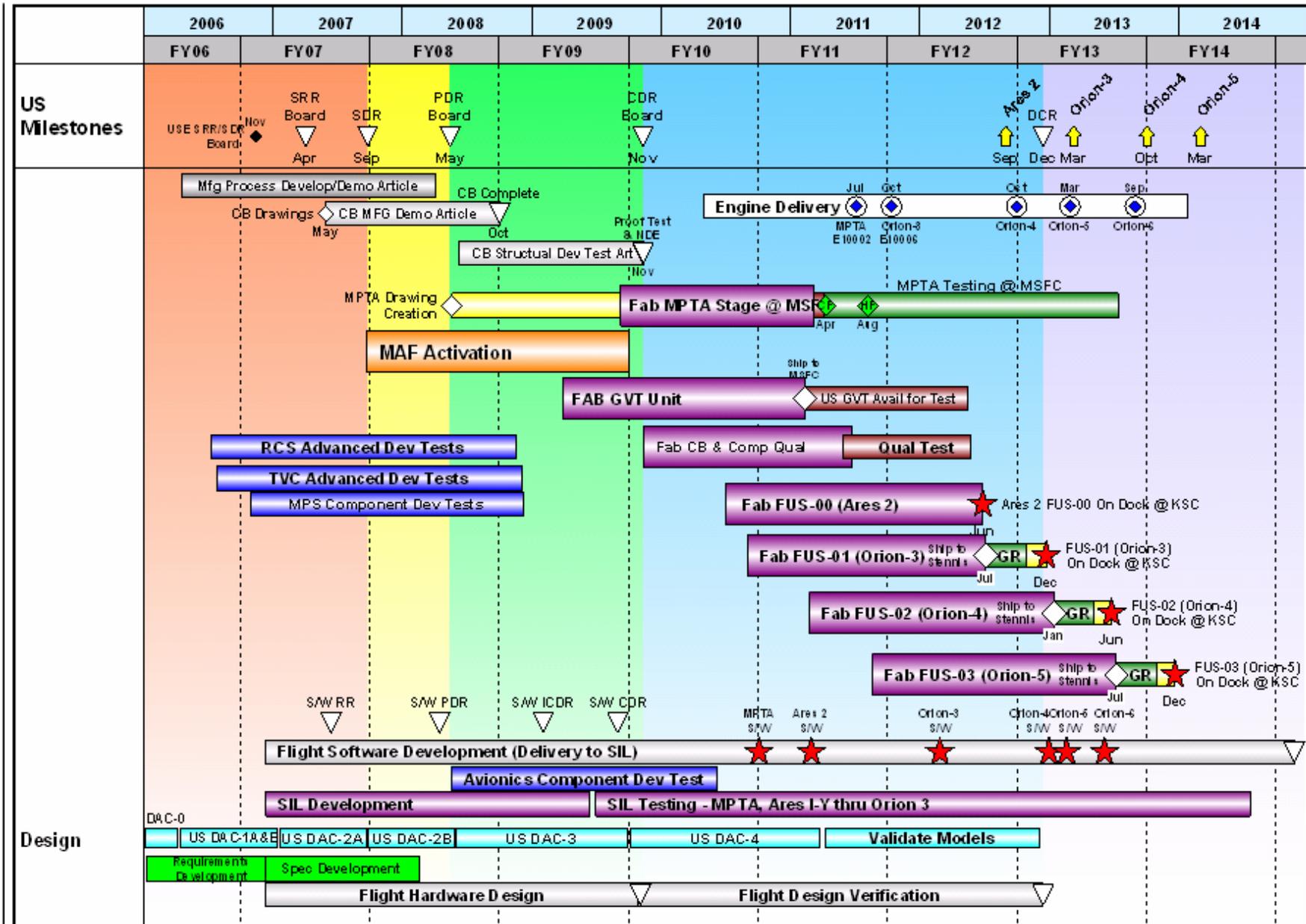
The Offeror shall also complete the following Sections of the RFP and include in a complete copy of a model contract: Sections B-I, Section J Attachments, and Section K.

<u>Section</u>	<u>Fill-in Required</u>
Clause B.2	Estimated Cost and Award Fee
Clause B.7	Award Fee Availability Schedule
Clause F.3	Place of Performance
Clause G.9	Use of Government Production and Research Property on a No-Charge Basis
Clause H.12	Key Personnel and Facilities
Clause H.14	Representations, Certifications and Other Statements of Offeror
Clause I.20	Earned Value Management System
Attachment J-3	Installation-Provided Property and Services
Attachment J-5	Estimated Cost and Fees
Attachment J-11	Government-Furnished Property
Attachment J-12	Government-Furnished Equipment
Attachment J-14	Small Business Subcontracting Plan
Attachment J-15	Safety and Health Plan
Attachment J-16	Schedule of Fully Burdened Labor Rates for IDIQ Task Orders
Attachment J-17	Make or Buy Program
Section K (All)	Certifications and Representations as Applicable

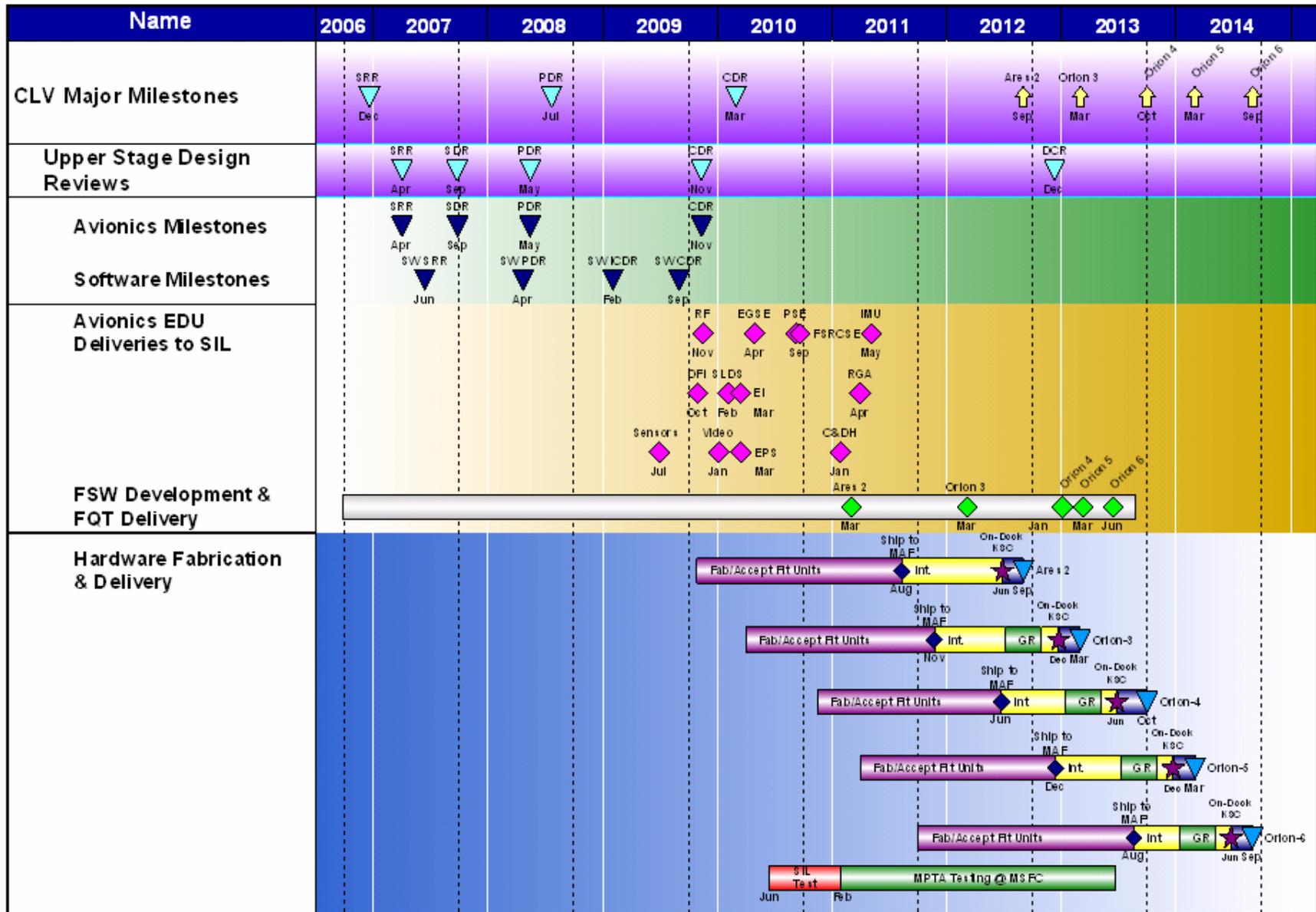
Volume V – Plans and DRDs

The Offeror shall submit the following plans and DRDs in this volume:

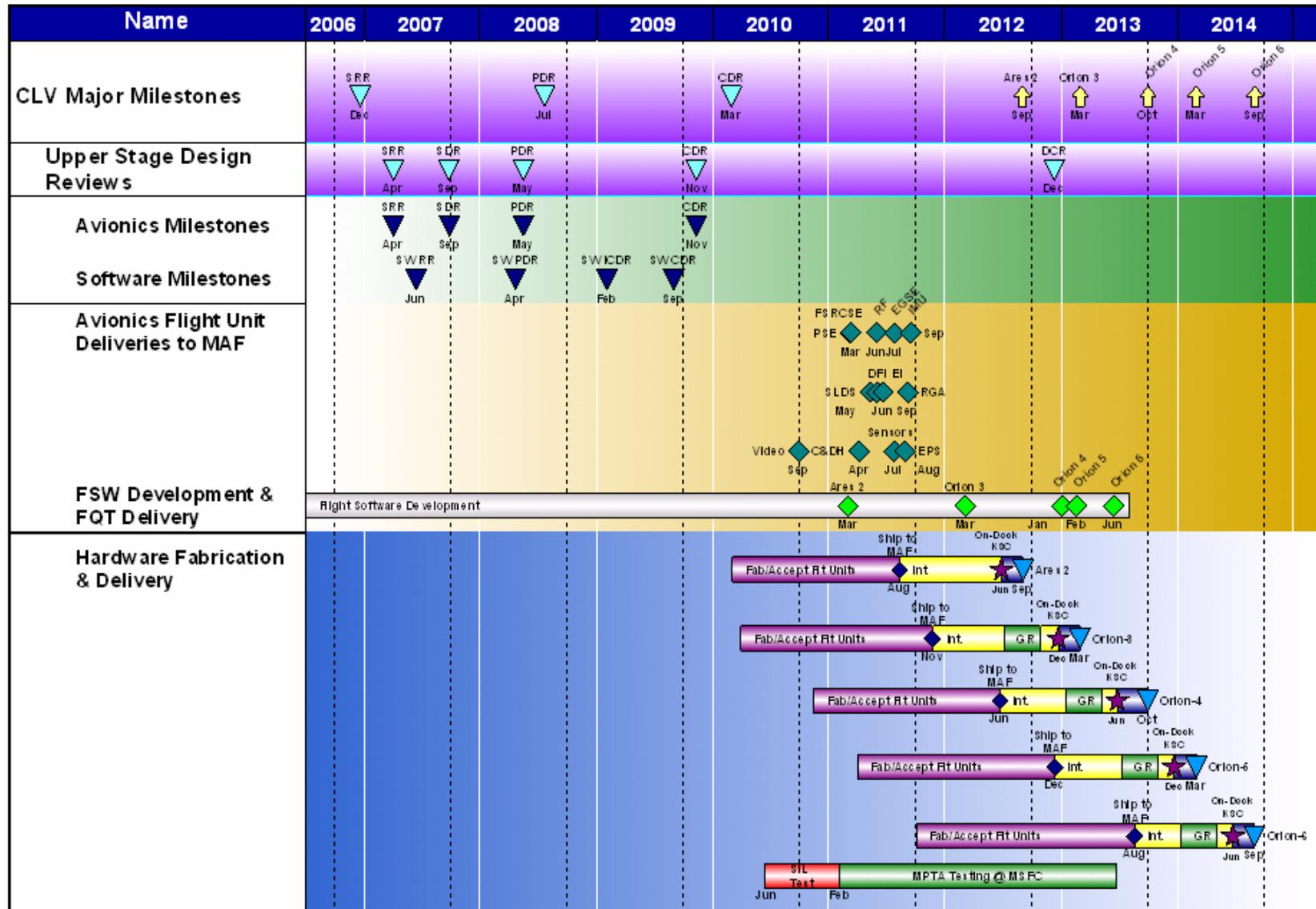
RFP NNM07190940R
Amendment 3



RFP NNM07190940R
Amendment 3



RFP NNM07190940R
Amendment 3



Components	Specification		Labor Cost (Unburdened)	Material Cost (Unburdened)	Unit Cost (\$)	
Electrical Power System						
US Battery Module Unit	USO-CLV-DE-25131					
US Power Distribution LRU's	USO-CLV-DE-25132					
US Pump Inverter LRU's	USO-CLV-DE-25133					
Primary Power cabling	USO-CLV-DE-25134					
FS Roll Control Battery	USO-CLV-DE-25131					
FS Power Distribution Unit	USO-CLV-DE-25132					
FS Roll Control Cabling/Harness	USO-CLV-DE-25134					
Electrical Integration						
Upper Stage Electrical Integration	USO-CLV-DE-25134					
Sensors & Instrumentation						
Calorimeters	USO-CLV-DE-25157					
Pressure Transducer, 10 Hz	USO-CLV-DE-25151					
Liquid Level, (event, temp based)	USO-CLV-DE-25156					
Temperature Sensor	USO-CLV-DE-25158					
Flowmeter	USO-CLV-DE-25154					
Rate (Angular)	USO-CLV-DE-25150					
Force (load Cell)	USO-CLV-DE-25153					
Speed Sensor	USO-CLV-DE-25161					
Displacement/Position	USO-CLV-DE-25160					
Liquid Level Sensor	USO-CLV-DE-25152					
Current Sensor	USO-CLV-DE-25155					
Accelerometer	USO-CLV-DE-25159					
High Speed Cameras	USO-CLV-DE-25128					
Standard Cameras	USO-CLV-DE-25129					
Camera Controller	USO-CLV-DE-25130					
Interstage Lighting	USO-CLV-DE-25136					
Large Wide Field Camera Lens	USO-CLV-DE-25139					
Small Wide Field of View Camera Lens	USO-CLV-DE-25140					
Medium Field Camera Lens	USO-CLV-DE-25141					
EGSE						
Upper Stage Avionics EGSE*	USO-CLV-DE-25135					

*For EGSE, price for 2nd Delivery Set within CLIN 3.

TA8 Sustaining Engineering - The Government will evaluate the proposed approach to perform Sustaining Engineering.

TA9 Operations Support - The Government will evaluate the proposed approach to provide ground and flight operations support.

TA10 Safety & Mission Assurance (S&MA) - The Government will evaluate the proposed approach to perform S&MA.

TA11 Technical Risk - The Government will evaluate the proposed approach for identification, mitigation, and reporting of risks inherent in the Offeror's approach to this Subfactor and the approach to manage technical risks throughout performance of the contract.

Small Business and Small Disadvantaged Business Utilization Subfactor (SB)

This subfactor applies to both large and small business Offerors. If the Offeror qualifies as a small business, the Offeror will receive credit under this subfactor for small business utilization at the prime level. If the Offeror also qualifies as an SDB, the Offeror will receive the benefit of the price adjustment in accordance with FAR Clause 52.219-23 "Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns" in Section M.2 of this solicitation, but will receive no credit under this subfactor for utilization of SDBs. However, if the Offeror qualifies as an SDB and has elected to waive the price evaluation factor adjustment by clearly stating so in their proposal in accordance with the FAR Clause 52.219-23 in Section M.2, the Offeror will receive evaluation credit under this subfactor for SDB utilization, as well as small business utilization.

SB1 Small Business (SB) Utilization –

(a) Small business Subcontracting Plan – The Government will evaluate the proposed approach to achieve or exceed the socioeconomic business goals as reflected in provision L.18. The Government will evaluate the extent of commitment to use socioeconomic businesses; the types, amount, and complexity of work to be performed by socioeconomic businesses both during the DDT&E and production phases of the contract. The Government will evaluate the approach for flow down of socioeconomic business subcontracting goals to large business subcontractors, the rationale for the goals, and the probability the approach will meet or exceed those goals. For purposes of the Small Business Subcontracting Plan, the proposed subcontracting target for SDB's will be evaluated based upon the SDB's status as a small business.

(b) Small Disadvantaged Business Participation – The Government will evaluate proposed SDB participation along with supporting rationale against total contract value with emphasis on complex work that will enhance the development of SDBs. Specific identification of SDB contractors and associated work will be evaluated. The

offeror's approach associated with ensuring attainment of proposed SDB targets will also be evaluated for effectiveness.

SB2 Small Business Risk – The Government will evaluate the proposed approach for identification, mitigation, and reporting of risks inherent to this Subfactor.

Volume II – Past Performance Factor

Past performance indicates how well an Offeror performed on earlier work and can be a significant indicator of how well the Offeror may perform the requirements of this procurement. Past performance applies to the prime contractor, any partnering team members and major subcontractors. The Government will evaluate the Offeror's response to past problems including corrective actions taken.

a. The Government will evaluate the Offeror's overall corporate past performance with other programs comparable to the Instrument Unit Avionics including, but not limited to:

1. Past performance/unique capabilities resulting from previous avionics and/or software experience on complex space systems that is relevant to the performance of the contemplated Instrument Unit Avionics effort.
2. Past performance with the development and production of avionics hardware and/or software for complex systems outside the realm of space flight.
3. Past performance in manufacturing and assembly of highly complex systems to a design developed outside the control of the proposed prime contractor.
4. Past performance in design and development leading to low cost production and operations.
5. Past performance in subcontract and supply chain management.
6. Past performance in managing complex manufacturing organizations and technologies to include safety and mission assurance.
7. Past performance in identifying and mitigating technical and programmatic risks.
8. Past performance in implementing an effective Earned value Management System.
9. Past performance in contractor' ability to meet or accelerate delivery schedules and cost goals.
10. Past performance in innovative manufacturing and logistic approaches to produce high quality products on schedule and within estimated contract costs.

RFP NNM07190490R Amendment 003

Attachment 1

Questions and Answers

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
1			To properly identify and support our re-use plan for other than Government owned or leased property and equipment depicted in the MAF Capabilities and ET Major Tooling and Unique Equipment CSs, will a copy of the NASA master inventory of GFE and other property, such as Fork Lifts, Scaffolding, Dollies, Lift Stands, Standoffs, etc. maintained and controlled by the Base Operations Support Contractor(s) for MAF be made available?	If yes, please provide a copy for our use.	The Government will make available in the Bidder's Library, a file listing of property identified at MAF for consideration in their proposals. This list is not considered an augmentation to Attachment L-5 (Government-Furnished Property and Government-Furnished Equipment). Bidders would be required to establish commitment letters, per RFP Part 4 Cost Volume, paragraph j. In accordance with paragraph j, rental calculation will be considered for evaluation purposes.	No	Yes
2			It is our understanding that non-recurring CEI development costs should be included in CLIN 001. Is that correct?		Yes.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
3			<p>The following Documents are missing: CxP 70084 Constellation Program Integrated Test Plan CxP 50000 Natural Environment Definition for Design CxP 70073 Constellation Program Management Systems Requirements Vol 1 CxP 70077 Constellation Program Architecture Description Document (ADD) CxP 72035 - Ares I Master Test & Verification CxP 72181 - US GSE Requirements Cxp 72051 - CLV SW Management Plan USO-CLV-MP-25500 - US Manufacturing & Assembly Plan</p>	<p>If available, please provide the documents or their status.</p>	<p>* The following Documents will be added to the Bidders Library folder "C) Other References": CxP 70073 Constellation Program Management Systems Requirements Vol 1 ; CxP 72035 - Ares I Master Test & Verification; Each of these documents is a lower-tier document, not specifically cited in J-1, J-2, or J-6. ** The citation of CxP 72181 - US GSE Requirements is incorrect in USO-CLV-DE-25135. The Correct document number is CxP 72121, which is currently posted in the Bidders Library. *** The following documents will not be posted: CxP 72051 - CLV SW Management Plan (NASA sensitive); USO-CLV-MP-25500 - US Manufacturing & Assembly Plan (Not available); CxP 70084 Constellation Program Integrated Test Plan (NASA sensitive; this is a lower-tier document, not specifically cited in J-1, J-2, or J-6) ; CxP 70077 Constellation Program Architecture Description Document (NASA Sensitive; this is a lower-tier document, not specifically cited in J-1, J-2, or J-6) ; CxP 50000 Natural Environment Definition for Design (this is a lower-tier document, not specifically cited in J-1, J-2, or J-6).</p>	No	Yes

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
4	B	B.4, Cost and Price Refresh	6th sentence states "...adjustment to rates and factors are outside the scope of this clause..." Are they referring to indirect rates only? Or each element of cost? "Factors" is not necessarily a defined term, so it could be any/everythink. [sic]	The terms "rates and factors" is not clearly defined. Is it correct to assume that "rates and factors" means indirect rates only.	No, it applies to both direct and indirect. For example, increases in labor rates would be non fee bearing.	No	No
5	B	B.4, Cost and Price Refresh	Section H.9, Special Provision for Contract Changes limits adjustments pursuant to the changes clause to \$500K.	Is Para H.9 applicable to Para B.4, Cost and Price Refresh	No.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
6	B	B-1/B.2	Paragraph B.2 states "The estimated cost of this contract is \$TBD1, for CLINs 1 and 3. The maximum available award fee , excluding base fee, if any, is \$TBD2 for CLINs 1 and 2 and \$TBD3 for CLINs 3 thru 5. The base fee is \$0. Total estimated cost, base fee, and maximum award fee are \$TBD4." This appears to be inconsistent with Attachment J-5.	Please confirm that: the value for TBD1 will equal the estimated cost columns in attachment J-5 for CLINs 1 and 3; the value for TBD2 will equal the Award Fee Amount in attachment J-5 for CLIN 1 only since attachment J-5 does not request an Award Fee Amount for CLIN 2; the value for TBD3 will equal the Award Fee Amounts in attachment J-5 for CLINs 3 & 5 since attachment J-5 does not request an Award Fee Amount for CLIN 4; and the value of TBD4 will equal the Total Estimated Values in attachment J-5 for CLINs 1, 3 & 5 since attachment J-5 does not request Total Estimated Values for CLINs 2 and 4.	Award Fee for CLINs 2 and 4 are established utilizing the NTE Award Fee rates by IDIQ task listed in attachments J-16-2 and J-16-4 as noted in J-5.	No	No
7	B and L	B-1/B-2 and B-2/B.5 and L-49/L.21.i and L-56/item 5	Within the IU Avionics Project Summary Template provided in the RFP, the time phased values for CLINs 2 and 4 do not correspond to the maximum values in clause B.5.	Please update the IU Avionics Project Summary Template to correspond to the clause B.2.	The IU Avionics Project Summary Template has been amended to reflect the maximum values identified in clause B.5.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
8	H	H.9, Special Provision for Contract Changes	Section H.9, Special Provision for Contract Changes limits adjustments pursuant to the changes clause to \$500K.	Is Para H.9 applicable to CLINs 2 and 4? Recommend that this clause only be applicable to CLINs 1, 3 and 5.	Clause H.9 does not apply to CLINs 2 and 4. These CLINs are considered additional work that has been incorporated into the contract and not the contract changes clause.	No	No
9	I	I.1.1.	FAR 52.215-17 waives CMF (but Section L.1(A) contains 52.215-16 which appears to permit CMF) Is CMF an allowable cost?	Delete 52.215-17 from Clause I.1.1 of Model Contract	Both clauses were used due to not knowing if the offeror's were proposing facilities capital cost of money.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
10	J-1	1.0 para 7	ref. indicates IUAC is responsible for integration. Section 5.5.1 i.b.i.d para 1, says NDT leads integration.	Clarify roles or definition of IUAC responsibility	Section 1.0 is introductory, and addresses Avionics System Integration in broad terms. Specific requirements are provided with "shall language" throughout the remainder of the SOW. The specific instance in Section 5.5.1 refers to hardware/software integration, at the SITF/SIL, led by the NDT; This is consistent with the final sentence of paragraph 7 of Section 1.0 which reads "The Contractor will support Ares I Element to Element integration and test activities during DDT&E (at the System Integration Laboratory (SIL)) and Production." The prior sentence "The Contractor will be responsible for Avionics System Level Integration including the development of test procedures, test reports and Avionics System manufacturing, assembly process planning, logistics planning, and planning for the transition to a sustaining engineering role" does not conflict with this, and should be interpreted to mean within the scope of this Contract/RFP, which specifically excludes the initial development of flight software, and does not include responsibilities for SIL activities which are outside the scope of the Upper Stage Element Office. The SIL is a Vehicle Integration Office responsibility, with deliveries from the Upper Stage Element Office (including the IUAC) and support of specific testing activities by Upper Stage Element Office personnel (including the IUAC).	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
11	J-1	4.5.4	This section references "CxP 70068" but we can not locate this anywhere. Is this a document?	please provide copy or instructions for accessing.	This document was posted in the IUAC Bidders Library folder on June 4th, and is located in the folder "B) Applicable & Reference Documents\2) Constellation Program & Project Documents\Constellation Documents".	No	No
12	J-1	5.2.1 and 5.2.2	Is FPGA development dictated by SOW paragraph 5.2.1 or 5.2.2?	Please clarify.	Please see SOW Section 5.2.1.r.	No	No
13	J-1	5.4.2.b	Indicates compliance to CxP70065 which is not in the ICE bidders library	Please post CxP 70065	Document will be posted to the IUAC Bidders Library folder "B) Applicable & Reference Documents\2) Constellation Program & Project Documents\Constellation Documents." Note: This document has changed titled. It formerly was "Constellation Program Software Management Policies and Plan" and is now titled "Constellation Program Computing System Requirements."	Yes	Yes

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
14	J-1	5.5.1	The first paragraph might be taken to indicate that flight units are not planned for use in SIL (in addition to the SITF).	Clarify the intended or allowable use of Flight hardware for the pre- and post transition to MAF SIL.	No flight hardware will be tested in either the SIL or the SITF, either before or after the transition to MAF.	No	No
15	J-1	5.5.1.e	5.5.1 indicates NASA is responsible for the physical relocation of the SIL/SITF hardware from MSFC to MAF following Orion 3 (scheduled for Mar 2013). This appears to be just after the time when the SITF operation will be transferring to the IUAC after the transition period from the NDT to the Contractor (within 90 days after DCR Dec 2012). This is also just before the time when the increase launch rates from 2 to 6 under CLIN 5 in 2014 may occur.	Does NASA have an estimate of the time this move is expected to take from initial shutting down at MSFC to when the SIL and SITF is re-certified by NASA at MAF? What is the SIL / SITF role for the IUAC during this down period?	Paragraphs 5.5.1a, 5.5.1d, and 5.5.1e describe the requirement for the Government's planning and are based on the best available information at this time, consistent with Level 3 (Vehicle Integration Office) facility plans. It is anticipated that the Level 3 responsible Project Office will begin the transition approximately one year prior to SITF/SIL re-certification need, thus mitigating impacts to the operational Ares I program's milestones. The solicitation is requesting the Offeror's assist in this transition planning (paragraphs 5.5.1d and 5.5.1e) including both inputs to the physical relocation conducted by the Government, and the contractor operation of the facility, as they will have a vested stake in how both these transition occurs. The expectation is that the transition be as seamless as possible.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
16	J-1	J-1-18 4.6.2.b	MIL-STD-1388 is identified as the document to be complied to for Logistics Support Analysis. This document was cancelled in April 1983 and replaced with MIL-HDBK-502. Which document does NASA want the seller to work to?	Clarify that MIL-STD-1388 in lieu of the replacement document MIL-HDBK-502 is to be the governing document.	The reference to MIL-STD-1388 will be replaced by USO-CLV-LS-25401.	Yes	No
17	J-1	J-1-27/ 5.2.2.a and J-1-30/5.4.2.b	These sections reference CxP 70065 Constellation Software Management Policies and Planning Document, but document is only available in draft form on Windchill but not available to proposal team	Please provide CxP 70065	Document will be posted to the IUAC Bidders Library folder "B) Applicable & Reference Documents\2) Constellation Program & Project Documents\Constellation Documents." Note: This document has changed titled. It formerly was "Constellation Program Software Management Policies and Plan" and is now titled "Constellation Program Computing System Requirements." The RFP will be amended to reflect the correct title.	Yes	Yes
18	J-1	J-1-32/5.5.2	SOW 5.5.2 Element and Ares Testing references SOW 7.0. SOW 7.0 is IDIQ effort. Please clarify the intent of paragraph 5.5.2 in regard to IDIQ effort.	Request clarification regarding SOW 5.5.2 - is any or all of SOW 5.5.2 considered IDIQ effort? If not, please clarify the intent of referencing SOW 7.0.	Yes, support of integrated US Element testing and support of integrated Ares vehicle testing are both IDIQ tasks per SOW 7.0	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
19	J-1.1	Entire Section	Under heading "Other Deliverables - CLIN 1" CEI Simulator Models are considered deliverables. There does not appear to be a corresponding DRD in Section J-2.	Should there, in fact, be a DRD to correspond to this deliverable?	A DRD is not required at this time. However, the definition of "model" in J-19 will be amended to provide greater clarity.	Yes	No
20	J-1.1	J-1.1	Battery Module Unit – IU. The number of Flight Qualified units for each ship set in J-1.1 is two. However, on page 18 of the Flight Computer specification USO-CLV-DE-25114 implies six battery units, one for each PDCU on the USE/US data bus. The CLV Avionics Reference Architecture, DAC-2 Draft 9 is also unclear. The architecture drawing either shows 6 IU batteries or four batteries with two of them having an A/B redundancy. The Battery CEI specification USO-CLV-DE-25131 does not clarify quantities, nor does it refer to any A/B redundancy capability.	Please clarify quantity required and whether A/B capability is required.	The number of Flight Qualified units for the Battery Module-IU is as shown in Attachment J-1.1 which is two battery LRUs per Launch Vehicle. The DAC-2 Conceptual Design packages 2 "functional" batteries per LRU for a total of four "functional" batteries.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
21	J-1.1	J-1.1	Power Distribution Control Unit – Aft. The number of Flight Qualified units for each ship set in J-1.1 is two. Page 18 of the Flight Computer specification USO-CLV-DE-25114 also calls out two PDCUs on the FS/IS data bus. However, the CLV Avionics Reference Architecture, DAC-2 Draft 9 shows four PDCUs on the Aft skirt. The PDCU CEI specification USO-CLV-DE-25132 does not clarify quantities.	Please clarify quantity required	The number of Flight Qualified units for the PDCU-Aft is as shown in Attachment J-1.1, which is two PDCU LRUs per Launch Vehicle.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
22	J-1.1	J-1.1	Power Distribution Control Unit – Interstage. The number of Flight Qualified units for each ship set in J-1.1 is two. Page 18 of the Flight Computer specification USO-CLV-DE-25114 does not delineate [sic] any PDCU units for the interstage. The CLV Avionics Reference Architecture, DAC-2 Draft 9 shows two PDCUs on the interstage. In addition, the architecture drawing shows the Inter-stage PDCU-1 and Inter-stage PDCU-2 having two 1553 connections. The PDCU CEI specification USO-CLV-DE-25132 only requires one 1553 bus connection. The PDCU CEI specification USO-CLV-DE-25132 does not clarify quantities.	Please clarify quantity required and whether A/B capability is required.	The number of Flight Qualified units for the PDCU-Interstage is as shown in Attachment J-1.1 which is two PDCU LRUs per Launch Vehicle. The DAC-2 Conceptual Design packages 2 "functional" PDCUs per LRU for a total of four "functional" PDCUs.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
23	J-1.1	J-1.1	Interstage Lighting. The number of Flight Qualified units for each ship set in J-1.1 is 2. However, page 27 of the Camera Controller specification USO-CLV-DE-25130 states that lighting is needed in three places: 1) First stage separation, 2) CEV separation, 3) LH2 tank sloshing. The CLV Avionics Reference Architecture, DAC-2 Draft 9 does not show any lightings CEIs. The Interstage Lighting CEI specification USO-CLV-DE-25136 mentions two places for lighting: first stage separation and CEV separation.	Please clarify quantity required.	The quantities shown in J-1.1 are correct, and take precedence over any narrative discussion in the CEI specifications.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
24	J-1.1	J-1.1	Standard Cameras. The number of Flight Qualified units for each ship set in J-1.1 is six. However, page 12 of the Camera Controller specification USO-CLV-DE-25130 calls out a total of 9 cameras, 3 external, 2 internal for CEV separation, 2 LH2 tank, and 2 for first stage separation. The CLV Avionics Reference Architecture, DAC-2 Draft 9 shows six standard cameras in the top left hand corner and another 6 cameras of an unknown type in the lower left corner. The Standard Camera CEI specification USO-CLV-DE-25129 does not clarify quantities.	Please clarify quantity required.	The quantities shown in J-1.1 are correct, and the CEI will be revised to remove quantity references. The Reference architecture does not show the 2 cameras that are flown for the first 5 flights only within the hydrogen tank. The 6 cameras shown in the lower left corner are part of First Stage and are not within the scope of this RFP.	No	Yes

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
25	J-1.1	J-1.1	Battery Module Unit – Aft. The number of Flight Qualified units for each ship set in J-1.1 is two. Page 18 of the Flight Computer specification USO-CLV-DE-25114 also implies two battery units, one for each PDCU on the FS/IS data bus. However, the CLV Avionics Reference Architecture, DAC-2 Draft 9 shows four battery units on the Aft skirt. The Battery CEI specification USO-CLV-DE-25131 does not clarify quantities.	Please clarify quantity required.	The number of Flight Qualified units for the Battery Module-Aft is as shown in Attachment J-1.1 which is two battery LRUs per Launch Vehicle.	No	No
26	J-1.1	J-1.1	Battery Module Unit – Interstage. The number of Flight Qualified units for each ship set in J-1.1 is two. Page 18 of the Flight Computer specification USO-CLV-DE-25114 does not imply any battery units (no PDCUs for the interstage are described). The CLV Avionics Reference Architecture, DAC-2 Draft 9 shows two battery units on the interstage (RoCSB1 and RoCSB2). The Battery CEI specification USO-CLV-DE-25131 does not clarify quantities.	Please clarify quantity required.	The number of Flight Qualified units for the Battery Module-Interstage is as shown in Attachment J-1.1 which is two battery LRUs per Launch Vehicle.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
27	J-1.1	J-1.1	Battery Module Unit – Interstage. The number of Flight Qualified units for each ship set in J-1.1 is two. Page 18 of the Flight Computer specification USO-CLV-DE-25114 does not imply any battery units (no PDCUs for the interstage are described). The CLV Avionics Reference Architecture, DAC-2 Draft 9 shows two battery units on the interstage (RoCSB1 and RoCSB2). The Battery CEI specification USO-CLV-DE-25131 does not clarify quantities.	Please clarify quantity required and whether A/B capability is required.	The number of Flight Qualified units for the Battery Module-Interstage is as shown in Attachment J-1.1 which is two battery LRUs per Launch Vehicle. These batteries are not required to have A/B capability.	No	No
28	J-1.1	J-1.1-1	The MPTA column of the table indicates that a full flight compliment of sensors and DACUs are provided , but there are only 1 FC and 1 CTC, thus it is not clear whether the DACUs can be operated.	Please Clarify that this is the correct implementation.	Quantities shown in Attachment J-1.1 are correct for MPTA. The MPTA avionics configuration is not identical to a flight launch vehicle.	No	No
29	J-1.1	J-1.1-3	The SIL column of the table has 2 x more camera deliverables than a single flight system though all other deliverables are consistent with a single flight system.	Change the MIS camera quantities to match flight deliverable quantities.	The quantities shown in J-1.1 are correct. The quantities will support the SIL facility and other engineering purposes.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
30	J-1.1	J-1.1-3	The "Ares Simulator at JSC" column contains a full flight compliment of sensor deliveries, but there is no DACU delivery, thus there is no way to interface to the sensors.	Delete the sensors from the "Ares Simulator at JSC" column to be consistent with the rest of the deliverables.	Quantities shown for sensor requirements for the Ares Simulator are in error and will be deleted.	Yes	No
31	J-1.1	J-1.1-3	The SDF column of the table indicates that a full compliment of sensors are provided to the SDF, but there is no DACU delivered, thus there is no way to interface to the sensors.	Delete the sensors from the SDF column to be consistent with the rest of the deliverables.	Quantities shown for sensor requirements for the SDF are in error and will be deleted.	Yes	No
32	J-1.1	J-1.1-4	The "Qualification Units" column of the table indicates that multiple cameras and lens are required for qualification whereas single units are required for all other CEIs.	Please Clarify that this is the correct implementation.	The quantities shown in J-1.1 are correct. Because it is anticipated the cameras may utilize off-the-shelf designs, additional qualification units are planned.	No	No
33	J-1.1	Table J-1.1b	The SIL support column indicates 2 EGSE, though there are only 1 flight system quantities of anything else delivered to the SIL. Is the SIL EGSE delivery quantity correct?	Please Clarify that this is the correct implementation.	Table J-1.1b is correct. SIL deliveries include an additional EGSE to replace any EGSE that fails or develops an anomaly.	No	No
34	J-1.2		Absent in the list of testers are: Power distribution and Control Units [USO-CLV-DE-25132] and US Pump Inverter Unit [USO-CLV-DE-25133].	Should these CEIs be included in the J-1.2 attachment?	No, the quantities in J-1.2 are correct.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
35	J-1.2	J-1.2-2	Imaging STE #3 and #4 correspond to the same CEI specification. Are these really unique STE, or just copies of the same STE, which could be indicated by a quantity of 2 in the STE#3 row.	Please Clarify that this is the correct implementation.	The quantities and specifications shown in J-1.2 are correct. Imaging STE #3 and #4 could have been identified as a single item with a quantity of two.	No	No
36	J-1-21; J-2-108; J-6-6	21, Para 5h,; Page 108, DRD No. 1152MP-003, Entry 14; and, J-6-6	Entries site USO-CLV-MP-25500 as the US Manufacturing and Assembly Plan. This document is not available via NASA ICE Windchill	Please post this document to the US Bidder's Library on ICE	This document does not yet exist. The Offeror should develop their own manufacturing and assembly plans without the availability of this document. This document is a requirement of the Upper Stage Production Contractor, currently being procured by the Government. Data Requirement 1152MP-003. In content, it is the same Data Requirements Description (DRD) submitted under USP RFP (1145MP-003). Upon award the USP and IUAC manufacturing and assembly plans will be integrated into USO-CLV-MP-25500.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
37	J-2	108, DRD No. 1152MP-003; Entry 15.2	MSFC-STD-6016, Standard, Materials and Processes Requirements for Spacecraft is listed as an applicable document. Is the document number supposed to be "NASA-STD-6016"	Revise entry if it is in error, or post MSFC-STD-6016 to the US Bidder's Library	DRD 1152MP-003 is in error. The correct reference is NASA-STD-6016.	Yes	No
38	J-2	Data Requirements Matrix, DRD 1152RM-005, Table L-2	The Data Requirements Matrix specifies submission of the Probabilistic Risk Assessment Plan, 1152RM-005, at "Contract Award + 60 Days." The DRD specifies initial submission as a "Preliminary with proposal." There is no page count specified in Table L-2 for Volume V-Plans.	Revise DRD 1152RM-005 to "see data requirements matrix."	DRD 1152RM-005 will be revised to read "See Data Requirements Matrix" removing the implied requirement for submission of a draft with the proposal.	Yes	No
39	J-2	DRD 1152MA-002	DRD 1152MA-002 delivery requirement of PDR and CDR does not match narrative identified in "Other" column [i.e., PDR, CDR, DCR, FRR]	Please clarify required deliveries.	There should be an "x" in the column for each of the following: PDR, CDR, DCR, and FRR, each with an asterisk indicating that the delivery is 90 days prior.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
40	J-2	J-2-13 DRD 1152-LS-003	In the delivery column identified as PDR, the letter "D" is present. On page J-2-20, "D" is stated to be, "Draft (to be submitted with proposal)". However, in the column identified as "Other" on page J-2-13, the comment reads "Semiannually for first year (annually thereafter). Update as new requirements are determined." Which instruction is correct for the delivery of this product?	Revise the Warehouse/Storage Requirements Plan to be delivered at PDR and then updated 6 months later (semi-annual). Maturity level at PDR should be preliminary (P), not draft (D).	DRD 1152LS-003 is to be delivered in Preliminary form at PDR, and then updated semi-annually for the first year, annually thereafter, or as new requirements are determined.	Yes	No
41	J-2	J-2-72, DRD 1152LS-003	Warehouse/Storage facilities at MAF and MSFC are anticipated. No indication of logistical requirements at either facility is documented in the DRD.	Clarify MAF and MSFC Warehouse/Storage facilities availability and footprint size.	The RFP provides for a 120 by 120 square foot area at MAF as available floor space. Should the Offeror's proposed approach exceed this allocation, they should request additional space. Limited space within the shipping and receiving area is provided for short term storage but should not be considered as permanent storage or within the allocation provided. Warehouse and storage facilities at MSFC will be the responsibility of the NASA Design Team. Should deficiencies in the MSFC allocation be identified, they can be rectified post contract award.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
42	J-6	J-6-6	CxP 70082, Integrated Test Plan is not available on NASA ICE	Please provide reference.	There is no reference to CxP 70082 in J-6, nor anywhere within the RFP. CxP 70084 is titled "Integrated test Plan" but will not be provided at this time due to "NASA Sensitive" markings.	No	No
43	J-6	J-6-6	CxP 72035, Master Verification Test Plan is not available on NASA ICE	Please provide reference.	There is no reference to CxP 72035 in J-6. However, one or more applicable documents listed in J-6 does include CxP 72035 within its' list of applicable/reference document. This document will be added to the Bidder's Library folder "C) Other References".	No	Yes
44	J-6	J-6-6	USO-CLV-US-25709 is not available on NASA ICE	Please provide reference.	There is no reference to USO-CLV-US-25709 in J-6, or anywhere within the RFP. However, the SRR version of this document has been located and will be added to the Bidders Library folder "C) Other References"	No	Yes

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
45	L	Cost Volume 2 (I), General Instructions Page L-39	Cost Volume 2(I) states that all costs are to be proposed on a contract year basis and that Calendar and Government fiscal year cost break-downs are not required and shall not be submitted. Cost Volume Part 3, Section 9 on page L-57 states that the OPM shall be time-phased by offeror fiscal year. Should Cost Volume Part 3, Section 9 also be proposed as a contract year basis?	Please Change Cost Volume Part 3, Section 9 on Page L-57 to reflect contract year consistent with Cost Volume 2(I) on Page L-39	The Offeror's Pricing Model shall be based on the Offeror's fiscal year. Section L, Volume III-Cost Factor, Part 2 General Instructions, Paragraph I (Page L-39) has been amended to clarify the Offeror shall utilize the EPM to submit its cost proposal by contract year and the OPM to submit its cost proposal by the Offeror's fiscal year.	Yes	No
46	L	Cost Volume Part 2; Para I.1.d - Indirect labor cost template	The ILCT template tab is linked to the LPT tab [sic] has incorrect WBS numbers. WBS 1.0.8.1, WBS 1.0.8.2 ...	Provide updated references for WBS 1.8.1, WBS 1.8.2 etc.	The WBS references in the ILCT and ICT (CLINs 1 & 3) have been corrected.	Yes	No
47	L	Cost Volume Part 2; Para I.1.d - Indirect labor cost template	The ILCT template tab, is linked to the LPT tab. The LPT tab has the Offerors categories and the standard labor categories. They are further categorized in to groups of Administrative [sic], Technical and Crafts. Should the Offeror use the three groups of categories in the ILCT tab or all 15 Standard labor?		The Offeror shall provide data per the applicable labor categories (from the 15 categories listed) on the LPT. This information should then be summed into the three categories (Administrative, Technical, and Crafts), as applicable, and carried forward to the ILCT. Administrative labor may be priced directly or indirectly.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
48	L	Cost Volume Part 2; Para I.1.e - Indirect cost template	Does "All cost ex Materials" in the ICT template tab mean "All cost except Materials"?		Yes.	No	No
49	L	Cost Volume Part 2; EPM templates	The EPM templates include hidden columns, should hidden columns contained within some EPM worksheets be deleted	Delete hidden rows as necessary if not in use	The Offeror may add or delete rows and columns as it deems necessary. Hidden columns and rows are acceptable. The hardcopy version takes precedence over the electronic version.	No	No
50	L	Cost Volume Part 3, Section 9 - Offeror's Pricing Model (OPM) General Instructions; 1st paragraph	On page L-39 item I of the RFP it states "Offerors are to propose all costs on a contract year basis. Calendar and Government fiscal year cost breakdowns are not required and shall not be submitted with the proposals". On page L-57 under cost volume Part 3 it states "The Offeror's Pricing Model shall be time-phased by Offeror fiscal year and separated by CLIN. This appears to be conflicting guidelines.	Recommend that the OPM is time-phased by Contract year like the EPM.	The Offeror's Pricing Model shall be based on the Offeror's fiscal year. Section L, Volume III-Cost Factor, Part 2 General Instructions, Paragraph I (Page L-39) has been amended to clarify the Offeror shall utilize the EPM to submit its cost proposal by contract year and the OPM to submit its cost proposal by the Offeror's fiscal year.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
51	L	Cost Volume Part 4 (j), (pg L-58)	States commitment letters shall include, for evaluation purposes, a supporting cost sheet related to rental calculations. Will there be an evaluated cost for the NASA provided GFP/GFE in Attachment L-5? If so, what will be the evaluated cost for each item identified in L-5?	Please clarify the RFP to state that costs will not be added for evaluation purposes for GFP/GFE identified in L-5	No cost will be added for items listed in Attachment L-5.	No	No
52	L	Cost Volume, Part 2 - EPM Indirect Cost Template	The contract year dates reflect dates from 9/01/xx to 8/31/xx. Is this correct? The contract year is 11/30/xx to 11/29/xx per section L-2. General Instructions, para a. "The Offeror shall use the start date of November 30, 2007".	Change the Indirect Cost Template dates to 11/30/xx to 11/29/xx	The Indirect Cost Template will be updated.	Yes	No
53	L	L.18	What is the subcontract dollar value threshold for the requirement to flow down percentage goals to first tier large business subcontractors as required in Section L.18?	Please identify criteria	FAR 52.219-9(d)(9) requires subcontracting plans for subcontracts >\$500k. Section L.18 flows down the percentage goals to the first tier large business subcontractors, although it does allow some potential flexibility with respect to the goals.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
54	L	L.21 ; TA 4 Manufacturing Approach	Instructions state "proposal shall include a draft Manufacturing and Assembly Plan in accordance with DRD 1152MP-004, ...	DRD callout should be DRD 1152MP-003.	The DRD callout in L.21, TA4 will be updated to DRD 1152MP-003.	Yes	No
55	L	L.21; Cost Volume	Clause B.4 has been changed with the issuance of the final RFP eliminating the words "their proposal traceability from the NTE amounts" and "...traceability to the original NTE", while adding the words "...the NTE fee rates in Table J-5-2". In addition, Table J-5-2 specifically shows columns separating "Estimated Cost" and "NTE AWARD FEE RATE". The paragraph in question, along with the corresponding EPM, appear not to have been changed to correspond with Clause B.4.	Replace the current text with: "Option prices per flight unit by CY for four units priced per CY are to be entered and summed. Both cost and NTE fee amounts per unit are to be identified. The Government shall have the right to order additional flight units in accordance with Clause B.3, Option for Increased Quantity-Separately Price Line Item." Make similar changes to the title shown in the EPM; from "I.U. Avionics Option Not to Exceed Cost" to "I.U Avionics Option Cost" and the column headings from "Fee" to "NTE Fee".	The language in Section L, Instructions to CLIN 5 Option Template will be updated.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
56	L	L-2-2	Specific salary information is tightly controlled. As indicated in the Upper Stage questions and answers, request that this information be submitted under separate cover.	Please clarify in the RFP to allow the offeror to submit attachment L-2 under separate cover.	The Key Personnel résumé form is not amended and the salary information is an indicator of the commitment level which is stated in the RFP. Offerors may submit the salary information under separate cover if deemed necessary; however the prime Offeror is still responsible to ensure all data is submitted and within the page limitations.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
57	L	L-27/TA-2	<p>In section L, paragraph TA2, NASA has allowed offerors to "include innovative approaches to implementation of component functions within the architecture such as, but not limited to, combining or integrating multiple component functions into a single enclosure and/or component." The Attachment L-8 in the final RFP also allows the offeror to adjust the product structure utilized for their cost estimate. These two provisions appear to enable offerors to describe and price avionics components different from those required by NASA. The avionics architecture encompasses, "component organization, fault tolerance approach, connectivity..." (ref. Glossary, J-19-2). Combining box functionality inherently changes the architecture in these areas. The boundaries for "innovation within the architecture" are not clear. Component box functionality changes will require changes to the reference architecture. In that event, it is unclear what standard NASA will use to assess the technical compliance and mission suitability of the proposed avionics components.</p>	<p>Maintain the clear requirement that offerors describe and price an approach to implementing NASA's specified reference architecture without deviation by removing the provision for offerors to modify the unit (CEI) breakdown in their cost estimate (ref. Attachment L-8). Beyond the NDT referenced architecture priced in this proposal, allow offerors to describe architectural innovation approaches that they would trade with the NDT as part of the produce-ability and systems engineering effort. Also, if any evaluation factors regarding design innovations exist (Examples: safety, reliability, functionality) please provide them.</p>	<p>The glossary definition for the term "Architecture" will be modified to remove ambiguity with respect to component organization. Evaluation for innovation will utilize the criteria identified in Section M. Section L requires supporting material for innovations to allow the Government's evaluation team to assess the innovation and therefore this material should be sufficient for this purpose. The Government does not expect architecture and CEI specifications to be re-submitted but would expect the Offeror to thoroughly describe their innovative approach within their technical proposal.</p>	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
58	L	L-27/TA-2 and L-8-1	It is unclear how offerors are to describe and substantiate proposed changes to component box functionality. These changes will alter the reference architecture and specifications. Are offerors required to supply similar architectural and specification data to support the technical compliance and benefit of suggested changes?	Require adherence to NASA's reference architecture or clarify whether offerors are required to update the CEI specifications or any other design documentation as a result of innovations, and when the updates are required.	The glossary definition for the term "Architecture" will be modified to remove ambiguity with respect to component organization. Evaluation for innovation will utilize the criteria identified in Section M. Section L requires supporting material for innovations to allow the Government's evaluation team to assess the innovation and therefore this material should be sufficient for this purpose. The Government does not expect architecture and CEI specifications to be re-submitted but would expect the Offeror to thoroughly describe their innovative approach within their technical proposal.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
59	L	L-58 and L-59; paragraph j	There is a requirement for a commitment letter from the cognizant government official for GFP/GFE not identified in the proposal. Offerors must request this letter and include the additional GFP/GFE required along with appropriate rental calculations associated with usage.	Since the Michoud Assembly Facility is being used for assembly operations of the IUA, please provide a listing of available GFP/GFE not listed in the RFP	The Government will make available in the Bidder's Library, a file listing of property identified at MAF for consideration in their proposals. This list is not considered an augmentation to Attachment L-5 (Government-Furnished Property and Government-Furnished Equipment). Bidders would be required to establish commitment letters, per RFP Part 4 Cost Volume, paragraph j. In accordance with paragraph j, rental calculation will be considered for evaluation purposes.	No	Yes
60	L	L-6	There are discrepancies between the charts shown in Attachment L-6 (L-6-2 vs. L-6-3/L-6-4). L-6-3 & 4 shows a Green Run for Ares-2 prior to launch but L-6-2 does not. We assume there is no Green Run for Ares-2 and that the time allocated for this activity on the L-6-3/4 charts will be available for the Upper Stage integration activity.	Please correct the RFP milestones to reflect that Ares 2 Mission does not have a Green Run.	The Ares 2 Upper Stage configuration does not include an Upper Stage Engine; therefore, Green Run testing is currently not in the plans. The detailed schedules L-6-3 and L-6-4 are in error and will be corrected to reflect no Green Run test for Ares 2.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
61	L	L-6	There are discrepancies between the charts shown in Attachment L-6 (L-6-2 vs. L-6-3/L-6-4). The time allocated to the Green Runs in charts L-6-3/4 include additional integration time at MAF prior to shipment to KSC which is not allocated in chart L-6-2. For example the Orion 3 mission indicates on L-6-2 a Green Run in Sept 2012 with a duration of approximately 3 months, however, L-6-3 appears to show a Green Run start date around June 2012 with a duration of approximately 5 months. Which is correct?	Please clarify the Milestone Schedule to reflect the correct Green Run start times and total durations.	The detailed schedules L-6-2, L-6-3, and L-6-4 are inconsistent and will be corrected. The first inconsistency is due to one schedule depicting US Element arrival dates at KSC and the other depicts ship dates from MAF (approximately 20 calendar days). The second inconsistency is due to dated planning that does not depict US final Integration being performed after Green Run. The updated schedule (J-6-2) will add activity to depict US integration post Green Run. In addition to the above inconsistencies, the "Roadmap" schedules do not provide for fidelity graphical depiction.	Y	No
62	L	Section L.21, Vol III ; Part 2, para I. (pg L-55)	CLINs 1 & 3 the instructions for Summary Technical Resources Template (STRT) & Subcontractor Cost Template (SCT) reference "WYE by SOW" and "costs by SOW". The STRT and SCT templates only reference the data by WBS, and all other templates only sort by WBS. Is the data on these templates to be by SOW?	Remove SOW reference from the Section L instructions to clarify that data required by WBS only.	Instructions for STRT and SCT in Section L have been modified to eliminate reference to SOW.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
63	L	Section L.21, Vol III ; Part 2, para I. (pg L-55)	Excel Pricing Model there are no instructions included in the IDIQ CLINs 2 & 4 section for the Indirect Labor Rate Template (ILRT) but this template is included for CLIN 4 (and not included for CLIN 2). Is the ILRT template to be included for the IDIQ CLINs 2 &/or 4 and will instructions be provided?	Clarify if ILRT is or is not required for IDIQ CLINs.	ILRT is not required for IDIQ CLINs. The template has been removed from the CLIN 4 EPM.	Yes	No
64	L	Section L.21, Vol III ; Part 2, para I. (pg L-55)	There are no instructions for the Prime and Major/Minor Subcontractor Cost Summary Template for Test Article, Flight Test Vehicles and Operational Vehicles (CLINs 1 & 3). Is this template to include all costs proposed for CLINs 1 & 3, allocated to the test article/flight vehicle? Or is it to only include the hardware costs directly associated with these flights? Is the template to be completed by Prime and Major Subs or Prime only?	Provide instructions for template	Section L.21, Page L-57: Instructions for the Article & Vehicle Summary (CLINs 1 & 3) have been provided. Cost shall reflect the Prime's fully burdened hardware cost (labor and material) for CLINs 1 & 3 only. References to Major/Minor subcontractors will be eliminated within the spreadsheet.	Yes	No
65	L	Section L.21; Volume IV	References Clause I.19 Earned Value Management System	Should read I.20	Agree, will be updated.	Yes	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
66	L-5	Paragraph 1	NASA has removed the reference to providing office space for 50 personnel on-site at MSFC. Is it the intent of the Government to provide office space for contractor personnel on site at MSFC?	For pricing purposes, clarify the anticipated office space available that will be provided for contractor staff.	The removal of the MSFC office space was intentional. The Government is not committing to provide MSFC office space. The Offeror should provide plans and costs for local-area off-site office space, where appropriate. (MSFC will continue to assess the availability of on-site locations following contract award.)	No	No
67	L-6	L-6-2 thru L-6-4	The top level milestone diagram on page L-6-2 shows a direct delivery of the Ares 2 vehicle to KSC. The detailed schedules on pages L-6-3 and L-6-4 show a Green Run for the Ares 2 and a three month integration period versus the six months shown for following vehicles. Please clarify.	Remove the Green Run period from the detailed schedules and extend the integration period to include that schedule time.	The Ares 2 Upper Stage configuration does not include an Upper Stage Engine; therefore, Green Run testing is currently not in the plans. The detailed schedules L-6-3 and L-6-4 are in error and will be corrected to reflect no Green Run test for Ares 2.	Yes	No
68	USO-CLV-DE-25106	5.1.6.6.1	Does the DFIS delivery include an RF EGSE interface, and will there be sufficient deliveries to match EGSE delivery requirements?	Define the responsibility and quantities of DFIS test sets and whether they include RF verification.	The EGSE will include an interface to the DFI system in order to perform a complete functional checkout of the integrated Upper Stage, including RF verification. No independent DFI test-set will be provided.	No	No

Index	RFP Section	Page / Paragraph	Offeror's Comment	Offeror's Suggested Change	Disposition	Amend RFP	Update Bidders Library
69	USO-CLV-DE-25106	5.1.6.9	Will the FSS Test Set be compatible with EGSE, and will there be quantities delivered to match the EGSE delivery requirements	Define quantities of FSS test sets and whether they include RF verification.	Yes, there will be an interface between the EGSE and the FSS Test Set (see USO-CLV-DE-25135, Section 3.6.3) although the details of this interface are not yet fully defined. The quantity of FSS Test Sets will be determined further during DDT&E. Testing of the FSS following integration of the Upper Stage will include RF verification. JP20-003-06, is a Memorandum of Understanding that will be added to the Bidders Library in the folder "C) Other References", and provides insight into the provision of FSS hardware to the Upper Stage Element Office by the First Stage Element Office.	No	Yes