SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)

2. CONTRACT NUMBER

3. SOLICITATION NUMBER

4. TYPE OF SOLICITATION

☐ SEALED BID (FB)

☒ NEGOTIATED (RFP)

5. DATE ISSUED

02/21/2017

6. REQUISITION/PURCHASE NUMBER

7. ISSUED BY

NASA/Johnson Space Center

Attn: David J. Wilson/BG

2101 NASA PKWY

Houston, TX 77598

8. ADDRESS OFFER TO (If other than item 7)

NOTE: In sealed bid solicitations “offer” and “offeror” mean “bid” and “bidder”.

NOTE: Sealed offers in original and 1 copies for furnishings the supplies or services in the Schedule will be received at the place specified in item 8, or if hand carried, in the depository located in specified in Section L.11, Proposal Marking and Delivery until local time March 30, 2017.

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:

A. NAME

David J. Wilson

B. TELEPHONE (NO COLLECT CALLS)

AREA CODE NUMBER EXTENSION

C. E-MAIL ADDRESS

David.j.wilson@nasa.gov

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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT

(See Section I, Clause No. 52.232-8)

10 CALENDAR DAYS (%) 20 CALENDAR DAYS (%) 30 CALENDAR DAYS (%) CALANDER DAYS(%)

14. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):

AMENDMENT NO. DATE AMENDMENT NO. DATE

15A. NAME AND ADDRESS OF OFFEROR

NAME ADDRESS

15B. TELEPHONE NUMBER

AREA CODE NUMBER EXTENSION

15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.

16. NAME AND THE TITLE OF PERSON AUTHORIZED TO SIGN OFFER

TYPE OR PRINT

17. SIGNATURE

18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED

20. AMOUNT

21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL OPEN COMPETITION:

☐ 10 U.S.C. 2304 (c)

☐ 41 U.S.C. 3304(a) ( )

23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)

ITEM

24. ADMINISTERED BY (If other than Item 7)

25. PAYMENT WILL BE MADE BY

CODE

26. NAME OF CONTRACTING OFFICER (Type or print)

David J. Wilson

27. UNITED STATES OF AMERICA

28. AWARD DATE

(Signature of Contracting Officer)

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

AUTHORIZED FOR LOCAL REPRODUCTION

Previous edition is unusable

STANDARD FORM 33 (REV. 6/2014)

Prescribed by GSA - FAR (48 CFR) 53.214 (c)
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SECTION B – SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

No clauses are incorporated by reference in Section B.

(End of clause)

B.2 TOTAL CONTRACT VALUE

(a) The total firm fixed-price of the phase-in is $[OFI]. The contract phase-in period is January 2, 2018 through March 31, 2018.

(b) The total contract value is broken out as follows:

<table>
<thead>
<tr>
<th>Table B-1</th>
<th>FFP Phase-In</th>
<th>Estimated Cost</th>
<th>Award Fee</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFP Phase-In</td>
<td>N/A</td>
<td>$[OFI]</td>
<td>N/A</td>
<td>$[OFI]</td>
</tr>
<tr>
<td>Base</td>
<td>N/A</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
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<td>Option 1</td>
<td>N/A</td>
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<tr>
<td>Option 2</td>
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<tr>
<td>Option 3</td>
<td>N/A</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
</tr>
<tr>
<td>Total Core (ISS)¹</td>
<td>N/A</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
</tr>
<tr>
<td>Total Core Orion</td>
<td>N/A</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
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</tr>
<tr>
<td>Cost Reimbursable IDIQ</td>
<td>N/A</td>
<td>$[TBD]</td>
<td>$[TBD]</td>
<td>$[TBD]</td>
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<tr>
<td>CMC3 TOTAL</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
</tr>
</tbody>
</table>

¹ The Cost Reimbursable Core estimated cost shall include close-out costs.
B.3 JPI 52.216-90 IDIQ MINIMUM AND MAXIMUM ORDERING LIMITS (AUG 2013)

In accordance with FAR 52.216-22, Indefinite Quantity, the guaranteed minimum to be ordered under this contract is $15,000 and the maximum which may be ordered under this contract is $30,000,000 (total for base and all option periods). This value is based on price. The Government is not obligated to order more than the minimum specified, but may order up to the maximum. The Contractor is obligated to fulfill orders issued, up to the maximum quantity.

(End of clause)

B.4 NFS 1852.216-85 ESTIMATED COST AND AWARD FEE (SEP 1993)

The estimated cost of this contract is $[OFI]. The maximum available award fee, excluding base fee, if any, is $[OFI]. The base fee is $0. Total estimated cost, base fee, and maximum award fee are $[OFI].

(End of clause)

B.5 NFS 1852.232-81 CONTRACT FUNDING (JUN 1990)

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is $[TBD]. This allotment is for cargo mission services and covers the following estimated period of performance: April 1, 2018 through [TBD].

(b) An additional amount of $[TBD] is obligated under this contract for payment of fee.

(c) An additional amount of $[TBD] is obligated under this contract for payment of the Firm-Fixed Price phase-in.

(End of clause)

B.6 FULLY BURDENED RATE TABLE FOR PRICING COST REIMBURSABLE (CR) IDIQ DELIVERY/TASK ORDERS

The purpose of this clause is to set forth the rates to be utilized in the subsequent negotiation of IDIQ task/delivery orders in accordance with H.3 Task Ordering Procedure and the Statement of Work (SOW). Pricing of all task/delivery orders shall be in accordance with the negotiated fully burdened rates in the Clause B.6 rate
tables. Under no circumstances shall the rates used to price out task/delivery orders exceed the agreed upon rates in the Labor Rate Tables.

The labor, indirect, and fee rates shall be used in establishment of the estimated cost of individual task/delivery orders. The labor rates are fully burdened composite team rates (prime and all subcontractors); but exclude prime fee. The indirect cost rates shown at the bottom of the tables shall also be used in negotiation of task/delivery orders, whenever applicable.

The parties agree that the fully burdened labor rates established in Clause B.6 rate tables shall not be construed as a basis for the contractor to request an equitable adjustment for the fully burdened ID/IQ rates or fee.

Table B-2
IDIQ Rate per Hour Table
(All labor rates are fully burdened exclusive of fee)

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Program Manager</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
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</tr>
<tr>
<td>Manager</td>
<td>$[OFI]</td>
<td>$[OFI]</td>
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<tr>
<td>Supervisor</td>
<td>$[OFI]</td>
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</tr>
<tr>
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<td>$[OFI]</td>
<td>$[OFI]</td>
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<td>$[OFI]</td>
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<tr>
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<td>$[OFI]</td>
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<td>Technical Prof. I</td>
<td>$[OFI]</td>
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<tr>
<td>Technician III</td>
<td>$[OFI]</td>
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Note: (1) Rates to be applied to non-labor costs (i.e. material, travel). Identify the rates and basis of application.

**B.7 AWARD FEE**

The amount of fee earned by the contractor shall be determined in accordance with the procedures in Attachment J-5, Award Fee Evaluation Plan and captured in J-5 Enclosure I.

(End of clause)
Cargo Mission Contract

Statement of Work (SOW)

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I. **FOREWORD**

The Cargo Mission Contract (CMC) supports the National Aeronautics and Space Administration (NASA) International Space Station (ISS), Orion, and future Exploration Programs by providing analytical and physical processing activities to support cargo requirements and providing sustaining engineering and maintenance and operations for Flight Crew Equipment (FCE). Additionally, the CMC develops and fabricates hardware as required to execute contract scope. Integration with International Partners and Commercial Visiting Vehicles (including Commercial Resupply Services (CRS) and U.S. Crew Vehicle (USCV)) is required to accomplish the required scope.

The purpose of the ISS is to conduct physical, engineering, and life sciences research for the benefit of life on Earth and to advance exploration of our solar system and enable commerce in Space. NASA’s Orion spacecraft will serve as the exploration vehicle that will carry the crew to space, provide emergency abort capability, sustain the crew during the space travel, and provide safe re-entry from deep space return velocities. In order to effectively support, operate and utilize the ISS and Orion Program vehicles, NASA requires the contractor to:

- Perform analytical integration and physical processing activities to support pressurized cargo requirements including:
  - Cargo/Stowage Mission Planning
  - Integration with hardware providers and/or launch vehicle providers
  - Stowage Integration
  - Cargo/Stowage Physical Processing
  - International Shipping
  - Decal, Placard and Graphic Production

- Perform Maintenance and Operations (M&O) and Sustaining Engineering (SE) functions for the following types of hardware (see definitions in contract Attachment J-1 and hardware list in contract Attachment J-9):
  - Pressurized and unpressurized cargo processing and transportation hardware: including (but not limited to):
    - Structural, soft goods, and foam Flight Support Equipment (FSE), etc., such as Extra-Vehicular Activity protective cover/housing, Pump Flow Controller Subassembly FSE (compatible with robotics/EVA, the launch vehicle and on-board interfaces), and Life Science Glovebox launch accommodation hardware and analysis
  - FCE: including (but not limited to):
    - Crew Clothing and Personal Hygiene Items
    - Housekeeping Items
    - Audio/Video Equipment and Associated Cabling
    - Laptop Computers and Support Equipment
    - Batteries
  - Supplemental items for ISS systems: including (but not limited to):
    - Portable monitoring devices (combustion products, ammonia, gas, etc.)
    - Medical crew health equipment
– Portable fire extinguishers
– Data Loggers
– Air Save Pump
– Water, or other liquid transfer bags
– Simple Payload Facilities: including (but not limited to):
  – ISS Lockers and drawers
  – Animal transporters
– Payload Hardware: including (but not limited to):
  – Wearable health monitoring devices
  – Tunable diode laser environmental sensing devices
  – Virtual reality to human interface hardware
– Payload Support Items: including (but not limited to):
  – Disposable syringes
  – Wipes
  – Bags
  – Fuels
  – Bogan Arms
  – Mounting Hardware
  – USB Hubs
  – Memory Devices
  – Environmental data recorders (accelerometer, temperature, shock, etc.)
– Unique Launch and Return Mission Requirements: including (but not limited to):
  – Hardware Mass Simulator
  – Shims

  • Development of new hardware, modification or recertification of existing hardware, or flight certification of Commercial-off-the Shelf (COTS) hardware, as needed, to support the hardware categories listed above.

The following Statement of Work (SOW) defines the tasks to be performed by the contractor. The contractor shall be responsible for the overall performance of the contract and provide all necessary resources to meet contract requirements. The contractor shall be responsible for all training and certifications required to accomplish contract requirements. All work completed under this contract shall comply with contract requirements.

For the SOW, the supported NASA Programs consist of the ISS and (when the CMC3 contract Option is exercised) Orion. The SOW is organized as follows:

  • Section 1, 2, 3 and 4 are considered “core” tasks which are required on a day-by-day basis to support the NASA Programs and are required to be performed for the entire contract Period of Performance (PoP). Contract changes to core tasks will be implemented via the Changes Clause (contract Section I) or the Underlimit Changes (Clause H.13) and require Contracting Officer (CO) authorization.
• Section 5 is a listing of requirements applicable to hardware or software development/modification or recertification. The specific SOW for these tasks will be listed in SOW Section 6 and/or the Deliverable Items List (DIL).

• Section 6 of the SOW and the DIL are for discrete tasks (clear start and end date with products; not part of core day-to day work covered in SOW Sections 1, 2, 3 and 4) which will implemented via the Underlimit Changes (Clause H.13) or Indefinite Delivery/Indefinite Quantity (IDIQ) Task Orders (Contract Section B and Clause H.3, Task Ordering Procedure) and issued by the CO.
1.0 MANAGEMENT INTEGRATION AND CONTROL

1.1 TECHNICAL DIRECTION

Performance of the work under this contract is subject to the written technical direction of the NASA Contracting Officer’s Representative (COR), who will be specifically appointed by the NASA Contracting Officer in writing. “Technical direction” means a directive to the contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in the contract SOW.

The COR does not have the authority to, and shall not, issue any instruction purporting to be technical direction that:

(1) Constitutes an assignment of additional work outside the Statement of Work;
(2) Constitutes a change as defined in the “Changes” clause (contract Section I) or Underlimit Changes (Clause H.13);
(3) Constitutes a basis for any increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;
(4) Changes any of the expressed terms, conditions, or specifications of the contract;
(5) Interferes with the contractor’s rights to perform the terms and conditions of the contract.

All technical direction shall be issued in writing by the COR. The contractor shall proceed promptly with the performance of the technical direction duly issued by the COR in the manner prescribed above and within the COR’s authority. If, in the contractor’s opinion, any instruction or direction by the COR falls within any of the categories defined above, the contractor shall not proceed but shall notify the CO in writing within 5 working days after receiving it and shall request the CO to either issue an appropriate contract modification within a reasonable time or advise the contractor in writing within 30 calendar days that the instruction or direction is rescinded in its entirety or within the requirements of the contract and does not constitute a change under the “Changes” clause of the contract, and that the contractor should proceed promptly with its performance.

A failure of the contractor and CO to agree that the instruction or direction is both within the requirements of the contract and does not constitute a change under the “Changes” clause, or a failure to agree upon the contract action to be taken with respect to the instruction or direction, shall be subject to the Disputes clause of this contract.

Any action(s) taken by the contractor in response to any direction given by any person other than the CO or the COR shall be at the contractor’s risk.
1.2 APPLICABLE DOCUMENTS
The Applicable Document List (ADL) for work performed under this contract is per Contract Section J-7, which contains the applicable version and dates of documents called out in the SOW, Data Requirement Descriptions (DRDs), and contract clauses. Applicable documents for work authorized via SOW Section 6 or the DIL, shall be the latest revision of the document at the time the work is authorized or per the specific Task Order.

1.3 CARGO MISSION MANAGEMENT AND ADMINISTRATION
The contractor shall conduct management and administration activities to develop and deliver the required products and services as defined within this contract. The contractor shall provide for the planning, organization, control, and reporting of all activities required by this contract to ensure accomplishment of all outcomes and deliverable products required by this contract.

The contractor shall maintain flexibility in performing the contract scope to accommodate multiple and frequent manifest changes resulting from launch delays, requirement changes, anomalies, etc. This includes the need to accelerate hardware and accept late hardware outside nominal template dates.

The contractor shall perform the activities in the most cost-effective and efficient manner while supporting the Government’s priorities for safety, mission success, and customer satisfaction.

1.3.1 MANAGEMENT PLAN
The contractor shall develop, maintain and implement a Cargo Mission Management Plan in accordance with Data Requirements Description (DRD) CMC-PM-01, Cargo Mission Management Plan. The contractor shall describe in the plan the contractor’s management structure that integrates all related plans and systems, including those of major subcontractors and vendors. (Major subcontractor and vendors are defined in DRD CMC-PC-01). The contractor shall address in the plan the contractor’s management of all systems, functions, and data requirements described in this SOW.

1.3.2 HUMAN RESOURCE MANAGEMENT
The contractor shall provide a qualified contractor workforce to implement the scope of this contract. The contractor shall:
- Provide fully trained, qualified, and certified (as required) contractor personnel in sufficient numbers to manage, supervise, and perform the work under this contract per required NASA Program schedules,
- Ensure no mission impacts due to position vacancies or personnel qualifications,
- Preclude staffing that may introduce single point failures,
- Support surge demands in staffing or workloads dictated by mission, operations, or maintenance demands.

1.3.3 PERFORMANCE MANAGEMENT REVIEWS (PMRs)
The contractor shall conduct Performance Management Reviews (PMRs) for the Government and provide monthly PMR products in accordance with DRD CMC-PM-02, Performance Management Review (PMR), for the work performed on this contract. The reviews shall provide the NASA Programs insight into the contractor's, subcontractors', and vendors' overall technical, schedule, and cost performance for all work performed. Metrics that indicate the level of success in the execution of contract requirements and the status of the contractor’s achievement against the performance standards contained within this SOW or elsewhere in this contract shall be presented at the PMR. The PMR presentations shall depict performance measurement, accomplishments, issues and corrective actions, company financial status (including rates), and all other data necessary to status the NASA Programs.

1.3.4 ANNUAL WORK PLANS
The contractor shall develop annual work plans per DRD CMC-PM-03, Annual Work Plans.

1.3.5 ISS BOARDS, PANELS AND WORKING GROUPS
The contractor shall provide data, analyses and input (including presentations), to provide status to, and support decision making at, the chartered ISS Program Boards, Panels and Working Groups as identified in Space Station Program (SSP) 50200-01, Station Program Implementation Plan (SPIP) Volume 1, Station Program Management Plan (Figure 5.0-1 “ISS Program Control Boards and Panels”).

1.3.6 EXTERNAL AND INTERNAL PROGRAM REVIEWS
The contractor shall develop and deliver briefing materials and analyses for NASA Program presentations and meetings with internal and external review groups. Materials and analyses include but are not limited to, contract technical, cost, and schedule status, specific safety or risk issues, and responses to external inquiries. These groups include, but are not limited to: the Aerospace Safety Advisory Panel (ASAP), Space Flight Advisory Committee (SFAC), Inspector General (IG) and United States (U.S.) Government Accountability Office (GAO), and Cost Assessments Teams.

1.4 BUSINESS MANAGEMENT AND ADMINISTRATION
The contractor shall provide business management and administration for this contract. The contractor shall perform all business and administrative functions and integrate these functions across all areas of performance. The contractor’s on-going business analysis shall support the NASA Program business’ process.

1.4.1 CONTRACT FINANCIAL SYSTEM
The contractor shall utilize a contract financial system which discretely tracks resources by fund source, contract Work Breakdown Structure (WBS), and elements of cost including labor, overhead, other direct costs (i.e. travel and subcontracts), and indirect costs. The contractor shall provide financial planning to the Government budget process (i.e. Planning, Programming, Budgeting, and Execution [PPBE] budget calls), and special requests for budget impacts. The contractor shall provide financial reporting in accordance with DRD CMC-PC-01, NF533 Monthly Cost Reporting. The contractor shall
include financial reporting requirements in any subcontracts for all tiers of subcontracts as defined in DRD CMC-PC-01.

1.4.2 CONTRACT WORK BREAKDOWN STRUCTURE (WBS)
The contractor shall develop, provide, and maintain a contract WBS Dictionary, in accordance with DRD CMC-PC-02, Work Breakdown Structure (WBS) and Dictionary. The contract WBS shall serve as the framework for contract planning, budgeting, cost reporting, schedule resource loading, and schedule status reporting to NASA. Separate WBS shall be established for ISS and Orion work.

1.5 CONFIGURATION AND DATA MANAGEMENT AND INTEGRATION
The contractor shall develop, implement and administer configuration management operations in accordance with SSP 41170, ISS Program Configuration Management Requirements; SSP 50010, Standards for ISS Program Documentation; and SSP 50123, Configuration Management Handbook. The contractor shall develop and maintain a Configuration Management Plan in accordance with DRD CMC-PC-03, Configuration Management Plan. Additionally, the contractor shall be responsible for contract specific functions as described below:

1.5.1 CONFIGURATION STATUS ACCOUNTING (CSA) AND VERIFICATION
The contractor shall ensure that the application of Configuration Status Accounting requirements and systems results in, and maintains, required Cargo Mission hardware and software product baselines in accordance with SSP 41170.

The contractor shall provide access to accurate and timely information about a product and its configuration information throughout its lifecycle. The data shall be accessible ISS Program-wide to support major milestones and flight readiness activities in accordance with SSP 41170.

1.5.2 CONFIGURATION CONTROL/CHANGE MANAGEMENT
The contractor shall develop and/or evaluate and respond to Change Requests (CRs) that impact the Cargo Mission Contract in accordance with SSP 50123. The contractor shall review and evaluate Program changes originating from outside this contract to determine if those changes have potential impacts to this contract, in accordance with SSP 50123. The contractor shall use the electronic Configuration Status Management Operations System (COSMOS) database to process CRs and Change Directives (CDs), assign CR numbers, and track/status changes.

The contractor shall provide timely (per schedule) and quality CDs (or inputs to CDs) with clear, thorough and accurate contract direction (e.g., proposed SOW updates, Deliverable Items List (DIL), Authority to Proceed (ATP) dates, and SOW Evidence of Completion). The contractor shall process CRs that contain a majority of CMC work as the NASA Change Integrator (CI) per SSP 50123.

1.5.3 DATA MANAGEMENT
The contractor shall provide the following Data Management activities specific to this contract, in accordance with SSP 50010 and SSP 41170. The contractor shall:
1.5.3.1 ENGINEERING RELEASE UNIT (ERU)

Provide an Engineering Release Unit to release approved documents, specifications, and other NASA Program-controlled documentation into the NASA Program approved repository per SOW Appendix B, ERU Process Flow.

1.5.3.2 CONFIGURATION MANAGEMENT RECEIPT DESK

Operate a Configuration Management Receipt Desk to process change paper per Appendix B, ERU Process Flow.

1.5.3.3 DATA QUALITY ASSURANCE (DQA)

Provide DQA for all NASA controlled Program documentation developed or sustained under this contract to verify complete and accurate documents for release.

1.6 INFORMATION TECHNOLOGY (IT)

The Mission and Program Integration (MAPI) contractor will provide common IT infrastructure architecture for use by the ISS participants to support the mission of the ISS Program. The contractor may choose to utilize the ISS Program IT infrastructure provided by the MAPI contractor when common products and services provide for increased supportability, promote commonality, or provide cost efficiencies.

Any of the existing ISS Program IT tools provided as Government Furnished Data (GFD) or Government Furnished Property (GFP) are available for utilization by the contractor to fulfill the requirements of this contract. Any modifications to GFD/GFP tools shall be in accordance with NID 7120.99, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.

SSP 50013, Information Systems Plan describes the current and the planned capabilities of the ISS Program Information Systems (IS). Additionally, the document describes the ISS Program IS providers and describes the processes by which the ISS Program participants can request services, report problems and identify improvements to the ISS Program IS.6.0.

The contractor shall develop and maintain software tools and applications required to implement the contract scope. All IT development unique to the ISS or Orion Programs shall be subject to the following NASA processes and procedures for application development:

- NASA Procedural Requirements (NPR) 2830.1, NASA Enterprise Architecture Procedures;
- NID 7120.99, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements;
- NPR 7123.1, NASA Systems Engineering Processes and Requirements;
Additionally, all unique ISS or Orion Program IT development shall be subject to the following NASA Web policies:

- 16 CFR Part 312, Children’s Online Privacy Protection Act;
- National Institute of Standards and Technology Special Publication (NIST-SP)-800-53, Security and Privacy Controls for Federal Information Systems and Organizations;
- 5 U.S.C. 552a, Records Maintained on Individuals;
- NASA Policy Directive (NPD) 2800.1, Managing Information Technology.
- NPR 1382.1, NASA Privacy Procedural Requirements

1.6.1 IT MANAGEMENT AND SECURITY

The contractor shall develop and implement an IT Management Plan per DRD CMC-PC-04, which includes a security plan which describes the policy, processes, and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract. The IT Management Plan shall that addresses both ground and on-board systems developed and sustained by this contract in accordance with DRD CMC-PC-04 and the following:

- NASA FAR Supplement (NFS) 1852.204-76, Security Requirements for Unclassified IT Resources;
- NPR 2810.1, Security of Information Technology;

The Contractor shall configure and manage the security configuration of existing systems and services per:

- Information Technology Handbook (ITS-HBK)-2810.02-01, Security Assessment and Authorization;
- ITS-HBK-2810.02-04, Security Assessment and Authorization: Continuous Monitoring;
- ITS-HBK-2810.05-01, System and Services Acquisition;
- ITS-HBK-2810.06-01, Security Awareness and Training;
- ITS-HBK-2810.08-01, Contingency Planning;
- ITS-HBK-2810.09-01, Incident Response and Management;
- ITS-HBK-2810.14-01, System and Information Integrity.

The Contractor shall facilitate, provision, and document requests for logical and physical systems access for the systems managed on this contract. Documentation and reporting of access shall be done via the Government-provided NASA Account Management System (NAMS) when possible.
1.6.2 IT CAPITAL PLANNING AND INVESTMENT
The contractor shall develop and implement an IT Capital Investment Process in accordance with SSP 50222, IT Capital Investment Process. All IT delivered by, or directly charged to, this contract shall be subject to IT capital planning processes.

1.6.3 DATA SHARING
The contractor shall implement an architecture that enables bi-directional digital data sharing and web-based access to CMC tools and information and data products with the Government and authorized users of the JSC network domain, including transmission of information across firewalls with the required security access.

1.6.4 EMPLOYEE IT SECURITY AWARENESS AND SENSITIVE INFORMATION TRAINING
Contractor employees performing work under this contract shall annually complete both 1) the NASA-provided IT Security Awareness Training and 2) ISS Program Guidance and Best Practices for Handling Sensitive Data Training. The Contractor shall provide evidence that these training activities have been met for all employees subject to this contract. The Contractor shall submit periodic reports (as required by CO) detailing the overall status of the annual training program. The annual training program is defined as the period from October 1 through September 30. Each of these two training modules are delivered via desktop workstation and each take approximately 1 hour to complete.

1.7 CERTIFICATION OF FLIGHT READINESS
The contractor shall develop, maintain, and implement a Certification of Flight Readiness (CoFR) Plan in accordance with DRD CMC-PM-04, Certification of Flight Readiness (CoFR) Plan, SSP 50108, Certification of Flight Readiness Process Document, and MPCV 72555, Orion Multi-Purpose Crew Vehicle (MPCV) Program Certification of Flight Readiness (CoFR) Implementation Plan. The contractor shall develop and implement an auditable approach to verify and ensure that flight preparation responsibilities and requirements are met and all problems dispositioned in accordance with SSP 50108 and MPCV 72555.

1.8 EXPORT CONTROL
The contractor shall export hardware, software and data distributed in any format in the execution of contract responsibilities in accordance with NPR 2190.1, NASA Export Control Program. The contractor shall establish export control procedures that are compliant with NASA policy and export regulations, and perform self-audits of their established export control procedures per DRD C-II-01, Export Control Plan (ECP), and SSP 50223, “ISS Export Control Plan” and deliver results of the Export Control Audits per DRD C-II-02, Export Control Audit Results.

The contractor shall identify contacts at Department of Homeland Security/Transportation Security Administration to aid cargo transport through US airports and expedite issue resolution.
1.9 NASA REIMBURSABLE SPACE ACT AGREEMENTS
The contractor shall accomplish all work necessary to accommodate commercial customers to the ISS. The work will be the same or similar scope already required elsewhere in this contract SOW but may be performed in support of a NASA Reimbursable Space Act Agreement (SAA).

1.10 GOVERNMENT PROPERTY
The contractor shall manage and perform property management for all property acquired as a direct charge to this contract, whether contractor-acquired or Government-provided, in accordance with the Government property clauses identified this contract.

The contractor shall describe the method of administering and controlling Government property per DRD CMC-PR-01, Government Property Management Plan, and shall report on NASA property in the custody of the contractor on both a monthly and annual basis per DRD CMC-PR-02, Financial Reporting of Contractor-Held Property.

2.0 SAFETY & MISSION ASSURANCE/RISK MANAGEMENT (S&MA/RM)
For hardware sustained within the scope of this contract, the S&MA analyses (e.g., Failure Mode and Effects Analysis (FMEAs), Acceptance Data Packages (ADPs), hazards, etc.) previously developed for this hardware shall be maintained per the requirements within this section of the SOW (Reference Clause H.19, Transitioned Hardware Data Acceptability).

2.1 MANAGEMENT

2.1.1 MISSION ASSURANCE & RISK MANAGEMENT PLAN

2.1.2 SAFETY AND HEALTH PLAN
The contractor shall perform tasks to ensure the protection of personnel, property, equipment, and the environment in contractor products and activities generated in support of this contract. To ensure compliance with applicable NASA policies, requirements, federal, state, and local regulations for safety, health, environmental protection, and fire protection, the contractor shall develop and implement a safety and health program per a NASA-approved safety and health plan, in accordance with DRD CMC-SA-02, Safety and Health Plan.

2.1.3 QUALITY ASSURANCE PLAN
The contractor shall develop, implement and maintain a quality assurance plan, as documented in DRD CMC-SA-01, Mission Assurance and Risk Management Plan, and SSP 41173, Space Station Quality Assurance Requirements.
2.2 RISK MANAGEMENT
The contractor shall identify risks and coordinate the abatement or acceptance of these risks in accordance with NPR 8000.4, Agency Risk Management Procedural Requirements and SSP 50175, Risk Management Plan.

2.3 SAFETY

2.3.1 ASSESSMENTS
The contractor shall develop and deliver safety assessments for all packed bags and for all hardware sustained and/or developed on this contract. Additionally, the contractor shall develop Integrated Bag Level Hazard Assessments (IBLHAs) for cargo launching and returning to:
- Ensure that hardware packed together in a bag does not create any new hazards (i.e., material incompatibility).
- Ensure that all hazards are controlled within the bag (i.e., sharp edges/pinch points, frangible materials, fluid containment).

Additionally, the contractor shall develop a Launch Cargo Hazard Summary for CRS Next Level Integrators (NLIs) for cargo launching to:
- List cargo items with ground transportation hazards
- Include Material Safety Data Sheets (MSDS) and Safety Data Sheets (SDSs) for these cargo items.
- Imagery of hardware and packed imagery for these cargo items.

All assessments shall be developed in accordance with DRD CMC-SA-03, Safety Analysis and Hazard Reports, and the following documents:
- SSP 30599, Safety Review Process;
- SSP 30309, Safety Analysis and Risk Assessment Requirements;
- SSP 50021, Safety Requirements Document;
- SSP 51700 Payload Safety Policy and Requirements for the International Space Station.

2.3.2 MISHAP INVESTIGATION AND REPORTING
The contractor shall investigate and report mishaps, in accordance with NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping.

2.4 RELIABILITY AND MAINTAINABILITY (R&M)

2.4.1 FAILURE MODES & EFFECTS ANALYSIS/CRITICAL ITEMS LIST
The contractor shall develop, maintain and deliver the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL) report and worksheets for hardware developed and/or sustained under this contract in accordance with DRD CMC-SA-04, Failure Modes and Effects Analysis and Critical Items List.
2.4.2 R&M ALLOCATION, ASSESSMENTS, AND ANALYSIS
The contractor shall develop, and deliver the R&M Allocation, Assessment, and Analysis (AAA) Report in accordance with DRD CMC-SA-05, R&M Allocations, Assessments, and Analyses Reports.

2.4.3 R&M SOURCE DATA
The contractor shall develop and, or maintain hardware R&M source data for hardware developed and/or sustained under this contract. Source data updates are required to reflect operational performance. The contractor shall utilize approved reliability block diagrams and data to perform quantitative R&M analyses. The contractor shall submit newly generated or updated source data and analyses to NASA for approval.

2.5 QUALITY ASSURANCE

2.5.1 AS9100C
The contractor shall establish and maintain a Quality Management System (QMS) that complies with the SAE Aerospace Standard AS9100C, Quality Management Systems – Requirements for Aviation, Space and Defense Organizations. The contractor shall obtain AS9100C certification within 18 months of contract start.

2.5.2 PROBLEM RESOLUTION
The contractor shall report, promote and participate in the investigation and resolution of applicable problems in accordance with SSP 41173, Space Station Quality Assurance Requirements, and SSP 30223, International Space Station Problem Reporting and Corrective Action (PRACA) System Requirements.

2.5.3 GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP)
The contractor shall be a member of, and participate in, the Government-Industry Data Exchange Program (GIDEP) in accordance with S0300-BT-PRO-010, GIDEP Operations Manual and S0300-BUGYD-010, GIDEP Requirements Guide (available from the GIDEP Operations Center, PO Box 8000, Corona, California 92878-8000) per DRD CMC-SA-06, GIDEP and NASA Advisory Problem Data Sharing and Utilization Program Documentation and Reporting.

The contractor shall review all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories to determine if they affect the contractors products/services provided to NASA. For those that affect the ISS or Orion Programs, the contractor shall take action to eliminate or mitigate any negative effect to an acceptable level. Note: For COTS parts, only parts with an available bill of materials requires a response.
The contractor shall generate the required failure experience data report(s) (GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory) and enter into the JSC NASA Advisory/GIDEP Documents Status Tracking System, jarts-sma.jsc.nasa.gov, in accordance with NPR 8735.1, “Procedures for Exchanging Parts, Materials, Software, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program (GIDEP) and NASA Advisories”, whenever failed or nonconforming items, available to other buyers, are discovered during the course of the contract.

2.5.4 ACCEPTANCE DATA PACKAGES
The contractor shall maintain hardware Acceptance Data Packages (ADPs) in accordance with SSP 30695, Acceptance Data Package Requirements Packages, and DRD C-SA-07, Acceptance Data Package (ADP).

3.0 SUSTAINING ENGINEERING & MAINTENANCE AND OPERATIONS
The contractor shall sustain and/or maintain the following categories of hardware (see contract Attachment J-1, Dictionary):

- Flight Crew Equipment (FCE)
- Pressurized and unpressurized cargo transport hardware, as specified in Attachment J-9
  (generally limited to hardware designed and/or built under this contract)
- Simple Payload Facilities
- Payload Hardware
- Payload Support Items
- Supplemental items for ISS Systems
- Hardware required to satisfy Unique Launch and Return Mission Requirements
- Ground Support Equipment (generally limited to hardware designed and/or built under this contract)

Specific hardware to be sustained and maintained is listed in contract Attachment J-9, “Hardware List”. NASA will retain overall SE responsibility for hardware not required to be sustained under this contract. NASA will retain System Management oversight for the hardware for which the contractor has SE responsibility.

For hardware sustained within the scope of this contract, the data previously developed for this hardware shall be maintained per the requirements within this section of the SOW (Reference Clause H.19, Transitioned Hardware Data Acceptability).

3.1 MAINTENANCE AND OPERATIONS (M&O)
The contractor shall acquire, warehouse, issue, track, maintain, and process all hardware identified in Attachment J-9, "Hardware List", to ensure availability for flight and training requirements.
3.1.1 STORAGE
The contractor shall provide and operate a total storage function, including controlled facilities, to implement the tasks associated with this SOW. The contractor shall receive, verify, and issue flight and non-flight property into a contractor provided and operated storage facility. The contractor shall segregate property in storage by flight or non-flight classification and as serviceable or non-serviceable. The contractor shall control perishable, shelf-life, and limited-life equipment.

3.1.2 INVENTORY MANAGEMENT
The contractor shall develop, implement, and maintain an automated inventory control system and workflow tool for all contractor-held Government property.

The contractor shall define and maintain ground inventory levels required to support ISS and Orion flight and training requirements. For crew provisioning ground inventory, the contractor will utilize inputs from NASA. To maintain inventories, the contractor shall acquire and/or fabricate parts, materials, and replacement units.

The contractor shall maintain a current inventory of all non-consumable hardware by location with location identified as “on ISS”, “on a space transportation vehicle (and identify the transportation vehicle)”, “disposed of”, “on Orion”, or “on the ground”. For items identified as “on the ground” the contractor shall identify the location and status, i.e. “warehouse”, “shipped to training facility”, “under repair”, or “staged at launch site for contingency use”.

3.1.3 CREW PROVISIONING
The contractor shall perform Crew Provisioning Fit Checks/Reviews and participate in the Crew Provisioning Working Group as defined in SSP 50409, Crew Provisioning Management Plan. The contractor shall procure/prepare the type and quantity of crew clothing, hygiene, and personal item requirements to be flown as determined by the Crew Provisioning Working Group (CPWG) (reference SSP 50477, Joint Crew Provisioning Catalog). This includes the necessary Crew Preference apparel for ground training and public affairs events for ISS Increment Crews.

3.1.4 MAINTENANCE AND REPAIR
The contractor shall maintain, repair, and test the hardware identified in Attachment J-9, “Hardware List” to maintain the required inventory to support ISS and Orion missions (reference SSP 50276, Depot/Manufacturing Facility Certification Plan). The contractor shall update required technical documentation including ADPs to maintain a record of the hardware’s history.

3.1.5 HARDWARE PROCESSING
The contractor shall perform processing required to make the hardware identified in Attachment J-9, "Hardware List", ready for flight or training per ISS Program schedules. The contractor shall update required technical documentation, including ADPs, to maintain a record of the hardware’s history.
3.1.6 **M&O SCHEDULES**  
The contractor shall prepare and deliver schedules for all maintenance, repair, and processing activities to provide the Government with insight into overall project status in accordance with DRD CMC-PM-02, Performance Management Review Products.

3.2 **SUSTAINING ENGINEERING**

3.2.1 **PERFORMANCE ANALYSIS**  
The contractor shall monitor, analyze, and document hardware reliability and performance to determine actual versus expected performance, anomalous behavior, and required updates to repair, maintenance plans, check out plans, and operational procedures for hardware sustained on this contract. The contractor shall perform an analysis of the use, maintenance (preventive and corrective), replacement, and anomalies associated with the hardware to be used in inventory management for all the equipment for which the contractor has accountability.

3.2.2 **ANOMALY RESOLUTION**  
The contractor shall identify, investigate, resolve, and document flight and ground hardware anomalies for all hardware sustained by this contract in support of the NASA Program’s anomaly resolution processes. Applicable anomalies shall be documented per SOW paragraph 2.5.2, PROBLEM RESOLUTION. The contractor shall conduct anomaly resolution in accordance with MGT-OA-019, On-Orbit Anomaly Resolution Process Work Instruction.

3.2.3 **ENGINEERING DRAWINGS/DATA**  
The contractor shall maintain drawings for hardware sustained on this contract in accordance with DRD CMC-EN-01, Engineering Drawings and Associated Lists and shall maintain engineering data on hardware sustained per DRD CMC-EN-02, ISS Vehicle Engineering Data.

*Note: Some of the drawings associated with GFP are currently stored in the NASA JSC Engineering Drawing Control Center (EDCC). All drawing releases to the VMDB shall be made per DRD CMC-EN-01.*

3.2.4 **COMPUTER-AIDED DESIGN (CAD) MODELS**  
The contractor shall provide CAD models for all hardware sustained on this contract in accordance with DRD CMC-EN-03, Cargo Integration Cargo CAD Models for Launch, Return and On-orbit Configurations.

3.2.5 **OBSOLESCENCE MANAGEMENT**  
The contractor shall perform obsolescence management for repair parts and COTS end items for hardware sustained on this contract, in order to ensure hardware is available to support maintenance or manufacturing activities. In the event that original materials and/or parts are no longer available, or desirable, the contractor shall notify NASA, certify new sources, and update engineering products per ISS Program processes.
3.2.6 STANDARD REPAIR PROCEDURES (SRPS)
The contractor shall generate, review and approve SRPs for hardware within the sustaining engineering responsibility of this contract to expedite hardware repair when an SRP does not already exist for items that need frequent repair.

3.2.7 SUSTAINING ENGINEERING SCHEDULES
The contractor shall prepare and deliver schedules for Sustaining Engineering activities to provide the Government with insight into overall project status in accordance with DRD CMC-PM-02, Performance Management Review Products.

3.2.8 CARGO INTEGRATION CERTIFICATION
The contractor shall perform the Hardware Provider function as described in SSP 50835, ISS Pressurized Volume Hardware Common Interface Requirements Document (CIRD), for items sustained per J-9, Hardware and Software List.

3.2.9 BOOK COORDINATION
The contractor shall book coordinate, as defined in Contract Attachment J-1: “Dictionary”, the following program process and requirement documents:
- SSP 50007, Space Station Inventory Management System Label Specification;
- SSP 50200-11, SPIP, Volume 11: Cargo Integration Processes;
- SSP 50465, Return Manifest Disposition Plan (RMDP) Blank Book, including flight specific appendices (i.e., Appendix D (team rosters), Appendix E (RMDP flight appendix), Appendix F (As-Flown RMDP) and Appendix G (Excess Integration and Unplanned Hardware) to be delivered using the Mission Integration Database Application System (MIDAS) RMDP application;
- JSC 64192, Requirements Verification Matrix for the Automated External Defibrillator (AED);
- JSC 64267, ISS Think Pad T61p™ Laptop Hardware Interface Requirements Document;
- JSC 64268, ISS Think Pad T61p™ Laptop Hardware Project Technical Requirements Specification;
- JSC 64270, ISS Think Pad T61p™ Laptop Computer Verification and Validation Document (V&VD);
- JSC 64278, Pre-Delivery/Pre-Installation Acceptance Test Procedures for the Crew Health Care System (CHeCS) Automated External Defibrillator (AED).
- CMC2-00471, ICWC to Commercial Orbital Transportation Services Visiting Vehicles (VV) (Cygnus and Dragon) Interface Requirements Document (IRD).

3.2.10 ISS APPLICATIONS SUSTAINING
The contractor shall maintain the following Government provided (reference contract Attachment J-10, Table 2) software applications and associated data to provide the most current processes, procedures and data:
- **eLRODS** - Electronic Launch, Return and On-Orbit Data Set (eLRODS) is the mechanism for hardware providers to provide the NASA ISS cargo processing or cargo integration community a standard set of requirements to pack, handle, transport, and stow pressurized hardware launched to and returned from ISS. eLRODS are required for all launch and return United States Orbital Segment (USOS) hardware, as well as any Russian Segment hardware launching or returning on USOS Visiting Vehicles.

- **eLabel** - eLabel is a consolidated application to facilitate hardware providers’ coordination with (and approval from) multiple disciplines necessary for spaceflight hardware labels.

- **eRMDP** - eRMDP is an application to consolidate and automate acquisition of flight specific RMDP data from hardware providers.

### 4.0 PRESSURIZED CARGO INTEGRATION
Tasks outlined in this section apply to cargo manifested on ISS Visiting Vehicles (VVs) (excluding International Partner provided cargo flying on its own vehicle unless otherwise specified) and the Orion MPCV for exploration missions. ISS VVs include Soyuz, Progress, H-II Transfer Vehicle (HTV), Commercial Resupply Services (CRS) (CRS-1 and CRS-2) vehicles, and U.S. Crew Vehicle (USCV).

### 4.1 CARGO MISSION PLANNING

#### 4.1.1 MANIFEST ASSESSMENTS
The contractor shall provide tactical level assessments of manifests and manifest options to confirm viable packing plans as new hardware is either reviewed for addition or added to the launch and return manifests to support the overall ISS and Orion Program planning processes. Descriptions of the ISS tactical planning processes are defined in SSP 50200-01, SPIP Volume 1: Station Program Management Plan, and SSP 50200-02, SPIP Volume 2: Program Planning and Manifesting. The following Program documents define ISS Planning requirements:

- SSP 54100, Increment Definition and Requirements Document Flight Program,
- SSP 50489, Mission Integration Templates.

#### 4.1.2 FLIGHT SCHEDULES
The contractor shall provide schedule inputs to the MAPI Contract’s development and maintenance of flight-specific Performance-to-Plan and associated Level III schedules. The purpose of the flight-specific schedule is to coordinate delivery dates for activities and products with the hardware providers, operations community, and the Next Level Integrator (NLI).

The contractor shall develop, maintain, and deliver a flight schedule in accordance with DRD CMC-PC-05, Cargo Mission Contract Program Schedules. The purpose of the schedule is to assess major
mission milestones related to cargo processing and turnover to the NLI for all active missions to provide the Government with insight into overall cargo processing resource loading.

4.1.3 VISITING VEHICLE INTEGRATED PRODUCT TEAM (VVIPT)
The contractor shall attend/participate in NASA VVIPT meetings to provide input and report on the progress of planned activities and issues associated with cargo mission plans. This shall include ready assessment of potential impacts to CMC M&O, sustaining engineering, and product delivery schedules. The VVIPT is described in SSP 50200-01 and SSP 50200-01-ANXC, SPIP Volume 1: Station Program Management Plan, Annex C: Mission Integration and Operations.

4.2 CARGO PLANNING AND INVENTORY
The contractor shall perform the cargo planning and inventory functions for pressurized cargo manifested on ISS VVs (reference SSP 50200-11) and the Orion MPCV. The contractor shall use the approved manifest and approved Manifest Request (MR) reports from the MIDAS system as the flight specific source for cargo to be processed under this contract to ensure work is performed using a Government approved list. SSP 50849, MIDAS to JAXA HTV Cargo Integration System Interface Control Document (ICD), defines the MIDAS data interface for the HTV vehicles.

4.2.1 CARGO INTEGRATION PLANNING
The contractor shall establish and implement a flight specific Hardware Audit (HA) process for each manifested hardware item to confirm ground handling and packing requirements, assess certification and export control status (when applicable), verify manifest data, and confirm delivery dates in accordance with SSP 50200-11.

The contractor shall facilitate identification and resolution of issues related to schedules and deliverables, including but not limited to export control status and, if required, the procurement of specialized shipping containers/transportation services to meet Department of Transportation standards, to ensure on-time delivery of manifested cargo to the NLI.

The contractor shall ensure completeness and accuracy of the Hardware Accountability Matrix Report (HAMR). Issues that cannot be resolved shall be reported to NASA, to ensure Government awareness of cargo integration activities.

4.2.2 CARGO DE-INTEGRATION PLANNING
The contractor shall coordinate de-integration and hardware return plans with the Soyuz, CRS-1, CRS-2, USCV and MPCV return vehicle providers, on-site NASA representatives (where applicable), and hardware owners to ensure returned hardware is delivered to the owner within the required time constraints. The contractor shall develop and maintain the requirements in the flight specific RMDP Appendices (SSP 50465-XXX, where XXX is flight specific).
The contractor shall provide a hardware return summary to NASA following the completion of return hardware disposition to identify impacts to future manifest plans, on-orbit inventory, and on-orbit stowage volume.

4.2.3 INVENTORY MANAGEMENT SYSTEM (IMS) BAR CODE TRACKING
The contractor shall collect hardware to barcode relationships, including any encoded and associated Radio Frequency Identification (RFID) data, and maintain the relationship in MIDAS to ensure the accuracy of the on-orbit IMS database.

The contractor shall review and process barcode label requests in accordance with the eLabel process and JSC 27260, Decal Process Document and Catalog. The contractor shall review and concur on, and process barcode label exemption requests to the NASA Cargo Integration Lead for approval in accordance with JF 1345, ISS Inventory Management System Bar Code Label Request for Exemption.

4.2.4 IMS CONTAINMENT DATA
The contractor shall document As-Built packing data in the MIDAS database system for hardware packed within the scope of this SOW for upload to the on-orbit IMS to ensure a full accounting of hardware containment within each packed bag or locker. As-Built packing data is defined per SSP 50200-11.

The contractor shall provide a capability for electronic upload of As-Built data into MIDAS. For pre-packed cargo delivered to the contractor or to the launch vehicle integration site from other packing organizations, the contractor shall provide As-Built packing data, not automatically loaded into the MIDAS database system, to the NASA Flight Operations Directorate (FOD) for upload to the on-orbit IMS database.

4.3 STOWAGE INTEGRATION
The contractor shall perform the Stowage Integrator (SI) function described in SSP 50200-11, for NASA packed bags and specialized stowage accommodations. The contractor shall provide facilitating tools and/or process mechanisms that aid the NASA Programs in identifying and analyzing stowage options for newly identified cargo requirements. Packed cargo shall meet the applicable vehicle requirements per the following Program documents:

- SSP 50273, Segment Specification for the H-II Transfer Vehicle;
- SSP 50438, International Space Station to H-II Transfer Vehicle Interface Control Document, Part 1;
- SSP 50833, International Space Station Program Cargo Transport Interface Requirements Document;
- SSP 50835, ISS Pressurized Volume Common Hardware Interface Requirements Document.
The following documents contain ISS Visiting Vehicle requirements on cargo and may be referenced by the Stowage Integrator as work is performed. The contractor shall notify the Government if the contractor notices a conflict with requirements in these documents and requirements in this contract:

- IT32928-103, Requirements for International Partner Cargoes Transported on Russian Progress and Soyuz Vehicles;
- NASDA-ESPC-2857, HTV Cargo Standard Interface Requirements Document Part 1, Volume 1 and Volume 2;
- JSX-2208041, HTV Cargo Safety Review Process;
- JHX-20080175, HTV Cargo Integration Plan (CIP);
- 6354-GD7100, Cygnus Pressurized Cargo Module to Internally-Carried Payload Interface Definition Document (IDD) (CRS-1);
- SPX-00001047, C3-1 Dragon Interface Definition Document (CRS-1).

The specific hardware lists to launch and return on each flight, and associated data, are contained within the ISS MIDAS database.

4.3.1 CARGO LAYOUTS
The contractor shall develop, maintain and deliver bag-level stowage products to define the arrangement of passive cargo in its packed configuration in accordance with hardware packing requirements documented in the eLRODS database and vehicle loading requirements per requirement documents listed in SOW 4.3, STOWAGE INTEGRATION.

The contractor shall develop and maintain bag-level descent cargo packing products for CRS-1, CRS-2, USCV, and Orion MPCV flights only and deliver to the Government. Disposal cargo layouts are only required for cargo having specific orientation requirements or for bags with complex packing plans (e.g. specific orientation requirements). The contractor shall develop and maintain bag level summary data for CRS disposal vehicles and deliver to the Government.

The contractor shall implement a cargo layout review process that enables review participants (including hardware provider(s) and NASA), to view the proposed packing configuration in accordance with SSP 50200-11. The process shall allow for near real-time review of the impacts of suggested changes to a bag: content configuration, weight, orientation, analytical center of mass, packing instructions, and volume utilization.

4.3.2 MASS PROPERTIES ANALYSIS
The contractor shall develop, maintain and deliver mass properties for cargo processed under this contract to the Government for use by VV providers for structural math model development, stowage analysis and vehicle integrated safety assessments. Mass properties shall include measured dimensions and mass values for all specialized stowage accommodations and packed bags and center of gravity (including origin frame of reference) for bags sized larger than a Triple Cargo Transfer Bag (CTB).
4.3.3 **ON-CALL SUPPORT OF ON-ORBIT OPERATIONS**
The contractor shall provide on-call support during on-orbit cargo return stowage integration operations to ensure timely resolution of on-orbit issues. The on-call support shall respond to the NASA Visiting Vehicle Lead within 30 minutes of contact regarding a real-time operations issue to determine and initiate the necessary actions to resolve the issue.

4.4 **PHYSICAL CARGO PROCESSING**
The contractor shall perform physical processing of ISS pressurized cargo to the bag level and deliver to the NLI as described in this SOW.

4.4.1 **FACILITIES REQUIREMENTS**
The contractor shall maintain all contractor facilities contracted under this SOW and used for processing of flight hardware, as no less than Generally Clean in accordance with SN-C-0005, Contamination Control Requirements.

The contractor shall provide facility space with Visibly Clean (VC) requirements in accordance with SN-C-0005 to accommodate VC hardware requirements for all flights in flow. The contractor shall provide controlled storage holding areas for pass-thru flight hardware and packed bags to ensure safe storage of the hardware for all flights in flow.

The contractor shall provide facility space which maintains hardware and packed bags in compliance with SSP 50260, ISS Medical Operations Requirement Document (ISS MORD) Section 7.4.3, Preflight Environmental Microbiology Specifications and Monitoring of Air and Surfaces.

The contractor shall co-locate the functions of hardware sustaining and pressurized cargo integration to minimize physical travel requirements for hardware.

4.4.2 **INVENTORY CONTROL**
The contractor shall maintain inventory control by tracking and recording inventory data on all cargo that is received, stored, or processed under this contract.

4.4.3 **HARDWARE VERIFICATION**
The contractor shall implement a verification review for each hardware item received per SSP 50200-11, paragraph 5.1.2 “In-Line Hardware Verification Review”, including labeling and sharp edge inspections in accordance with SSP 50005, Flight Crew Integration Standard. The contractor shall implement an approach that emphasizes early identification of issues with manifested hardware before the hardware is shipped from the hardware provider. The contractor shall document discrepancies on hardware delivered for packing and work with the hardware provider to resolve the discrepancy.

The contractor shall perform sharp edge inspections on EVA-related hardware items and notify NASA when required sharp edge inspections are not performed or when discrepancies are noted on hardware.
In addition to standard reporting, notification shall be provided to the EVA Analysis Integration Team (AIT) point of contact.

The contractor shall implement NASA approved resolutions and Standard Repair Procedures on hardware not sustained by this contract, including but not limited to removal of sharp edges and ground handling items, addition of protective caps, and scratch repair on aluminum surfaces. These repairs may be requested by the Government when hardware providers are not available to perform the work. For cargo that cannot be made compliant with all hardware requirements in time for nominal cargo processing, the contractor shall notify NASA for a decision to return such cargo to the hardware provider.

4.4.4 LABELING
The contractor shall apply contingency labels on hardware, according to the directions of the hardware provider, to complete labeling requirements if hardware is not pre-labeled or is labeled incorrectly and the hardware provider cannot add or replace the label prior to the start of bag packing. If the coordination and application of contingency labeling cannot be completed prior to the required NLI need date, the contractor shall inform the Government.

The contractor shall produce flight labels for all packed stowage configurations developed under this contract. IMS bar code labels shall be per SSP 50007, Space Station Inventory Management System Bar Code Label Requirements and Specification. Cargo Transfer Bag (CTB) labels shall be produced in accordance with drawing SEG 32106109, 4 Inch Contents Label, and installed in accordance with SSP 50005, Flight Crew Integration Standard. The contractor shall label stowage provisions in accordance with SOW Appendix A, ISS Program Stowage Provision Labeling Guidelines.

4.4.5 CARGO IMAGERY
The contractor shall provide imagery of cargo items and integrated bags and assemblies (including labeling) prior to, or during, the cargo integration and de-integration processes in accordance with SSP 50200-11 and SSP 50502, International Space Station Preflight Imagery Requirements. The contractor shall provide this imagery to the community with adequate time (when hardware delivery schedules to the contractor are more than 96 hours prior to shipping to NLI) for review and comment to support implementation of approved changes to the final configuration before shipping to the NLI. The time shall not be less than 48 hours.

4.4.6 FOAM SERVICES
The contractor shall perform foam-cutting services to manufacture packing provisions for all bags packed on this contract or for any NASA hardware to be launched on ISS visiting vehicles to meet hardware packing requirements documented in the eLRODS database.

The contractor shall provide analytical, design, and foam cutting services to manufacture packing provisions or mockups for other contractors and IPs, when approved by the Government.
The contractor shall provide analytical, design, and foam cutting services to manufacture foam clamshells for NASA, other contractors, and IPs, when approved by the Government.

4.4.7 WATER FILL SERVICES
The contractor shall fill Water Storage System (WSS) resupply tanks and Iodine Compatible Water Containers (ICWCs) with iodinated water per JSC 66695, EMU Water Quality Specification and ICD CMC2-00471, ICWC to Commercial Orbital Transportation Services Visiting Vehicles (VV) (Cygnus and Dragon) Interface Requirements Document (IRD).

4.4.8 CARGO PACKING
The contractor shall integrate the flight hardware and stowage provisions in accordance with stowage layouts, and implement all packing and labeling requirements defined from the Hardware Audit and any cargo layout review(s) and maintained in the HAMR. The contractor shall perform internal fit checks, of pressurized cargo bags or assemblies to be integrated into launch vehicle racks or stowage volumes, using a fit check tool sized to the internal rack or stowage volume dimensions, prior to shipment to NLI to mitigate issues with vehicle integration at the launch site.

4.4.8.1 LAUNCH SITE CARGO PACKING
The contractor shall pack cargo bags at the launch sites (United States only) to accommodate late load ambient items and hardware that cannot meet nominal schedule templates for cargo packing.

4.4.8.2 HARDWARE ENVIRONMENTAL LIMITS
The contractor shall monitor hardware during shipping to determine if any environmental limits are violated.

4.4.8.3 STOWAGE PROVISIONS
The contractor shall provide flight certified stowage provisions (see Appendix C, Stowage Provision “Pick-List”) to the ISS Community (as requested) for manifested hardware to ensure items are delivered “Flight Ready” for packaging and delivery to NLI. Maximum response time shall be five working days, except during heavy packing periods when maximum response time shall be ten working days (unless otherwise negotiated with the requestor). Appendix C, Stowage Provision “Pick-List”, documents the approved ISS stowage provision “pick list” items by part number, size and pre-approved quantities of issue.

4.4.9 AS-BUILT DATA DELIVERY TO NLI
The contractor shall provide As-Built data for cargo processed under this contract to the NLI during shipment to ensure accurate accounting for vehicle mass properties. This data includes As-Built lists identifying bag type, bag-level mass properties, external identifier, Integrated Bag Level Hazards Assessment (IBLHA), constraints on bag co-location, ground handling requirements and orientation requirements.
The contractor shall provide As-Packed bag weights to the MAPI Contract for use in accounting for the launched mass of stowage provisions.

4.4.10 HARDWARE SHIPMENT
The contractor shall ship packed cargo to the NLI and ship returned flight hardware to the hardware owners. The contractor shall ship loose hardware, including but not limited to non-manifested flight hardware and/or articles (including items consigned to the U.S. Embassy in Russia) and non-flight hardware, required to meet ISS Program schedules. The contractor shall pre-coordinate approval of International shipping, export and customs paperwork with receiving offices, and resolve issues with customs and handling agents to ensure cargo turnover meets NASA Program schedules. Translation services in the native language of the receiving country may be required to facilitate customs clearance.

4.4.11 RETURN CARGO PROCESSING
For each Soyuz, CRS-1, CRS-2, USCV, and MPCV flight that returns cargo, the contractor shall receive, de-integrate, and disposition hardware (including waste or non-recoverable items) according to the flight specific RMDP. The contractor shall notify the hardware provider for any unplanned return hardware items and update the As-Flown RMDP accordingly to provide the MAPI contract with an official source for As-Flown Manifest updates. The contractor shall develop, update, and implement contingency procedures to disposition improperly labeled cargo, containers, and waste.

4.4.12 EARLY DESTOW
The contractor shall provide the following for ISS Visiting Vehicles (VVs) returning cargo:
- Early de-stow activities,
- For VVs landing in or near the Continental United States (CONUS), air transportation for early return hardware (from landing site to Houston, Texas),
- Loading and off-loading services for early return hardware.

Early destow activities shall be performed in accordance with SSP 50465, Return Manifest Disposition Plan (RMDP) flight specific appendices.

For VVs landing in or near the Continental United States (CONUS), the contractor shall provide the air transportation and loading and offloading services for early return hardware from the port of return to Houston with a single aircraft. Aircraft requirements include:

1. The aircraft shall accommodate up to a total of 6500 pounds (lbs.) of cargo, Ground Support Equipment (GSE), flight hardware and support equipment from port of return to Houston.
2. The aircraft shall transport a minimum of three passengers.
3. Hardware shall be transported based on provided temperature constraints and aircraft cabin shall be maintained for passenger comfort nominally at 75°F +/− 10°F.
4. The aircraft cargo door shall be at least 34 inches wide for loading and offloading of equipment.
5. The aircraft shall provide 4.4 kilowatts (kWs) of power at 115 volts alternating current (VAC) to power GSE while the aircraft is on the ground and 3.8 kW at 115 VAC during flight.
6. The aircraft shall accommodate a Dry Ice Case with up to 100 lbs. of dry ice and ventilation of the Dry Ice Case.
7. The aircraft shall allow in-flight accessibility for monitoring of hardware.
8. The contractor shall return the cargo (nominal plan) within 12 hours from turnover at port of return to landing in Houston.

The contractor shall transport the GSE from Houston to the port of return.

4.5 DECALS, PLACARDS AND GRAPHICS
The contractor shall provide flight and non-flight decals, placards, and graphics for NASA Programs, including prototypes, mockups, trainers, and engineering mockups. Note that the NASA insignia, logo, etc. are protected by law and can only be reproduced with NASA approval. This task includes scheduling and producing the products and working with the customers on technical and delivery requirements.

The contractor shall provide inputs to JSC 27260, Data Process Document and Catalog, based on changing requirements, lessons learned, improved technology, or revised processes.

4.5.1 FLIGHT AND NON-FLIGHT DECALS, PLACARDS AND GRAPHICS
The contractor shall produce flight and non-flight decals, placards, and graphics, for external customers when authorized per the eLabel process and website and released engineering drawing. The contractor shall be capable of producing all decals, placards and graphics that are described in JSC 27260, Data Process Document and Catalog.

4.5.2 PRODUCT DELIVERY SCHEDULE
The contractor shall provide decal, placard, and graphic end products and deliverables no later than 15 working days after NASA approval of the initiating eLabel Support Request, unless the required delivery date has been negotiated with and approved by NASA. Specific end products and deliverables are identified in the specifics of the eLabel Support Request.

4.5.3 DELIVERY REPORT
The contractor shall provide monthly status and tracking reports of all work submitted to the Decal Lab to facilitate NASA budgeting and cost sharing with other organizations. The reports shall be delivered to NASA within 15 calendar days of the end of each month. The reports shall include the submittal request number, requester name and company, requesting Program or International Partner (IP), job title (drawing name), quantity of products, materials and processes, date submitted, due date, charge number, and status.

5.0 HARDWARE/SOFTWARE DEVELOPMENT, MODIFICATION AND RECERTIFICATION
The contractor shall design, manufacture, assemble, modify, provide integration services, and/or certify/re-certify flight and training software/hardware as required to support requirements for the following (see contract Attachment J-1, Dictionary):

- Flight Crew Equipment (FCE)
- Unique Launch and Return Mission Requirements
- Payload Support Equipment
- Pressurized and unpressurized cargo processing, packing, and transport
- Simple Payload Facilities
- Payload Hardware
- Payload support items
- Supplemental items for ISS Systems

This work will be authorized via the Underlimit Changes (Clause H.13) or IDIQ Task Orders (contract section B) and requires CO authorization.

Requirements applicable to this work are listed below; however specific requirements may be levied at the time the work is authorized via specific Task Order or SOW. The current version of the document at the time the work is authorized shall be used unless otherwise specified in the specific SOW or Task Order:

5.1 DESIGN REQUIREMENTS
Flight and training hardware shall meet the applicable design requirements levied in the following documents (Note: Reference: 1) Space Station Program Control Board (SSPCB) presentation dated March 1, 2016: CMC New Streamline Process, Moving towards ideal state of “buy and fly”, and 2) Draft ISS Management Directive 1060, Class 1-E Flight Hardware Development Policy, for non-critical, simple hardware):

- SSP 50835, ISS Pressurized Volume Hardware Common Interface Requirements Document;
- SSP 50492, General ISS On-orbit Requirements for Non-Pressurized Support Equipment;
- SSP 50021, Safety Requirements Document;
- SSP 50004, Ground Support Equipment Design Requirements International Space Station;
- JSC 27472, Requirements For Submission Of Data Needed For Toxicological Assessment Of Chemicals and Biologicals To Be Flown On Manned Spacecraft,
- NPR 6000.1, Requirements for Packaging, Handling and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components.
- JSC 64192, Requirements Verification Matrix for the Automated External Defibrillator (AED);
- JSC 64267, ISS Think Pad T61p™ Laptop Hardware Interface Requirements Document;
- JSC 64268, ISS Think Pad T61p™ Laptop Hardware Project Technical Requirements Specification;
- JSC 64270, ISS Think Pad T61p™ Laptop Computer Verification and Validation Document (V&VD);
• JSC 64278, Pre-Delivery/Pre-Installation Acceptance Test Procedures for the Crew Health Care System (CHeCS) Automated External Defibrillator (AED).

5.2 IT DEVELOPMENT
All IT development unique to the ISS or Orion Programs shall be subject to the applicable requirements in SOW 1.6, INFORMATION TECHNOLOGY.

5.3 HARDWARE/DATA DELIVERIES
For each end item being designed and built, the contractor shall deliver the corresponding data and hardware in accordance with SSP 50287, Hardware/Software Acceptance Process, and DRD CMC-EN-04, New Hardware Interim Design Review Deliverables.

5.4 ENGINEERING DRAWINGS/DATA
The contractor shall provide engineering drawings and data for hardware developed or modified in accordance with DRD CMC-EN-01, Engineering Drawings and Associated Lists and DRD CMC-EN-02, Vehicle Engineering Data. For all engineering drawings and associated engineering products that are delivered to NASA, or to NASA contractors, the contractor shall also transmit them to the VMDB (via the ISS Vehicle Sustaining contract).

5.5 CAD MODELS
The contractor shall deliver CAD models for hardware developed or modified in accordance with DRD CMC-EN-03, Cargo Integration Cargo CAD Models for Launch, Return and On-orbit Configurations. The ISS Vehicle Sustaining contractor will maintain the models in in a model library.

5.6 SAFETY AND RELIABILITY AND MAINTENANCE ASSESSMENTS
The contractor shall perform and deliver the following for all hardware developed or modified:

- Safety assessments per SOW paragraph 2.3.1, SAFETY ASSESSMENTS;
- FMEA/CIL report and worksheets per SOW paragraph 2.4.1, FMEA/CILs;
- R&M Allocation, Assessment, and Analysis and R&M source data per SOW 2.4.2, R&M ALLOCATION, ASSESSMENT, AND ANALYSIS and SOW 2.4.3, R&M SOURCE DATA.

5.7 DEVELOPMENT SCHEDULES
The contractor shall prepare and deliver schedules for hardware development projects to provide the Government with insight into overall project status in accordance with DRD CMC-PM-02, Performance Management Review Products.

5.8 ADPs
The contractor shall provide an Acceptance Data Package (ADP) in accordance with DRD CMC-SA-07, Acceptance Data Package Requirements Specification, for contractor developed hardware.
6.0 **DISCRETE TASKS - TO BE AUTHORIZED**

Section 6 of the SOW is for discrete tasks (clear start and end date with products; not part of base-line day-to day work covered in SOW Sections 1, 2, 3 and 4) within the scope of the contract and authorized via the Underlimit Changes (Clause H.13) or Task Orders (contract section B) and requires CO authorization.
APPENDIX A: ISS PROGRAM STOWAGE PROVISION LABELING GUIDELINES

1. INTRODUCTION
   1.1. This appendix identifies the ISS Program stowage provision labeling guidelines for all NASA or IP ISS cargo packed by the contractor for launch. When labeling the stowage all text should be applied using sentence case with the exception of acronyms, which should be in all caps (example, For Smith, For CEVIS, Trash after installation). Unless otherwise specified, labels should be applied to the outward facing surface such that the crew will view the label as they face the rack or open the rack/bag/container.

2. GENERIC STOWAGE PROVISION LABELING GUIDELINES
   2.1. Operational Nomenclature (OpNom) Labeling
      2.1.1. Label the provision with the hardware OpNom in the largest font. If OpNom not required (in MIDAS) use part name.
      2.1.2. If only two items inside the stowage provision, the OpNom for both items should be labeled on the outside of the stowage provision.
      2.1.3. For stowage provisions containing more than two items, label the outside of the stowage provisions with the title if defined at the drawing review. This circumvents 2.1.2. and 2.3.
   2.2. Hazard Labeling (toxicity, biosafety, and flammability)
      2.2.1. For hardware with a Hazard Response Level (HRL) rating (0,1,2,3,4), label the outside surface of the stowage provisions containing the hardware in the lower left corner.
      2.2.2. HRL labeling is only required on opaque stowage provisions.
      2.2.3. Hardware which is exempt from HRL labeling does require provision label.
   2.3. Part number
      2.3.1. The part number (P/N) of the hardware contained within the stowage provision should be labeled on the crew-facing surface below the OpNom with the “P/N” preface.
      2.3.2. List the quantity (Qty) next to the OpNom with the “Qty” preface.
   2.4. Special Handling Requirements
      2.4.1. For hardware that is Electrostatic Discharge (ESD) sensitive; ESD-sensitivity should be indicated on the outside of the stowage provision that contains the hardware. “ESD-Sensitive” should be labeled in the lower left corner of the crew facing surface.
      2.4.2. For pressure vessels, pressure vessel contained should be indicated on the stowage provisions in the lower left corner of the crew facing surface. Label “Contents Under Pressure.”
   2.5. Custom Notes
      2.5.1. Custom inputs to the labeling may be identified during the Drawing Review or Packing Readiness Review, and then subsequently entered by the Hardware Provider into the eLabel tool. Notes should be applied below the OpNom and part number and enclosed in parenthesis and sentence case (example; For Smith, For CEVIS).
2.6. If a single item is in two (2) stowage provisions (ex: double bubble) labeling required on outer bag only.

3. UNIQUE GUIDELINES FOR FOAM LABELING

3.1. Foam Part Number and Qty
  3.1.1. The part number and piece count “X of X pieces” of the foam should be labeled on the external surface of non-FJB or FJT part numbered foam on a non-crew facing surface (foam part number nomenclature: F = Foam, J=Johnson Space Center, B = Block, and T = Triangle).
  3.1.2. The part number of the foam should be labeled on all FJB and FJT filler foam on the non-crew facing surface.

3.2. Foam Type
  3.2.1. Foam type should be written on the external surface of the foam under the existing foam P/N label in same size font as foam part number label.
  3.2.2. Non-Covered Minicel foam must be labeled “Foam must be stowed in a non-flammable stowage bag or locker”.

3.3. Foam Disposal Status
  3.3.1. Disposal status should be written on the inside of the foam container so the crew sees what to do with the foam once the hardware is removed.
  3.3.2. The Disposal status should be defined as one of:
    3.3.2.1. “Trash”: For foam that is known that it should be discarded at any time.
    3.3.2.2. “Keep”: For foam that is known that it should be kept.
    3.3.2.3. “Trash after installation”: For foam that is known that it should be discarded after the hardware is installed.
    3.3.2.4. Leave Blank: for foam that it is unknown if it can be trashed or kept (better to say nothing than to say the wrong thing).
    3.3.2.5. Custom: Denoting an above status with additional notes.
  3.3.3. For filler cushions inside cargo transfer bags and M bags, the disposal status should be on the crew facing surface of the foam that the crew will see as they face the open rack/bag/container.
  3.3.4. For identified foam caps that transfer to the ISS with Orbital Replacement Units (ORUs), highlight in yellow the words ”Transfer foam cap with XXX ORU” specifying the ORU OpNom. Foam caps will be identified through the LRODS and Pressurized Cargo Integration Analysis process.

3.4. Launch Locations for M-bag cushions
  3.4.1. For all M-Bag foam cushion, label the foam with the bag serial number (S/N) as "Bag S/N ###" in the lower right corner of the crew facing cushion surface as they face the open M-bag

3.5. Special Handling Requirements
  3.5.1. For foam containing hardware with keep out zones, add a note stating “Caution: Hardware has Keep out Zones Labeled” on the outside of foam in the lower left corner
of the crew facing cushion surface in addition identify sensitive or keep out zones on the foam.

3.5.2. Arrows/various colors should be marked on foam to simplify re-assembly for the on-orbit crew when cushion boxes are complex if identified at drawing review.

3.6. Bag Filler foam

3.6.1. For bags containing multiple pieces of filler foam, apply Velcro to the foam to assist the crew with restraining the foam during packing and unpacking.
4. CARGO TRANSFER BAG (CTB) TITLE AND CONTENTS LABEL GUIDELINES
   4.1. Bag Title and Contents Labels are controlled by the four (4) Inch Label engineering drawing P/N SEG32106109. Reference the document on Engineering Drawing Control Center (EDCC).
   4.2. Custom inputs to the Bag Title and/or Content Label drawing may be provided during the Drawing Review or Packing Readiness Review.

5. RUSSIAN VEHICLE CARGO UNIQUE GUIDELINES
   5.1. Teflon does not need to be labeled as a stowage provision (contents), if all sub-pack item labels are clearly visible. If sub-pack item labels are obstructed, top level Teflon must have a summary of all sub-pack contents.
   5.2. Bag Contents Labels will include hardware part numbers per Russian requirements.
   5.3. Barcodes will be applied to the lower right corner of the outermost layer of containment (i.e. Teflon bags, kynar bags). Reference Figure 3.
5.4. Stowage provision foam not contained in a CTB or other type of containment will have a barcode applied to lower right corner of the outward facing surface.

FIGURE 3: BARCODE PLACEMENT EXAMPLE
APPENDIX B: ENGINEERING RELEASE UNIT (ERU) PROCESS FLOW
### APPENDIX C: STOWAGE PROVISION “PICK-LIST”

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bag, Static Dissipative, Zipper Lock</td>
<td>12” x 15”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>12” x 12”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>20” x 20”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>20” x 30”</td>
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</tr>
<tr>
<td></td>
<td>14” x 18”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>4” x 6”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>6” x 8”</td>
<td>5 ea</td>
</tr>
<tr>
<td></td>
<td>13” x 30”</td>
<td>2 ea</td>
</tr>
<tr>
<td>2 Kapton Tape</td>
<td>Kapton Tape 1”</td>
<td>1 roll</td>
</tr>
<tr>
<td></td>
<td>Kapton Tape 2”</td>
<td>1 roll</td>
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<tr>
<td>3 Ziplock Bag</td>
<td>4” x 4” Zip-lip (4 mil)</td>
<td>20 ea</td>
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<td>6” x 6” Zip-lip (4 mil)</td>
<td>20 ea</td>
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<tr>
<td></td>
<td>8” x 8” Zip-lip (4 mil)</td>
<td>20 ea</td>
</tr>
<tr>
<td></td>
<td>10” x 10” Zip-lip (4 mil)</td>
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<td>9” x 15” Zip-lip (4 mil)</td>
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<td>8” x 7” Slide Grip (1 quart)</td>
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<td>10.5” x 11” Slide Grip (2.7 mil)</td>
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<td>4 Velcro Loop</td>
<td>Velcro 1” Loop, White, PS</td>
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<td>Velcro 2” Loop, White, PS</td>
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<td>5 Velcro Hook</td>
<td>Velcro 1” Hook, White, PS</td>
<td>≤ 20 ft</td>
</tr>
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<td></td>
<td>Velcro 2” Hook, White, PS</td>
<td>≤ 20 ft</td>
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<tr>
<td>6 General Purpose (Duct) Tape</td>
<td>GP Tape 1”</td>
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<td>GP Tape 2”</td>
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<td>7 Velcoids</td>
<td>Loop, White</td>
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<tr>
<td></td>
<td>Hook, White</td>
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<tr>
<td>8 Misc.</td>
<td>Sharpie Pen</td>
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</tr>
<tr>
<td></td>
<td>Cable Wraps</td>
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SECTION D – PACKAGING AND MARKING

D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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

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(End of clause)

D.2 NFS 1852.245-74 IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT (JAN 2011)

(a) The Contractor shall identify all equipment to be delivered to the Government using NASA Technical Handbook (NASA-HDBK) 6003, Application of Data Matrix Identification Symbols to Aerospace Parts Using Direct Part Marking Methods/Techniques, and NASA Standard (NASA-STD) 6002, Applying Data Matrix Identification Symbols on Aerospace Parts or through the use of commercial marking techniques that: (1) are sufficiently durable to remain intact through the typical lifespan of the property; and, (2) contain the data and data format required by the standards. This requirement includes deliverable equipment listed in the schedule and other equipment when no longer required for contract performance and NASA directs physical transfer to NASA or a third party. The Contractor shall identify property in both machine and human readable form unless the use of a machine readable-only format is approved by the NASA Industrial Property Officer.

(b) Equipment shall be marked in a location that will be human readable, without disassembly or movement of the equipment, when the items are placed in service unless such placement would have a deleterious effect on safety or on the item’s operation.
(c) Concurrent with equipment delivery or transfer, the Contractor shall provide the following data in an electronic spreadsheet format:
   (1) Item Description.
   (2) Unique Identification Number (License Tag).
   (3) Unit Price.
   (4) An explanation of the data used to make the unique identification number.

(d) For equipment no longer needed for contract performance and physically transferred under paragraph (a) of this clause, the following additional data is required:
   (1) Date originally placed in service.
   (2) Item condition.

(e) The data required in paragraphs (c) and (d) of this clause shall be delivered to the NASA center receiving activity listed below:

   NASA Johnson Space Center
   Attention: Transportation Officer/ JB7
   Central Receiving, Building 420
   2101 NASA Parkway
   Houston, TX 77058-3696

(f) The contractor shall include the substance of this clause, including this paragraph (f), in all subcontracts that require delivery of equipment.

(End of clause)

[END OF SECTION]
SECTION E – INSPECTION AND ACCEPTANCE

E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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

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E.2 NFS 1852.246-72 MATERIAL INSPECTION AND RECEIVING REPORT
(APR 2015)

(a) At the time of each delivery to the Government under this contract, the Contractor shall prepare and furnish a Material Inspection and Receiving Report (DD Form 250 series). The forms shall be prepared and distributed as follows: 1 (one) original, to be retained with the shipment, and 2 copies to be distributed as follows upon receipt:

1 COPY – Supply and Equipment Management Officer (SEMO)
1 COPY – FINANCE PROPERTY ACCOUNTING
(MAILCODE: LF32)
(b) The Contractor shall prepare the DD Form 250 in accordance with NASA FAR Supplement 1846.6. The Contractor shall enclose the copies of the DD Form 250 in the package or seal them in a waterproof envelope, which shall be securely attached to the exterior of the package in the most protected location.

(c) When more than one package is involved in a shipment, the Contractor shall list on the DD Form 250, as additional information, the quantity of packages and the package numbers. The Contractor shall forward the DD Form 250 with the lowest numbered package of the shipment and print the words "CONTAINS DD FORM 250" on the package.

(End of clause)

E.3 SUBMISSION OF MATERIAL INSPECTION AND RECEIVING REPORTS

Material Inspection and Receiving Reports (DD Form 250) are only required for equipment and hardware deliveries and system turnovers to the Government. DD Form 250s will normally be signed by the Government within 30 days of contractor submission.

(End of clause)

[END OF SECTION]
SECTION F – DELIVERIES OR PERFORMANCE

F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.242-15</td>
<td>AUG 1989</td>
<td>STOP-WORK ORDER (ALTERNATE I) (APR 1984)</td>
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<tr>
<td>52.247-34</td>
<td>NOV 1991</td>
<td>F.O.B. DESTINATION</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>None included by reference</td>
<td></td>
<td>(End of clause)</td>
</tr>
</tbody>
</table>

F.2 RESERVED

(End of clause)

F.3 NFS 1852.247-73 BILLS OF LADING (JUN 2002)

The purpose of this clause is to define when a commercial bill of lading or a government bill of lading is to be used when shipments of deliverable items under this contract are F.O.B. Destination.

(a) Commercial Bills of Lading. All domestic shipments shall be made via commercial bills of lading (CBLs). The Contractor shall prepay domestic transportation charges. The Government shall reimburse the Contractor for these charges if they are added to the invoice as a separate line item supported by the paid freight receipts. If paid receipts in support of the invoice are not obtainable, a statement as described below must be completed, signed by an authorized company representative, and attached to the invoice.

"I certify that the shipments identified below have been made, transportation charges have been paid by (company name), and paid freight or comparable receipts are not obtainable."
Contract or Order Number: [TBD]
Destination: [TBD Location]

(b) Government Bills of Lading. (1) International (export) and domestic overseas shipments of items deliverable under this contract shall be made by Government bills of lading (GBLs). As used in this clause, “domestic overseas” means non-continental United States, i.e. Hawaii, Commonwealth of Puerto Rico, and possessions of the United States.

(2) At least 15 work days before shipment, the Contractor shall request in writing GBLs from: JSC Shipping Office Traffic Management Specialist, 2101 NASA Rd. 1, Houston, TX 77058. If time is limited, requests may be by telephone: 281-483-6512. Requests for GBLs shall include the following information.

   (i) Item identification/description.
   (ii) Origin and destination.
   (iii) Individual and total weights.
   (iv) Dimensional Weight.
   (v) Dimensions and total cubic footage.
   (vi) Total number of pieces.
   (vii) Total dollar value.
   (viii) Other pertinent data.

(End of clause)

F.4 PERIOD OF PERFORMANCE

The basic period of performance of this contract, for both Core and Orion Option, shall be from April 1, 2018, through March 31, 2020. Task Orders placed prior to the expiration date of this contract shall remain in full force and effect until deliveries have been completed and payment has been made.

The periods of performance for the option years, for both Core and Orion Option, are as follows:

Option 1: April 1, 2020 through March 31, 2022
Option 2: April 1, 2022 through September 30, 2023
Option 3: October 1, 2023 through September 30, 2024.

(End of clause)
F.5 PLACE OF PERFORMANCE

The primary effort required under this contract shall be performed at or near [OFI] and at other locations as covered by the SOW.

(End of clause)

F.6 RESERVED

(End of clause)

F.7 SHIPPING INSTRUCTIONS

All documentation shall be shipped to the addresses cited in Attachment J-8, Data Requirements List – Data Requirements Descriptions. Shipment of all other items shall be as follows:

Parcel Post Shipments and Freight Shipments

Ship to: Transportation Officer, National Aeronautics and Space Administration Central Receiving, Building 420 Lyndon B. Johnson Space Center 2101 NASA Parkway Houston, TX 77058-3696

Mark for: Contracting Officer’s Representative
Mark with: Purchase Request No: N/A
Mark with: Contract Number: [TBD]
For reissue to: [To be supplied per shipment]

(End of clause)

F.8 PHASE-IN AND CONTRACT CLOSE-OUT

The services provided by this contract are vital to the Government’s overall effort, and continuity must be maintained at a consistently high level without disruption. The contractor is expected to meet full performance requirements from the start date of the base contract period. The Phase-In period shall be 89 calendar days prior to the start date of the base contract period. Office space will not be provided by the Government during the Phase-In period. The contractor shall participate in a weekly meeting with the incumbent contractor(s) to discuss/identify problems or areas requiring attention during this Phase-In period.

The total firm fixed price of Phase-In is identified in Clause B.2, Total Contract Value. Any costs incurred in excess of this amount shall be unallowable under this
or any other Government contract.

(a) Contractor Close-Out. The contractor shall close-out at contract end in a cooperative manner with the Government and new contractor to allow for continuity of services and smooth transition. Close-Out activities shall be accomplished in accordance with FAR 45.6 Reporting, Reutilization and Disposal, FAR 52.245-1 Government Property, FAR 52.237-3 Continuity of Services, and DRD CMC-PR-05 Close-Out Plan. Contractor’s cooperation and compliance with this clause will be considered as part of the final Award Fee period and final Past Performance Evaluation.

(End of clause)

F.9 OPTION TO EXERCISE ORION PROGRAM WORK

The pressurized cargo packing/processing work to be performed for the Orion Program will be included as the “Orion Option.” The Contracting Officer may exercise the option identified in F.9 Option to Exercise Orion Program Work, by issuance of a unilateral contract modification. The contract values will be as set forth in Clause B.2, Total Contract Value. The Sustaining Engineering and Maintenance and Operations work unique to Orion is not included in the Option.

(End of clause)

[END OF SECTION]
G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
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<tr>
<td>52.204-19</td>
<td>DEC 2014</td>
<td>INCORPORATION BY REFERENCE OF REPRESENTATIONS AND CERTIFICATIONS</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1852.227-70</td>
<td>APR 2015</td>
<td>NEW TECHNOLOGY</td>
</tr>
<tr>
<td>1852.227-86</td>
<td>APR 2015</td>
<td>COMMERCIAL COMPUTER SOFTWARE – LICENSING</td>
</tr>
<tr>
<td>1852.242-71</td>
<td>DEC 1988</td>
<td>TRAVEL OUTSIDE THE UNITED STATES</td>
</tr>
<tr>
<td>1852.242-73</td>
<td>NOV 2004</td>
<td>NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING</td>
</tr>
<tr>
<td>1852.245-70</td>
<td>AUG 2015</td>
<td>CONTRACTOR REQUESTS FOR GOVERNMENT-PROVIDED EQUIPMENT AND ALTERNATE I</td>
</tr>
</tbody>
</table>
| 1852.245-73   | JAN 2011   | FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS
 Insert: 2101 NASA Parkway, Houston, TX 77058, MC JB3 |
| 1852.245-75   | JAN 2011   | PROPERTY MANAGEMENT CHANGES                                  |
| 1852.245-78   | AUG 2015   | PHYSICAL INVENTORY OF CAPITAL PERSONAL PROPERTY              |
| 1852.245-79   | JAN 2011   | RECORDS AND DISPOSITION REPORTS FOR GOVERNMENT PROPERTY WITH POTENTIAL HISTORIC OR SIGNIFICANT REAL VALUE |

(End of clause)
G.2 NFS 1852.216-76 AWARD FEE FOR SERVICE CONTRACTS (APRIL 2012)

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in NASA FAR Supplement clause 1852.216-85, "Estimated Cost and Award Fee" in this contract.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the Contractor's performance. Following the initial 6 month review, the Government shall evaluate the Contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with Contract Attachment J-5, Award Fee Fee Plan. The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The NASA/JSC Financial Management Office (LF231) will make payment based on issuance of a unilateral contract modification by the Contracting Officer.

(d) The Contracting Officer may direct the withholding of earned award fee payments until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest relative to an orderly and timely closeout of the contract. This reserve shall not exceed 15 percent of the contract’s total potential award fee or $100,000, whichever is less.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth in Contract Attachment J-5, Award Fee Plan. Fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f) (1) Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the Contractor on a monthly basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 80 percent or the prior period's evaluation score.

(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.
(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate.

(4) Provisional award fee payments will not be made prior to the first award fee determination by the Government.

(g) Award fee determinations are unilateral decisions made solely at the discretion of the Government.

(End of clause)

G.3 1852.232-80 SUBMISSION OF VOUCHERS FOR PAYMENT (SEP 2016)

(a) The designated payment office is the NASA Shared Services Center (NSSC) located at FMD Accounts Payable, Building 1111, Jerry Hlass Road, Stennis Space Center, MS 39529.

(b) Except for classified vouchers, the Contractor shall submit all vouchers electronically using the steps described at NSSC’s Vendor Payment information Web site at: https://www.nssc.nasa.gov/vendorpayment. Please contact the NSSC Customer Contact Center at 1-877-NSSC123 (1-877-677-2123) with any additional questions or comments.

(c) Payment requests. (1) The payment periods designated in the payment clause(s) contained in this contract will begin on the date a proper request for payment is received by the NSSC payment office specified in paragraphs (a) and (b) of this section. Vouchers shall be prepared in accordance with the guidance provided by the NSSC at the following Web site: https://answers.nssc.nasa.gov/app/answers/detail/a_id/6643.

(2) Vouchers shall include the items delineated in FAR 32.905(b) supported by relevant back-up documentation. Back-up documentation shall include at a minimum, the following information:

(i) Breakdown of billed labor costs and associated contractor generated supporting documentation for billed direct labor costs to include rates used and number of hours incurred.

(ii) Breakdown of billed other direct costs (ODCs) and associated contractor generated supporting documentation for billed ODCs.
(iii) Indirect rate(s) used to calculate the amount of billed indirect expenses.

(d) Non-electronic payment. The Contractor may submit a voucher using other than the steps described at NSSC's Vendor Payment information through any of the means described at https://www.nssc.nasa.gov/vendorpayment, if any of the following conditions are met:

(1) The Contracting Officer administering the contract for payment has determined, in writing, that electronic submission would be unduly burdensome to the Contractor. In such cases, the Contractor shall include a copy of the Contracting Officer's determination with each request for payment when the Government-wide commercial purchase card is used as the method of payment.

(2) The contract includes provision allowing the contractor to submit vouchers using other than the steps prescribed at NSSC's Vendor Payment information Web site. In such instances, the Contractor agrees to submit non-electronic payment requests using the method or methods specified in Section G of the contract.

(e) Improper vouchers. The NSSC Payment Office will notify the contractor of any apparent error, defect, or impropriety in a voucher within seven calendar days of receipt by the NSSC Payment Office. Inquiries regarding requests for payment should be directed to the NSSC as specified in paragraph (b) of this section.

(f) Other payment clauses. In addition to the requirements of this clause, the Contractor shall meet the requirements of the appropriate payment clauses in this contract when submitting payment requests.

(g) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate payment request for the amount withheld will be required before payment for that amount may be made.

(End of clause)

**G.4 NFS 1852.227-72 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (APRIL 2015)**

(a) For purposes of administration of the clause of this contract entitled "New Technology-Other than a Small Business Firm or Nonprofit Organization" or "Patent Rights--Ownership by the Contractor," whichever is included, the installation New Technology and Patent Representatives identified at http://prod.nais.nasa.gov/portals/pl/new_tech_pocs.html are hereby designated by the Contracting Officer to administer such clause for the appropriate installation:

(b) Disclosures of reportable items and of subject inventions, interim new technology summary reports, final new technology summary reports, utilization
reports, and other reports required by the applicable “New Technology” or “Patent Rights-Ownership by the Contractor” clause, as well as any correspondence with respect to such matters, shall be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent Representative. Inquiries or requests regarding disposition of rights, election of rights, or related matters shall be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology-Other than a Small Business Firm or Nonprofit Organization" clause or "Patent Rights--Ownership by the Contractor" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the aforementioned representatives are set forth in 1827.305-270 of the NASA FAR Supplement.

(End of clause)

G.5 NFS 1852.245-71 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (ALTERNATE I) (JAN 2011)

(a) The Government property described in paragraph (c) of this clause may be made available to the Contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property unless authorized by the Contracting Officer under (b)(1)(iv). Under this clause, the Government retains accountability for, and title to, the property, and the Contractor shall comply with the following:

- NPR 4200.1, NASA Equipment Management Procedural Requirements
- NPR 4300.1, NASA Personal Property Disposal Procedure Requirements
- NPR 4310.1, Artifact Identification and Disposition
- NPR 4200.2, NASA Equipment Management Manual for Property Custodians
- JSC Procedural Requirement (JPR) 1281.7, Control of Customer Property
- JPR 1281.15, Identification, Handling, Storage, Packaging, Preservation, and Delivery
- JSC Work Instruction (JWI) 4200.1, Management of Controlled Equipment
- JWI 4210.2, JSC Instructions for Control of Program Stock (formally JSC 26549)
- JWI 4300.1, JSC Instructions for Excess and Disposal of Government Property
- JWI 6050.1, Procedures for Processing Shipments from JSC

Property not recorded in NASA property systems must be managed in accordance with the requirements of the clause at FAR 52.245–1, as incorporated in this contract.
The Contractor shall establish and adhere to a system of written procedures to assure continued, effective management control and compliance with these user responsibilities. In accordance with FAR 52.245-1(h)(1) the contractor shall be liable for property lost, damaged, destroyed or stolen by the contractor or their employees when determined responsible by a NASA Property Survey Board, in accordance with the NASA guidance in this clause.

(b) (1) The official accountable recordkeeping, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished within NASA management information systems prescribed by the installation Supply and Equipment Management Officer (SEMO) and Financial Management Officer. If this contract provides for the Contractor to acquire property, title to which will vest in the Government, the following additional procedures apply:

(i) The Contractor shall not utilize the installation’s central receiving facility for receipt of contractor-acquired property. However, the Contractor shall provide listings suitable for establishing accountable records of all such property received, on a monthly basis, to the SEMO.

(ii) [Reserved]

(iii) The Contractor shall establish a record for Government titled property as required by FAR 52.245-1, as incorporated in this contract, and shall maintain that record until accountability is accepted by the Government.

(iv) Contractor use of Government property at an off-site location and off-site subcontractor use requires advance approval of the Contracting Officer and notification of the Industrial Property Officer. The property shall be considered Government furnished and the Contractor shall assume accountability and financial reporting responsibility. The Contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR 52.245–1, Government Property (as incorporated in this contract), until its return to the installation. NASA Procedural Requirements related to property loans shall not apply to offsite use of property by contractors.

(2) After transfer of accountability to the Government, the Contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in paragraph (a) of this clause and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the Contracting Officer.
(c) The following property and services are provided if checked (note: none checked):

(1) Office space, work area space, and utilities. Government telephones are available for official purposes only.

(2) Office furniture.

(3) Property listed in “not applicable”.

   (i) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records.

   (ii) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer’s prior written approval.

(4) Supplies from stores stock.

(5) Publications and blank forms stocked by the installation.

(6) Safety and fire protection for Contractor personnel and facilities.

(7) Installation service facilities: [Insert the name of the facilities or “none”].

(8) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.

(9) Cafeteria privileges for Contractor employees during normal operating hours.

(10) Building maintenance for facilities occupied by Contractor personnel.

(11) Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services may be provided on-site, as approved by the Contracting Officer.

(End of clause)

G.6 1852.245-73 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (JAN 2011)
(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with this clause, the instructions on the form and NFS subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

(b)(1) Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF 1018.

(2) The Contractor shall mail the original signed NF 1018 directly to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(3) One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: NASA/Johnson Space Center, Industrial Property Officer/JB3, 2101 NASA Parkway, Houston, Texas 77058, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c)(1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, contractors' procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the contractor shall contact the cognizant NASA Center Industrial Property Officer (IPO) within 30 days after discovery of the error to discuss corrective action.

(2) The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding $25,000 or 5 percent of the amount of the contract, whichever
is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with NFS subpart 1845.71 and any supplemental instructions for the current reporting period issued by NASA. Such reserve shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(d) A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with paragraph (b)(1) through (3) of this clause.

(End of clause)

G.7 NFS 1852.245-76 LIST OF GOVERNMENT PROPERTY FURNISHED PURSUANT TO FAR 52.245-1 (JAN 2011)

(a) For performance of work under this contract, the Government will make available Government property identified below or in Attachment, Section J, Attachment 11 – Core Government Furnished Property List per 52.245-1, of this contract on a no charge-for-use basis pursuant to the clause at FAR 52.245–1, Government Property, as incorporated in this contract. The Contractor shall use this property in the performance of this contract at [OFI] and at other location(s) as may be approved by the Contracting Officer. Under FAR 52.245–1, the Contractor is accountable for the identified property.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Acquisition Date</th>
<th>Acquisition Cost</th>
<th>Quantity</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Section J Attachment 11 – Government Furnished Property per 52.245-1</td>
<td></td>
<td></td>
<td>Manufacturer</td>
<td>Model</td>
</tr>
</tbody>
</table>

(End of clause)

G.8 NFS 1852.245-82 OCCUPANCY MANAGEMENT REQUIREMENTS (JAN 2011)

(a) In addition to the requirements of the clause at FAR 52.245–1, Government Property, as included in this contract, the Contractor shall comply with the following in performance of work in and around Government real property:
(1) NPR 8800.15, Policy for Real Property Management.
(2) NPR 8831.2, Facility Maintenance Management
(3) J69W-01, Real Property Management
(4) JPD 4310.1, National Historic Landmark Preservation
(b) The Contractor shall obtain the written approval of the Contracting Officer before installing or removing Contractor-owned property onto or into any Government real property or when movement of Contractor-owned property may damage or destroy Government-owned property. The Contractor shall restore damaged property to its original condition at the Contractor’s expense.

(c) The Contractor shall not acquire, construct or install any fixed improvement or structural alterations in Government buildings or other real property without the advance, written approval of the Contracting Officer. Fixed improvement or structural alterations, as used herein, means any alteration or improvement in the nature of the building or other real property that, after completion, cannot be removed without substantial loss of value or damage to the premises. Title to such property shall vest in the Government.

(d) The Contractor shall report any real property or any portion thereof when it is no longer required for performance under the contract, as directed by the Contracting Officer.

(End of clause)

G.9 JPI 52.204-91 SECURITY/BADGING REQUIREMENTS FOR FOREIGN NATIONAL VISITORS AND EMPLOYEES/REPRESENTATIVES OF FOREIGN CONTRACTORS (MAY 2013)

(a) An employee of a domestic Johnson Space Center (JSC) contractor or its subcontractor who is not a U.S. citizen (foreign national) may not be admitted to the JSC site for purposes of performing work without special arrangements. In addition, all employees or representatives of a foreign JSC contractor/subcontractor may not be admitted to the JSC site without special arrangements. For employees as described above, advance notice must be given to the Security Office of the host installation [JSC or White Sands Test Facility (WSTF)] at least three weeks prior to the scheduled need for access to the site so that instructions on obtaining access may be provided. Contractors should be aware that approval for access to the site and issuance of a badge may take much longer than three weeks and sufficient lead time must be allowed to accommodate the approval process. Employees or visitors from a Designated Country by birth or citizenship, must allow at least 30 days for approval process for any badge.

(b) All visit/badge requests for persons described in (a) above must be entered Identity and Access Management Tools (IdMAX) for acceptance, review, concurrence, and approval purposes. When an authorized company official requests a JSC or WSTF badge for site access, he/she is certifying that steps have been taken to ensure that its contractor or subcontractor employees, visitors, or representatives will not be given access to export-controlled or classified information for which they are not authorized. These individuals shall serve as
the contractor’s representative(s) in certifying that all visit/badge request forms are processed in accordance with JSC and WSTF security and export control procedures. No foreign national, representative, or resident alien contractor/subcontractor employee shall be granted access into JSC or WSTF until approved and processed through the IdMAX. Unescorted access will not be granted unless Visual Compliance, NCIC, SAVE check, and fingerprints have been completed and favorably adjudicated by the JSC Security Office and a NASA Foreign National Visitor Technology Transfer Control Plan (TTCP) or Access Control Plan have been submitted and approved.

(c) The contractor agrees that it will not employ for the performance of work onsite at JSC or WSTF any individuals who are not legally authorized to work in the United States. If the JSC International Visits Coordinator or the contracting officer has reason to believe that any employee of the contractor may not be legally authorized to work in the United States and/or on the contract, the contractor is required to furnish copies of Form I-9 (Employment Eligibility Verification), U.S. Department of Labor Application for Alien Employment Certification, and any other type of employment authorization document.

The contractor agrees to provide the information requested by JSC or WSTF Security Office in order to comply with NASA policy directives and guidelines related to foreign visits to NASA facilities so that (1) the visitor/employee/representative may be allowed access to JSC or other NASA centers for performance of this contract, (2) required investigations can be conducted, and (3) required annual revalidation of FN visit can be completed. All requested information must be submitted in a timely manner in accordance with instructions provided by JSC or any other center to be visited.

(End of clause)

G.10 JPI 52.223-92 JSC HAZARDOUS MATERIALS USE (MAY 2009)

(a) This clause is JSC-unique, and the requirements are in addition to any U.S. Environmental Protection Agency, U.S. Occupational Safety and Health Administration, or other state or Federal regulation or statute. Therefore, the following requirements do NOT supersede any statutory or regulatory requirements for any entity subject to this clause.

(b) "Hazardous materials," for the purposes of this clause, consist of the following:


(2) Those "extremely hazardous substances" subject to the emergency planning requirements in the Environmental Protection Agency Emergency Planning

(3) Those "hazardous substances" subject to the release notification requirements under Environmental Protection Agency's Emergency Planning and Community Right-to-Know Regulation, 40 Code of Federal Regulation 302.4, without regard for quantity.

(4) Any radioisotope material or device that produces ionizing radiation.


(6) Any explosive or any pyrotechnics.

(7) Any pesticide.

(c) The contractor shall develop and maintain an inventory listing the identity and quantity of hazardous materials stored or used onsite at JSC for the performance of the contract.

(d) The contractor shall ensure that the proper training of its employees in the use and inherent hazards of these materials is accomplished prior to use.

(e) The contractor shall notify the JSC Clinical Services Branch (SD3) prior to any initial use or different application of these materials.

(f) The contractor shall use all hazardous materials properly and take all necessary precautions to ensure no harm is done to humans or the environment.

(g) The contractor shall insert the substance of this clause, including this Paragraph F with appropriate changes of designations of the parties, in subcontracts under which hazardous materials will be utilized, or may reasonably be expected to be utilized, onsite at JSC.

(h) In the event the contractor fails or refuses to comply with any aspect of this clause, such failure or refusal may be considered a material breach of this contract.

(End of clause)

G.11 JPI 52.242-92 IDENTIFICATION OF EMPLOYEES (JULY 2016)

At all times while on Government property, the Contractor, subcontractors, their employees, and agents shall wear badges. These Badges will be issued in accordance with NPR 1600.4, Identity and Credential Management. The
employee’s Facility Security Officer (FSO) and/or designated official (DO) will submit an identity request for temporary (between 29 and 179 days) or permanent (greater than 180 days) badge/credentials within IdMax/NAMS.

Badges will be issued at the following locations: NASA Badging & Visitor Control Office, located in Building 110 at the JSC 6:00 a.m. to 5:30 p.m. Monday through Friday excluding holidays; the Sonny Carter Training Facility (SCTF); Ellington Field (EFD), Building 265, 7:00 a.m. to 11:00 a.m. Monday through Friday excluding holidays. At WSTF, PIV Badges are issued at the Security Building Badging Office, Building 108 Monday through Friday from 8:00 a.m. to 4:00 p.m. excluding holidays and off every other Friday due to 9/80 hour scheduling. WSTF visitor badges will be issued at the WSTF Forward Gate on a 7-day-a-week, 24-hour-a-day basis.

Note: FSO or DO needing identity requester rights, must complete the following training in SATURE: Personal Identity Verification (PIV) – ICAM Overview and PIV – Requester Module. After completion of the training the FSO/DO will request the following rights in NAMS: Agency ICAM Infrastructure; with the Identity Requester role. Last, submit a change request to be added to the JSC Form (JF) 200, NASA-JSC Contractor Signature Card for the contract/agreement of responsibility.

For temporary (between 29 and 179 days) credentials/badge requests, the FSO/DO will submit the credential request within IdMAX and instruct the employee to visit a JSC Badging Office to complete the enrollment process for the temporary credential/badge. The employee will need to present two forms of matching identification to process a temporary badge.

For permanent (180 days) credential/badge requests, the FSO/DO will submit a JF 1805, Non-NASA Employee Security Information, no later than noon on the Wednesday prior to the employee’s start date. The FSO/DO will notify the employee of the date/time for the background investigation processing at the JSC Security Office eQIP lab, if required. The FSO/DO will provide the employee with the necessary forms to complete prior to the eQIP lab appointment. Employee will present two forms of matching identification to process a permanent badge. Employee will receive a 30-day picture badge until the PIV Smartcard permanent credential/badge arrives at the JSC Badging Office. When the badge arrives, the employee or FSO/DO will receive an email notification for badge pickup at the JSC Badging Office.

The Contractor shall be held accountable for issued badges and all other related items and must assure that they are returned to the NASA Badging Office upon completion of work under the contract in accordance with the procedures listed on JF 760, JSC Contractor Termination and Return for Future Use Checklist.

(End of clause)
G.12 INFORMATION INCIDENTAL TO CONTRACT ADMINISTRATION

(a) With the exception of financial information, the Government shall have unlimited rights to use and distribute to third parties any administrative or management information developed by the contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract, whether or not said information is specified as a contract deliverable, if created in whole or in part at Government expense. The Contracting Officer may, at any time during the contract performance or within a period of 3 years after acceptance of all items to be delivered under this contract, order any administrative or management information developed by the contractor or a subcontractor at any tier in whole or in part for the performance of the contract or first produced in the performance of the contract.

(b) The Contracting Officer may release the contractor from the requirements of this clause for specifically identified information at any time during the 3-year period set forth in paragraph (a) of this clause.

(End of clause)

[END OF SECTION]
SECTION H – SPECIAL CONTRACT REQUIREMENTS

H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
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II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

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<tr>
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<tr>
<td>1852.208-81</td>
<td>NOV 2004</td>
<td>RESTRICTIONS ON PRINTING AND Duplicating</td>
</tr>
<tr>
<td>1852.223-70</td>
<td>DEC 2015</td>
<td>SAFETY AND HEALTH MEASURES AND MISHAP REPORTING</td>
</tr>
<tr>
<td>1852.223-75</td>
<td>FEB 2002</td>
<td>MAJOR BREACH OF SAFETY OR SECURITY</td>
</tr>
<tr>
<td>1852.228-76</td>
<td>OCT 2012</td>
<td>CROSS-WAIVER OF LIABILITY FOR SPACE STATION ACTIVITIES</td>
</tr>
<tr>
<td>1852.242-72</td>
<td>OCT 2015</td>
<td>DENIED ACCESS TO NASA FACILITIES</td>
</tr>
<tr>
<td>1852.247-71</td>
<td>JULY 2015</td>
<td>PROTECTION OF THE FLORIDA MANATEE</td>
</tr>
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(End of clause)

H.2 NFS 1852.209-71 LIMITATION OF FUTURE CONTRACTING (DEC 1988)

(a) The Contracting Officer has determined that this acquisition may give rise to a potential organizational conflict of interest. Accordingly, the attention of prospective offerors is invited to FAR Subpart 9.5 -- Organizational Conflicts of Interest.

(b) The nature of this conflict is:
   - 9.505-3 Providing evaluation services
   - 9.505-4 Obtaining access to proprietary information
   - Reference Clause H.10, ISS Contract Strategy Conflict of Interest Agreement. (The specific restrictions for an ISS Contract Strategy Conflict of Interest are described in Clause H.10.)

(c) The restrictions upon future contracting are as follows:
(1) If the contractor, under the terms of this contract, or through the performance of tasks pursuant to this contract, is required to develop specifications or statements of work that are to be incorporated into a solicitation, the contractor shall be ineligible to perform the work described in that solicitation as a prime or first-tier subcontractor under an ensuing NASA contract. This restriction shall remain in effect for a reasonable time, as agreed to by the Contracting Officer and the contractor, sufficient to avoid unfair competitive advantage or potential bias (this time shall in no case be less than the duration of the initial production contract). NASA shall not unilaterally require the contractor to prepare such specifications or statements of work under this contract.

(2) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data of other companies, and as long as these data remain proprietary or confidential, the contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete with those other companies.

(End of clause)

H.3 NFS 1852.216-80 TASK ORDERING PROCEDURE (OCT 1996)

(a) Only the Contracting Officer may issue task orders to the contractor, providing specific authorization or direction to perform work within the scope of the contract and as specified in the schedule. The contractor may incur costs under this contract in performance of task orders and task order modifications issued in accordance with this clause. No other costs are authorized unless otherwise specified in the contract or expressly authorized by the Contracting Officer.

(b) Prior to issuing a task order, the Contracting Officer shall provide the contractor with the following data:

(1) A functional description of the work identifying the objectives or results desired from the contemplated task order.

(2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.

(3) A request for a task plan from the contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the Contractor's proposal.

(c) Within 10 working days after receipt of the Contracting Officer's request, the contractor shall submit a task plan conforming to the request.
(d) After review and any necessary discussions, the Contracting Officer may issue a task order to the contractor containing, as a minimum, the following:

(1) Date of the order.

(2) Contract number and order number.

(3) Functional description of the work identifying the objectives or results desired from the task order, including special instructions or other information necessary for performance of the task.

(4) Performance standards, and where appropriate, quality assurance standards.

(5) Maximum dollar amount authorized (cost and fee or price). This includes allocation of award fee among award fee periods, if applicable.

(6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.

(7) Delivery/performance schedule including start and end dates.

(8) If contract funding is by individual task order, accounting and appropriation data.

(e) The contractor shall provide acknowledgment of receipt to the Contracting Officer within 3 working days after receipt of the task order.

(f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d), a task order which includes a ceiling price may be issued.

(g) The Contracting Officer may amend tasks in the same manner in which they were issued.

(h) In the event of a conflict between the requirements of the task order and the contractor's approved task plan, the task order shall prevail.

(i) Contractor shall submit monthly task order progress reports. As a minimum, the reports shall contain the following information:

(1) Contract number, task order number, and date of the order.

(2) Task ceiling price.

(3) Cost and hours incurred to date for each issued task.

(4) Costs and hours estimated to complete each issued task.
(5) Significant issues/problems associated with a task.

(6) Cost summary of the status of all tasks issued under the contract.

(End of clause)


(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at [OFI], where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

(e) The Contractor may request, in writing, that the Contracting Officer authorize it to export ITAR-controlled technical data (including software) pursuant to the exemption at 22 CFR 125.4(b)(3). The Contracting Officer or designated representative may authorize or direct the use of the exemption where the data does not disclose details of the design, development, production, or manufacture of any defense article.

(End of clause)

H.5 NFS 1852.235-71 KEY PERSONNEL AND FACILITIES (MAR 1989)

(a) The personnel and/or facilities listed below (or specified in the contract Schedule) are considered essential to the work being performed under this contract. Before removing, replacing, or diverting any of the listed or specified personnel or facilities, the contractor shall (1) notify the Contracting Officer reasonably in advance, and (2) submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on this contract.
(b) The contractor shall make no diversion without the Contracting Officer's written consent; provided that the Contracting Officer may ratify in writing the proposed change, and that ratification shall constitute the Contracting Officer's consent required by this clause.

(c) The list of personnel and/or facilities (as specified in the contract schedule) may, with the consent of the contracting parties, be amended from time to time during the course of the contract to add or delete personnel and/or facilities.

Program Manager - [OFI]
Deputy Program Manager - [OFI]

(End of clause)

H.6 JPI 52.219-90 SMALL BUSINESS SUBCONTRACTING GOALS (OCT 2006)

For purposes of this clause, the terms, “HUBZone Small Business Concern,” “Small Disadvantaged Business Concern,” “Service-Disabled, Veteran-Owned Small Business Concern, “Veteran-Owned Small Business Concern,” “Women-Owned Small Business Concern,” and “Historically Black College or University (HBCU)” are defined in paragraph 2.101 of the Federal Acquisition Regulation.

The total small business goal, expressed as a percent of total contract value including options, is 23 percent. The small business percentage goal, includes the following goals expressed as a percent of total contract value:

- Small Disadvantaged Business Concerns: 5.0 percent
- Woman-Owned Small Business Concerns: 6.0 percent
- HUBZone Small Business Concerns: 1.7 percent
- Veteran-Owned Small Business Concern: 4.0 percent
- Service-Disabled, Veteran-Owned Small Business Concern: 3.0 percent
- HBCU’s (includes other minority institutions): 0.5 percent

If the Offeror proposes higher small business subcontracting goals in the Subcontracting Plan, Attachment J-6, than those listed above, the Offeror shall modify the goals above to match the proposed numbers in the Subcontracting Plan.

The Contractor shall comply with the approved subcontract plan set forth in Attachment J-6 and delivered under DRD CMC-PR-06, Small Business Subcontracting Plan & Reports. Changes to the plan will be authorized only by contract modification. Performance by the Contractor in exerting its best effort to operate in accordance with this plan shall be a factor in determining award fee under this contract.

The contractor will be evaluated on its efforts toward achieving the percentage goals outlined above. The percentages of contractor performance for each award fee period shall be calculated based on the dollars expended to the concerns for the
evaluation period as compared to Contract total actual expenditures for the
evaluation period. For purposes of calculating percentage goals outlined above,
contract total expenditures shall not include expenditures to entities outside the
United States or its outlying areas. The contractor may include all lower tiered
subcontractors in reporting progress toward meeting the goals outlined above.

(End of clause)

H.7 JPI 52.223-93 ENVIRONMENTAL AND ENERGY CONSERVATION
REQUIREMENTS (FEB 2011)

(a) The Contractor shall ensure that all work performed and equipment used to fulfill
the requirements of this contract are in compliance with all Federal, state, and
local regulations and public laws, and the following NASA JSC directives: JPD
8500.1, JSC Environmental Excellence Policy; JPR 8550.1, JSC Environmental
Compliance Procedural Requirements; JPR 8553.1, JSC Environmental
Management System Manual; JWI 8553.1, EMS Aspect/Impact Assessment and
EMP Process; and NPR 8570.1, Energy Efficiency and Water Conservation. The
Contractor shall provide data on affirmative procurement, waste reduction
activity, energy efficient product procurement, and ozone depleting substances in
accordance with DRD [CMC-PR-07], Environmental and Energy Consuming
Product Compliance Reports.

(b) The Government remains the owner and operator of record for all environmental
activities conducted at NASA owned properties unless otherwise documented in
a signed agreement between NASA and the Contractor. The Contractor is
advised that activities performed at JSC and associated facilities are subject to
Federal, state and local regulatory agency inspections to review compliance with
environmental laws and regulations. For on-site issues, JSC's Environmental
Office will be the single point of contact with Federal and state regulatory
agencies and their representatives unless otherwise directed by the Contracting
Officer or the Environmental Office. The Contractor shall immediately notify
the JSC Environmental Office when contacted by external regulatory agency
representatives and shall cooperate fully. The Contractor shall complete,
maintain, and make available to the Contracting Officer, JSC Environmental
Office, JSC Energy Manager, or regulatory agency personnel all documentation
relating to environmental compliance matters under applicable laws. The
Contractor shall immediately notify the JSC Environmental Office upon issuance
of a Notice of Violation or noncompliance to the Contractor.

(c) Should a Notice of Violation, Notice of Noncompliance, Notice of Deficiency, or
similar regulatory agency notice be issued to the Government as a facility
owner/operator on account of the actions or inactions of the Contractor or one of
its subcontractors in the performance of work under this contract, the Contractor
shall fully cooperate with the Government in correcting any problems and
defending against regulatory assessment of any civil fines or penalties arising out
of such actions or inactions.

(End of clause)

H.8 JPI 52.242-94 ADMINISTRATIVE LEAVE (SEP 2008)

(a) When the NASA installation grants administrative leave to its Government employees (e.g., as a result of inclement weather, potentially hazardous conditions, or other special circumstances), the following personnel should also be dismissed upon notification of a center closure provided by the Contracting Officer:

(1) Contractor personnel working on-site; and

(2) Contractor personnel dedicated to the contract effort who are
   (i) Working off-site within 10 miles of JSC; and
   (ii) Unable to perform their NASA contract duties at their off-site location because their normal place of business has been or is expected to be negatively impacted by an emergency situation (e.g. has sustained damage, has been evacuated, etc.).

However, the contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative.

(b) Administrative leave granted under this clause shall be subject to modification or termination by the Contracting Officer and in all instances shall be subject to the availability of funds. The cost of salaries and wages to the contractor for the period of any such excused absence shall be a reimbursable item of cost under this contract for effected employees in accordance with the contractor's established accounting policy.

(1) If a labor hour-based contract, administrative leave granted under this clause shall be accounted for consistent with productive hours under this contract for employees in accordance with the contractor's established accounting policy.

(2) For fixed price contracts based on other than labor hours for deliverables, the Contracting Officer and contractor shall as a precondition to any reimbursement negotiate an advanced agreement to determine the appropriate method in which to grant administrative leave under this clause.

(3) All invoices requesting payment under this clause shall be marked as “Administrative Leave in accordance with 52.242-94, Administrative Leave.” All such invoices paid will be subject to review, audit, and revision when routine operations re-commence.
(c) The contractor shall include this clause in all services subcontracts that include personnel in the categories described in (a) above.

(End of clause)

H.9 REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFEROR

The completed provision 52.204-8, Annual Representations and Certifications, including any amended representation(s) made at paragraph (b) of the provision; and other representations, certifications and other statements contained in Section K completed and submitted as part of the offer dated October 1, 2017 are hereby incorporated by reference in this resulting contract.

(End of clause)

H.10 ISS CONTRACT STRATEGY CONFLICT OF INTEREST AGREEMENT

(a) An organizational conflict of interest exists for this contract as it relates to other contracts awarded by the ISS Program since the contractor may be in a position to favor its own products or capabilities. The Mission and Program Integration (MAPI) Contract and the Russian Language and Logistics Services (RLLS) Contract currently support ISS Program Management. This contract will be responsible for the overall implementation of these Program requirements. The intent of this clause is to prohibit a contractor from developing Program requirements in one of the aforementioned two contracts designed for “Support to ISS Program Management” and also implementing those requirements in one of the additional contracts responsible for “ISS Program Implementation.” Therefore, the contractor, by signing this contract, fully understands, agrees, and will comply with the following conditions:

(1) The contractor will not perform work as a prime for any ISS follow-on contract responsible for support to ISS Program Management.

(2) The contractor will perform no more than 49% (total contract costs) of the work as a subcontractor under any of the ISS Program Management support contracts.

(3) The contractor shall not, and will not, make the day-to-day program management decisions under any of the ISS Program Management support contracts set forth in (a).

(b) If by the performance of this contract, or by any other means, the contractor believes they may violate any of these conditions above, the contractor shall notify the Contracting Officer in writing immediately.
H.11 SPECIAL COMPUTER SOFTWARE PROVISION

(a) In addition to any restricted or unrestricted computer software specified elsewhere to be delivered under this contract, the contractor, upon request of the Contracting Officer, shall deliver to the Government any computer software, including its documentation and available source code, which was created in performance of this contract.

(b) The restricted and unrestricted computer software, documentation, and source code acquired or created during the performance of this contract shall remain in the custody of the contractor until such time as the Contracting Officer calls for the delivery thereof under paragraph A.

H.12 ASSOCIATE CONTRACTOR AGREEMENT FOR ISS

(a) The success of the International Space Station (ISS) Program is dependent on the efforts of multiple contractors. The CMC contractor is a key participant. The other contracts of the key participating contractors include, but are not limited to:

- International Space Station (ISS) Vehicle Sustaining Engineering Contract – NAS 15-10000
- Integrated Mission Operations Contract (IMOC), NNJ14RA01B
- Extravehicular Activity Space Operations Contract (ESOC) – NNJ10TB01C
- Mission and Program Integration (MAPI) Contract – NNJ12GA46C
- Russian Language and Logistics Services (RLLS) Contract – NNJ12GA47C
- Test and Operations Support Contract (TOSC), NNK13MA14C

Under the aforementioned contracts the contractors will provide the necessary technical, engineering and processing products and services required to develop, operate, maintain and utilize the ISS.

(b) In order to achieve efficient and effective implementation of the operation and utilization phase of the ISS, the contractor shall establish the means for coordination and exchange of information with associate contractors. The information to be exchanged shall be that required by the contractors in the execution of their respective contract requirements. The contractors are strongly encouraged to seek out and foster cooperative efforts that will benefit the ISS Program with increased safety, efficiency, and productivity.

(c) Given the unique role of this contract, and interrelations with the development, operation, maintenance and utilization of the ISS, the contractor will engage in
cooperative relationships that facilitate effective management of the overall ISS effort. This joint cooperation will be evaluated as part of the contract award fee process, as defined in Attachment J-5, Award Fee Evaluation Plan, for the contract. Successful performance will be determined by the Government’s assessment of the overall and combined performance of the operation and utilization requirements in the contracts, as modified.

(d) To ensure successful implementation and utilization of the ISS, the contractors shall establish formal guidelines to address coordination, cooperation and communication. All program elements shall work in a coordinated fashion. Each contractor shall establish the means for the exchange of such data as needed to keep other project elements fully informed.

(End of clause)

H.13 UNDERLIMIT CHANGES

The parties agree that, notwithstanding the provisions of the “Changes” clause (FAR 52.243-1) and the “Government Property” clause (FAR 52.245-1), no core change made pursuant to the “Changes” clause shall give rise to an equitable adjustment in the estimated cost or fee or any other contract provision when said change causes an increase or decrease of $750,000 or less in the estimated cost of this contract.

Each change shall be controlling in making this determination, and such change shall not, for purposes of determining the applicability of this clause, be added to any other changes(s). The parties recognize that several changes may be grouped together in a bilateral modification for definitization; however, the dollar value of each individual change will be controlling in determining whether or not an equitable adjustment is in order.

(End of Clause)

H.14 REPROCUREMENT PACKAGE

The contractor shall provide a Data Reprocurement Package in accordance with DRD CMC-PR-04, Reprocurement Data Package.

(End of clause)

H.15 GOVERNMENT-PROVIDED RUSSIAN LANGUAGE AND LOGISTICS SERVICES (RLLS) CONTRACT SERVICES

The contractor is authorized use of the following RLLS contract services in performance of this contract or any subcontract entered into under this contract:
Russian Translations
Russian Interpretations
Russian Language Training
Russian Logistics services (both in the U.S. and in Russia), including:
  a) Ground Services (e.g. airport pickup/drop-off, transportation between hotels and meeting locations);
  b) Meeting Services (e.g. coordination of schedules, agendas, and protocols);
  c) Hotel Reservations;
  d) Visa Coordination.

The Contracting Officer shall be promptly notified by the contractor upon identification of a need for RLLS contract services. The Contracting Officer shall provide instructions as to the point of contact for submitting a request for RLLS contract services. This provision, including this flow-down requirement, shall be inserted in all subcontracts where it is anticipated that RLLS contract services may be necessary for contract performance.

(End of clause)

H.16 SUBCONTRACTING WITH RUSSIAN ENTITIES FOR GOODS OR SERVICES

(a) Definitions: In this provision:

(1) The term “Russian entities” means:

   (A) Russian persons, or

   (B) Entities created under Russian law or owned, in whole or in part, by Russian persons or companies including, but not limited to, the following:

     (i) The Russian Federal Space Agency (Roscosmos State Corporation for Space Activities),

     (ii) Any organization or entity under the jurisdiction or control of Roscosmos State Corporation for Space Activities, or

     (iii) Any other organization, entity, or element of the Government of the Russian Federation.

(2) The term “extraordinary payments” means payments in cash or in kind made or to be made by the United States Government prior to December 31, 2020, for work to be performed or services to be rendered prior to that date necessary to meet United States obligations under the Agreement
Concerning Cooperation on the Civil International Space Station, with annex, signed at Washington January 29, 1998, and entered into force March 27, 2001, or any protocol, agreement, memorandum of understanding, or contract related thereto.

(b) This clause implements the reporting requirement in section 6(i) of the Iran, North Korea, and Syria Nonproliferation Act, as amended (INKSNA). This clause implements section 6(a) and the exception in section 7(1)(B) of INKSNA that is applicable through December 31, 2020. NASA has applied the restrictions in the Act to include funding of Russian entities via U.S. Contractors.

(c) (1) The Contractor shall not subcontract with Russian entities without first receiving written approval from the Contracting Officer (CO). In order to obtain this written approval to subcontract with any Russian entity as defined in paragraphs (a), the Contractor shall provide the CO with the following information related to each planned new subcontract and any change to an existing subcontract with entities that fit the description in paragraph (a):

(A) A detailed description of the subcontracting entity, including its name, address, and a point of contact, as well as a detailed description of the proposed subcontract including the specific purpose of payments that will made under the subcontract.

(B) The Contractor shall provide certification that the subcontracting entity is not, at the date of the subcontract approval request, on any of the lists of proscribed denied parties, specially designated nationals and entities of concern found at:

BIS's Listing of Entities of Concern (see http://www.access.gpo.gov/bis/ear/pdf/744spir.pdf)

BIS's List of Denied Parties (see http://www.bis.doc.gov/dpl/Default.shtm)

OFAC's List of Specially Designated Nationals (Adobe® PDF format) (see http://www.treas.gov/offices/enforcement/ofac/sdn/t11sdn.pdf)

List of Unverified Persons in Foreign Countries (see http://www.bis.doc.gov/Enforcement/UnverifiedList/unverified_parties.html)

State Department’s List of Parties Statutorily Debarred for Arms Export Control Act Convictions (see http://www.pmddtc.state.gov/debar059.htm)

State Department’s Lists of Proliferating Entities (see http://www.state.gov/t/isn/c15231.htm)

(2) Unless relief is granted by the CO, the information necessary to obtain approval to subcontract shall be provided to the CO thirty (30) business
days prior to executing any planned subcontract with entities defined in paragraph (a).

(d) After receiving approval to subcontract, the Contractor shall provide the CO with a report every six months that documents the individual payments made to an entity in paragraph (a). The reports are due on July 15th and January 15th. The July 15th report shall document all of the individual payments made from the previous January through June. The January 15th report shall document all of the individual payments made from the previous July through December. The content of the report shall provide the following information for each time a payment is made to an entity in paragraph (a):

(1) The name of the entity
(2) The subcontract number
(3) The amount of the payment
(4) The date of the payment

(e) The CO may direct the Contractor to provide additional information for any other prospective or existing subcontract at any tier. The CO may direct the Contractor to terminate for the convenience of the Government any subcontract at any tier with an entity described in paragraph (a), subject to an equitable adjustment.

(f) All work subcontracted to the Russian Federal Space Agency, any organization or entity under the jurisdiction or control of the Russian Federal Space Agency, or any other organization, entity or element of the Government of the Russian Federation must be completed on or before December 31, 2020. No payments for such work may be made by the Contractor to the subcontractor, or by NASA to the Contractor, after December 31, 2020. The Contractor is responsible for ensuring the completion of and payment for such subcontracted work in sufficient time to enable payment by NASA to the Contractor on or before December 31, 2020.

(g) The Contractor shall include the substance of this clause in all its subcontracts, and shall require such inclusion in all other subcontracts of any tier. The Contractor shall be responsible to obtain written approval from the CO to enter into any tier subcontract that involves entities defined in paragraph (a).

(End of clause)

H.17 FLIGHT ITEM MARKING
Flight hardware or equipment to be shipped under this contract shall be annotated with the following:

"THIS IS A FLIGHT ITEM" or "THIS IS MISSION ESSENTIAL GROUND SUPPORT EQUIPMENT," as applicable.

This annotation must either be hand written or rubber stamped. The annotation shall not be smaller than ¼ inch letters. The annotation shall be on block 16 of each Department of Defense (DD) Form 250 “Material Inspection and Receiving Report” or block 4 of the DD Form 1149 “Requisition and Invoice/Shipping Document.”

(End of clause)

H.18 EVIDENCE OF COMPLETION MATRIX

The Contractor shall submit a SOW Evidence of Completion Matrix in accordance with DRD CMC-PM-05, Evidence of Completion Matrix. The SOW Evidence of Completion Matrix shall define completion criteria for each numbered paragraph of the statement of work. Upon contract completion, each SOW task will require proof of closure in accordance with the Evidence of Completion Matrix pursuant to DRD CMC-PM-05, Evidence of Completion Matrix.

(End of clause)

H.19 TRANSITIONED HARDWARE DATA ACCEPTABILITY

The parties hereby understand and agree that hardware transitioned to the CMC3 has engineering and safety documentation that is not necessarily compliant to the requirements in the CMC Statement of Work (SOW) and Data Requirements Deliverables (DRDs). Furthermore, this documentation is herewith agreed to as being acceptable in the existing delivered “as-is” configuration, for all history prior to transition to the CMC.

In the event that any hardware item is modified, altered, or maintained, subsequent to transition to the CMC, in such a manner so as to require changes to the engineering and safety documentation, the “current version” of the documentation will be required to be updated for the work performed as required to be fully compliant with the requirements in the CMC SOW and DRDs; although the historical version will continue to be acceptable “as is.”

(End of clause)

[END OF SECTION]
### I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

#### I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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## I. CARGO MISSION CONTRACT 3

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

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I.2 FAR 52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This contract is subject to the written approval of the Procurement Officer for the NASA Johnson Space Center and shall not be binding until so approved.

(End of clause)

I.3 FAR 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The contractor shall make the following notifications in writing:

(1) When the contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The contractor shall—

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;
(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the contractor’s ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each contractor ownership change.

(c) The contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of clause)

I.4 FAR 52.216-22 INDEFINITE QUANTITY (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the “maximum.” The Government shall order at least the quantity of supplies or services designated in the Schedule as the “minimum.”

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor’s and Government’s rights and obligations with respect to that order to the same extent as if the order were completed during the contract’s effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after September 30, 2024.

(End of clause)
I.5 FAR 52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 2014)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

See Section J, Attachment J-4, Department of Labor Wage Determination.

(End of clause)

I.6 FAR 52.222-60 PAYCHECK TRANSPARENCY EXECUTIVE ORDER 13673 (JAN 2017)

(a) Wage statement. In each pay period, the Contractor shall provide a wage statement document (e.g. a pay stub) to all individuals performing work under the contract subject to the wage records requirements of any of the following statutes:


(2) 40 U.S.C. chapter 31, subchapter IV, Wage Rate Requirements (Construction) (formerly known as the Davis Bacon Act).


(b) Content of wage statement.

(1) The wage statement shall be issued every pay period and contain–

i. The total number of hours worked in the pay period;

ii. The number of those hours that were overtime hours;

iii. The rate of pay (e.g., hourly rate, piece rate);

iv. The gross pay; and

v. Any additions made to or deductions taken from gross pay. These shall be itemized. The itemization shall identify and list each one separately, as well as the specific amount added or deducted for each.

(2) If the wage statement is not provided weekly and is instead provided bi-weekly or semi-monthly (because the pay period is bi-weekly or semi-monthly), the hours worked and overtime hours contained in the wage statement shall be broken down to correspond to the period (which will almost always be weekly) for which overtime is calculated and paid.

(3) The wage statement provided to an individual exempt from the overtime compensation requirements of the Fair Labor Standards Act (FLSA) need not include a record of hours worked, if the Contractor informs the individual in writing of his or her overtime exempt status. The notice may not indicate or suggest that DOL or the courts agree with the Contractor’s determination that the individual is exempt. The notice must be given either before the individual begins work on the contract, or in the first wage statement under the contract.
Notice given before the work begins can be a stand-alone document, or can be in an offer letter, employment contract, or position description. If during performance of the contract, the Contractor determines that the individual’s status has changed from non-exempt to exempt from overtime, it must provide the notice to the individual before providing a wage statement without hours worked information or in the first wage statement after the change.

(c) Substantially similar laws. A Contractor satisfies this wage statement requirement by complying with the wage statement requirement of any State or locality (in which the Contractor has employees) that has been determined by the United States Secretary of Labor to be substantially similar to the wage statement requirement in this clause. The determination of substantially similar wage payment states may be found at www.dol.gov/fairpayandsafeworkplaces.

(d) Independent contractor.

(1) If the Contractor is treating an individual performing work under the contract as an independent contractor (e.g., an individual who is in business for him or herself or is self-employed) and not as an employee, the Contractor shall provide a written document to the individual informing the individual of this status. The document may not indicate or suggest that the enforcement agencies or the courts agree with the Contractor’s determination that the worker is an independent contractor. The Contractor shall provide the document to the individual either at the time an independent contractor relationship is established with the individual or prior to the time the individual begins to perform work on the contract. The document must be provided for this contract, even if the worker was notified of independent contractor status on other contracts. The document must be separate from any independent contractor agreement between the Contractor and the individual. If the Contractor determines that a worker’s status while performing work on the contract changes from employee to independent contractor, then the Contractor shall provide the worker with notice of independent contractor status before the worker performs any work under the contract as an independent contractor.

(2) The fact that the Contractor does not make social security, Medicare, or income tax withholding deductions from the individual’s pay and that an individual receives at year end an IRS Form 1099-Misc is not evidence that the Contractor has correctly classified the individual as an independent contractor under the labor laws.

(e) Notices.

(1) Language. Where a significant portion of the workforce is not fluent in English, the Contractor shall provide the wage statement required in paragraph (a) of this clause, the overtime exempt status notice described in paragraph (b)(3) of this clause, and the independent contractor notification required in paragraph (d) of this clause in English and the language(s) with which the significant portion(s) of the workforce is fluent.

(2) Electronic notice. If the Contractor regularly provides documents to its workers by electronic means, the Contractor may provide to workers
electronically the written documents and notices required by this clause. Workers must be able to access the document through a computer, device, system or network provided or made available by the Contractor.

(f) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that exceed $500,000, at all tiers, for other than commercially available off-the-shelf items.

(End of clause)

I.7 FAR 52.223-11 OZONE-DEPLETING SUBSTANCES (MAY 2016)

(a) Definition. As used in this clause—
“Global warming potential” means how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon dioxide’s global warming potential is defined as 1.0.

“High global warming potential hydrofluorocarbons” means any hydrofluorocarbons in a particular end use for which EPA’s Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR Part 82 subpart G with supplemental tables of alternatives available at (http://www.epa.gov/snap/).

“Hydrofluorocarbons” means compounds that only contain hydrogen, fluorine, and carbon.

“Ozone-depleting substance,” means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as—
(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or
(2) Class II, including, but not limited to, hydrochlorofluorocarbons.

(b) The Contractor shall label products that contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), (d), and (e) and 40 CFR part 82, subpart E, as follows:

Warning

Contains (or manufactured with, if applicable) *_______, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

* The Contractor shall insert the name of the substance(s).
(c) Reporting. For equipment and appliances that normally each contain 50 or more pounds of hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons, the Contractor shall—

(3) Track on an annual basis, between October 1 and September 30, the amount in pounds of hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons contained in the equipment and appliances delivered to the Government under this contract by—
   i. Type of hydrofluorocarbon (e.g., HFC-134a, HFC-125, R-410A, R-404A, etc.);
   ii. Contract number; and
   iii. Equipment/appliance;

(4) Report that information to the Contracting Officer for FY16 and to www.sam.gov, for FY17 and after—
   vi. Annually by November 30 of each year during contract performance; and
   vii. At the end of contract performance.

(d) The Contractor shall refer to EPA's SNAP program (available at http://www.epa.gov/snap) to identify alternatives. The SNAP list of alternatives is found at 40 CFR part 82 subpart G with supplemental tables available at http://www.epa.gov/snap.

(End of clause)

I.8 FAR 52.247-67 SUBMISSION OF TRANSPORTATION DOCUMENTS FOR AUDIT (FEB 2006)

(a) The contractor shall submit to the address identified below, for prepayment audit, transportation documents on which the United States will assume freight charges that were paid—

   a. By the contractor under a cost-reimbursement contract; and
   b. By a first-tier subcontractor under a cost-reimbursement subcontract thereunder.

(b) Cost-reimbursement contractors shall only submit for audit those bills of lading with freight shipment charges exceeding $100. Bills under $100 shall be retained on-site by the contractor and made available for on-site audits. This exception only applies to freight shipment bills and is not intended to apply to bills and invoices for any other transportation services.

(c) Contractors shall submit the above referenced transportation documents to
NASA Johnson Space Center
2101 NASA Parkway
Houston, TX  77058
Attn: Contracting Officer
Mail Code: BG
Contract Number: [TBD]

(End of clause)

I.9 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and
effect as if they were given in full text. Upon request, the Contracting Officer will
make their full text available. Also, the full text of a clause may be accessed
electronically at this/these address(es):

http://www.arnet.gov/far/

http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of clause)

I.10 FAR 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR
Chapter 1) clause with an authorized deviation is indicated by the addition of
“(DEVIATION)” after the date of the clause.

The use in this solicitation or contract of any NASA FAR Supplement Regulation (48
CFR Chapter 18) clause with an authorized deviation is indicated by the addition of
“(DEVIATION)” after the name of the regulation.

(End of clause)

I.11 NFS 1852.225-71 RESTRICTIONS ON FUNDING ACTIVITY WITH CHINA
(FEB 2012)

(a) Definition - “China” or “Chinese-owned company” means the People’s Republic
of China, any company owned by the People’s Republic of China or any company
incorporated under the laws of the People’s Republic of China.

(b) Public Laws 112-10, Section 1340(a) and 112-55, Section 539, restrict NASA
from contracting to participate, collaborate, coordinate bilaterally in any way with
China or a Chinese-owned company using funds appropriated on or after April 25,
2011. Contracts for commercial and non-developmental items are exempted from
the prohibition because they constitute purchase of goods or services that would not involve participation, collaboration, or coordination between the parties.

(c) This contract may use restricted funding that was appropriated on or after April 25, 2011. The contractor shall not contract with China or Chinese-owned companies for any effort related to this contract except for acquisition of commercial and non-developmental items. If the contractor anticipates making an award to China or Chinese-owned companies, the contractor must contact the contracting officer to determine if funding on this contract can be used for that purpose.

(d) Subcontracts - The contractor shall include the substance of this clause in all subcontracts made hereunder.

(End of clause)

I.12 NFS 1852.215-84 OMBUDSMAN (NOV 2011)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the contracting officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution.

(b) If resolution cannot be made by the contracting officer, interested parties may contact the installation ombudsman, whose name, address, telephone number, facsimile number, and e-mail address may be found at: http://prod.nais.nasa.gov/pub/pub_library/Omb.html. Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the Agency ombudsman identified at the above URL. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

(End of clause)

I.13 NFS 1852.228-75 MINIMUM INSURANCE COVERAGE (OCT 1988)

(a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease
statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least $100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(b) Comprehensive general (bodily injury) liability insurance of at least $500,000 per occurrence.

(c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least $200,000 per person and $500,000 per occurrence for bodily injury liability and $20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least $200,000 per person and $500,000 per occurrence for bodily injury, other than passenger liability, and $200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least $200,000 multiplied by the number of seats or passengers, whichever is greater.

(End of clause)


(a) Definitions.

“ECP” means an Engineering Change Proposal (ECP) which is a proposed engineering change and the documentation by which the change is described, justified, and submitted to the procuring activity for approval or disapproval.

(b) Either party to the contract may originate ECPs. Implementation of an approved ECP may occur by either a supplemental agreement or, if appropriate,
as a written change order to the contract.

(c) Any ECP submitted to the Contracting Officer shall include a "not-to-exceed" estimated cost increase or decrease adjustment amount, if any, and the required time of delivery or period of performance adjustment, if any, acceptable to the originator of the ECP. If the change is originated within the Government, the Contracting Officer shall obtain a written agreement with the contractor regarding the "not-to-exceed" estimated cost and delivery or period of performance adjustments, if any, prior to issuing an order for implementation of the change. An ECP accepted in accordance with the Changes clause of this contract shall not be considered an authorization to the contractor to exceed the estimated cost in the contract Schedule, unless the estimated cost is increased by the change order or other contract modification.

(d) After submission of a contractor initiated ECP, the Contracting Officer may require the contractor to submit the following information:

(1) Cost or pricing data in accordance with FAR 15.403-5 if the proposed change meets the criteria for its submission under FAR 15.403-4; or

(2) Information other than cost or pricing data adequate for Contracting Officer determination of price reasonableness or cost realism. The Contracting Officer reserves the right to request additional information if that provided by the contractor is considered inadequate for that purpose. If the contractor claims applicability of one of the exceptions to submission of cost or pricing data, it shall cite the exception and provide rationale for its applicability.

(e) If the ECP is initiated by NASA, the Contracting Officer shall specify the cost information requirements, if any.

(f) If the estimated cost adjustment proposed for any contractor-originated ECP is $100,000 or less, the ECP shall be executed with no adjustment to the contract estimated cost.

(End of clause)

I.15 TECHNICAL INFORMATION RELEASES AND PUBLICATIONS

As authorized by paragraph (d)(1) of the Rights in Data-General Clause (FAR 52.227-14) of this contract, the following exception shall apply:

During the performance of this contract, if data relating to this contract is planned for use in oral or written presentations, professional meetings, seminars, or in articles to be published in professional, scientific, and technical journals and similar media, the contractor shall assure that an advance information copy of the presentation or
article is sent to the ISS Program in accordance with NF1676JSC, JSC Approval of Scientific and Technical Information for External Release, to have the benefit of advance information concerning accomplishments of interest, and will provide the ISS Program an opportunity to make suggestions to the contractor concerning revisions if it is considered that such comments might be useful to the contractor to help assure the technical accuracy of the information to be presented or published. The information copy will be forwarded to the technical monitor of the contract at least four weeks in advance of the date the author intends to give the presentation or submit the article for publication.

The advance information copy may be submitted in the format or medium, which will be utilized in its ultimate release.

(End of clause)

I.16 DATA RIGHTS NOTICE

(a) Any proposal submitted during the course of contract performance must expressly identify any computer software or technical data that is to be provided with less than unlimited data rights. The contractor shall notify the Contracting Officer in writing prior to incorporating any item, component, subcomponent, process, or software, wherein the related technical data or computer software qualifies as limited rights data or restricted computer software in accordance with Alternate II and III of FAR 52.227-14 and NFS 1852.227-86. This notification does not apply to commercial off-the-shelf (shrink-wrapped) computer software, and corresponding documentation, that has a standard commercial license unless the software is to be incorporated as a subcomponent in a developmental effort.

(b) Technical data and computer software delivered shall not be marked with restrictive legends unless the Contracting Officer has given prior written consent.

(c) All license agreements shall be compliant with Federal laws, regulations and the terms and conditions of this contract and shall be transferable to the government upon completion of the contract without additional cost to the Government. One copy of the final negotiated license agreement shall be forwarded to the Contracting Officer within 30 days of agreement to ensure compliance.

(End of clause)

I.17 LIMITED RIGHTS DATA NOTICE

(See Alternate II of the Rights in Data-General Clause (52.227-14 as modified at 1852.227-14)
(a) These data are submitted with limited rights under Government Contract No. [OFI] (and subcontract [OFI], if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the contractor, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

1. Use (except for manufacture) by support service contractors.

2. Evaluation by nongovernment evaluators.

3. Use (except for manufacture) by other contractors participating in the Government’s program of which the specific contract is a part, for information and use in connection with the work performed under each contract.

4. Emergency repair or overhaul work.

5. Release to a foreign government, or instrumentality thereof, as the interests of the United States Government may require, for information or evaluation, or for emergency repair or overhaul work by such government.

(b) This notice shall be marked on any reproduction of these data, in whole or in part.

(End of clause)

I.18 ACCESS TO CONTRACTOR DATA

(a) “Data” for purposes of this clause, means recorded information, regardless of the form or media on which it may be recorded. The term includes technical data; computer software; and information incidental to contract administration, such as financial, administrative, cost or pricing, or management information. Types of data contained in the definition also include Contractor internal audits of any discipline, system, or task, which directly or indirectly supports the performance of this contract as well as data from any audit of subcontractor(s) performing this contract. These examples are illustrative and are not to be construed as a limitation on the definition of data.

(b) The Contracting Officer or designee shall, through closeout, have access to and the right to examine any of the data produced or specifically used in the performance of this contract. The purpose of this access provision is to permit the Government to monitor the Contractor’s performance under this contract and to permit sampling of Contractor data to verify requirements compliance and
continuous improvement without unduly increasing the number of data deliverables to this contract.

(c) The contractor shall make available at all reasonable times for Government inspection all existing Government data provided to the Contractor and any data first produced or used in the performance of this contract for examination through closeout. Moreover, information provided by the Contractor on this system shall contain all necessary technical and business application data to determine the degree to which contract requirements are met.

(d) Except for software systems being provided as part of this contract, the contractor shall maintain all data on a commercially available system for information management that is easily accessible by NASA. For the purposes of this clause, “commercially available system” is defined as a system comprised of a Commercial Off-The-Shelf (COTS) database management system with its associated reporting/query tools, and a COTS text and graphics viewer software package. The contractor must obtain the approval of the Contracting Officer prior to using any noncommercial system for information management of data generated under this contract. As part of this request, the contractor must justify why no commercial system to manage information is adequate for this contract. If use of a noncommercial system is approved, then the contractor shall demonstrate the system to the Government and provide thorough training to Government personnel to ensure they are able to access (i.e., read and copy) all data maintained on the system.

(e) The Contractor shall provide the Government unimpeded access to all areas determined by Government representatives as necessary for surveillance, audit and independent evaluation purposes. In those instances that access is restricted due to hazards or other personnel access limitations, the Contractor shall accommodate Government personnel such that access is provided and operational safety is not compromised.

(f) Notwithstanding the Additional Data Requirements clause, the Government shall have the right to reproduce any data found during the examination that it wishes to retain. The Government will reimburse reproduction costs only when it uses Contractor equipment for the reproduction. The Government shall retain no greater rights in the reproduced data than it would have under the Rights in Data-General clause.

(g) The Contractor shall describe the areas of its internal systems where NASA access will be permitted, define access and interface requirements, and provide NASA the required training to be able to access and use these systems.

(h) The Contractor shall flow this clause to all cost type subcontracts.
(End of clause)

[END OF SECTION]
PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS

K.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>52.204-5</td>
<td>OCT 2014</td>
<td>Women-Owned Business (Other Than Small Business).</td>
</tr>
<tr>
<td>52.204-17</td>
<td>JUL 2016</td>
<td>Ownership or Control of Offeror</td>
</tr>
<tr>
<td>52.225-25</td>
<td>OCT 2015</td>
<td>Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran – Representations and Certifications</td>
</tr>
</tbody>
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II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<table>
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<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
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<tbody>
<tr>
<td>None included by reference</td>
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K.2 FAR 52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (APR 2016)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 541690.

(2) The small business size standard is $15,000,000.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.
(b)(1) If the provision at 52.204-7, System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the provision at 52.204-7 is not included in this solicitation, and the offeror is currently registered in the System for Award Management (SAM), and has completed the Representations and Certifications section of SAM electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

- (i) Paragraph (d) applies.
- (ii) Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c)(1) The following representations or certifications in SAM are applicable to this solicitation as indicated:

(i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—

(A) The acquisition is to be made under the simplified acquisition procedures in Part 13;

(B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or

(C) The solicitation is for utility services for which rates are set by law or regulation.

(ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed $150,000.

(iii) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the provision at 52.204-7, System for Award Management.

(iv) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—

(A) Are not set aside for small business concerns;

(B) Exceed the simplified acquisition threshold; and

(C) Are for contracts that will be performed in the United States or its outlying areas.

(v) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations—Representation.
(vi) **52.209-5**, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(vii) **52.209-11**, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.

(viii) **52.214-14**, Place of Performance—Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(ix) **52.215-6**, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(x) **52.219-1**, Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.
   (A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.
   (B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

(xi) **52.219-2**, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.

(xii) **52.222-22**, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at **52.222-26**, Equal Opportunity.

(xiii) **52.222-25**, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at **52.222-26**, Equal Opportunity.

(xiv) **52.222-38**, Compliance with Veterans’ Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial items.

(xv) **52.223-1**, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at **52.223-2**, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.
(xvi) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA–designated items.

(xvii) 52.225-2, Buy American Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xviii) 52.225-4, Buy American—Free Trade Agreements—Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at 52.225-3.
(A) If the acquisition value is less than $25,000, the basic provision applies.
(B) If the acquisition value is $25,000 or more but is less than $50,000, the provision with its Alternate I applies.
(C) If the acquisition value is $50,000 or more but is less than $77,533, the provision with its Alternate II applies.
(D) If the acquisition value is $77,533 or more but is less than $100,000, the provision with its Alternate III applies.

(xix) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xx) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan—Certification. This provision applies to all solicitations.

(xxi) 52.225-25, Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certifications. This provision applies to all solicitations.

(xxii) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.

(2) The following representations or certifications are applicable as indicated by the Contracting Officer:
   __ (i) 52.204-17, Ownership or Control of Offeror.
   __ (ii) 52.204-20, Predecessor of Offeror.
   __ (iii) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.
   __ (iv) 52.222-48, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment—Certification.
__ (v) 52.222-52, Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services-Certification.

__ (vi) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA–Designated Products (Alternate I only).

__ (vii) 52.227-6, Royalty Information.
   __ (A) Basic.
   __ (B) Alternate I.

X (viii) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d) The offeror has completed the annual representations and certifications electronically via the SAM website accessed throughhttps://www.acquisition.gov. After reviewing the SAM database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.
Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

(End of Provision)

K.3 FAR 52.209-5 CERTIFICATION REGARDING RESPONSIBILITY MATTERS (OCT 2015)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that—

(i) The Offeror and/or any of its Principals—
   (A.) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
   (B.) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) contract or subcontract; violation of Federal or State antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property (if offeror checks “have”, the offeror shall also see 52.209-7, if included in this solicitation);
   (C.) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision; and
   (D.) Have ( ), have not ( ), within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds $3,500 for which the liability remains unsatisfied.

(1) Federal taxes are considered delinquent if both of the following criteria apply:
   (i) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the
liability is not finally determined until all judicial appeal rights have been exhausted.

(2) **The taxpayer is delinquent in making payment.** A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded. Examples.

(i) The taxpayer has received a statutory notice of deficiency, under I.R.C. §6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(ii) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. §6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(iii) The taxpayer has entered into an installment agreement pursuant to I.R.C. §6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(iv) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).

(ii) The Offeror has ( ), has not ( ), within a 3-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) **Principal,** for the purposes of this certification, means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).
(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

K.4 FAR 52.209-7 INFORMATION REGARDING RESPONSIBILITY MATTERS (JUL 2013)

(a) Definitions. As used in this provision—

*Administrative proceeding* means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative Proceedings, Civilian Board of Contract Appeals Proceedings, and Armed Services Board of Contract Appeals Proceedings). This includes administrative proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include agency actions such as contract audits, site visits, corrective plans, or inspection of deliverables.

*Federal contracts and grants with total value greater than $10,000,000* means—

(1) The total value of all current, active contracts and grants, including all priced options; and
(2) The total value of all current, active orders including all priced options under indefinite-delivery, indefinite-quantity, 8(a), or requirements contracts (including task and delivery and multiple-award Schedules).

*Principal* means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).

(b) The offeror [ ] has [ ] does not have current active Federal contracts and grants with total value greater than $10,000,000.

(c) If the offeror checked “has” in paragraph (b) of this provision, the offeror represents, by submission of this offer, that the information it has entered in the Federal Awardee Performance and Integrity Information System (FAPIIS) is current, accurate, and complete as of the date of submission of this offer with regard to the following information:

(1) Whether the offeror, and/or any of its principals, has or has not, within the last five years, in connection with the award to or performance by the offeror of a Federal contract or grant, been the subject of a proceeding, at the Federal or State level that resulted in any of the following dispositions:

   (i) In a criminal proceeding, a conviction.

   (ii) In a civil proceeding, a finding of fault and liability that results in the payment of a monetary fine, penalty, reimbursement, restitution, or damages of $5,000 or more.

   (iii) In an administrative proceeding, a finding of fault and liability that results in—

      (A) The payment of a monetary fine or penalty of $5,000 or more; or

      (B) The payment of a reimbursement, restitution, or damages in excess of $100,000.

   (iv) In a criminal, civil, or administrative proceeding, a disposition of the matter by consent or compromise with an acknowledgment of fault by the Contractor if the proceeding could have led to any of the outcomes specified in paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this provision.

(2) If the offeror has been involved in the last five years in any of the occurrences listed in (c)(1) of this provision, whether the offeror has provided the requested information with regard to each occurrence.

(d) The offeror shall post the information in paragraphs (c)(1)(i) through (c)(1)(iv) of this provision in FAPIIS as required through maintaining an active registration in the System for Award Management database via https://www.acquisition.gov (see 52.204-7).
(End of provision)

K.5 FAR 52.209-11 REPRESENTATION BY CORPORATIONS REGARDING DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER ANY FEDERAL LAW (FEB 2016)

(a) As required by sections 744 and 745 of Division E of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235), and similar provisions, if contained in subsequent appropriations acts, the Government will not enter into a contract with any corporation that—

(1) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or

(2) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.

(b) The Offeror represents that—

(1) It is [ ] is not [ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(2) It is [ ] is not [ ] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(End of provision)

K.6 FAR 52.209-12 CERTIFICATION REGARDING TAX MATTERS (FEB 2016)

(a) This provision implements section 523 of Division B of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235), and similar provisions, if contained in subsequent appropriations acts.
(b) If the Offeror is proposing a total contract price that will exceed $5,000,000 (including options), the Offeror shall certify that, to the best of its knowledge and belief, it—

(1) Has [ ] filed all Federal tax returns required during the three years preceding the certification;

(2) Has not [ ] been convicted of a criminal offense under the Internal Revenue Code of 1986; and

(3) Has not [ ], more than 90 days prior to certification, been notified of any unpaid Federal tax assessment for which the liability remains unsatisfied, unless the assessment is the subject of an installment agreement or offer in compromise that has been approved by the Internal Revenue Service and is not in default, or the assessment is the subject of a non-frivolous administrative or judicial proceeding.

(End of provision)

K.7 FAR 52.219-1 ALT1 SMALL BUSINESS PROGRAM REPRESENTATIONS. (SEP 2015)

(a) Definitions. As used in this provision—

*Economically disadvantaged women-owned small business (EDWOSB) concern* means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States and who are economically disadvantaged in accordance with 13 CFR part 127. It automatically qualifies as a women-owned small business concern eligible under the WOSB Program.

*Service-disabled veteran-owned small business concern*—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) *Service-disabled veteran* means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).
Small business concern means a concern, including its affiliates that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (b) of this provision.

Small disadvantaged business concern, consistent with 13 CFR 124.1002, means a small business concern under the size standard applicable to the acquisition, that—

(1) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by—
   (i) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States, and
   (ii) Each individual claiming economic disadvantage has a net worth not exceeding $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(2) The management and daily business operations of which are controlled (as defined at 13 CFR 124.106) by individuals who meet the criteria in paragraphs (1)(i) and (ii) of this definition.

Veteran-owned small business concern means a small business concern—
(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.
Women-owned small business concern means a small business concern—
(1) That is at least 51 percent owned by one or more women; or, in the case of any
publicly owned business, at least 51 percent of the stock of which is owned by
one or more women; and
(2) Whose management and daily business operations are controlled by one or more
women.

Women-owned small business (WOSB) concern eligible under the WOSB
Program (in accordance with 13 CFR part 127), means a small business concern that
is at least 51 percent directly and unconditionally owned by, and the management
and daily business operations of which are controlled by, one or more women who
are citizens of the United States.

(b)(1) The North American Industry Classification System (NAICS) code for this
acquisition is - 541690.
(2) The small business size standard is $15,000,000.
(3) The small business size standard for a concern which submits an offer in its
own name, other than on a construction or service contract, but which
proposes to furnish a product which it did not itself manufacture, is 500
employees.

(c) Representations.
(1) The offeror represents as part of its offer that it ☐ is, ☐ is not a small business
concern.
(2) [Complete only if the offeror represented itself as a small business concern in
paragraph (c)(1) of this provision.] The offeror represents that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.
(3) [Complete only if the offeror represented itself as a small business concern in
paragraph (c)(1) of this provision.] The offeror represents as part of its offer
that it ☐ is, ☐ is not a women-owned small business concern.
(4) Women-owned small business (WOSB) concern eligible under the WOSB
Program. [Complete only if the offeror represented itself as a women-owned
small business concern in paragraph (c)(3) of this provision.] The offeror
represents as part of its offer that—
(i) It ☐ is, ☐ is not a WOSB concern eligible under the WOSB Program, has
provided all the required documents to the WOSB Repository, and no
change in circumstances or adverse decisions have been issued that affects
its eligibility; and
(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(4)(i) of this provision is accurate for each WOSB concern eligible under the WOSB Program participating in the joint venture. [The offeror shall enter the name or names of the WOSB concern eligible under the WOSB Program and other small businesses that are participating in the joint venture: ____.] Each WOSB concern eligible under the WOSB Program participating in the joint venture shall submit a separate signed copy of the WOSB representation.

(5) Economically disadvantaged women-owned small business (EDWOSB) concern. [Complete only if the offeror represented itself as a women-owned small business concern eligible under the WOSB Program in (c)(4) of this provision.] The offeror represents as part of its offer that—

(i) It ☐ is, ☐ is not an EDWOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and

(ii) It ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(5)(i) of this provision is accurate for each EDWOSB concern participating in the joint venture. [The offeror shall enter the name or names of the EDWOSB concern and other small businesses that are participating in the joint venture: ____.] Each EDWOSB concern participating in the joint venture shall submit a separate signed copy of the EDWOSB representation.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(7) [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(6) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(8) [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that—

(i) It ☐ is, ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material changes in ownership and control, principal office, or HUBZone
employee percentage have occurred since it was certified in accordance with 13 CFR Part 126; and

(ii) It □ is, □ is not a HUBZone joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (c)(8)(i) of this provision is accurate for each HUBZone small business concern participating in the HUBZone joint venture. [The offeror shall enter the names of each of the HUBZone small business concerns participating in the HUBZone joint venture: ____.] Each HUBZone small business concern participating in the HUBZone joint venture shall submit a separate signed copy of the HUBZone representation.

(9) [Complete if offeror represented itself as disadvantaged in paragraph (c)(2) of this provision. The offeror shall check the category in which its ownership falls:

__ Black American.
__ Hispanic American.
__ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).
__ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, Republic of Palau, Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).
__ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).
__ Individual/concern, other than one of the preceding.

(c) Notice. (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a business concern that is small, HUBZone small, small disadvantaged, service-disabled veteran-owned small, economically disadvantaged women-owned small, or women-owned small eligible under the WOSB Program in order to obtain a contract to be awarded under the preference programs established pursuant to section 8, 9, 15, 31, and 36 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall—

(i) Be punished by imposition of fine, imprisonment, or both;
(ii) Be subject to administrative remedies, including suspension and debarment; and
(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

K.8 FAR 52.222-25 AFFIRMATIVE ACTION COMPLIANCE (APR 1984)

The offeror represents that (a) it has developed and has on file, has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or (b) it has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(End of provision)

K.9 FAR 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (FEB 2016)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Veterans), it has filed the most recent VETS-4212 Report required by that clause.

(End of provision)

K.10 FAR 52.225-20 PROHIBITION ON CONDUCTING RESTRICTED BUSINESS OPERATIONS IN SUDAN—CERTIFICATION (AUG 2009)

(a) Definitions. As used in this provision—

Business operations means engaging in commerce in any form, including by acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, or any other apparatus of business or commerce.
Marginalized populations of Sudan means—
(1) Adversely affected groups in regions authorized to receive assistance under
section 8(c) of the Darfur Peace and Accountability Act (Pub. L. 109-344)
(50 U.S.C. 1701 note); and

(2) Marginalized areas in Northern Sudan described in section 4(9) of such Act.

Restricted business operations means business operations in Sudan that include
power production activities, mineral extraction activities, oil-related activities,
or the production of military equipment, as those terms are defined in the Sudan
Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted
business operations do not include business operations that the person (as that
term is defined in Section 2 of the Sudan Accountability and Divestment Act of
2007) conducting the business can demonstrate—

(1) Are conducted under contract directly and exclusively with the regional
government of southern Sudan;

(2) Are conducted pursuant to specific authorization from the Office of Foreign
Assets Control in the Department of the Treasury, or are expressly exempted
under Federal law from the requirement to be conducted under such
authorization;
(3) Consist of providing goods or services to marginalized populations of
Sudan;

(4) Consist of providing goods or services to an internationally recognized
peacekeeping force or humanitarian organization;

(5) Consist of providing goods or services that are used only to promote health
or education; or

(6) Have been voluntarily suspended.

(b) Certification. By submission of its offer, the offeror certifies that the offeror
does not conduct any restricted business operations in Sudan.

(End of provision)

K.11 FAR 52.227-15 REPRESENTATION OF LIMITED RIGHTS DATA AND
RESTRICTED COMPUTER SOFTWARE (DEC 2007)

(a) This solicitation sets forth the Government's known delivery requirements for
data (as defined in the clause at 52.227-14, Rights in Data—General). Any
resulting contract may also provide the Government the option to order
additional data under the Additional Data Requirements clause at 52.227-16, if
included in the contract. Any data delivered under the resulting contract will be
subject to the Rights in Data—General clause at 52.227-14 included in this contract. Under the latter clause, a Contractor may withhold from delivery data that qualify as limited rights data or restricted computer software, and deliver form, fit, and function data instead. The latter clause also may be used with its Alternates II and/or III to obtain delivery of limited rights data or restricted computer software, marked with limited rights or restricted rights notices, as appropriate. In addition, use of Alternate V with this latter clause provides the Government the right to inspect such data at the Contractor's facility.

(b) By completing the remainder of this paragraph, the offeror represents that it has reviewed the requirements for the delivery of technical data or computer software and states [offeror check appropriate block]—

( ) None of the data proposed for fulfilling the data delivery requirements qualifies as limited rights data or restricted computer software; or

( ) Data proposed for fulfilling the data delivery requirements qualify as limited rights data or restricted computer software and are identified as follows:

________________  
________________  
________________

(c) Any identification of limited rights data or restricted computer software in the offeror's response is not determinative of the status of the data should a contract be awarded to the offeror.

(End of provision)

K.12 FAR 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (OCT 2015)

NOTE: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT—COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of $750,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR
Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

(1) **Certificate of Concurrent Submission of Disclosure Statement.** The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement:
Name and Address of Cognizant ACO or Federal Official WhereFiled:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) **Certificate of Previously Submitted Disclosure Statement.** The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:
Name and Address of Cognizant ACO or Federal Official Where Filed:
The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) **Certificate of Monetary Exemption.** The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling $50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) **Certificate of Interim Exemption.** The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

**CAUTION:** Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of $50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. **COST ACCOUNTING STANDARDS—ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE**

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately
preceding the period in which this proposal was submitted, the offeror received less than $50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of $50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of $50 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

[ ] Yes [ ] No

(End of provision)

K.13 FAR 52.230-7 PROPOSAL DISCLOSURE – COST ACCOUNTING PRACTICE CHANGES (APR 2005)

The offeror shall check “yes” below if the contract award will result in a required or unilateral change in cost accounting practice, including unilateral changes requested to be desirable changes.

[ ] Yes [ ] No

If the offeror checked “Yes” above, the offeror shall—

(1) Prepare the price proposal in response to the solicitation using the changed practice for the period of performance for which the practice will be used; and

(2) Submit a description of the changed cost accounting practice to the Contracting Officer and the Cognizant Federal Agency Official as pricing support for the proposal.

(End of provision)
K.14 NFS 1852.209-76 REPRESENTATION BY ENTITIES REGARDING
RESTRICTIONS OF WHISTLEBLOWING (MAY 2016)

(a) In accordance with sections 743 of the Consolidated and Further Continuing
Appropriations Act, 2015, Pub. L. 113-235, none of the funds appropriated or
otherwise made available by this Act or any other Act may be available for
obligation on a contract with an entity that

(1) Requires employees or contractors of such entity seeking to report waste,
fraud, or abuse to sign internal confidentiality agreements or statements
prohibiting or otherwise restricting such employees or contractors from
lawfully reporting such waste, fraud, or abuse to a designated investigative
or law enforcement representative of a Federal department or agency
authorized to receive such information.

(2) The limitation above shall not contravene requirements applicable to
Standard Form 312, Form 4414, or any other form governing the
nondisclosure of classified information that a Federal department or agency
has issued.

(b) The offeror represents that —

It does [ ] does not [ ] require its contractors or its employees to sign internal
confidentiality agreements or statements prohibiting or otherwise restricting
such employees or contractors from lawfully reporting such waste, fraud, or
abuse to a designated investigative or law enforcement representative of a
Federal department or agency authorized to receive such information.

(End of provision)
K.15 NFS 1852.225-72 RESTRICTION ON FUNDING ACTIVITY WITH CHINA – REPRESENTATION (FEB 2012)

(a) Definition - “China” or “Chinese-owned” means the People’s Republic of China, any company owned by the People’s Republic of China or any company incorporated under the laws of the People’s Republic of China.

(b) Public Laws 112-10, Section 1340(a) and 112-55, Section 536, restrict NASA from contracting to participate, collaborate, or coordinate bilaterally in any way with China or a Chinese-owned company with funds appropriated on or after April 25, 2011. Contracts for commercial and non-developmental items are exempted from the prohibition as they constitute purchase of goods or services that would not involve participation, collaboration, or coordination between the parties.

(c) Representation. By submission of its offer, the offeror represents that the offeror is not China or a Chinese-owned company.

(End of provision)

[END OF SECTION]
SECTION L – INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

L.1 FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer (CO) will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://www.acquisition.gov/far/

http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of provision)

NOTICE: The following contract provisions pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<table>
<thead>
<tr>
<th>PROVISION NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.204-7</td>
<td>JUL 2013</td>
<td>System for Award Management</td>
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<tr>
<td>52.204-16</td>
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<td>Commercial and Government Entity Code Reporting</td>
</tr>
<tr>
<td>52.214-34</td>
<td>APR 1991</td>
<td>Submission of Offers in the English Language</td>
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<td>52.214-35</td>
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<td>Submission of Offers in U.S. Currency</td>
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<tr>
<td>52.215-1</td>
<td>JAN 2004</td>
<td>Instructions to Offerors – Competitive Acquisition</td>
</tr>
<tr>
<td>52.215-16</td>
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<tr>
<td>52.215-22</td>
<td>OCT 2009</td>
<td>Limitations on Pass-Through Charges – Identification of Subcontract Effort</td>
</tr>
<tr>
<td>52.222-24</td>
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<td>52.222-56</td>
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<td>52.237-1</td>
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<td>Site Visit</td>
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<tr>
<td>52.237-10</td>
<td>MAR 2015</td>
<td>Identification of Uncompensated Overtime</td>
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II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) PROVISIONS

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<td>Requests for Waiver of Rights to Inventions</td>
</tr>
<tr>
<td>1852.227-84</td>
<td>APR 2015</td>
<td>Patent Rights Clauses</td>
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<tr>
<td>1852.228-80</td>
<td>SEP 2000</td>
<td>Insurance – Immunity From Tort Liability</td>
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<tr>
<td>1852.233-70</td>
<td>DEC 2015</td>
<td>Protests to NASA</td>
</tr>
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</table>

(End of provision)

L.2 REQUIREMENTS FOR CERTIFIED COST OR PRICING DATA OR DATA OTHER THAN COST OR PRICING DATA (OCT 2010) – ALT. IV (OCT 2010)

(a) Submission of certified cost or pricing data is not required.

(b) Provide data described below: See Provision L.18, Volume III – Cost and Price Proposal

(End of provision)

L.3 NFS 1852.215-81 PROPOSAL PAGE LIMITATIONS (APR 2015)

(a) The following page limitations are established for each portion of the proposal submitted in response to this solicitation.

Refer to Section L.16.2, PROPOSAL ARRANGEMENT, PAGE LIMITATIONS, COPIES, AND DUE DATES for provisions on page limitations.

Note: Offerors are highly encouraged to provide only the relevant information necessary to understand their proposal. Filling the page count with extraneous and/or repetitive information is highly discouraged.

(b) A page is defined as one side of a sheet, 8 1/2” x 11”, with at least one inch margins on all sides, using not smaller than 12 point type. Foldouts count as an equivalent number of 8 1/2” x 11” pages. The metric standard format most closely approximating the described standard 8 1/2” x 11” size may also be used.

(c) In addition, the Cost section of your proposal is not page limited, nor is 12 point type required (though the Offeror should ensure readability). However, this section is to be strictly limited to cost and price information. Information that can be construed as belonging in one of the other sections of the proposal will be so construed and counted against that section's page limitation.

(d) If final revisions are requested, separate page limitations will be specified in the Government's request for that submission.

(e) Pages submitted in excess of the limitations specified in this provision will not be evaluated by the Government and will be returned to the Offeror.
(End of provision)

L.4 FAR 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Single Award, Cost Plus Award Fee (CPAF) contract on ISS Core work and Orion Core work Option, and an Indefinite-Delivery, Indefinite Quantity (IDIQ) component resulting from this solicitation. The phase-in effort will be Firm Fixed Price (FFP).

(End of provision)

L.5 FAR 52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 31.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Hand Carried Call
David Wilson at (281) 483-3385

U.S. Mail
NASA Johnson Space Center
Solicitation: NNJ16591116R
Attn: BG/David J. Wilson
2101 NASA Parkway
Houston, TX 77058
Phone: 281-483-3385

E-Mail
js-cmc3@mail.nasa.gov
Subject: Solicitation NNJ16591116R
Attn: David J. Wilson

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

L.6 FAR 52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any NASA FAR Supplement Regulation (48 CFR Chapter
18) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of provision)

L.7 NFS 1852.215-77 PRE-PROPOSAL CONFERENCE (APR 2015)

(a) A preproposal/pre-bid conference was held as indicated below:

Date: January 31, 2017

Time: 9:00am – 10:30am

Location: Electronic Meeting / Teleconference

For additional information regarding the Conference and cost and pricing briefing, please reference the CMC3 Pre-Proposal Conference Notification on https://www.fbo.gov/.

Site tours and Prime One-on-One meetings were held on November 9, 2016, and November 10, 2016, respectively.

(b) Participation in the preproposal/pre-bid conference is recommended; however, participation is neither required nor a prerequisite for proposal/bid submission and will not be considered in the evaluation.

(c) Offerors, individuals, or interested parties who plan to participate in preproposal/pre-bid conference must provide the Contracting Officer in writing, at a minimum, full name of the attendee(s), identification of nationality (U.S. or specify other nation citizenship), Lawful Permanent Resident Numbers in the case of foreign nationals, affiliation and full office address/phone number. Center-specific security requirements for this preproposal/pre-bid conference will be given to a company representative prior to the conference or will be identified in this solicitation as follows: (See Pre-Proposal Conference Notification on https://www.fbo.gov/). Examples of specific identification information which may be required include state driver’s license and social security number. Except for foreign nationals, the identification information must be provided at least (see Pre-Proposal Conference Notification on https://www.fbo.gov/) working days in advance of the conference. This information shall be provided at least (see Pre-Proposal Conference Notification on https://www.fbo.gov/) working days in advance of the conference for foreign nationals due to the longer badging and clearance processing time required. However, the Center reserves the right to determine foreign nationals may not be allowed on the Government site.* The Government is not responsible for Offerors’ inability to obtain clearance within sufficient time to attend the conference. Due to space limitations, representation of any potential Offeror may not exceed (see Pre-Proposal Conference Notification on https://www.fbo.gov/) company representatives/persons per Offeror. Any “lobbying firm or lobbyist” as defined in 2 U.S.C. 1602(9) and (10), or any Offeror represented by a lobbyist under the Lobbying Disclosure Act of 1995 shall be specifically identified.
(d) Visitors on NASA Centers are allowed to possess and use photographic equipment (including camera cell phones) and related materials EXCEPT IN CONTROLLED AREAS**. Anyone desiring to use camera equipment during the conference should contact the Contracting Officer to determine if the site(s) to be visited is a controlled area.

(e) The Government will respond to questions regarding this procurement provided such questions have been received at least five (5) working days prior to the conference.*** Other questions will be answered at the conference or in writing at a later time. All questions, together with the Government’s response, will be transmitted to all solicitation recipients via the government-wide point of entry (GPE). In addition, conference materials distributed at the preproposal/pre-bid conference will be made available to all potential Offerors via the GPE using the NAIS Electronic Posting System.****

[NOTES: * Foreign nationals will not be allowed on the Government site. ** All areas being toured are Controlled Areas. *** All questions asked before or during the Pre-Proposal Conference and during tours will be answered in writing at a later time and posted to the GPE. ****The current GPE is FBO.gov.]

(End of provision)

L.8 NFS 1852.231-71 DETERMINATION OF COMPENSATION REASONABLENESS (APR 2015)

(a) The proposal shall include a total compensation plan. This plan shall address all proposed labor categories, including those personnel subject to union agreements, the Service Contract Act, and those exempt from both of the above. The total compensation plan shall include the salaries/wages, fringe benefits and leave programs proposed for each of these categories of labor. The plan also shall include a discussion of the consistency of the plan among the categories of labor being proposed. Differences between benefits offered professional and non-professional employees shall be highlighted. The requirements of this plan may be combined with that required by the clause at FAR 52.222-46, "Evaluation of Compensation for Professional Employees."

(b) The Offeror shall provide written support to demonstrate that its proposed compensation is reasonable.

(c) The Offeror shall include the rationale for any conformance procedures used or those Service Contract Act employees proposed that do not fall within the scope of any classification listed in the applicable wage determination.

(d) The Offeror shall require all service subcontractors provide, as part of their proposal, the information identified in (a) through (c) of this provision for cost reimbursement or non-competitive fixed-price type subcontracts having a total potential value expected to
exceed the threshold for requiring certified cost or pricing data as set forth in FAR 15.403-4.

(End of provision)

L.9 NFS 1852.245-80 GOVERNMENT PROPERTY MANAGEMENT INFORMATION (JAN 2011)

(a) The offeror shall identify the industry leading or voluntary consensus standards, and/or the industry leading practices, that it intends to employ for the management of Government property under any contract awarded from this solicitation.

(b) The offeror shall provide the date of its last Government property control system analysis along with its overall status, a summary of findings and recommendations, the status of any recommended corrective actions, the name of the Government activity that performed the analysis, and the latest available contact information for that activity.

(c) The offeror shall identify any property it intends to use in performance of this contract from the list of available Government property in the provision at 1852.245-81, List of Available Government Property.

(d) The offeror shall identify all Government property in its possession, provided under other Government contracts that it intends to use in the performance of this contract. The offeror shall also identify: The contract that provided the property, the responsible Contracting Officer, the dates during which the property will be available for use (including the first, last, and all intervening months), and, for any property that will be used concurrently in performing two or more contracts, the amounts of the respective uses in sufficient detail to support prorating the rent, the amount of rent that would otherwise be charged in accordance with FAR 52.245-9, Use and Charges (June 2007), and the contact information for the responsible Government Contracting Officer. The offeror shall provide proof that such use was authorized by the responsible Contracting Officer.

(e) The offeror shall disclose cost accounting practices that allow for direct charging of commercially available equipment, when commercially available equipment is to be used in performance of the contract and the equipment is not a deliverable.

(f) The offeror shall identify, in list form, any equipment that it intends to acquire and directly charge to the Government under this contract. The list shall include a description, manufacturer, model number (when available), quantity required, and estimated unit cost. Equipment approved as part of the award need not be requested under NFS clause 1852.245-70,
(g) The offeror shall disclose its intention to acquire any parts, supplies, materials or equipment, to fabricate an item of equipment for use under any contract resulting from this solicitation when that item of equipment:

Will be titled to the government under the provisions of the contract; is not included as a contract deliverable; and the Contractor intends to charge the costs of materials directly to the contract. The disclosure shall identify the end item or system and shall include all descriptive information, identification numbers (when available), quantities required and estimated costs.

(h) Existing Government property may be reviewed at the following locations, dates, and times: [Enter the appropriate information]

(End of provision)

Note: Information required in this clause shall be submitted as a separate tab after the Property Management Plan (if the plan is required with the submittal) or in the Management Volume, unless stated otherwise in this RFP.

L.10 NFS 1852.245-81 LIST OF AVAILABLE GOVERNMENT PROPERTY (JAN 2011)

(a) The Government will make the following Government property available for use in performance of the contract resulting from this solicitation, on a no-charge-for-use basis in accordance with FAR 52.245-1, Government Property, included in this solicitation. The Offeror shall notify the Government, as part of its proposal, of its intention to use or not use the property. See attachment J-11 Core Government Furnished Property List.

(b) The Government will make the following Government property available for use in performance of the contract resulting from this solicitation, on a no-charge-for-use basis in accordance with FAR 52.245-2, Government Property Installation Operation Services, as included in this solicitation. The Offeror shall notify the Government of its intention to use or not use the property.

(c) The selected Contractor will be responsible for costs associated with transportation, and installation of the property listed in this provision.

(End of provision)

L.11 JPI 52.215-109 PROPOSAL MARKING AND DELIVERY (AUG 2012)

(a) Methods of Proposal Delivery

Proposals shall be delivered to the designated proposal receiving office by one of the following methods:

U.S. Postal Service
Commercial Delivery Service

Delivery by company employee or other individual agent

Regardless of the method of delivery chosen, the Offeror is responsible for delivery of the proposal to the designated receiving office no later than the date and time stated on the Standard Form 33.

(b) External Marking of Proposal Package(s)
All proposal packages must be closed, sealed, and marked in large letters “PROPOSAL – DELIVER UNOPENED”. Proposal packages must include the solicitation number, the contract specialist’s name, mail code/stop, and the Offeror’s name and address clearly marked on the outside of the package.

The Offeror shall include a notice on the cover of the proposal package as follows:

“NOTICE: THIS PROPOSAL MUST BE DELIVERED TO THE SPECIFIED ADDRESS NO LATER THAN (OFFEROR—ENTER DATE AND TIME).”

(c) Delivery Address

Proposals must be delivered to:

NASA Johnson Space Center
Attention: BG/David James Wilson
Central Receiving, Building 420
2101 NASA Parkway
Houston, TX 77058-3696

JSC Central Receiving can only be accessed through JSC Gate 4, which is located off Space Center Boulevard. The Offeror is strongly encouraged to notify the Contracting Officer one day in advance of the proposal submission. Proposals will be considered to be timely if the proposal package arrives in Building 420 by the due date and time*.

[Note: *For the purposes of proposal delivery, the proposal package is considered to have “arrived” only after it has been time stamped in Building 420. Please allow ample time to process your package at Building 420.]

(End of provision)

L.12 AVAILABILITY OF SPECIFICATIONS

(a) For the purpose of this RFP, the Technical Reference Library (TRL) contains the official versions of applicable and reference documentation. No other version of the documentation should be used.

(b) Technical documentation which is incorporated directly by reference in this solicitation
may be obtained from the Cargo Mission Contract 3 (CMC3) TRL which is available online at the following url:

http://procurement.jsc.nasa.gov/cmc3/

(c) In order to obtain a User-ID and password to access the documents above, please e-mail the following information to the Contract Officer at js-cmc3@mail.nasa.gov:

• Request for access to the TRL
• Requestor’s Name
• Full Company Name
• Company Address
• Company Security Point of Contact
• Phone Number
• Foreign Company (Yes/No)
• Commercial and Government Entity (CAGE) Code

(d) All copy-righted technical documentation which is incorporated directly by reference in this solicitation cannot be placed on the CMC3 TRL. If the Offeror desires to have these copy-righted documents to prepare their proposal they must be obtained, at the bidder's expense, from the organization that develops, establishes and/or publishes those documents.

(e) Upon request, the Contracting Officer will furnish to the Offeror NASA technical documents (Federal, Military, NASA, other Government Standards and Specifications, and technical documentation) not incorporated by reference.

Requests should be made on or before February 20, 2017, at 4:00 p.m. Houston, TX, local time to:

Name:   David J. Wilson, Mail Code: BG
E-mail: js-cmc3@mail.nasa.gov
Address: NASA Johnson Space Center
         2101 NASA Parkway
         Houston, TX 77058-3696

The request should identify the solicitation number and the specification requested by date, title, and number, as cited in the solicitation. Any information that is requested and subsequently provided by the CO will be posted to the CMC3 TRL.

(End of provision)

L.13 COMMUNICATIONS REGARDING THIS SOLICITATION

Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:
L.14 OFFEROR ACCEPTANCE PERIOD

Proposals submitted in response to this solicitation shall remain firm for at least 365 calendar days after the date specified for receipt by the Government. This shall be captured on the SF30.

(End of provision)

L.15 PERIOD COVERED BY PROCUREMENT

This solicitation covers a period of a 89-day Phase-In, and a 6 ½ year period of performance for both the ISS Core work and Orion Core work Option, if exercised, which includes a 2-year base period, one 2-year option period, one 1 ½-year option period and one 1-year option period.

For contracting purposes:

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<th>Anticipated Dates</th>
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<td>04/01/18 – 03/31/20</td>
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<td>04/01/22 – 09/30/23</td>
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<td>10/01/23 – 09/30/24</td>
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<td>Option 3</td>
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</table>

The option periods identified above will be exercised only if the requirements of FAR 17.207(c), Exercise of Options, have first been met. The Government is not obligated to exercise any option if it determines for any reason that doing so is not in its best interest.

(End of provision)
L.16 INSTRUCTIONS TO OFFERORS FOR A SOURCE EVALUATION BOARD (SEB)

This section provides detailed instructions to Offerors to be used in the preparation of proposals. It is organized as follows:

L.16.1 INTRODUCTION
L.16.2 PROPOSAL ARRANGEMENT, PAGE LIMITATIONS, COPIES, AND DUE DATES
L.16.3 VOLUME I – MISSION SUITABILITY
L.17 VOLUME II – PAST PERFORMANCE
L.18 VOLUME III – COST/PRICE PROPOSAL
L.19 VOLUME IV – RESPONSIBILITY CONSIDERATIONS
L.20 VOLUME V – MODEL CONTRACT

L.16.1 INTRODUCTION

This acquisition is being conducted as a competitive full and open competition. In providing these instructions, the Government’s intention is to solicit information that will permit a competitive evaluation of the Offeror’s proposal. The information solicited will demonstrate the Offeror’s competence and capability to successfully complete the requirements specified in the CMC3 Statement of Work (SOW). Generally, the proposal shall:

(a) Demonstrate understanding of the overall and specific requirements of the proposed Contract; convey the company’s capabilities for transforming understanding into accomplishment; provide in detail, the plans and methods for so doing; and provide, as requested below, the cost/price associated with so doing.

(b) The proposal shall be clear, concise, and shall include sufficient detail for effective evaluation and substantiation of all information. The proposal should not simply rephrase or restate the Government’s requirements, but rather shall provide convincing rationale to address how the Offeror intends to meet these requirements.

(c) Elaborate brochures or documentation, detailed artwork, or other superfluous embellishments are unnecessary and are not desired, unless specifically requested in a scenario response.

(d) Offerors are requested to provide information responsive to the items set forth below. This information is considered essential for the Government to conduct a fair and uniform evaluation of proposals in accordance with the evaluation factors and subfactors provided in Section M.

(e) The instructions in this part of Section L are directly related to the evaluation factors set forth in Section M.
Table L-1 Cross Reference from Section L to Section M

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<th>Section ID</th>
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<td>MS Factor – Volume I</td>
<td>M.3</td>
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L.16.2 PROPOSAL ARRANGEMENT, PAGE LIMITATIONS, COPIES, AND DUE DATES

(a) The entire proposal is due by March 30, 2017, at 4:00 p.m. local time. Proposal VOLUME II – PAST PERFORMANCE (including Attachment L-4, Past Performance Questionnaire), and the Cognizant Federal Agency and Audit...
Office Template (CFAOT) of VOLUME III – COST/PRICE PROPOSAL, are requested on March 20, 2017, at 4:00 p.m. local time, but not officially due until the proposal submittal date. The last version of the proposals submitted on time will be evaluated. The delivery location is specified in Section L.11, PROPOSAL MARKING AND DELIVERY.

(b) Offerors shall arrange their proposal as set forth below in Tables L-2a through L-2e. Proposal sections excluded from the page limit shall be placed at the end of each volume. A single acronym list shall be provided that covers all proposal volumes. The acronym list shall be included at the end of Volume I. Mission Suitability is page limited to 210 total pages as noted in Table L-2a. Past Performance is limited as described in Table L-2b.

Information previously submitted, if any, will not be considered unless it is resubmitted as part of the proposal; it must not be incorporated by reference. Offerors must not assume that the Source Evaluation Board (SEB) is aware of their company’s abilities, capabilities, plans, facilities, organization or any other pertinent fact that is important to the accomplishment of the work.

Table L-2a: Proposal Volumes and Page Limitations, Volume I

<table>
<thead>
<tr>
<th>Volume No.</th>
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### Table L-2e: Proposal Volumes and Page Limitations Volume V

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Offerors shall submit the entire model contract, not just those pages which contained Offeror fill-ins. This includes a signed SF33, completed Model Contract:
| Sections A-J, with all fill-ins completed, and Section K, Representations and Certifications, with all Offeror fill-ins completed |

(c) The proposal text shall be printed on non-glossy white 8 ½ x 11-inch paper. The metric standard format most closely approximating the described standard 8 ½ x 11-inch size may also be used. Volumes shall be separately bound in 3-ring binders that permit the volume to lie flat when open. For hardcopies, multiple volumes may be submitted in the same binder, if each volume is tabbed and labeled. Staples shall not be used. A cover sheet shall be included on each binder, clearly marked with date of offer, volume number, title, copy number, solicitation number and the Offeror name. The same identifying data should be placed on the spine of each binder. Information shall not be incorporated by reference. A suitable table of contents shall be provided with each volume for ready reference to sections, tables, and figures. Pages shall be formatted in a standard page style, without the use of numerous columns. Offers shall tab each subsection within each volume for ease of reference. Tabs and dividers are not included in the page count limitations and shall not contain any proposal material.

The following requirements apply to the sections of the proposal which are page limited:

Sections of the proposal which are page limited shall be prepared and submitted using non-compressed Arial font with single-spaced 12 point text printed on both sides of the sheet with a one-inch margin on all sides in accordance with Microsoft Word default settings. Character spacing shall be “Normal” per Microsoft Word settings. Text in diagrams, charts, tables, artwork, and photographs shall also be non-compressed Arial font with 12 point text size. Diagrams, charts, tables, artwork and photographs shall not be used to circumvent the text size limitations of the proposal. The margins may contain headers and footers but shall not contain any proposal content to be evaluated.

All pages in each volume shall be numbered sequentially with Arabic numerals (1, 2, 3, etc.) for contents subject to page limitations. Each side of the sheet, tab, or divider containing proposal material will be counted as part of the appropriate volume’s page limitations. Information that can be construed as belonging in another volume of the proposal will be so construed and counted against the appropriate volume’s page limitation. Partial pages will count as a whole page.

Title pages, table of contents, cross-reference matrices, glossaries, and acronym lists that do not contain information that can be construed as proposal information will not be counted as part of the page limitations. However, these
pages shall be numbered with lower case Roman numerals (i, ii, iii, etc.) in order to provide ease of reference for the Government.

Foldout pages may only be used for large tables, charts, graphs, plans, figures, diagrams and schematics, not for pages of text. Foldouts shall be counted as two pages against the page limitations, shall be printed on one side only, shall be printed on 11 x 17-inch paper with a one-inch margin on all sides, and shall fold entirely within the volume.

Pages submitted in excess of the limitations specified in this provision will not be evaluated by the Government and will be returned to the Offeror in accordance with NFS 1815.204-70(b). Minor informalities or irregularities in a proposal that can be adjusted, corrected, or waived without being prejudicial to other Offerors may be accepted if it is immaterial to the acquisition. However, any pages contained in a page limited section of your proposal which do not comply with the RFP requirements may be returned by the Government and not evaluated.

The following requirements apply to the sections of the proposal which are not subject to page limitations:

Sections of the proposal which are not page limited do not need to abide by the font, size or margin requirements of the page limited sections, though the Offeror should ensure readability. All pages in each section shall be numbered sequentially with Arabic numerals (1, 2, 3, etc.) Title pages, table of contents, cross-reference matrices, glossaries, acronym lists, etc. shall be numbered with lower case Roman numerals (i, ii, iii, etc.) in order to provide ease of reference for the Government.

(d) If final proposal revisions are requested, separate page limitations will be specified in the Government's request for that submission.

(e) Each Offeror is required to submit its proposal in two formats, one conventional hard copy bound format in the quantities specified above, and one in an electronic format in the quantities specified above. The electronic submission is requested on a non-rewritable (CD-R) disk(s) and must be compatible with the software and hardware specification described below. Electronic media must be labeled or tagged with the RFP Number, Company Name, Date Prepared, version of Microsoft Office® application used, an indication of the files or range of files contained on the disks marked and in accordance with FAR 52.215-1(e), Restriction on Disclosure and Use of Data, and FAR 3.104-5, Disclosure, Protection, and Marking of Contractor Bid or Proposal Information and Source Selection Information.

(f) Electronic copies of the proposal shall be prepared and submitted in Microsoft Office® applications (Word and Excel) compatible with Microsoft Office® version 2013. Further, the Microsoft Excel spreadsheets shall be submitted in
Microsoft Excel format, not in a scanned Microsoft Word or Adobe PDF file. Microsoft Word documents shall be submitted in Microsoft Word format, not in an Adobe PDF file.

To the extent of any inconsistency between data provided electronically and proposal hard copies, the electronic copy of the proposal will be considered to be the intended data to measure compliance with the page limitations specified in this provision.

For electronic submissions, each volume of the proposal should be submitted as a separate electronic file. If a volume extends to multiple disks, the Offeror shall clearly indicate the sequence number. The Offeror shall not embed sound or video files into the proposal files. Minimize the use of scanned images and keep embedded graphics as simple as possible.

(g) A cover sheet should be contained as the first page of each book, clearly marked with volume number, title, solicitation identification, and the Offeror’s name. Be sure to apply all appropriate markings, including those prescribed in accordance with FAR 52.215-1(e), Restriction on Disclosure and Use of Data, and FAR 3.104-5, Disclosure, Protection, and Marking of Contractor Bid or Proposal Information and Source Selection Information.

(h) Provide a Cross Reference List that tracks the page and paragraph numbers of the Offer’s proposal to the page and paragraph numbers in the Government’s instructions. A Cross Reference List shall be submitted in each Volume for that particular volume.

(End of Provision)

L.16.3 VOLUME I – MISSION SUITABILITY FACTOR

The following Subfactors apply to the Missions Suitability Factor – Volume I:

Subfactor 1. Management Approach
Subfactor 2. Technical Approach
Subfactor 3. Safety & Health
Subfactor 4. Small Business Utilization

The proposal shall be detailed and complete enough to clearly and fully demonstrate that the Offeror understands the requirements and the inherent risks associated with the objectives of this procurement. It is inadequate to simply state that the Offeror understands and will comply with the requirements, or to paraphrase the requirements such as: “standard procedures will be employed to…” and “well-known techniques will be used for…” The Mission Suitability Proposal shall comprehensively explain how you propose to comply with the applicable specifications, as well as the techniques and procedures you propose to implement.
For any proposed innovations and/or efficiencies that could lead to an overall cost savings, provide supporting rationale for your claim and descriptive language for each and document in Contract Section J-21, Innovations and Efficiencies.

L.16.3.1 SUBFACTOR 1 – MANAGEMENT APPROACH (MA) - MISSION SUITABILITY

The Offeror management approach for fulfilling the contract requirements will be evaluated in accordance with the subfactor’s elements as discussed below:

MA1 OVERALL MANAGEMENT APPROACH

The Offeror shall provide in Volume I their Overall Management approach for fulfilling all contract requirements as required in the Cargo Mission Management Plan (DRD CMC-PM-01). Additionally, The Offeror shall propose an organizational structure and Work Breakdown Structure and Dictionary (DRD CMC-PC-02) to meet contract requirements, and deliver as part of Volume I, Management. The organizational structure and how it is applicable to the contract requirements should be described and supporting rationale provided. The Offeror shall describe their approach to evolving the organizational structure to accommodate operational surges and to allow for cross-utilization of personnel between functional areas and among various physical locations of the contract.

Discuss the details of your formal teaming arrangements. Describe how these arrangements will be used to meet requirements and to maintain control of quality, schedule, and cost for subcontractors, team members, or joint venture partners. Describe the communication channels, lines of authority, reporting relationships, and responsibilities of all organizational elements with respect to the prime contractor’s organizational structure and management processes.

MA2 Total Compensation Plan

The Offeror shall provide in Volume I, the Total Compensation Plan (DRD-CMC-PR-03). The Total Compensation Plan must correspond with the data provided on the Compensation Templates (a) through (d) in Volume III, Cost and Price.

MA3 Contract Phase-In Approach

The Offeror shall provide in Volume I, their Contract Phase-in approach for fulfilling all Contract requirements. The Government anticipates a
phase-in period of 89 days prior to contract start for the purpose of obtaining full operational readiness on the first day of the contract, including all deliverables due on contract start. The Contract Phase-in Plan shall describe the Offeror’s overall strategy and approach for ensuring a smooth and seamless transition of personnel and all non-personnel resources without compromising effective and efficient operations and without any disruption in services.

The Offeror’s plan shall include a discussion of critical and high-risk operations and activities to be transitioned and the associated risk mitigation strategies, as well as an approach for staffing, training and certifying personnel and facilities. The Offeror shall identify key milestones with associated schedules and measures for success, for accomplishing contract phase-in activities including any incumbent contractor support. Discuss in detail your proposed phase-in milestones, and specific plans for successfully completing each phase-in performance milestone. For each milestone, Offerors are requested to: (a) provide a detailed plan inclusive of responsible personnel, (b) provide all relevant interim and final schedule dates to be met, and (c) propose objective criteria that can be used to determine if the milestone has been achieved.

The Offeror shall describe activities and schedules for obtaining or updating licenses, systems, plans, processes and procedures required to support this contract. The Offeror shall describe their approach for establishing contacts and interfaces with the Government and other contractors. The Offeror’s approach shall address a comprehensive phase-in of all critical activities and should contain, at a minimum, the following information with rationale:

A. Facilities, Flight Hardware, and Ground Support Equipment (GSE)
   Discuss the schedule, rationale, and method for certification for any facility proposed for maintaining, repairing, and manufacturing flight hardware as well as processing cargo for flight. Describe core capabilities that must be put in place and certified to perform the technical requirements documented in the solicitation. Describe your approach and schedule for transitioning of inventory of flight hardware, GSE, and all associated sub-components. Hardware and GSE inventory data are contained in Attachment J-11 Core Government Furnished Property List. Describe your approach for managing transition of inventory records and if required, associated data systems.

B. Cargo In-Flow
   Describe your approach and rationale for determining and coordinating the transition from CMC2 to CMC3 for each flight in-flow during the contract phase-in (see Attachment L-8 Work Load Indicators), ensuring full CMC3 responsibility and operations at the end of the phase-in period. Include a discussion of planning information, analytical
integration data, flight hardware in-process, and integrated cargo not yet turned over to the Next Level Integrator (NLI). Also address transition of support for on-orbit return stowage integration operations and the separation of Certification of Flight Readiness (CoFR) responsibilities with the incumbent contractor. Identify any steps the Government, the incumbent contractor, and NLI can take with respect to each flight to facilitate the transition.

MA4 Key Personnel Approach

The Offeror shall provide in Volume I the approach and rationale for identifying, selecting, filling, and retaining key positions. The Offeror shall address the key personnel positions listed in Clause H.5 Key Personnel and Facilities. The Offeror shall provide the basis for selection of the individuals and a summary of their qualifications to fill those positions. Describe the minimum qualification standards (training, certifications, type and length of experience, etc.) you will use to replace key personnel, if required, during the term of the contract. Provide this information for each key position. Describe how you will ensure key personnel will maintain the minimum qualification standards.

For the key personnel listed in Clause H.5, provide their education (including licenses and certifications), current position, current significant responsibilities or projects, previous positions, and professional activities and achievements (including patents and significant publications). Additionally, the Offeror shall provide evidence of commitment, for each individual proposed for a key position.

A minimum of three personal references shall be provided for each individual proposed for a key position. Where an Offeror chooses to request a personal reference for key personnel from a civil servant employee at JSC, please be advised that a Limited Communications Notice (LCN) has been issued in conjunction with this solicitation. The LCN directs that all civil service personnel at JSC shall refrain from communicating with industry on any matters related to this competitive procurement; as a result, while the civil servants may provide a personal reference they will be unable to provide status to the Offeror, or communication in any other fashion with the Offeror, as it relates to this solicitation, about that personal reference request.

If key personnel are currently being proposed for other contracts, or for other reasons are not planned to be 100% dedicated to this contract, describe the level of commitment proposed. Please discuss your rationale for how the work can be effectively performed with key personnel who are not fully committed to this contract. Include in the discussion, scenarios that may lead to less than their full commitment to this contract and any alternatives you propose. If the commitment of key personnel is
contingent upon the outcome of another competition, alternate key personnel should be proposed along with evidence of commitment.

L.16.3.2 SUBFACTOR 2 – Technical Approach (TA) - Mission Suitability

**TA1 Specific Technical Understanding and Resources**

The Offerors are required to demonstrate their understanding of the requirements and the specific labor resources needed to successfully perform the requirements of this Contract. Since the paragraphs and Tables described in these instructions are also intended to facilitate the technical evaluation of the Offeror’s Cost and Price proposal, Offerors should carefully follow these instructions.

The Offeror’s response to this section should be consistent with the proposed Management Approach. Likewise, the Work Year Equivalent (WYE)s listed on the Technical Resources Summary Templates (TRSTs) must agree with the resources in the Volume III, Cost and Price. WYEs are defined as the proposed productive hours needed to comprise one average full time employee. This may be one employee or several part time employees. Productive Hours are defined as the total available hours for productive work in a year, excluding overtime, less paid time off.

The Offeror’s approach to meeting the technical requirements of the RFP shall demonstrate an in-depth understanding of cargo mission operations, Sustaining Engineering (SE), Maintenance and Operations (M&O) and hardware development and the various support functions needed to satisfactorily achieve mission success. Proposed innovations and efficiencies pertaining to the implementation of the work should include supporting rationale. Innovations and efficiencies may be proposed for all aspects of the contract scope (SOW, DRDs, clauses, etc.).

The Offeror’s proposed approach shall discuss how cost, schedule and quality will be maintained while (a) performing multiple phases of the cargo mission process, SE, M&O and hardware development, (b) managing diverse, dynamic and late changing requirements and priorities, and (c) managing the complexity of interfaces related to multiple customers and associate contractors.

Refer to Attachment L-8, Workload Indicators, for a summary of workload indicators for contract scope associated with this solicitation. Pressurized cargo integration for the Orion Program shall be proposed separately from ISS pressurized cargo integration and shall be proposed as contract options.

The Offeror shall provide requested information as detailed in paragraphs A through F below:
A. Hardware Sustaining and Maintenance and Operations

The Offeror shall describe their approach, processes, rationale, and tools for performing both M&O and SE responsibilities. The Offeror shall demonstrate their understanding of processing, maintenance, and manufacturing of the different categories of hardware on this contract. The Offeror shall specify the skills, facilities, and equipment required to perform the processing, maintenance, and manufacturing of each hardware category (categories proposed by Offeror). The Offeror shall describe their approach to identify, mitigate and prioritize supportability risks to flight hardware and GSE. The Offeror shall describe their approach for working anomalies which have occurred either on ground or on-orbit, including technical integration with the Government. Note: Hardware to be sustained and maintained is listed in Contract Section J-9, Hardware List. The following hardware categories in SOW Section 3 should not be proposed on as there is currently no hardware in these categories on contract. Specific scope and contract value for hardware in these categories will be added via Program Change Requests once the contract begins:

- Commercial Hardware for Technology Demonstrations
- Payload Support Equipment
- Simple Payload Facility Hardware
- System Support Hardware
- New unpressurized cargo transport hardware designed under this contract

B. Hardware Development and Manufacturing

The Offeror shall describe their ability to access or acquire design and manufacturing capabilities as required for hardware specified in Section 5 of the SOW. Describe your processes, methodologies, and activities for flight hardware projects. Include in this discussion your approach to requirements development and creative conceptual studies, schedule development and management, design, development, testing, evaluation, production, fabrication, integration, certification, and end item delivery, including inspection and acceptance.

C. Pressurized Cargo Integration

Describe your approach, schedule, rationale, and process for performing all of the cargo integration functions as described in the solicitation, while maintaining cost and schedule. Include a description of your approach for ensuring hardware provider and operations community packing and labeling requirements are incorporated into analytical products prior to bag packing, and for enabling a virtual or
remote review of as-packed cargo bags by the hardware providers and operations community. Describe the extent to which your process accommodates late changes to flight schedules, manifest requirements and, or late deliveries of hardware items. Describe the process for filling Water Storage System (WSS) resupply tanks and Iodine Compatible Water Containers (ICWCs) with iodinated water per JSC 66695, EMU Water Quality Specification.

D. Operational Scenarios

The Offeror’s shall provide recommendations and solutions to the operational scenarios in Attachment L-9, Operational Scenarios.

E. Basis of Estimate (BOE)

Explain the BOE (see attachment L-6 for template) by providing supporting rationale for all labor resources (WYEs and skill mix) proposed and impacts of proposed innovations and efficiencies (as documented in J-21, Innovation and Efficiencies) to support the contract requirements for Sections L.16.3.2.A, Hardware Sustaining and Maintenance and Operations and L.16.3.2.C, Pressurized Cargo Integration. Include a discussion regarding how the proposed WYEs were estimated. Also, include a discussion associated with any assumptions made regarding the requirements that led to the proposed resources such as: "we assume that a verification plan for the XYZ deliverables already exist and all we are responsible for is the maintenance of the plan." Include sufficient narrative discussion to substantiate that the proposed resources are realistic for the proposed technical and management approach. Note, all non-labor resources are Government plug numbers, therefore Offerors are not required to provide NLR costs in the BOE template in attachment L-6.

F. Resources

The resources shall agree with the narrative discussion for Sections L.16.3.2 A, Hardware Sustaining and Maintenance and Operations and L.16.3.2.C, Pressurized Cargo Integration. The resource details shall be contained in the Technical Resources Templates described below, and will reconcile with the cost proposal as indicated in the cost proposal instructions for a pricing model.

i. Technical Resources Templates

The Offeror shall complete the Technical Templates located in Attachment L-2, Excel Pricing Model (EPM). The Technical Templates include a Technical Resources Template Core (TRT-Core) and a Technical Resources Summary Template Core (TRST-Core).
The TRT-Core covers the core effort at the lower level WBS for Contract Year 1 only, while the TRST-Core covers the core effort at the summary level per contract year for the entire period of performance. The resources (labor) shown in the TRT-Core templates for each WBS shall agree with the detailed resources proposed in the applicable BOEs (see attachment L-6 for template). The rolled-up resources shown in the BOEs shall agree with the resources in the TRST-Core template. The TRT-Cores shall agree with the narrative approach and basis of estimate discussion in paragraphs A, C, and E above. Likewise, the resources (labor) identified on the TRT-Core and the TRST-Core must agree with the resources proposed in the EPM VOLUME III – COST/PRICE PROPOSAL. Inconsistencies between the Technical Templates and the Cost/Price Proposal may result in negative mission suitability findings and cost realism adjustments (probable cost).

Note: There are two separate TRT-Core and TRST-Core templates provided in the CMC3 EPM workbook: One TRT-Core and TRST-Core templates for the ISS-CORE and one TRT-Core and TRST-Core templates for the ORION-CORE.

Note: Non-labor resources are Government “plug numbers”.

ii. Standard Labor Categories (SLC)

The Offeror will develop their cost estimates using their estimating system. The Offeror will map their labor categories to the SLCs using the guidelines provided in Attachment L-1. SLCs are intended to broadly group proposed labor into a manageable number of categories. These guidelines do not address all the possible specific skills, or requirements that any one occupation or profession may require. It is the Offeror’s responsibility to acquire an understanding of the complexities of the work required to successfully meet the CMC3 requirements. Accordingly Offerors must propose the resources required to successfully meet these requirements. Offerors are allowed to include additional labor categories that do not easily map into the SLC below, however; the Offeror must provide job descriptions similar to the guidelines provided in Attachment L-1.

iii. Government Resource Estimate (GRE)

The GRE is shown in Section L.18.1, VOLUME III – COST/PRICE PROPOSAL, paragraph (c), Pricing Methodology, subparagraph (1), Pricing for Core Effort and depicts the overall direct labor staffing and Non Labor Resources (NLRs) for the entire core effort portion of the Section C SOW (Sections 1 – 4).
The GRE is the Government’s estimate of both the labor and non-labor resources required to perform this effort, without incorporation of any one Offeror’s specific management or technical approach. The GRE for WYEs is based on historical usage factors, and, with the exception of the Specified Resources for IDIQ, are not considered to be a Government “plug numbers”. Offeror’s are required to develop their own resource estimates that support their unique management and technical approaches and shall provide supporting rationale in narrative form. The GRE, which is based on historical usage factors, may not be representative of 100% of usage for future work. The GRE for Non-labor Resources (NLRs) are considered "plug numbers", with the exception of travel costs. The GRE is provided for Offerors to scope and develop their management and technical approach and rationale and for development of indirect rates.

The IDIQ, Section L.16.3.2 B Hardware Development and Manufacturing, will be evaluated using specified resources as an estimate of the quantity and resources (labor and non-labor) necessary for future work for evaluation purposes. The Government-provided specified resources are included in the Excel Pricing Model, IDIQ Summary Cost Template - Specified Resources (ISCT - SR) tab. The Offeror’s IDIQ rates together with the specified resources will yield the evaluated price for the IDIQ portion of work for CMC3.

Because of the uncertainties involved with IDIQ work, Offerors are cautioned that this estimate is not a guarantee of future work. Offerors are directed to Clause B.3, IDIQ Minimum and Maximum Ordering Limits, regarding the guaranteed minimum order for IDIQ.

L.16.3.3 SUBFACTOR 3 – Safety and Health Approach - Mission Suitability

The Offeror shall provide in Volume I their overall Safety and Health Approach for fulfilling the Contract requirements as required in Safety and Health Plan (DRD CMC-SA-02).

L.16.3.4 SUBFACTOR 4 – Small Business Utilization (SBU) - Mission Suitability

All Offerors, except small businesses, must complete the portion of the instructions under Small Business Subcontracting specific to the Small Business Subcontracting Plan, (DRD CMC-PR-06). Small businesses are not required to submit Small Business Subcontracting Plans; however, small businesses are required to indicate the amount of effort proposed to be done by a small business either at the prime level or at the first tier subcontract level.

The instructions regarding SDB participation apply to all Offerors.
SBU1 Small Business Subcontracting

Small Business Subcontracting Plan

Required by the FAR:

(a) This solicitation contains FAR Clause 52.219-9, “Small Business Subcontracting Plan and its Alternate II”. The Plan described and required by the Clause, including the associated subcontracting percentage goals and subcontracting dollars, shall be submitted with your proposal via the Small Business Subcontracting Plan, (DRD CMC-PR-06).

(b) The Contracting Officer’s determination of the appropriate subcontracting goals for this acquisition are as follows:

<table>
<thead>
<tr>
<th>Small Business Type</th>
<th>Subcontracting Goals (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Businesses (SB)</td>
<td>23.0%</td>
</tr>
<tr>
<td>Small Disadvantaged Business Concerns (SDB) (Includes SDB’s in represented and under-represented areas*)</td>
<td>5.0%</td>
</tr>
<tr>
<td>Women Owned Small Business Concerns (WOSB)</td>
<td>6.0%</td>
</tr>
<tr>
<td>Historically Black Colleges and Universities and Other Minority Institutions (HBCU/MI)</td>
<td>0.5%</td>
</tr>
<tr>
<td>HUBZone Small Business Concerns (HBZone)</td>
<td>1.7%</td>
</tr>
<tr>
<td>Veteran Owned Small Business Concerns (VOSB)</td>
<td>4.0%</td>
</tr>
<tr>
<td>Service-Disabled Veteran-Owned Small Business Concerns (SDVOSB)</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

* Although 15 U.S.C. 637(d) requires subcontracting plans to contain information about SDB concerns, case law prevents the Government from giving evaluation credit to business types based on race or ethnicity unless those businesses are in under-represented industries. The Section M evaluation for SDB participation ensures that the Government only evaluates participation of SDBs in industries that are designated by the Department of Commerce as underrepresented. For purposes of the Small Business Subcontracting Plan, the proposed subcontracting goal for SDBs will be evaluated based upon the SDB’s status as a small business.

(c) The numbers above reflect the Contracting Officer’s assessment of the appropriate subcontracting goals to be achieved at the completion of contract performance. If it is anticipated that the proposed small business goals will not be met by the submission of the first Individual Subcontracting Report (ISR) for this effort as required by FAR
52.219-9, the Offeror shall discuss as part of their Small Business Subcontracting Plan their approach to include timeline for meeting the Small business goals and the associated rationale.

(d) The stated goals represent the minimum for the CMC3 contract. If the Offeror proposes goals higher than the Contracting Officer’s recommendation, the Offeror shall document the methodology behind determining those goals, and their approach to successfully managing the subcontractor and consistently meeting the higher proposed goals in the face of the uncertain environment facing JSC. Offerors shall also address their approach for managing the subcontractor for both positive and negative performance. The Offeror shall also describe in detail their approach for managing and maintaining high goals with an uncertain and unpredictable workload and constant workload fluctuation.

(e) The Plan submitted with the proposal shall be incorporated in Section J as the Small Business Subcontracting Plan, (DRD CMC-PR-06), of the resulting contract. The requirements in the Plan must flow down to first tier large business subcontracts expected to exceed $700,000 or $1,500,000 for construction of a public facility. 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 may differ from those suggested in the solicitation based upon the nature of their respective performance requirements.

(f) Offerors are advised that a proposal will not be rejected solely because the submitted Plan does not meet the NASA recommended goals that are expressed in paragraph (a) (2) above in terms of percent of TOTAL CONTRACT VALUE (base and all options combined). NASA will consider the amount of work being retained for performance by the prime contractor in-house and the associated rationale when determining whether a subcontracting plan is acceptable. Offerors shall discuss the rationale for any goal proposed that is less than the Contracting Officer’s recommended goal in any category. In addition, the Offeror shall describe the efforts made to establish a goal for that category and what ongoing efforts, if any, the Offeror plans during performance to increase participation in that category.

(g) In addition to submitting a Small Business Subcontracting Plan, Offerors shall complete Attachment L-3, Small Business Subcontracting Tables, which provides a breakdown of the Offeror’s proposed goals, by small business category, expressed in terms of both a percent of TOTAL CONTRACT VALUE and a percent of TOTAL PLANNED SUBCONTRACTS. Offerors shall modify the exhibit to
show the proposed subcontracting goals for the basic contract requirement and each option separately.

**SBU2 Commitment to the Small Business Program:**

(a) All Offerors shall briefly describe work that will be performed by small businesses. Proposals should also identify any work to be subcontracted that is considered “high technology.” High Technology is defined as research and development efforts that are within or advance the state-of-the-art in technology discipline and are performed primarily by professional engineers, scientists, and highly skilled and trained technicians or specialists. Offerors shall describe any potential risks or impacts to seamless performance throughout the site when subcontracting out such efforts.

(b) If the subcontractor(s) is (are) known, Offerors must connect the work to the subcontractor and specify the extent of commitment to use the subcontractor(s) (enforceable vs. non-enforceable commitments). (Small Business Offerors shall provide this information to the extent subcontracting opportunities exist in their approach to performing the requirement.)

(c) All Offerors shall provide information demonstrating the extent of commitment to utilize small business concerns and to support their development. Information provided should include a brief description of established or planned procedures and organizational structure for Small Business outreach, assistance, participation in the Mentor Protégé program, counseling, market research and Small Business identification, and relevant purchasing procedures. (For Large Business Offerors, this information should conform to applicable portions of the submitted Small Business Subcontracting Plan. Small Business Offerors shall provide this information to the extent subcontracting opportunities exist in their approach to performing the requirement.)

**L.17 VOLUME II – PAST PERFORMANCE FACTOR**

Provide information from organizations and companies for which your company has previously performed work, in order for the Government to obtain appraisals of past performance. Offerors, including joint ventures, and major subcontractors (a company that performs $35,000,000 or more of the estimated total cost for the contract Period of Performance) shall each provide information on up to five past contracts (subject to the page limitation constraints). Offerors with no past performance experience shall so state.

(a) Offerors shall consider the recency and relevance, as they relate specifically to this solicitation. Only contract period of performances within 5 years from the date of the CMC3 original solicitation will be considered in the past performance evaluation.
(b) The following information shall be provided:

- Contract number, CAGE code, North American Industrial Classification System (NAICS) code, and DUNS number (if other than the prime, provide the prime’s contract number and the Offeror’s CAGE code and DUNS number)

- Contract value (If other than the prime, provide the overall contract value and the subcontract contract value)

- Number of full-time equivalent employees assigned to the contract (if other than the prime, provide the number of full-time equivalent provided by the applicable subcontractor/entity)

- Employing Agency/Company Name

- Point of Contact (including address, telephone and fax numbers, and e-mail addresses)

- If a Government Agency, include both the Contracting Officer and Contracting Officer’s

- Technical Representative points of contact

- Contract Description

- Place of Performance

- Period of Performance

- Contract Type

- Status of Contract (current, terminated (if so, why), successfully completed (include completion date))

- Consent Letters executed by each subcontractor, and/or joint venture partner, authorizing the release of past performance information so the Offeror can respond to such information. See sample consent letter at Attachment L-5. Consent letters shall be included in Past Performance Attachments.

Submit information on contracts that you consider relevant in demonstrating your ability to perform the proposed effort. The submission shall include rationale supporting your assertion of relevance. This submission shall clearly detail what portions of the SOW, the prime, major subcontractors, teaming partner, and/or joint venture partner are responsible for and the specific resources (workforce, management, facilities, or other resources) to be employed and relied upon to perform the proposed effort. If the Past Performance volume includes data on any affiliated company,
division(s), business units, segments, or other organizations of your company, then provide a narrative to address what they will be responsible for and/or proposing to do and the specific resources (workforce, management, facilities, or other resources) to be employed and relied upon, such that said affiliated company will have meaningful involvement in contract performance.

Complete the Relevance Matrix, found in the Excel Pricing Model, as part of your response. In the event of a conflict between the narrative and the Relevance Matrix, the narrative will take precedence as the Offeror’s intended response.

Provide an organizational chart displaying the relationships between the parent company, affiliate, and/or any other organizational entity (division(s), business units, or other segments of your company) which are proposed to perform the effort.

(c) In addition to the information above, Offerors, any major subcontractors, as defined above, and any other organizational entity (parent or affiliated company, division(s), business units, or segments of your company, which is considered to provide meaningful involvement in contract performance, shall each submit the Past Performance Questionnaire, Attachment L-4, to all of the point of contact references required in paragraph (b) above. The Offeror is responsible for ensuring that all references are directed to return two copies of each questionnaire directly to the Contracting Officer in a sealed envelope, by fax, or e-mail to the contact identified in provision L.11 Proposal Marking Instructions.

Where an Offeror chooses to request, from a civil servant employee at JSC, that a past performance questionnaire be submitted on its behalf, please be advised that a Limited Communications Notice (LCN) has been issued in conjunction with this solicitation. The LCN directs that all civil service personnel at JSC shall refrain from communicating with industry on any matters related to this competitive procurement; as a result, while the civil servants may respond to the past performance questionnaire they will be unable to provide status to the Offeror, or communication in any other fashion with the Offeror, as it relates to this solicitation, about that past performance request.

(d) You may include up to one page of introductory material about the experience and performance of your company and subcontractors (if applicable). This introductory material is in addition to the page limitation constraints. You may also submit additional reference information on experience and past performance for consideration. This additional information shall be subject to the page limitation constraints.

(e) Offerors shall provide the following performance data with explanatory remarks on relevant contracts performed in the last five years. Offerors shall identify the applicable NAICS Code for each contract and shall include points of contact for each contract. If a joint venture or prime-subcontractor relationship is proposed, the same information shall be provided for each company proposed. Explanatory statements shall be included as appropriate.
For all work performed during the past five years, Offerors shall provide the following:

**Environmental Data:**

- Copies of any and all environmental non-compliance correspondence and citations from federal, state or local agencies or authorities with explanatory remarks.

**Safety and Health Data:**

- Copies of any and all OSHA citations with explanatory remarks.
- Records of the company’s occupational injuries and illnesses. These records shall include, for each worksite, as a minimum, number of occupational injuries and illness, annual average number of employees at the worksite, total hours worked by all employees, and applicable NAICS code. Provide records for the past five years with signature of a company executive. Provide explanatory remarks of adverse performance and methods being used to improve performance. A copy of each year’s OSHA logs (Forms 300 and 300A) may be submitted or equivalent occupational injury and illness data.
- A letter from the insurance carrier providing workers compensation coverage (or equivalent) summarizing the Offeror’s Experience Modification Rates, loss run data, liability and lawsuit history related to safety and health performance for the past three years including history of changes to the experience modified rate. If an Offeror self-insures, provide and certify the same information (except the experience modification rate history) with the signature of the responsible corporate officer or official.

(f) The prime Offeror shall provide a statement of small business participation (targets, record, and type of work subcontracted) over the last 5 years on work that is relevant to this effort, with special emphasis on the division of the company which will perform the proposed contract.

**L.18 VOLUME III – COST/PRICE FACTOR**

**Instructions for Preparation of the Cost Proposal**

**L.18.1 COST/PRICE PROPOSAL**

Instructions for the preparation of the Cost/Price Proposal are organized as shown in the following Table and are presented below.

<table>
<thead>
<tr>
<th>L.18.1 Paragraph</th>
<th>Cost/Price Proposal Instruction Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Introduction</td>
</tr>
<tr>
<td>(b)</td>
<td>Specific Guidelines</td>
</tr>
<tr>
<td></td>
<td>1 Direct Labor Rates</td>
</tr>
<tr>
<td></td>
<td>2 Direct Labor Rate Escalation</td>
</tr>
<tr>
<td></td>
<td>3 Indirect Rate Historical Data and Analysis</td>
</tr>
</tbody>
</table>
The Offeror’s cost proposal shall be compliant with and based upon the Offeror’s estimating, accounting, and other applicable business systems. Certified cost and pricing data is not required; however, data other than certified cost and pricing data is required.

To ensure that the Government is able to perform a fair assessment of the proposed cost, the prime Offeror and all “major subcontractors” are required to submit a cost proposal that is suitable for evaluation. For the purposes of this solicitation, a “major subcontractor” is any team member (e.g., a subcontractor or inter-divisional organization) with an estimated total contract value that equals or exceeds $35,000,000 over the period of performance for this contract as defined in Section L.15, PERIOD COVERED BY PROCUREMENT. A “minor subcontractor” is any team member (e.g., a subcontractor or inter-divisional organization) with an estimated total contract value below $35,000,000 over the period of performance for this contract as defined in Section 14, PERIOD COVERED BY PROCUREMENT.

A cost proposal that is suitable for evaluation shall:
- Account for all resources necessary to complete requirements of this RFP.
- Provide traceability to the technical/management proposal(s).
- Explain in detail all pricing and estimating techniques.
- Disclose the basis of all projections, rates, ratios, percentages, and factors in sufficient detail to facilitate the SEB’s understanding and ability to mathematically verify these estimating tools.
- Comply with applicable Federal Acquisition Regulation (FAR), NASA FAR Supplement (NFS), and statutory requirements.
- Include a narrative portion that explains all judgmental elements of cost projections and fee policies.
- Include all templates required in this RFP.

The Offeror’s cost proposal shall be submitted in one volume labeled Volume III Cost/Price Proposal.
(b) Specific Guidelines

The following cost instructions apply to the prime Offeror and all “major subcontractors”:

1. Direct Labor Rates

For any direct labor rates not included in a Forward Pricing Rate Agreement (FPRA), the Offeror shall indicate the basis and/or source data (e.g., actual salary data as of a specific date, proposed salary data from a specific source as of a specific date, etc.) of any direct labor rate proposed. Indicate any adjustments that were made to the source data in order to derive the direct labor rates proposed in the initial contract year. If an adjustment(s) to the source data was made, indicate the reason(s) and rationale for the adjustment(s).

Note: If the Offeror’s proposed direct labor rates are based on information obtained from a third party salary survey/service provider, then the Offeror shall include the source data as part of their cost/price proposal. Even-numbered wage determinations (e.g., 15-5234) are to be applied only to contracts where an even-numbered wage determination applied to the preceding contract of the same federal agency for the same services in the same location. Therefore, the JSC-area wage determination is even-numbered. In addition to the JSC-area wage determination, a wage determination will be incorporated into the Model Contract for each place of performance where the offerors propose to perform the CMC 3 effort. If the CMC 3 effort was not previously performed at that location, then an odd-numbered wage determination will apply. For more information on odd and even-numbered wage determinations, refer to Chapters 14 and 18 of the Department of Labor Prevailing Wage Resource Book at: https://www.dol.gov/whd/recovery/pwr/(redacted).

2. Direct Labor Rate Escalation

For any direct labor rates not included in a FPRA, the Offeror shall provide the company's direct labor escalation history for the past three (3) years. The Offeror shall indicate the reason(s) for the historical escalation history. Explain how proposed rate(s) for escalation are both realistic and compliant with the solicitation. This solicitation includes FAR Clause 52.222-43, Fair Labor Standards Act and Service Labor Standards - Price Adjustment (Multiple Year and Option Contracts) (May 2014). This clause does not allow Offerors to propose contingency to cover the specific risk that the Government may change the wage determination in the future. However, the clause does allow Offerors to propose escalation or to pay wages or health and welfare benefits higher than the minimum compensation required by the wage determination. The clause only allows for a price adjustment if the
Government changes a wage determination in the future and those updated minimum wages or benefits exceed amounts previously being paid by the Contractor. Since the clause does not provide a price adjustment for other reasons, the Offeror shall provide rationale to demonstrate the realism of any proposed escalation in prices in consideration of the contract's full period performance. This explanation shall address all labor resources for professional and wage determination covered employees, as well as, all non-labor resources.

Note: The proposed direct labor rate of escalation discussed in this paragraph shall match the direct labor rate of escalation proposed in the Excel Pricing Model (EPM) Total Compensation Templates (i.e., TC(a) and TC(b)).

3. Indirect Rate Historical Data and Analysis

For any indirect rate(s) not included in a FPRA, the Offeror shall provide the company's indirect rate history for the past three (3) years. Further, the Offeror shall specifically provide, and explain, the rationale for any elements of cost in either the “pool” or the “base” that are driving significant changes in the indirect rate(s) going forward or that have resulted in significant changes to the indirect rate(s) versus the historical indirect rate data. Likewise, the Offeror shall indicate the primary reason(s) for any significant change in the indirect rate from one year to another year.

Note: Where an Offeror does not have three prior years of history for an indirect rate, then that Offeror shall provide and explain both the calculation and the rationale for the “pool” and “base” costs that comprise each indirect rate. Emphasis should be placed on the large and/or significant dollar items, but shall encompass no less than 75% of the total proposed “pool” and “base” cost items.

4. Uncompensated Overtime

The Government does not require the use of uncompensated overtime; however, if proposed, include a detailed narrative explaining your proposed methodology and provide your historical experience for similar work.

5. Standard Labor Categories

Standard Labor Categories (SLCs) to facilitate a consistent evaluation among Offerors are provided in Attachment L-1. Offerors shall map their labor categories to the SLCs. Offerors shall provide a brief narrative description of their labor categories and how they map to the SLCs to permit for a Government review based on the Offeror’s estimating system. Offerors are allowed to include additional SLCs for work that does not easily map into the
SLCs provided in the cost proposal. However, Offerors shall provide descriptions similar to the guidelines used in Attachment L-1 for SLCs.

6. Model Contract Rates versus Cost Proposal Rates

The Fully Burdened Rates (FBR) per SLC used in the development of the Offeror’s cost proposal shall match exactly with the FBR per SLC proposed in Section B.7, Fully Burdened Rate Table for Pricing Cost Reimbursable (CR) IDIQ Delivery/Task Orders of the Model Contract.

(c) Pricing Methodology

For purposes of this solicitation, Offerors shall be required to provide their estimate of the required level of resources necessary to perform the SOW as discussed in the following paragraph:

1. Core Work Pricing

Offerors are required to provide their estimate of the required resources – level of WYE’s, appropriate skill mix – necessary to accomplish their unique technical approach to performing the SOW portion identified as Core (i.e., SOWs 1.0, 2.0, 3.0 and 4.0) including costs for contract close-out. Clause F.9, Option to Exercise Orion Program Work, will also be priced. A Government Resource Estimate (GRE) is provided in Tables L.4a, L.4b, L.4c, and L.4d with Work Load Indicators for both the ISS Core work and the Orion Core work Option defined in Attachment L-8.

The GRE is the Government’s estimate of both the labor and non-labor resources required to perform this effort, without incorporation of any one Offeror’s specific management or technical approach. The labor resources GRE is based on historical usage factors and, with the exception of Table L.4e IDIQ Specified Resources, is not considered to be a Government “plug number.” Offeror’s are required to develop their own resource estimates that support their unique management and technical approaches and shall provide supporting rationale in narrative form. The non-labor resources GRE is based on historical usage factors and, are considered “plug numbers”, with the exception of Travel costs. See notes below each table.
## Table L.4a ISS Core Work (WYEs)

<table>
<thead>
<tr>
<th>SOW Paragraph Number</th>
<th>SOW Title</th>
<th>Per Contract Year (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CY 1 – CY 7 Base and Options 1, 2, &amp; 3</td>
</tr>
<tr>
<td>SOW 1.0</td>
<td>Program Management</td>
<td>7.5</td>
</tr>
<tr>
<td>SOW 1.0</td>
<td>Business Management</td>
<td>10.0</td>
</tr>
<tr>
<td>SOW 1.0</td>
<td>Configuration Mgmt/Data Integration</td>
<td>8.0</td>
</tr>
<tr>
<td>SOW 1.0</td>
<td>Program Information Technology</td>
<td>6.0</td>
</tr>
<tr>
<td>SOW 2.0</td>
<td>Safety and Mission Assurance</td>
<td>5.0</td>
</tr>
<tr>
<td>SOW 3.0</td>
<td>Sustaining Engineering</td>
<td>18.0</td>
</tr>
<tr>
<td>SOW 3.0</td>
<td>Logistics and Maintenance</td>
<td>23.0</td>
</tr>
<tr>
<td>SOW 4.0</td>
<td>Stowage Integration</td>
<td>15.0</td>
</tr>
<tr>
<td>SOW 4.0</td>
<td>Physical Processing</td>
<td>40.0</td>
</tr>
<tr>
<td>SOW 4.0</td>
<td>Decals, Placards, &amp; Graphics</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>TOTAL WYEs</strong></td>
<td></td>
<td><strong>145.0</strong></td>
</tr>
</tbody>
</table>

*Note: Within the ISS Core work, a 0.5 of Technical Professional II WYE performs translation services.*

## Table L.4b Orion Core Work (WYEs)

<table>
<thead>
<tr>
<th>SOW Paragraph Number</th>
<th>SOW Title</th>
<th>Per Calendar Year (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CY1 – CY7</td>
</tr>
<tr>
<td>SOW 1.0</td>
<td>Program/Business Management</td>
<td>1.75</td>
</tr>
<tr>
<td>SOW 2.0</td>
<td>Safety and Mission Assurance</td>
<td>0.25</td>
</tr>
<tr>
<td>SOW 3.0</td>
<td>Sustaining Engineering/Logistics and Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>SOW 4.0</td>
<td>Stowage Integration/Processing/Decals</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL WYEs</strong></td>
<td></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

*Note: The GRE WYE estimates include all direct labor to perform the work with the exception of traditional G&A type personnel such as: sales, finance, legal, procurement, and executives.*
<table>
<thead>
<tr>
<th>Non-Labor Resource (NLR)</th>
<th>Contract Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight</td>
<td>$228,000</td>
</tr>
<tr>
<td>Material</td>
<td>$2,107,000</td>
</tr>
<tr>
<td>Travel **</td>
<td>$78,000</td>
</tr>
<tr>
<td>Software Expenses</td>
<td>$87,000</td>
</tr>
<tr>
<td><strong>TOTAL NLRs</strong></td>
<td><strong>$2,500,000</strong></td>
</tr>
</tbody>
</table>

Note: * The NLR GRE does not include application of any indirect expenses such as material handling or G&A expenses, nor does it include fee. Out-year NLR cost estimates have been escalated in the CMC3 EPM Technical and Cost templates. ** As previously stated, the GRE NLR costs shown in Table L.4c above are considered plug numbers, except for Travel costs. The travel cost estimates are based on a contractor being located in the Houston area. If an Offeror chooses another location for its operations, the Offeror is required to change the plug travel dollars and provide its proposed travel cost estimates in the EPM technical and cost templates, including the supporting rationale in its cost/price narrative.

<table>
<thead>
<tr>
<th>Non-Labor Resource (NLR)</th>
<th>Contract Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight</td>
<td>$11,000</td>
</tr>
<tr>
<td>Material</td>
<td>$105,000</td>
</tr>
<tr>
<td>Travel **</td>
<td>$8,000</td>
</tr>
<tr>
<td>Software Expenses</td>
<td>$4,000</td>
</tr>
<tr>
<td><strong>TOTAL NLRs</strong></td>
<td><strong>$128,000</strong></td>
</tr>
</tbody>
</table>

Note: * The NLR GRE does not include application of any indirect expenses such as material handling or G&A expenses, nor does it include fee. Out-year NLR cost estimates have been escalated in the CMC3 EPM Technical and Cost templates. ** As previously stated, the GRE NLR costs shown in Table L.4c above are considered plug numbers, except for Travel costs. The travel cost estimates are based on a contractor being located in the Houston area. If an Offeror chooses another location for its operations, the Offeror is required to change the plug travel dollars and provide its proposed travel cost estimates in the EPM technical and cost templates, including the supporting rationale in its cost/price narrative.
2. **IDIQ Specified Level of Resources Pricing**

Offerors are required to develop a contractor team composite FBR per SLC, per contract year, and then apply those rates to the respective hours provided in Table L.4e. The Offeror shall also utilize the NLRs provided in Table L.4f. This pricing approach is facilitated through the Government provided cost templates in the Excel Pricing Model, which is explained in detail in Paragraph (d) below. Because of the uncertainties involved with IDIQ work, Offerors are cautioned that this estimate is not a guarantee of future work. Offerors are directed to Section B.3 regarding the guaranteed minimum order for IDIQ. See the Work Load Indicators (Section L-8) for history of IDIQ orders on the current CMC contract.

<table>
<thead>
<tr>
<th>Table L.4e IDIQ Specified Resources (hours)</th>
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<tbody>
<tr>
<td><strong>SOW 5.0</strong></td>
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<td><strong>BASE</strong></td>
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<td><strong>Contract Year 5</strong></td>
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<th>Table L.4f IDIQ Specified Resources (NLRs) *</th>
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<td><strong>Non-Labor Resource (NLR)</strong></td>
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<tr>
<td><strong>TOTAL NLRs</strong></td>
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<tr>
<td><strong>$124,000</strong></td>
</tr>
</tbody>
</table>
Note: * The NLR GRE does not include application of any indirect expenses such as material handling or G&A expenses, nor does it include fee. Out-year specified resources NLR cost estimates have been escalated in the CMC3 EPM IDIQ Summary Cost Template (ISCT)-Specified Resources (SR).

(d) Excel Pricing Model (EPM):

The goal of the EPM automated workbook is to provide a comprehensive working model of the Offeror’s proposed cost volume in an automated format. It is important to note that the detailed instructions on how to complete the CMC3 EPM templates are included in each applicable template. The pricing model will be designed to facilitate changes to source data such as direct labor hours and/or rates, overhead and G&A rates etc. and be sophisticated enough to compute the total impact of various changes to both cost and price. It is important that your model facilitate this process to ensure fidelity and is error free. For example; the model must be able to compute the cost and price impact of:

- Increasing (or decreasing) the number of WYE's of any SLC.
- Increasing (or decreasing) the indirect rates.

The following flowchart illustrates in a simplified manner how the different templates relate to one another to create a complete representation of proposed Core cost.

**CORE PRICING FLOWCHART**
The following flowchart illustrates in a simplified manner how the different cost templates relate to one another to create a complete representation of proposed IDIQ cost

**IDIQ PRICING FLOWCHART**

![IDIQ Pricing Flowchart Diagram]

(e) Supplemental Cost Data

The following supplemental cost data, where appropriate, shall be submitted with the Cost/Price Volume:

1. Financial Accounting Standard (FAS) 13 Analysis

   If an Offeror is proposing to lease off-site facilities in order to perform this effort, the Offeror shall perform a FAS 13 analysis, as required by FAR 31.205-36 and FAR 31.205-11, in determining the classification of a lease as operating or capital. The Offeror is further reminded that this solicitation covers an 89 day phase-in period and a basic period of performance of 2.0 years (24 months), with options for up to an additional four and a half years of performance per L.15, Period Covered by Procurement.

   The Offeror shall submit copies of any proposed lease, along with a statement of whether it considers the lease to be capital or operating, for purposes of reimbursement under the Contract. Regardless of whether the Offeror considers the lease to be operating or capital, the Offeror shall submit the rationale, with sufficient substantiation, to enable the Government to conclude that the Offeror’s categorization and proposed cost of the lease is correct. The Offeror shall indicate where these costs are included in the cost
proposal elements. The Offeror should also include an analysis detailing the cost impact of treating the lease as an operating lease and the cost impact of treating the lease as a capital lease. Finally, the Offeror should discuss the significance of the impact of fluctuating Task Orders issued as a result of the IDIQ portion of the contract relative to the proposed lease and/or lease cost and how the Offeror would mitigate the cost impact upon on Government, if possible.

2. Cost of Money for Facilities Capital

The Offeror may choose to include the cost of money for facilities capital as authorized by Cost Accounting Standard (CAS) 414 and FAR 31.205-10 in the proposal. In the event the Offeror does not propose cost of money for facilities capital, FAR clause 52.215-17, “Waiver of Facilities Capital Cost of Money” shall be included in the Model Contract.

3. Fee

Include a discussion of how the proposed Not-To-Exceed (NTE) fee rate was derived and why it is reasonable for the type of effort. If a fee pool sharing arrangement is proposed, include a discussion of the arrangement and the distribution of fee earned. The NTE fee rate represents the maximum award fee.

(End of provision)

L.19 VOLUME IV – RESPONSIBILITY CONSIDERATIONS

(a) Responsibility Information

Provide information addressing all of the elements under FAR 9.104, Standards, to demonstrate responsibility. Additionally, state whether all business systems, including but not limited to accounting, property control, purchasing, estimating, project reporting and employee compensation, which require Government acceptance or approval (as applicable) are currently accepted/approved, by the Cognizant Federal agency, such as (DCMA or NASA). Per FAR 2.1, a Cognizant Federal agency means the Federal agency that, on behalf of all Federal Agencies, is responsible for establishing final indirect cost rates and forward pricing rates, if applicable, and administering cost accounting standards for all contracts in a business unit. Provide documentation showing approval status including the following:

- Provide the date of acceptance/approval for each system.
- Explain any existing conditional acceptances/approvals and the compliance status of any systems(s) for which acceptance or approval is currently withheld.

FAR 16.301-3, Cost-Reimbursable Contracts, Limitations, requires that a contractor's accounting system be adequate for determining costs applicable to the contract prior to the award of a cost-reimbursement contract. The Offeror shall provide evidence of an
adequate accounting system as determined by the Government office for accumulating and reporting incurred costs. An adequate accounting system is not an evaluation criterion. It is a basic contract requirement with a pass/fail determination. A contract may only be awarded to the Offeror(s) who are determined to have an adequate accounting system.

If a determination of adequacy of the Offeror's accounting system has not been made, or an Offeror does not have a Cognizant Federal agency, the Offeror shall complete the 'Pre-award Survey of Prospective Contractor Accounting System checklist' found in Attachment L-7 and provide a copy of the completed form as part of Volume IV, Responsibility Considerations.

(b) Cost Accounting Standards

State whether the Cost Accounting Standards (CAS) Disclosure Statement represented in Provision K.12, Cost Accounting Standards Notices and Certifications, has been approved by the cognizant Administrative Contracting Officer, and provide the date of such approval. If your CAS Disclosure Statement is currently not approved or there are some existing CAS non-compliance findings, please provide detailed explanation of the CAS non-compliance issues, corrective action status, and any potential impact on this procurement. FAR 30.202-6, Responsibilities, states that the Contracting Officer shall not award a CAS-covered contract until the cognizant Federal agency official (CFAO) has made a written determination that a required Disclosure Statement is adequate.

(c) Organizational Conflict of Interest Information

In accordance with FAR Part 9.5, Organizational and Consultant Conflicts of Interest, the Offeror and the Offeror’s proposal will be reviewed for existing and potential OCI issues in relation to this procurement. The contractor shall identify existing OCI issues, if any, and submit a plan to mitigate each issue.

(d) Property Management Plan

The Contracting Officer will request a Property Management Plan (CMC-PR-01) from all Offerors in the competitive range or only from the apparent successful Offeror or from Offerors deemed as necessary to support an efficient responsibility decision. Offeror(s) will be notified by the Contracting Officer of this requirement, with an anticipated 10 days allowed for submittal.

(e) Taxpayer Identification Number

Prime Offerors shall provide their Taxpayer Identification Number (TIN) (the number required by the Internal Revenue Service (IRS) to be used by the Offeror in reporting income tax and other returns).

(f) Waiver of Rights to Inventions
This solicitation contains NASA FAR Supplement (NFS) Clause 1852.227-70, “New Technology” and NFS provision 1852.227-71, “Request for Waiver to Rights to Inventions”. Any petitions for advance (prior to contract execution) waiver of rights to inventions should be included in this volume.

(g) **Subcontractor Listing**

The Offeror shall provide a summary listing (by name and address) of all subcontractors (regardless of dollar value) that have been identified throughout the Offeror’s proposal, the subcontract value associated with each entity, and the SOW sections that each subcontractor proposes to support. This listing shall also include the subcontractors size classification (i.e. Small business (SB), Woman Owned Small Business (WOSB), etc) and CAGE code.

### L.20 VOLUME V – MODEL CONTRACT AND ADDITIONAL REQUIREMENTS

**(a) Instructions for Preparation of the Model Contract**

Offerors shall also submit with its proposal, in Volume V, the Model Contract in its entirety (basic and any amendments, including all Offeror fill-ins) per the instructions below. All proposed efficiencies and innovations must be captured in the model contract. With the submission of its proposal, the offeror acknowledges that the Government will incorporate the offeror's approved Data Requirement Descriptions into the model contract. This may result in the renumbering of contract pages. NASA does not intend to accept proposals with alternate terms and conditions.

<table>
<thead>
<tr>
<th>Contract Section</th>
<th>Areas of Model Contract Offerors with Offeror Fill-ins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A</td>
<td>Complete blocks 12 through 18, provide an original signature on each copy, and date the SF 33. Offerors shall indicate, in Block 12 of the SF 33, a proposal validity period of <strong>365</strong> days. However, in accordance with paragraph (d) of FAR provision 52.215-1, “Instructions to Offerors--Competitive Acquisitions,” a different validity period may be proposed by the Offeror.</td>
</tr>
<tr>
<td>Section B</td>
<td>B.2 – Offeror Fill-in Phase-in amount and Total Contract Value Table (B-1).</td>
</tr>
<tr>
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<td>B.4 – Offeror Fill-in estimated cost of contract, award fee and Total.</td>
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<td>B.7 - Complete the table of Fully Burdened Labor Rates for Cost Reimbursable IDIQ Delivery and Task Orders (B-2)</td>
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<td>Section C</td>
<td>No Offeror Fill-in</td>
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<td>No Offeror Fill-in</td>
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<tr>
<td>Section F</td>
<td>F.5 – Offeror Fill-in place of performance</td>
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<tr>
<td>Section G</td>
<td>G.5 (5) Check installation property and services if any are being requested as part of the proposal; G.7- Offeror Fill-in place of performance</td>
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<td>Section H</td>
<td>H.4 – Offeror Fill-in place of performance</td>
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<td>H.5 – Offeror Fill-in key personnel</td>
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<td>Section I</td>
<td>I.17 – Offeror Fill-in of Contract numbers</td>
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<tr>
<td>Section J</td>
<td>Offerors shall submit the required documents; J-5 – Fill in Available Award Fee</td>
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<tr>
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<td>J-21 Offeror Fill in Innovations and Efficiencies</td>
</tr>
<tr>
<td>Section K</td>
<td>Annual representations and certifications shall be completed electronically and submitted with this volume in accordance with provision K.2, Annual Representations and Certifications (FAR 52.204-8).</td>
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</tbody>
</table>

The Government reserves the right to incorporate the offeror's approved Data Requirement Descriptions prior to execution of the contract. This may result in the renumbering of contract pages. The Government may also make other minor clerical and purely administrative changes to the offeror's model contract (i.e. value of obligated funding at contract award), prior to executing the contract, without such action serving as a revocation of contractor's original offer.

(End of provision)
## LIST OF ATTACHMENTS

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<thead>
<tr>
<th>Attachment</th>
<th>Title</th>
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<tbody>
<tr>
<td>L-1</td>
<td>Standard Labor Categories</td>
</tr>
<tr>
<td>L-2</td>
<td>Technical Resources Summary Template &amp; Excel Pricing Model (EPM) Cost Templates</td>
</tr>
<tr>
<td>L-3</td>
<td>Small Business Subcontracting Tables</td>
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<td>L-4</td>
<td>Past Performance Questionnaire Templates</td>
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<td>L-5</td>
<td>Past Performance Consent Letters</td>
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<tr>
<td>L-6</td>
<td>Basis of Estimate (BOE) Template</td>
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<tr>
<td>L-7</td>
<td>Pre-award Survey of Prospective Contractor Accounting System Checklist</td>
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<td>Workload Indicators</td>
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<td>Operational Scenarios</td>
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(END OF SECTION)
## Attachment L-1 Standard Labor Categories

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<tr>
<th>SLC Description</th>
<th>Education</th>
<th>Years of Exp.</th>
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<tr>
<td><strong>Program Manager</strong>&lt;br&gt;Serves as the Contractor's primary contract manager. Coordinates and monitors the safety, technical performance, and cost of the contract. Ensures adherence to master plans and schedules. Develops solutions to program problems, and directs work of managers and other employees. Responsible for ensuring that all projects are completed on time and within budget. Acts as advisor to program team regarding projects, tasks, and operations. Familiar with standard concepts, practices, and procedures within a particular field. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of complex tasks. Typically reports to a program manager.</td>
<td>Typically requires a bachelor's degree</td>
<td>Typically requires 10 years of experience</td>
</tr>
<tr>
<td><strong>Manager</strong>&lt;br&gt;Directs work of Supervisors and other employees. Ensures employees follow all established safety, technical procedures necessary for successful contract performance. Familiar with standard concepts, practices, and procedures within a particular field. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of complex tasks. Typically reports to a program manager.</td>
<td>Typically requires a bachelor's degree</td>
<td>Typically requires 5 years of experience</td>
</tr>
<tr>
<td><strong>Supervisor</strong>&lt;br&gt;Supervises activities and oversees personnel. Typically has full authority and may be considered a member of management. Familiar with a variety of the field's concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks. Typically reports to a manager.</td>
<td>Typically requires a bachelor's degree in area of specialty.</td>
<td>Typically requires 5 years of experience</td>
</tr>
<tr>
<td><strong>Engineer III</strong>&lt;br&gt;Typically responsible for design, development, test, implementation, and analysis. Recognized as technical leader and resource. Proficient with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Responsible for the solution of complex total system problems. May direct, guide, and coordinate the activities of a team of technical personnel performing complex engineering activities. Typically reports to a manager or program manager.</td>
<td>Typically requires a bachelor's degree in engineering</td>
<td>Typically requires 10 years of related experience.</td>
</tr>
<tr>
<td><strong>Engineer II</strong>&lt;br&gt;Typically responsible for design, development, test, implementation, and analysis of technical products and systems. May develop a range of products. Familiar with commonly used concepts, practices, and procedures within a particular field. Typically reports to a senior Engineer, supervisor or a manager. May direct the efforts of others.</td>
<td>Typically requires a bachelor's degree in engineering</td>
<td>Typically requires 5 years of experience in the field or in a related area</td>
</tr>
<tr>
<td><strong>Engineer I</strong>&lt;br&gt;Typically responsible for design, development, test, implementation, and analysis of technical products and systems. May develop a range of products. Familiar with commonly used concepts, practices, and procedures within a particular field. Typically reports to a senior Engineer, supervisor or a manager.</td>
<td>Typically requires a bachelor's degree in engineering</td>
<td>Typically requires 10 years of experience</td>
</tr>
<tr>
<td><strong>Technical Professional III</strong>&lt;br&gt;Responsible for performance of technical work in design, development, analysis, test, etc. Typically reports to an engineer or supervisor. May direct the efforts of others.</td>
<td>Typically requires a bachelor's degree in engineering, math or science</td>
<td>Typically requires 10 years of experience</td>
</tr>
<tr>
<td><strong>Technical Professional II</strong>&lt;br&gt;Responsible for performance of technical work in design, development, analysis, test, etc. Typically reports to a more senior Technical Professional, Engineer or supervisor.</td>
<td>Typically requires a bachelor's degree in engineering, math or science</td>
<td>Typically requires 5 years of experience</td>
</tr>
<tr>
<td><strong>Technical Professional I</strong>&lt;br&gt;Responsible for performance of technical work in design, development, analysis, test, etc. Typically reports to a more senior Technical Professional or Engineer.</td>
<td>Typically requires a bachelor's degree in engineering, math or science</td>
<td>Typically requires 5 years of experience</td>
</tr>
<tr>
<td><strong>IT III</strong>&lt;br&gt;Typically reviews, analyzes, and modifies programming systems including encoding, testing, debugging and installing to support an organization's application systems. Consults with users to identify current operating procedures and to clarify program objectives. Experience in writing documentation to describe program development, logic, coding, and corrections. Writes manuals for users to describe installation and operating procedures. Typically possess a working knowledge of relational databases and client-server concepts. Relies on extensive experience and judgment to plan and accomplish goals. Responsible for the solution of complex total systems problems. Directs, guides, and coordinates activities of a team/teams of technical personnel performing complex IT engineering activities. Typically reports to a manager or program manager.</td>
<td>Typically requires BS degree</td>
<td>Typically requires 10 years of experience</td>
</tr>
<tr>
<td>IT II</td>
<td>Typically reviews, analyzes, and modifies programming systems including encoding, testing, debugging and installing to support an organization's application systems. Consults with users to identify current operating procedures and to clarify program objectives. Experience in writing documentation to describe program development, logic, coding, and corrections. Writes manual for users to describe installation and operating procedures. Familiar with relational databases and client-server concepts. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks. Typically reports to a more senior IT person, supervisor or a manager. May direct the efforts of others.</td>
<td>Typically requires a BS degree</td>
</tr>
<tr>
<td>IT I</td>
<td>Assures the quality of products. Evaluates technical documents such as drawings and specifications for adequate quality requirements and in-process controls. Performs flight equipment acceptance reviews. Prepares test readiness review documentation and identifies hardware pre-test status. Approves work authorization documents and establishes mandatory inspection points. Provides inputs to milestone reviews and boards. Assists Quality Assurance Specialists. Evaluates discrepancy reports and concurs on Material Review Board decisions. Evaluates engineering changes and waivers for quality assurance impacts. Performs trend analysis of nonconformances and prepares reports. Evaluates inspection and test methods, tools, instruments, and processes for effectiveness. Adheres by and enforces adherence to published safety procedures. Typically reports to a more senior IT person, supervisor or a manager.</td>
<td>Typically requires a BS degree</td>
</tr>
<tr>
<td>Quality Engineer II</td>
<td>Assures the quality of products. Evaluates technical documents such as drawings and specifications for adequate quality requirements and in-process controls. Performs flight equipment acceptance reviews. Prepares test readiness review documentation and identifies hardware pre-test status. Approves work authorization documents and establishes mandatory inspection points. Provides inputs to milestone reviews and boards. Assists Quality Assurance Specialists. Evaluates discrepancy reports and concurs on Material Review Board decisions. Evaluates engineering changes and waivers for quality assurance impacts. Performs trend analysis of nonconformances and prepares reports. Evaluates inspection and test methods, tools, instruments, and processes for effectiveness. Adheres by and enforces adherence to published safety procedures. Typically reports to a more senior Quality Engineer, supervisor or a manager.</td>
<td>Typically requires a BS degree</td>
</tr>
<tr>
<td>Technician III</td>
<td>Requires advanced experience and skill in a technical craft or trade, i.e. avionics, electronics, mechanical, or other systems. May direct the efforts of others.</td>
<td>Typically requires a degree or certification beyond High School</td>
</tr>
<tr>
<td>Technician II</td>
<td>Requires proficiency and skill in a technical craft or trade, i.e. avionics, electronics, mechanical, or other systems.</td>
<td>May require a degree or certification beyond High School</td>
</tr>
<tr>
<td>Technician I</td>
<td>Responsible for completing tasks in a technical craft or trade (i.e. avionics, electronics, mechanical, or other systems) with some supervision necessary. Works under immediate supervision. Typically reports to a supervisor or manager.</td>
<td>High School Degree or its equivalent</td>
</tr>
<tr>
<td>Quality Assurance Specialist II</td>
<td>Develops, applies, revises, and maintains quality standards for in process and final inspection. Performs receiving inspection on pre-manufacturing stock, test articles, and test support equipment. Performs dimensional and physical inspection on precision measuring equipment. Witnesses Mandatory Inspection Points. Documents nondestructive evaluation inspections for flight and flight-like hardware. Documents discrepancies on facilities and hardware. Witnesses assembly of hardware and facility/test buildup. Witnesses/verifies technician workmanship. Witnesses test build-up configuration and tests. Verifies contamination control requirements. Accurately reads engineering drawings. Adheres to all published safety procedures. Typically reports to a quality engineer, manager or program manager. May direct the efforts of others.</td>
<td>Typically requires a high school diploma or its equivalent</td>
</tr>
</tbody>
</table>
### Quality Assurance Specialist I

Perform receiving inspection on pre-manufacturing stock, test articles, and test support equipment. Performs Mandatory Inspection Points. Performs visual and nondestructive evaluation (NDE) inspections for welded hardware. Documents discrepancies for facilities and hardware. Performs exit and facility/test build up. Performs test build up configuration and tests. Verifies contamination control requirements. Accurately reads engineering drawings. Adheres to all published safety procedures. Typically reports to a more senior quality specialist, quality engineer, manager or program manager.

**Typically requires a high school diploma or its equivalent**

### Business Specialist II

Typically responsibilities include aiding in the negotiation of contracts and contract changes and coordinating preparations of proposals, plans, specifications, and financial conditions of contracts. Ensures adherence to master plans and schedules and develops solutions to program problems. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of complex tasks. A certain degree of creativity and latitude is required. Typically reports to a manager or program manager. May direct the efforts of others.

**Typically requires a BS degree**

### Business Specialist I

Typically prepares contract proposals and administers major contracts and delivery orders. Also may negotiate contractual provisions with sub-contractors. Has knowledge of standard concepts, practices, and procedures within the Business field. Relies on experience and judgment to plan and accomplish goals. Works under general supervision; typically reports to a more senior business specialist, manager or program manager.

**Typically requires a BS degree**

### Designer II

Draftsman/designer able to design or create engineering drawings using CAD systems with reference to engineering specifications.

**Typically requires a high school diploma or its equivalent**

**Typically requires 5 years of work experience.**

### Designer I

Junior draftsman/designer able to design or create engineering drawings using CAD systems with reference to engineering specifications.

**Typically requires a high school diploma or its equivalent**

### Administrative Specialist III

Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Follows organization and department procedures to complete tasks in a highly skilled and timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of additional office-work tasks. May direct, guide, and coordinate the activities of a team of administrative personnel. Typically reports to a supervisor, manager or program manager.

**Typically requires a high school diploma or its equivalent**

**Typically requires 5 years of experience.**

### Administrative Specialist II

Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Follows organization and department procedures to complete tasks in a highly skilled and timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of additional office-work tasks. Typically reports to a more senior Administrative Specialist, supervisor or a manager. May direct the efforts of others.

**Typically requires a high school diploma or its equivalent**

**Typically requires 4 years of experience.**

### Administrative Specialist I

Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Follows organization and department procedures to complete tasks in a timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Performs a variety of additional office-work tasks. Works under general supervision. Typically reports to a more senior administrative specialist, professional, supervisor or manager.

**Typically requires a high school diploma or its equivalent**

### Professional Specialist

Mastery of Russian and English. Advanced skill in translating to transfer the most difficult medical, scientific, political and technical material from one language to another and render a translation that is accurate in meaning and tone. Knowledge of each country’s history, current conditions potentially opposing national interests, as well as of cultural and linguistic peculiarities which might have a hearing on sensitive issues. Skill in writing and translating both languages so as to be able to produce final copy of such high quality that it is suitable for signature or publication.

**Typically requires 10 years of experience**

### Other

Propose additional Labor Categories that cannot be logically mapped into any of the Standard Labor Categories above. Provide a job description and qualifying education and experience.

**Note:** *Within the ISS Core work, a 0.5 of Technical Professional II WYE performs translation services.*
Attachment L-2 Technical Resources Summary Template and EPM Cost Templates Included in Excel Pricing Model
Attachment L-3 Small Business Subcontracting Tables

[OFI]
Attachment L-4 Past Performance Questionnaire Template

Complete one set of letters and forms for each Past Performance reference. Additional space or blank sheets may be added to answer any question.

Transmittal Letter to Accompany Present/Past Performance Questionnaire

FROM: [OFI]

SUBJECT: Present/Past Performance Questionnaire for Contract(s):

We are currently responding to NASA Johnson Space Center’s (JSC’s) Request for Proposal (RFP). This RFP requires Offerors to identify customers and solicit their response regarding our performance.

We are providing present and past performance data to NASA JSC relating to our performance identified on contract [OFI- contract name/number]. The RFP instructs that we provide our customers with the attached questionnaire and requests that you provide requested data and submit it by Monday, March 20, 2017 directly to:

Contract Name: CMC3
Attn: David Wilson (MC BG)
NASA Johnson Space Center
2101 NASA Parkway
Houston, TX  77058
Email address: js-cmc3@nasa.gov

You are also encouraged to email the questionnaire(s).

The information contained in the completed Past Performance Questionnaire is considered sensitive and cannot be released to us, the Offeror. If you have any questions about the acquisition or the attached questionnaire, your questions must be directed back to the JSC point of contact identified above. Thank you for your timely assistance.

Sincerely,
(Company Official)
Offeror Identification

Please provide the following information:

1. Contractor Information
   _____ Company:

   _____ Division:

   _____ Mailing Address:

2. Contract Number:

3. Contract Type:

4. Product/Service Description:

5. Contract Award Date:

6. Period of Performance (basic and any options):

7. During this contract period of performance, this firm was the:  □ Prime Contractor
   □ Significant Subcontractor □ Team Member □ Other (please describe):
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

What percentage of the Total Contract Value for this contract did the firm perform, and what is the Total Contract Value? Percentage of work performed by contractor ___________; total contract value ___________

8. Does a corporate or ownership relationship exist between the contractor being evaluated and your organization?  □ No  □ Yes – If yes, please describe the relationship:
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

9. Unusual contract features or conditions:
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Past Performance Evaluation

Based on your knowledge of the contract identified above, please provide your assessment of how well the contractor performed on each of the following questions. It is very important to keep in mind that only performance in the past 5 years is relevant.

Please rate the contractor as described below in the following technical, schedule, contract management and cost performance, and general areas.

Excellent (E) – Of exceptional merit, exemplary performance in a timely, efficient and economical manner, very minor (if any) deficiencies with no adverse effect on overall performance.

Very Good (VG) – Very effective performance, fully responsive to contract requirements; contract requirements accomplished in a timely, efficient, and economical manner for the most part, only minor deficiencies.

Good (G) – Effective performance, fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance.

Satisfactory (S) – Meets or slightly exceeds minimum acceptable standards, adequate results; reportable deficiencies with identifiable, but not substantial, effects on overall performance.

Poor/Unsatisfactory (P) – Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas which adversely affect overall performance.

Not Applicable – Contractor not required to provide the service or product indicated.

<table>
<thead>
<tr>
<th>Technical Performance Category</th>
<th>N/A</th>
<th>P</th>
<th>S</th>
<th>G</th>
<th>VG</th>
<th>E</th>
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<tbody>
<tr>
<td>1. Overall performance in planning and implementation of plan(s)</td>
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<td>2. Overall quality of technical products, services, and support</td>
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<td>3. Compliance with technical requirements and performance standards in providing safety and mission assurance support and services</td>
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<td>4. Insight in understanding customer requirements and priorities</td>
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<tr>
<td>5. Initiative in identifying and resolving unforeseen technical and schedule problems (causes, impacts, and resolutions)</td>
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<td>6. Surveillance, and management of major/critical subcontractors</td>
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<td>7. Contractor’s ability to correct performance deficiencies</td>
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<td>8. Content, accuracy, and timeliness of technical reports</td>
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<td>9. Ability to use metrics and other tools to accurately measure and track program</td>
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<td>10. Record in demonstrating a thorough understanding of the nature of the work required and the disciplines required to accomplish them</td>
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<td>11. Record in identifying and mitigating risks</td>
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<td>12. Effectiveness of technical training program</td>
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<td>13. Manufacturing, procuring, and integrating hardware for space flight, military, or other high-end commercial applications.</td>
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</table>
14. Integrating and implementing U.S. and international logistical shipments, including protection for sensitive cargo items

15. Designing and/or implementing software to enable intuitive customer interfaces based on insight into customer needs

16. Performing 3D CAD assessments to validate solutions within customer-defined constraints.

17. Performing in-house hardware testing (e.g. electrical end-to-end testing, thermal, mass, and e.g.)

18. Managing a bonded storage facility and tracking large numbers of inventory items

19. Please give a short narrative as to why you chose the adjective you did for the 18 areas above, especially for those answers that are other than “satisfactory.”

20. Other particular strong/weak points of contractor’s technical performance.

<table>
<thead>
<tr>
<th>Schedule Performance Category</th>
<th>N/A</th>
<th>P</th>
<th>S</th>
<th>G</th>
<th>VG</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ability to provide a qualified workforce to fulfill schedule requirements</td>
<td></td>
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<td>2. Adherence to task/production schedules under nominal conditions</td>
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<td>3. Adherence to task/production schedules under periods of dynamic change; ability to respond with effective, timely solutions</td>
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<td>4. Timeliness and accuracy of cost and business reports</td>
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<tr>
<td>5. Record in completing technical tasks/milestones, deliverables within established schedules</td>
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</table>

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<thead>
<tr>
<th>Contract Management And Cost Performance</th>
<th>N/A</th>
<th>P</th>
<th>S</th>
<th>G</th>
<th>VG</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adherence to estimated costs and contract cost targets</td>
<td></td>
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<tr>
<td>2. Ability to effectively plan efforts, provide realistic cost and schedule estimates, etc.</td>
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<tr>
<td>3. Ability to forecast and control costs</td>
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<tr>
<td>4. Ability to submit accurately and timely financial reports and credible forecasts of future resource requirements</td>
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<tr>
<td>5. Rate the degree of monitoring/guidance required in contract administration</td>
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<tr>
<td>6. Contract change order management (discuss contractor commitment to negotiate and implement contract changes in a timely manner)</td>
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<tr>
<td>7. Rate the contractor’s record in effectively selecting and managing subcontractors</td>
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<tr>
<td>8. Rate the contractor’s history of reasonable and cooperative behavior and commitment to customer satisfaction</td>
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<tr>
<td>9. Rate the contractor’s record in reacting quickly and adjusting staffing levels and make-up to meet changing requirements</td>
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<tr>
<td>10. Performance in managing problems and implementing corrective actions:</td>
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</tr>
</tbody>
</table>
11. Record in managing multiple and diverse projects/tasks from planning through execution phases

12. Record in managing complex projects at multiple, geographically dispersed sites

13. Record in adhering to or ability to meet goals for Small Business Subcontracting Goals

14. Overall effectiveness in communications, including lines of authority and reporting relationships

15. Contract Value:  

<table>
<thead>
<tr>
<th>Initial Value</th>
<th>Current/Final Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Cost</td>
<td>$______________  $______________</td>
</tr>
<tr>
<td>Fee/Fee</td>
<td>$______________  $______________</td>
</tr>
<tr>
<td>Total Value</td>
<td>$______________  $______________</td>
</tr>
</tbody>
</table>

Briefly describe any change(s) from original contract value:

16. Was there a cost overrun/under-run?  

- [ ] No  
- [ ] Yes – If yes, what was the magnitude? Please explain:

17. Does the contract have ceilings rates?  

- [ ] No  
- [ ] Yes – If yes, what are the rates?

18. Has the contractor exceeded the rates?  

- [ ] No  
- [ ] Yes – If yes, please explain:

19. If an award/incentive fee type contract, percent of available fee earned?  

- [ ] 100%  
- [ ] _____%  
- [ ] N/A

20. Has the contract been partially or completely terminated for default or convenience?  

- [ ] No  
- [ ] Yes – If yes, please explain the reason for termination (i.e., inability to meet cost or delivery schedules, performance, etc):

21. What has been the key personnel turnover rate for this contract?  

- [ ] N/A  
- [ ] P  
- [ ] S  
- [ ] G  
- [ ] VG  
- [ ] E

General  

<table>
<thead>
<tr>
<th>N/A</th>
<th>P</th>
<th>S</th>
<th>G</th>
<th>VG</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>1. Rate the contractor’s record in identifying key positions, filling these positions with individuals with required skills, and providing back-ups:</td>
<td></td>
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<tr>
<td>2. Rate the contractor’s record in recruiting, maintaining, and managing a workforce with the required skill mix:</td>
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<tr>
<td>3. Rate the contractor’s compliance with export control requirements:</td>
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<tr>
<td>4. Rate the contractor’s record in complying with safety, health, and environmental procedures/requirements:</td>
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</tbody>
</table>
5. Record in establishing and maintaining an effective quality assurance program and meeting quality improvement requirements:

6. Approximately how many people were/are employed under this contract? ________________

7. Did any accidents or industrial illnesses resulting in lost time occur under this contract? ☐ No ☐ Yes – If yes, please provide details:

8. In what areas below do you feel the contractor is strong?
- Program/Project Management
- Risk Identification and Mitigation
- Attracting and Retaining Qualified Personnel
- Communication
- Technical Performance
- Technical Innovation
- Small Business Utilization
- Safety and Environmental Performance
- Cost Performance
- Response to Change

9. In what areas below do you feel the contractor is weak?
- Program/Project Management
- Risk Identification and Mitigation
- Attracting and Retaining Qualified Personnel
- Communication
- Technical Performance
- Technical Innovation
- Small Business Utilization
- Safety and Environmental Performance
- Cost Performance
- Response to Change

RESPONDENT INFORMATION

1. Name of evaluator: ________________________________________________________

2. Position title: ____________________________________________________________

3. Agency/Company
   Name: ____________________________________________
   Mailing Address: ____________________________________
   _________________________________________________
   _________________________________________________
   Telephone Number: ________________________________
   Facsimile Number: _________________________________
   E-Mail Address: ___________________________________

4. Your role in the program/contract:
5. Length of involvement in this program/contract: ____________________

6. Date questionnaire completed: ____________________
Attachment L-5 Past Performance Consent Letters

PAST PERFORMANCE CONSENT LETTER

SUBCONTRACTOR/TEAMING PARTNER CONSENT FORM FOR THE RELEASE OF PAST AND PRESENT PERFORMANCE INFORMATION TO THE PRIME CONTRACTOR

[Past performance information concerning key personnel, subcontractors and teaming partners cannot be disclosed to a private party without the subcontractor’s or teaming partner’s consent. Because a prime contractor is a private party, the Government will need that consent before disclosing key personnel, subcontractor/teaming partner past and present performance information to the prime during exchanges. In an effort to assist the Government in assessing your past performance relevancy and confidence, we request that the following consent form be completed by the major subcontractors/teaming partners identified in your proposal. The completed consent forms should be submitted as part of your Past Performance Volume]

SAMPLE CONSENT LETTER

Dear (Contracting Officer)

We are currently participating as a (subcontractor/teaming partner) with (prime contractor or name of entity providing proposal) in responding to the NASA, Johnson Space Center, Request for Proposal (solicitation number) for the (description of effort).

We understand that the Government is placing increased emphasis on past performance in order to obtain best value in source selections. In order to facilitate the performance confidence assessment process, we are signing this consent form to allow you to discuss our past and present performance information with the prime contractor during the source selection process.

__________________________
(Signature / Title / Date from the company authority who can legally bind the company)

[Company Name]
[Street]
[City, State]
[Zip code]
Attachment L-6 Basis of Estimate (BOE) Template

<table>
<thead>
<tr>
<th>Response to: RFP NNJ16591116R</th>
<th>Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base/Option Period</td>
<td>Response to what part of RFP</td>
</tr>
<tr>
<td>WBS</td>
<td>Recurring/Non-Recurring</td>
</tr>
<tr>
<td>SOW</td>
<td>Other Tracking reference optional</td>
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<tr>
<td>Org</td>
<td>Other reference optional</td>
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Hours:

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<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
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<td>2024</td>
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<td></td>
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</tr>
</tbody>
</table>

* Only utilize years containing content

**Task 1: Task Description**

*An example: Update Drawings*

**Rationale**

*An example: Comparison to other D size drawings, editing takes tbd hours*

**How to calculate hours for task**

*An example: tbd drawings * tbd hours * tbd people = tbd hours*

**Task n: Task Description**

**Rationale**

**How to calculate hours for task**

** utilize as many Task # as required to describe work**
Attachment L-7 Pre-award Survey of Prospective Contractor Accounting System Checklist

[OFI, if required per L.19 Responsibility Considerations]
ATTACHMENT L-8 WORKLOAD INDICATORS

The following information provides estimated work load indicators for the contract period of performance. The information is based on history or projections and does not include all aspects of contract performance. It is not an indication of the exact amount of work that will be required, as work will fluctuate with Program priorities, manifest changes, flight delays/changes, and failures. These are provided to assist Offerors in determining the general overall scope to support development of indirect rates and for development of their management and technical approaches. Offerors shall develop their own estimates that support their unique proposal management and technical approaches and shall provide supporting rationale in narrative form.

Because of the uncertainties involved with IDIQ work, Offerors are cautioned that this estimate is not a guarantee of future work.

1.0 SOW 1.5.2: CONFIGURATION CONTROL/CHANGE MANAGEMENT:
   - Evaluation of approximately 140 Change Requests/year.
   - Initiate approximately 30 Change Requests/year.

2.0 SOW 3.0: SUSTAINING ENGINEERING AND MAINTENANCE AND OPERATIONS

2.1 Workload Indicators (per year) – ISS Program (does not include Orion Program)
   - Manifest Requests Delivered: 250
   - Manifest Requests Initiated: 70
   - Failure Investigation Teams Supported: 8
   - Drawings updated: 45
   - Re-flight Safety Data Packages Completed: 40
   - Non-Compliance Reports (NCRs) closed: 225
   - Flight Crew Equipment provided for Manifest Requests and Requests for Services: 7800
   - Computer Aided Design (CAD) models submitted between April 1, 2011 – August 31, 2016 (not related to hardware builds, Section 6.0 of SOW): none

2.2 Hardware Replenishment

2.2.1 Overview
This section provides the NASA Program philosophy on hardware replenishment. This strategy should be used when planning for support of the International Space Station (ISS). NASA returns science for analysis and critical hardware items to ground to be repaired or refurbished for re-flight.

The Specific requirements for Orion have not been determined at this time. Once determined, a Program Change Request (CR) will be developed to add unique requirements and additional hardware quantities as required. It is expected that Orion Program sustaining processes and philosophy will be similar to the ISS Program.
2.2.1.1 Commercial Off-the-Shelf (COTS) and Modified COTS Items
This category of hardware is generally bought in bulk, with NASA buying enough hardware to last until the technology is out of date or until the end of the ISS Program. The following types of items are examples: Digital Cameras and Camcorders, Laptops, Calibrated Tools (Torque Wrenches), and Diagnostic Equipment (Multi-meter, Scopemeter). When inventory levels get to minimum levels, Program CRs will be written to specify the requirements for design, certification, and provisioning for new hardware.

2.2.1.2 Design, Development, Test and Evaluation (DDT&E) Type Hardware
This category of hardware is designed and manufactured by NASA or a NASA Contractor. NASA buys this hardware in large enough quantities to support the required function. As quantities get low due to failures, a Program CR will be required to determine if additional quantities of the existing design should be manufactured or if a new design is required. The following types of items are examples: power supplies, interface boxes.

2.2.1.3 Consumables
This category of hardware will not be re-used. The following types of items are examples: clothing, hygiene, office supplies, laptop ancillary hardware (USB flash drives, HDSC Cards, Compact Flash Cards) and batteries. As part of maintenance and operations efforts, the contractor should plan to purchase additional quantities of these items to support ISS operations. When certified vendors or items are no longer available, Program CRs will be written to specify the requirements for design, certification, and provisioning for new hardware.

Tables L-8-1 through L-8-4 provide Work Load Indicators for clothing, hygiene products office supplies and batteries for the ISS Program (does not include Orion):

<table>
<thead>
<tr>
<th>Name</th>
<th>Required on Orbit</th>
<th>Flown Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Shirts</td>
<td>97</td>
<td>390</td>
</tr>
<tr>
<td>Exercise Shirts</td>
<td>49</td>
<td>195</td>
</tr>
<tr>
<td>Crew Preference Shirts</td>
<td>23</td>
<td>90</td>
</tr>
<tr>
<td>Undergarments</td>
<td>342</td>
<td>1369</td>
</tr>
<tr>
<td>Socks</td>
<td>97</td>
<td>390</td>
</tr>
<tr>
<td>Exercise Shorts</td>
<td>97</td>
<td>390</td>
</tr>
<tr>
<td>Cargo Shorts/Pants</td>
<td>23</td>
<td>90</td>
</tr>
<tr>
<td>Cycling Shoes</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Running Shoes</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Crew Sweater</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Work Gloves</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>
Table L-8-2: FCE – Hygiene Work Load Indicators

<table>
<thead>
<tr>
<th>Name</th>
<th>Required on Orbit</th>
<th>Flown Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deodorant</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Shaving Cream</td>
<td>23</td>
<td>90</td>
</tr>
<tr>
<td>Disposable Razor</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Disposable Razor Cartridge</td>
<td>45</td>
<td>180</td>
</tr>
<tr>
<td>Electric Razor</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Toothpaste</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Toothbrush</td>
<td>30</td>
<td>180</td>
</tr>
<tr>
<td>Hairbrush</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Cotton Swabs Package</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Chap Stick</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Dental Floss</td>
<td>16</td>
<td>45</td>
</tr>
<tr>
<td>Nitrile Gloves Package</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Nail Clippers</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>No Rinse Shampoo</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>Bar Soap</td>
<td>23</td>
<td>90</td>
</tr>
<tr>
<td>No Rinse Body Bath Soap</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>Washcloth</td>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>Lintless Towel</td>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>Wet Wipes Package</td>
<td>120</td>
<td>486</td>
</tr>
</tbody>
</table>

Table L-8-3: FCE – Office Supplies Work Load Indicators

<table>
<thead>
<tr>
<th>Name</th>
<th>Required on Orbit</th>
<th>Flown Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencils</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Printer Paper</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Printer Cartridges</td>
<td>6</td>
<td>24</td>
</tr>
</tbody>
</table>
Table L-8-4: Battery Work Load Indicators

<table>
<thead>
<tr>
<th>Name</th>
<th>Required on Orbit</th>
<th>Flown Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Pack Assembly, XL - 1 Digital Camcorder same as Canon BP-930</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>T61p Laptop Battery</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Nikon EN-EL4 Battery</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Alkaline AA</td>
<td>504</td>
<td>200</td>
</tr>
<tr>
<td>Alkaline AAA</td>
<td>480</td>
<td>300</td>
</tr>
<tr>
<td>Alkaline AAAAA</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Alkaline 9 V</td>
<td>50 to 150</td>
<td>150</td>
</tr>
<tr>
<td>Alkaline C&amp;D</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>Primary Li button CR2032, CR1220</td>
<td>5 to 10 for each cell</td>
<td>20</td>
</tr>
<tr>
<td>Primary Li button 2025</td>
<td>150 every six months</td>
<td>300</td>
</tr>
<tr>
<td>Primary Li 9V</td>
<td>32</td>
<td>200</td>
</tr>
<tr>
<td>Ag/Zn single cells</td>
<td>15 to 20</td>
<td>20</td>
</tr>
<tr>
<td>Ag/Zn 6 V</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Ag/Zn 8 V</td>
<td>50 per year</td>
<td>50</td>
</tr>
</tbody>
</table>

2.3 HARDWARE PROCESSING

2.3.1 Crew Provisioning (Clothing, Hygiene and Office Supply)
Preflight, a Fit Check is conducted where the contractor provides a complete complement of crew provisioning items to the selected crewmembers for review and size selection. A single sample of each option for personal hygiene item (hairbrush, toothbrush, razor, etc.) will be displayed for crew selection. “Crew-worn” items like socks, undergarments, and clothing (i.e. any item that has multiple sizes) must be presented with all available sizes ready for the crew to try on and select their correct size. All these items should be collected and displayed at the same time to limit the time spent by the crew making their selections. After the entire crew has made their selections for a specific flight, a formal document will be created by CMC to document each item and the number selected. This document will be used for manifesting.

After completion of the document specifying the crew’s selections, CMC will perform hardware verification, inspection and packing. Most crew provisioning hardware will be accepted for flight based on a simple drawing inspection, which confirms the configuration and vendor root part number. Once the hardware has passed inspection and safety verification, it will be packed and shipped for flight. Any clothing or personal hygiene items that are returned will be discarded and cannot be resold or used in another manner.
2.3.2 Tools and Diagnostic Equipment
Flight hardware processing for the Tools and Diagnostics subsystem is based on resupplying damaged on-orbit equipment and annual resupply of tools requiring calibration to the ISS. Most tools, except for the calibrated items, are processed after the on-orbit crew communicates the need to replace a damaged tool or request additional units of an existing tool. The program then adds these requested items to a flight manifest which triggers the start of processing an item for the selected flight. The calibrated equipment will be manifested as needed to maintain the tool’s calibration while on-orbit. Calibrated items will be added to the flight manifest via a Manifest Request (MR) generated by CMC and coordinated with NASA for a specific flight. This will start the processing of the needed item.

Pre-Delivery Acceptance (PDA) of these items is conducted based on the complexity of the item and ranges from simple inspection to a released drawing to a detailed functional check-out. Post inspection and PDA, the hardware is made ready for flight.

In the low likelihood a calibrated tool is returned, CMC will need to inspect and re-calibrate after the mission before returning the item to flight ready status.

2.3.3 Restraints and Mobility Aids

The flight hardware processing for the Restraint and Mobility Aids (R&MA) sub-system is based on resupplying damaged on-orbit equipment and new identified needs aboard the ISS. R&MA items are processed after the on-orbit crew communicates the need to replace a damaged item or request additional units of existing hardware. The Program then adds these requested items to a flight manifest which triggers CMC to start processing an item for the selected flight. PDA of these items is conducted based on the complexity of the item and ranges from simple inspection to a released drawing to detailed functional check-out. In some instances, it will be necessary to mount an R&MA item to a simulated rack face (Ground Support Equipment) during PDA. Post inspection and PDA, the hardware is made ready for flight. No post mission processing is planned for this sub-system.

2.3.4 Photo/TV Hardware

A minimum set of hardware is required on the U.S. On-Orbit Segment (USOS) to support operations. NASA provides this Photo/TV hardware in support of all International Partners with the exception of Russia. NASA plans to provide one Digital Still Camera system (Nikon D4) per USOS module and one Camcorder system (Canon XF305) per USOS module.

Prior to depleting the existing inventory, a Program CR will be required to procure and certify new cameras. Since it is unclear how many, if any, cameras will actually return, it should be assumed that there will be no re-flight of Digital Still or Video Cameras. Existing units of old model video cameras will continue to be supported until no hardware is left on-orbit (Canon XF-305 and Ghost Drift-S Minicam). Other miscellaneous Photo/TV hardware and accessories (cables, filters, etc.) will only be required to be replaced as hardware fails or...
is lost on-orbit. Storage media (memory cards, tapes, etc.) will be flown as part of Photo/TV resupply. Any requirements for new hardware will be approved via Program CRs.

The ISS Program is planning to submit a Program Change Request (CR) to upgrade the Nikon D4 to the Nikon D5 camera body in FY 17.

### 2.3.5 Laptops and Accessories

Lifetime buys were made for all laptop and associated ancillary hardware (excludes consumables). All hardware will be built up prior to contract start. As hardware fails on-orbit or as new requirements are identified, additional hardware will be processed for flight and flown. There is no current plan to repair any returned on-orbit hardware. Any fleet leading anomaly will need to be investigated to understand if an anomaly is systemic or a fleet issue.

The ISS Program is currently planning a Next Generation Laptop procurement and replacement of the ZBook in FY 20.

### 2.4 SOW 3.2.10 ISS APPLICATIONS SUSTAINING: The eRMDP application is currently under development. The existing applications (eLRODS, eLabel) are currently (as of 11/2016) hosted in a SharePoint 2010 Foundation environment with a MS SQL 2008 R2. The plan is to migrate these applications to SharePoint 2013 Standard and MS SQL Server 2012 before the end of the CMC2 contract (3/31/2018). The virtual environment (as of 10/2016) for the applications is described below in Table L-8-5. In order to prepare for hosting the core applications the Contractor should plan for half of the virtual environments listed.
Table L-8-5: Virtual Environment for Applications to be Sustained

<table>
<thead>
<tr>
<th>Environment</th>
<th>CPU</th>
<th>RAM (GB)</th>
<th>Total Disk GB</th>
<th>System Model</th>
<th>OS &amp; Firmware Version</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEV</td>
<td>4</td>
<td>12</td>
<td>1532</td>
<td>VMware virtual server</td>
<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>DEV</td>
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<td>8</td>
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<tr>
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<td>4</td>
<td>8</td>
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<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>DEV</td>
<td>8</td>
<td>3</td>
<td>645</td>
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</tr>
<tr>
<td>DEV</td>
<td>4</td>
<td>8</td>
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<tr>
<td>DEV</td>
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<td>DEV</td>
<td>4</td>
<td>8</td>
<td>240</td>
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<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
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<tr>
<td>DEV</td>
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<td>MSSQL 2008 R2 Express</td>
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<tr>
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<td>MSSQL 2008 R2 Standard</td>
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</tr>
<tr>
<td>PROD</td>
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<td>MSSQL 2008 R2 Standard</td>
</tr>
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<tr>
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<td>200</td>
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<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>UAT</td>
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<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
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<td>200</td>
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<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>UAT</td>
<td>4</td>
<td>16</td>
<td>200</td>
<td>VMware virtual server</td>
<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>UAT</td>
<td>4</td>
<td>16</td>
<td>200</td>
<td>VMware virtual server</td>
<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>UAT</td>
<td>4</td>
<td>16</td>
<td>200</td>
<td>VMware virtual server</td>
<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
<tr>
<td>UAT</td>
<td>4</td>
<td>16</td>
<td>200</td>
<td>VMware virtual server</td>
<td>Windows 2008 R2 std</td>
<td>MSSQL 2008 R2 Standard</td>
</tr>
</tbody>
</table>

Note: All product versions are current as of 10/2016

**UAT = User Acceptance Testing**

The Government forecasts an average of approximately 650 CMC3 reviews and approvals per year for new or revised eLRODS. These consist of transportation / ground handling, launch, on-orbit stowage, and return hardware requirements. Please note that this does not constitute a guarantee of the scope of eLRODS reviews and approvals required of the CMC3 contractor.
3. CARGO INTEGRATION WORK LOAD INDICATORS
These are provided to assist Offerors in determining the general overall scope and for development of their management and technical approaches. Offerors shall develop their own estimates that support their unique proposal management and technical approaches and shall provide supporting rationale in narrative form. Because of the uncertainties involved with IDIQ work, Offerors are cautioned that this estimate is not a guarantee of future work.

3.1 ISS PROGRAM

3.1.1 SOW 4.3.3 ON-CALL SUPPORT OF ON-ORBIT OPERATIONS: 10 hours/week.

3.1.2 SOW 4.4.1 FACILITIES REQUIREMENTS: The contractor shall enable JSC Microbial Team sampling of up to 10% of hardware items and up to 10% of cargo bags prior to each ISS flight cargo shipment leaving CMC.

3.1.3 SOW 4.4.6 FOAM SERVICES: The following is an average annual forecast of the quantity and type of foam pieces required for CMC3. Note that this is not a guarantee of scope for foam production.

<table>
<thead>
<tr>
<th>Foam Type</th>
<th>Average # pieces prepared / year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom</td>
<td>160</td>
</tr>
<tr>
<td>Non-Standard*</td>
<td>90</td>
</tr>
<tr>
<td>Filler</td>
<td>500</td>
</tr>
<tr>
<td>Clamshell*</td>
<td>2</td>
</tr>
</tbody>
</table>

* When approved by the Government

3.1.4 SOW 4.4.7 WATER FILL SERVICES: 21 Water Storage System (WSS) fills/year and 4 Iodine Compatible Water Containers (ICWCs) fills/year.

3.1.5 SOW 4.4.8.1 LAUNCH SITE CARGO PACKING: Per Flight: 10 late load bags and 5 nominal load / initial load bags packed at launch site (US launch sites only).

Government facilities near US launch sites (i.e. Kennedy Space Center, Florida and Wallops Island, Virginia) are available for CMC3 contractor use for this requirement. Facility features include:

- Tables / workbenches
- Loading dock access (forklift and pallet jacks)
- Lifting aids for heavy items
- c.g. table (to measure packed cargo bag c.g.)
- Footprint ~ 500 - 1000 sq. ft
3.1.6 SOW 4.4.10 HARDWARE SHIPMENT: The following is a forecast of the annual number of shipments, by type. Note that this is not a guarantee of the scope of shipments.
### Table L-8-6: Visiting Vehicle Ascent Cargo Upmass

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>CY</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
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<tr>
<td>Flights</td>
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<td>3</td>
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<td></td>
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<td></td>
<td>6</td>
</tr>
<tr>
<td>Usable</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.2</td>
</tr>
<tr>
<td>Soyuz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Flights</td>
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<td>2</td>
<td></td>
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<td>0.1</td>
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<td>0.3</td>
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<td>USCV</td>
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<td>1</td>
<td>1</td>
<td></td>
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<td></td>
<td></td>
<td>4</td>
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<tr>
<td>Usable</td>
<td>2.58</td>
<td>2.58</td>
<td>2.89</td>
<td>2.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.94</td>
</tr>
<tr>
<td>CRS1</td>
<td></td>
<td></td>
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<td>10</td>
</tr>
<tr>
<td>Flights</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Usable</td>
<td>12.8</td>
<td>6.4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.2</td>
</tr>
<tr>
<td>CRS2</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Flights</td>
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<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td></td>
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<td>24</td>
</tr>
<tr>
<td>Usable</td>
<td>3</td>
<td>12</td>
<td>15</td>
<td>12</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>12</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>Usable</td>
<td>15.88</td>
<td>12.38</td>
<td>18.09</td>
<td>15.2</td>
<td>15.09</td>
<td>15.2</td>
<td>15.2</td>
<td>15.2</td>
<td>107.04</td>
</tr>
</tbody>
</table>

3.1.7 VISITING VEHICLE CARGO LOADING: The following tables provide current planning data for ISS visiting vehicles, including expected mass demand and cargo transfer bag complement for launch and return. The data is provided by visiting vehicle type on a Calendar Year basis and does not include packing provisions. The mass forecast is in metric tons and is dependent on overall vehicle capabilities, as well as the allocation of pressurized cargo vs. fluids and unpressurized cargo.

<table>
<thead>
<tr>
<th>Shipment Type</th>
<th>Average # of shipments / year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch Manifest / Flight</td>
<td>70</td>
</tr>
<tr>
<td>BHSEALS</td>
<td>60</td>
</tr>
<tr>
<td>Diplomatic</td>
<td>5</td>
</tr>
<tr>
<td>Hand Carry</td>
<td>10</td>
</tr>
<tr>
<td>Other (return h/w to owner, requested foam / packing provisions, etc.)</td>
<td>650</td>
</tr>
</tbody>
</table>
### Table L-8-7: Visiting Vehicle Ascent Cargo Bag Counts

<table>
<thead>
<tr>
<th>Period</th>
<th>0.5 CTB</th>
<th>1.0 CTB</th>
<th>MD L</th>
<th>2.0 CTB</th>
<th>3.0 CTB</th>
<th>4.0 CTB / M02</th>
<th>6.0 CTB / M-01</th>
<th>8.0 CTB / M-04</th>
<th>10.0 CTB / M-03</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY18</td>
<td>200</td>
<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
<td>1120</td>
</tr>
<tr>
<td>CY19</td>
<td>200</td>
<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
<td>1120</td>
</tr>
<tr>
<td>CY20</td>
<td>200</td>
<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
<td>1120</td>
</tr>
<tr>
<td>CY21</td>
<td>200</td>
<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
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</tr>
<tr>
<td>CY23</td>
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<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
<td>1120</td>
</tr>
<tr>
<td>CY24</td>
<td>200</td>
<td>300</td>
<td>30</td>
<td>150</td>
<td>100</td>
<td>150</td>
<td>150</td>
<td>30</td>
<td>10</td>
<td>1120</td>
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<td>Total</td>
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<td>700</td>
<td>1050</td>
<td>1050</td>
<td>210</td>
<td>70</td>
<td>7840</td>
<td></td>
</tr>
</tbody>
</table>

### Table L-8-8: Visiting Vehicle Descent Cargo Downmass

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>CY</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soyuz</td>
<td>Flights</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>0.1</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>USCV</td>
<td>Flights</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>CRS1</td>
<td>Flights</td>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>6</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Usable</td>
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<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>Flights</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>6.3</td>
<td>6.25</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>36.05</td>
</tr>
</tbody>
</table>

### Table L-8-9: Visiting Vehicle Descent Cargo Bag Counts

<table>
<thead>
<tr>
<th>Period</th>
<th>0.5 CTB</th>
<th>1.0 CTB</th>
<th>MD L</th>
<th>2.0 CTB</th>
<th>3.0 CTB</th>
<th>4.0 CTB / M02</th>
<th>6.0 CTB / M-01</th>
<th>8.0 CTB / M-04</th>
<th>10.0 CTB / M-03</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY18</td>
<td>75</td>
<td>100</td>
<td>4</td>
<td>32</td>
<td>0</td>
<td>12</td>
<td>18</td>
<td>0</td>
<td>4</td>
<td>245</td>
</tr>
<tr>
<td>CY19</td>
<td>75</td>
<td>100</td>
<td>4</td>
<td>32</td>
<td>0</td>
<td>12</td>
<td>18</td>
<td>0</td>
<td>3</td>
<td>244</td>
</tr>
<tr>
<td>CY20</td>
<td>60</td>
<td>75</td>
<td>4</td>
<td>24</td>
<td>4</td>
<td>18</td>
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<td>2</td>
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<td>2</td>
<td>213</td>
</tr>
<tr>
<td>CY23</td>
<td>60</td>
<td>75</td>
<td>4</td>
<td>24</td>
<td>4</td>
<td>18</td>
<td>24</td>
<td>2</td>
<td>2</td>
<td>213</td>
</tr>
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<td>CY24</td>
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<td>75</td>
<td>4</td>
<td>24</td>
<td>4</td>
<td>18</td>
<td>24</td>
<td>2</td>
<td>2</td>
<td>213</td>
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<td>Total</td>
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<td>184</td>
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<td>114</td>
<td>156</td>
<td>10</td>
<td>17</td>
<td>1554</td>
</tr>
</tbody>
</table>
3.1.8 FLIGHTS-IN-FLOW DURING PHASE-IN: The table below provides current planning dates for ISS visiting vehicles for which cargo integration may be on-going by the incumbent contractor. These projected dates are subject to change and should not be relied upon for assurance of launch.

Table L-8-10: Visiting Vehicles with Cargo In-Flow

<table>
<thead>
<tr>
<th>ISS Flight</th>
<th>Visiting Vehicle</th>
<th>Launch Date</th>
<th>Dock / Mate Date</th>
<th>Undock / Unberth Date</th>
<th>Landing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>USCV-2</td>
<td>Comm. Crew</td>
<td>Mar 2018</td>
<td>L+2d</td>
<td>Up to 6 months from Launch</td>
<td>Undock Day</td>
</tr>
<tr>
<td>SpX-15</td>
<td>Dragon</td>
<td>Apr 2018</td>
<td>L+2d</td>
<td>L+32d</td>
<td>Unberth Day</td>
</tr>
<tr>
<td>OA-10</td>
<td>Cygnus</td>
<td>Jun 2018</td>
<td>L+7d</td>
<td>L+59d</td>
<td></td>
</tr>
<tr>
<td>SpX-16</td>
<td>Dragon</td>
<td>Aug 2018</td>
<td>L+2d</td>
<td>L+32d</td>
<td>Unberth Day</td>
</tr>
<tr>
<td>53S</td>
<td>Soyuz</td>
<td>10 Nov 2017</td>
<td>10 Nov 2017</td>
<td>05 May 2018</td>
<td>Undock Day</td>
</tr>
<tr>
<td>54S</td>
<td>Soyuz</td>
<td>14 Mar 2018</td>
<td>14 Mar 2018</td>
<td>03 Sep 2018</td>
<td>Undock Day</td>
</tr>
<tr>
<td>55S</td>
<td>Soyuz</td>
<td>29 May 2018</td>
<td>29 May 2018</td>
<td>31 Oct 2018</td>
<td>Undock Day</td>
</tr>
</tbody>
</table>

3.1.9 HARDWARE ISSUE REPORTS (IRs): Table L-8-11 shows a forecast assuming that 25% of the forecasted Corrective Maintenance and first-flight Utilization hardware are delivered with non-compliances that require IR generation.

Table L-8-11: Forecasted Issue Reports

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Upmass (kg)</td>
<td>15880</td>
<td>12380</td>
<td>18540</td>
<td>15200</td>
<td>15090</td>
<td>15650</td>
<td>15650</td>
</tr>
<tr>
<td>Corrective Maint. H/W (kg)</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>New Utilization H/W (kg)</td>
<td>3500</td>
<td>3500</td>
<td>3500</td>
<td>3500</td>
<td>3500</td>
<td>3500</td>
<td>3500</td>
</tr>
<tr>
<td>% at Risk by Mass</td>
<td>26%</td>
<td>25%</td>
<td>24%</td>
<td>23%</td>
<td>22%</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Upmass at Risk (kg)</td>
<td>4129</td>
<td>3095</td>
<td>4450</td>
<td>3496</td>
<td>3320</td>
<td>3287</td>
<td>3130</td>
</tr>
<tr>
<td>Line Items at Risk</td>
<td>1652</td>
<td>1238</td>
<td>1780</td>
<td>1398</td>
<td>1328</td>
<td>1315</td>
<td>1252</td>
</tr>
<tr>
<td>Qty IR's / Year @ 25%</td>
<td>413</td>
<td>310</td>
<td>445</td>
<td>350</td>
<td>332</td>
<td>329</td>
<td>313</td>
</tr>
<tr>
<td>Qty IR's / Flight @ 25%</td>
<td>26</td>
<td>26</td>
<td>49</td>
<td>50</td>
<td>47</td>
<td>41</td>
<td>39</td>
</tr>
</tbody>
</table>
3.1.10 CARGO LAYOUTS: Table L-8-12 provides a forecast of the number of ascent cargo bag layouts likely to be developed for future ISS flights by vehicle type, as well as the quantity of layout revisions expected.

Table L-8-12: Forecasted Cargo Bag Layouts

<table>
<thead>
<tr>
<th>Revision</th>
<th>Progress</th>
<th>Soyuz</th>
<th>HT V</th>
<th>CRS 1</th>
<th>CRS2</th>
<th>USCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/C</td>
<td>8</td>
<td>2</td>
<td>24</td>
<td>24</td>
<td>26</td>
<td>10</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
<td>5</td>
<td>47</td>
<td>47</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Total Layouts</td>
<td>21</td>
<td>8</td>
<td>80</td>
<td>79</td>
<td>105</td>
<td>22</td>
</tr>
<tr>
<td>Equivalent Layouts</td>
<td>38</td>
<td>15</td>
<td>148</td>
<td>144</td>
<td>229</td>
<td>46</td>
</tr>
</tbody>
</table>

3.1.11 DECAL LAB PRODUCTION:
The following provides the Government’s best estimate of ISS Program decal support requests and decals produced for the term of the contract:

- The forecasted Decal Lab Support Requests is 1200/Calendar Year.
- The forecasted Decal Lab Production is 80400/Calendar Year.

3.1.12 LEASED VEHICLES:
The following provides the Government’s best estimate of vehicles needed to support CMC3 for the term of the contract, for all activities other than ISS flight cargo shipments. Note that the cost data is representative of a Government vehicle lease; leasing vehicle(s) from the Government is not required, but these vehicles are available for CMC3 lease.

Table L-8-13: Forecasted Support Vehicle Data

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DESCRIPTION</th>
<th>BASE COST</th>
<th>ADDITIONAL COST PER MILE</th>
<th>AVG MILES / MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>VAN, LD CARGO</td>
<td>$208.00</td>
<td>$0.252</td>
<td>400</td>
</tr>
<tr>
<td>2013</td>
<td>VAN, MD 4X2 CARGO</td>
<td>$208.00</td>
<td>$0.252</td>
<td>200</td>
</tr>
</tbody>
</table>

If this resource is utilized, the clause NFS 1852.223-76 Federal Automotive Statistical Tool Reporting (JUL 2003), shall be applicable to CMC3.
3.2 ORION PROGRAM

The following ground rules and assumptions should be used to propose cargo packing for Orion MPCV flights:

- Launch from KSC, Landing off San Diego, California*
- Provide 3 iterations of stowage layout drawings and evaluations for items to be stowed: provide at 1 year prior to flight, 6 months prior, and a final for flight. The 1 year stowage evaluation will be drawing based, the 6 month and final will be based off the containers produced.
- Build 2 iterations of stowage containers per ship set, based on drawings provided: one at 6 months, and one final: 2 sets per iteration (1 flight, 1 trainer). A ship set consists of approximately 14 stowage containers.
- Deliver pre-integrated containers to KSC for installation into Orion. (installation performed by KSC). *Hardware will be returned to CMC at KSC.
- CMC conducts one crew fit check event at CMC facility per flight: crew examines stowage containers, selects FCE hardware (shirts, shorts, etc) for final packing.

3.2.1 MPCV CARGO LOADING: The following tables provide current planning data for the Orion MPCV expected mass demand. The data is provided by Calendar Year and does not include packing provisions. The mass forecast is in metric tons and is dependent on overall vehicle capabilities, as well as the allocation of pressurized cargo vs. fluids and unpressurized cargo.

Table L-8-14: MPCV Ascent Cargo Upmass

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>CY</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEV</td>
<td>Flights</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>1.35</td>
<td></td>
</tr>
</tbody>
</table>

Table L-8-15: MPCV Vehicle Descent Cargo Downmass

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>CY</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEV</td>
<td>Flights</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Usable</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>.45</td>
<td>1.35</td>
<td></td>
</tr>
</tbody>
</table>

3.2.2 DECAL LAB PRODUCTION: Table L-8-16 provides the Government’s best estimate of Orion Program decal support requests and decals produced for the term of the contract.

Table L-8-16: Forecasted Decal Lab Support Requests and Decal Production

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requests</td>
<td>50</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Produced</td>
<td>1000</td>
<td>1000</td>
<td>6700</td>
<td>6700</td>
<td>13400</td>
<td>13400</td>
<td>13400</td>
</tr>
</tbody>
</table>
4.0 CARGO INTEGRATION PROCESS DESCRIPTION

The following information is based on ISS Program processes and is provided to supplement SSP 50200-11, Station Program Implementation Plan (SPIP), Volume 11, ISS Cargo Integration Processes and SSP 50489, ISS Mission Integration Template. Cargo integration processes for the Orion Program should be assumed to be similar to the ISS Program.

The information describes current roles, requirements and schedules and how they apply to future processes. Each section is described in terms of inputs and outputs to allow for development of efficient, effective, and competitive processes beyond the baseline concept outlined in this document. Some description of current processes is included to aid in understanding; however, it is the expectation of the Government that the Offeror will identify improvements or changes as appropriate to provide the Government with the most efficient process.

4.1 Cargo Integration Functions

Multiple integration functions are required to effectively track, receive, integrate, pack, and ship cargo. These functions are described below.

4.1.1 Cargo Coordination

Overview:
CMC is responsible for integrating and orchestrating the delivery of cargo from the Hardware Provider to the Next Level Integrator (NLI). Responsibilities include leading the hardware audit, managing the integrated hardware delivery schedule, reporting hardware issues, and ensuring all hardware and associated data is delivered on-time. Status of hardware delivery issues and cargo turnover issues shall be reported to NASA.

Inputs:

<table>
<thead>
<tr>
<th>Input</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware On Dock Dates</td>
<td>Defines when manifested hardware is available for packing</td>
</tr>
<tr>
<td>Flight Manifest</td>
<td>Defines the hardware approved for launch on the specific vehicle</td>
</tr>
<tr>
<td>Cargo Turnover to NLI Date</td>
<td>Defines when all packed bags are to be handed over to the next level integrator for vehicle integration</td>
</tr>
</tbody>
</table>

Outputs:

<table>
<thead>
<tr>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Accountability Matrix Report (HAMR)</td>
<td>Generated report used as a tracking matrix. Used during hardware verification to validate the hardware or identify issues with the hardware or discrepancies with the manifest</td>
</tr>
<tr>
<td>Issue Reports (IRs)</td>
<td>Identifies a physical or analytical hardware discrepancy requiring resolution prior to final packing</td>
</tr>
<tr>
<td>Expedited Planning</td>
<td>Defines an end to end plan for late arriving, newly added, or re-planned hardware in order to deliver and pack hardware prior to turnover to the NLI while balancing all requirements, i.e. safety, mass properties</td>
</tr>
</tbody>
</table>
4.1.2 Stowage Integration

Overview:
CMC is responsible for defining the ascent and descent configurations of packed bags to be delivered to the NLI. CMC compiles multiple inputs to produce a packed configuration meeting all requirements to protect the cargo on launch and return, while maximizing cargo delivery. CMC seeks inputs or feedback from the Hardware Providers and operations community regarding implementation of packing and labeling requirements.

Inputs:

<table>
<thead>
<tr>
<th>Input</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight Manifest</td>
<td>Defines the hardware approved for launch on the specific vehicle</td>
</tr>
</tbody>
</table>
| Hardware Packing Requirements | Provided by the hardware owners   
Hardware Provider requirements define the minimum amount and type of packing material required to protect sensitive hardware. Also included are any specific ground handling constraints, 1-G or launch orientation requirements, or special accommodations. |
| Hardware dimensions         | Provided by the Manifest   
Used to assess hardware layout into the packed bag                                                                                       |
| Hardware Mass               | Provided by the Manifest   
Compiled to ensure bag design, ground handling, rack, and vehicle mass limits are not violated                                           |
| Vehicle Rack Layout         | Provided by the NLI   
Defines the rack configuration and therefore the acceptable bag compliment delivery to the vehicle NLI                                       |
| Cargo Priority List         | Provided by NASA, as needed   
Confirms ISS Program priority for all manifested cargo                                                                               |
| Vehicle Interface Constraints | Provided by the NLI, as Interface Control Document, Interface Definition Document, etc. 
Defines vehicle launch containment mechanisms and corresponding mass and center of gravity limitations                                |
| Hardware On-dock date       | Defines when manifested hardware is available for packing                                                                                |
| Cargo Turnover to NLI Date  | Defines when all packed bags are to be handed over to the NLI for vehicle integration                                                  |
| Certified packing Bags, Foam, and material | Defines flight certified packing materials for use during packing when not specifically indicated by the Hardware Providers |
| Operational Inputs          | Comments provided by the operations community requesting colocation of hardware items or specific labeling for incorporation in bag layouts. When needed, the ISS Program will consider trades between operational considerations versus maximizing cargo upmass. Special consideration is given to critical hardware cases |
where ops requirements improve the probability of mission success or crew/vehicle safety.

Output:

<table>
<thead>
<tr>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bag Layout</td>
<td>Provides a 3D isometric view of cargo stowed within each packed bag used for planning, evaluation, and reference. Also defines foam and containment labeling requirements as agreed to with the operations community.</td>
</tr>
<tr>
<td>Containment</td>
<td>Provides a detailed hierarchy listing which items are stowed within other items, built to the bag level</td>
</tr>
<tr>
<td>Bag level mass properties</td>
<td>Defines the mass, dimensions, and center of gravity (where required) of the packed bag</td>
</tr>
<tr>
<td>Bag level handling constraints</td>
<td>Defines handling constraints during shipping and vehicle loading</td>
</tr>
<tr>
<td>Bag Labels</td>
<td>Defines the bag label details outlining the bag contents</td>
</tr>
<tr>
<td>Bag level safety co-location constraints</td>
<td>Defines to the NLI the constraints on co-locating bags within proximity of each other during vehicle loading</td>
</tr>
<tr>
<td>Foam tracking information</td>
<td>Defines all foam packing material used within packed bags for input into MIDAS or delivery to NASA.</td>
</tr>
</tbody>
</table>

4.1.3 Packing

Overview:
CMC is responsible for performing the hands on hardware verification and packing of cargo bags for launch per requirements. Cargo bags are than prepared for shipment to the NLI.

Inputs:

<table>
<thead>
<tr>
<th>Input</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Accountability Matrix Report (HAMR)</td>
<td>Used during hardware verification to ensure the hardware being delivered meets the manifested criteria</td>
</tr>
<tr>
<td>Shipping paperwork</td>
<td>Used to identify hardware arriving during packing and to ensure the hardware being delivered meets the manifested criteria</td>
</tr>
<tr>
<td>Flight Manifest</td>
<td>Defines the hardware approved for launch on the specific vehicle</td>
</tr>
<tr>
<td>Bag Layout</td>
<td>Provides a 3D isometric view of cargo stowed within each packed bag used for planning, evaluation, and reference. Also defines foam and containment labeling requirements as agreed to with the operations community.</td>
</tr>
<tr>
<td>Virtual Review Comments</td>
<td>Comments received from users, operations, or Hardware Providers that are provided during the virtual cargo review.</td>
</tr>
</tbody>
</table>
Outputs:

<table>
<thead>
<tr>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue Reports (IRs)</td>
<td>Identifies a physical or analytical hardware discrepancy requiring resolution prior to final packing</td>
</tr>
<tr>
<td>Virtual Review Comment</td>
<td>Disposition of comments provided during the virtual cargo review. Comments that are crew safety, vehicle safety, or mission success must be resolved prior to bag turnover</td>
</tr>
<tr>
<td>disposition</td>
<td></td>
</tr>
<tr>
<td>Hardware imagery</td>
<td>Photo documents the received flight hardware prior to packing for use during the virtual cargo review</td>
</tr>
<tr>
<td>Packed Hardware Imagery</td>
<td>Photo documents the received flight hardware after packaging in packing material and prior to packing into the bag for use during the virtual cargo review</td>
</tr>
<tr>
<td>Bag Level imagery</td>
<td>Photo documents the packed hardware as it is stowed within the packed bag, including all levels of packing and labels for use during the virtual cargo review</td>
</tr>
<tr>
<td>Bag Content Labels</td>
<td>Bag label identifying the contents of the packed bag</td>
</tr>
<tr>
<td>Bag Level Containment</td>
<td>An as-built listing of all hardware items contained within the packed bag</td>
</tr>
<tr>
<td>Flight-Ready Cargo Bags</td>
<td>Final configuration of the flight ready (i.e. closed out) packed bag</td>
</tr>
<tr>
<td>Cargo Shipment</td>
<td>Preparation of the flight ready cargo bags into shipping containers prior to pickup by the freight forwarder</td>
</tr>
</tbody>
</table>

4.1.4 Shipping

Overview:
CMC is responsible for planning and coordinating domestic and international shipments, including customs clearance, in order to deliver the packed cargo to the NLI’s vehicle integration facility. CMC is also responsible for verifying all cargo being shipped internationally has an export classification and has received an export license or export exemption or exception as applicable prior to shipping. NLI vehicle integration facilities are located as follows:

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Cargo Delivery Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTV</td>
<td>Tanigashima Space Center, Japan</td>
</tr>
<tr>
<td>Progress</td>
<td>Moscow, Russia</td>
</tr>
<tr>
<td>Soyuz</td>
<td>Moscow, Russia</td>
</tr>
<tr>
<td>CRS1: Orbital</td>
<td>Wallops, VA (primary) or Cape Canaveral Air Force Station, FL (backup)</td>
</tr>
</tbody>
</table>
For H-II Transfer Vehicle (HTV) flights, CMC is responsible for delivering the cargo to the Tanigashima Space Center, Japan via freight forwarder.

For Progress and Soyuz flights, CMC is responsible for delivering the cargo to Moscow. Customs clearance is performed by to Rocket Space Corporation-Energia (RSC-E) with the support of the NASA Moscow Technical Liaison Office (MTLO). RSC-E will then transport the cargo to Baikonur.

For U.S. flights, the shipping coordinator delivers ascent cargo via freight forwarder.

**Inputs:**

<table>
<thead>
<tr>
<th>Input</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>As-built Containment</td>
<td>Provided by CMC</td>
</tr>
<tr>
<td></td>
<td>A listing of all packed bags by part number and serial number, including a listing of hardware items contained within each packed bag.</td>
</tr>
<tr>
<td>Ground handling constraints</td>
<td>Provided by the hardware owners</td>
</tr>
<tr>
<td></td>
<td>Hardware Provider requirements defining the minimum amount and type of packing material required to protect sensitive hardware. Also included are any specific ground handling constraints, 1-G or launch orientation requirements, or special accommodations</td>
</tr>
<tr>
<td>Hardware description</td>
<td>Provided by the Technical Data Sheet or gathered by CMC through coordination with the Hardware Providers</td>
</tr>
<tr>
<td></td>
<td>Used to assess hardware layout into the packed bag</td>
</tr>
<tr>
<td>As Packed Bag Mass</td>
<td>Provided by CMC</td>
</tr>
<tr>
<td></td>
<td>Measured to ensure bag design, ground handling, rack, and vehicle mass limits are not violated</td>
</tr>
<tr>
<td>Cargo Turnover to NLI Date</td>
<td>Defines when all packed bags are to be handed over to the next level integrator for vehicle integration</td>
</tr>
</tbody>
</table>
## Outputs:

<table>
<thead>
<tr>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proforma Invoice</td>
<td>Shipping document detailing the hardware included in the shipment. Used by the freight forwarder and customs when clearing the shipment.</td>
</tr>
<tr>
<td>Export License Tracking Report</td>
<td>Tracking status report of export classification for manifested flight hardware. Includes reporting on hardware requiring export authority and schedule coordination to ensure an export license, or applicable exemption/exception is obtained prior to shipment. Report delivered to NASA with recommendations</td>
</tr>
<tr>
<td>Three Way Protocol</td>
<td>Signed by NASA, RSC-E and Roscosmos, authorizing the shipment to Moscow (for cargo launching on Russian vehicles)</td>
</tr>
<tr>
<td>Airway Bill</td>
<td>Specifically defines the cargo carrier or traveler delivering the cargo. Used by the freight forwarder or customs to clear the shipment through customs.</td>
</tr>
<tr>
<td>Transportation Coordination</td>
<td>Pre-Coordinates with the necessary agencies to ensure shipments and courier deliveries are identified as NASA shipments while in transit</td>
</tr>
</tbody>
</table>

### 4.1.5 Mass Properties Management

#### Overview:

Responsible for ensuring the mass properties of integrated packed bags are within the boundaries established by the Interface Control Documents established by the specific vehicle integrators, while maximizing the upmass of the cargo delivered to orbit.

#### Inputs:

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Mass Properties</td>
<td>Individual hardware mass properties ultimately compiled with packing material to generate the bag level mass properties</td>
</tr>
<tr>
<td>Integrated Bag Mass Properties</td>
<td>Mass, Dimensions, and Center of Gravity (where required) of in integrated bag ready for turnover to the NLI.</td>
</tr>
<tr>
<td>Vehicle Mass Constraints</td>
<td>Defines the mass limitations of racks, lockers, straps, pallets, and any other cargo accommodations used to restrain cargo for launch to orbit</td>
</tr>
<tr>
<td>Vehicle Center of Gravity Constraints</td>
<td>Defines the center of gravity limitations of racks, lockers, straps, pallets, and any other cargo accommodations used to constrain cargo for launch to orbit</td>
</tr>
<tr>
<td>Vehicle Dimensional Constraints</td>
<td>Defines the dimensional limitations of racks, lockers, straps, pallets, and any other cargo accommodations used to constrain cargo for launch to orbit</td>
</tr>
<tr>
<td>Output</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Estimated Integrated bag level mass properties</td>
<td>Delivered to the NLI in time to support preliminary vehicle analysis</td>
</tr>
<tr>
<td>Final Integrated bag level mass properties</td>
<td>Delivered to the NLI in time to support final vehicle analysis</td>
</tr>
</tbody>
</table>

### 4.1.6 Return Manifest Disposition Plan

**Overview:**
CMC is responsible for ensuring all return cargo de-integration requirements are met when returning cargo from orbit to the Hardware Provider via the vehicle de-integrator. Additionally, CMC manages and maintains the Return Manifest Disposition Plan.

**Inputs:**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Location Code</td>
<td>Defines the location of the hardware stowed in the vehicle for return. Used as cargo is de-integrated to discern between nominal and early destow cargo bags Provided by the return packing plan</td>
</tr>
<tr>
<td>Return Cargo Handling Constraints</td>
<td>Defines constraints for handling cargo upon return, i.e. orientation, temperature constraints, 1-G orientation requirements, etc. Provided by the Hardware Provider</td>
</tr>
<tr>
<td>Destow Category</td>
<td>Defines if the cargo is nominal or early destow from the vehicle and the timeframe to return the hardware to the Hardware Provider, or vectored to the correct waste stream</td>
</tr>
<tr>
<td>Containment</td>
<td>Provides a detailed hierarchy listing which items are stowed within other items, built to the bag level</td>
</tr>
<tr>
<td>Hardware description</td>
<td>Provides information to identify the hardware as it is unpacked from bags.</td>
</tr>
</tbody>
</table>

**Outputs:**

<table>
<thead>
<tr>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrepancy report</td>
<td>Documents discrepancies identified during de-integration, including damaged, incorrect parts, incorrect quantities, or lost hardware, and/or any additional hardware that returned inadvertently</td>
</tr>
<tr>
<td>Return Manifest Disposition</td>
<td>Integrated report compiling and tracking all planned and unplanned return hardware and hardware requirements for de-integration</td>
</tr>
<tr>
<td>Returned hardware</td>
<td>Hardware is successfully de-integrated and physically returned to the hardware owners, or entered into the necessary waste stream</td>
</tr>
</tbody>
</table>
4.1.7 Data Products

Overview:
Table L-8-17 lists products by vehicle type from the input and output integration performed by CMC.

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>HTV</th>
<th>CRS1</th>
<th>CRS2</th>
<th>USCV</th>
<th>Progress/Soyuz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Accountability Matrix Report (HAMR)</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Packing Data Report (PDR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Proforma</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Protocol</td>
<td></td>
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<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Bag Level Dimensional Drawing</td>
<td></td>
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<td></td>
<td>x</td>
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<tr>
<td>Airway Bill</td>
<td></td>
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</tr>
<tr>
<td>Bag Layout</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>MIDAS Inventory Tracking Report (MTR)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>As Built Packing List (ABPL)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Transferring Cushion MR/Waste MR (WMR)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Bag Mass Properties Report</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JAXA MIDAS Interface</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RMDP</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

4.1.7.1 HAMR:
- A HAMR is required for every flight.
- 38 continuously tracked data fields per manifest line item.
- Of the 38 fields, 20 are defined by CMC through coordination with internal and external sources while 18 are provided by the manifest group.
- Tracking begins from Manifest Request approval to turnover to NLI.
- An auto generated HAMR report can be produced in support of specific milestones or as requested by the Government.

4.1.7.2 Packing Data Report (PDR):
- A PDR is only required for Progress and Soyuz Flights.
- 19 data fields per manifested line item.
• Of the 19 fields, 8 are defined by CMC through coordination with internal and external sources while 11 are provided by the manifest group.
• Tracking begins from Manifest Request approval to turnover to the Russians.
• Up to 3 drafts of a PDR are produced and delivered to the Russians for review.
• A final PDR is also delivered to the Russians for incorporation in their technical decision package.

4.1.7.3 Proforma Invoice:
• A proforma invoice is required for every shipment (multiple invoices needed if multiple shipment types per flight).
• 11 data fields per manifested line item.
• Of the 11 fields, 7 are defined by CMC through coordination with internal and external sources (including Data Usage Chart (DUC)) while 4 are provided by the manifest group.
• Invoice development begins with DUC receipt and concludes with shipment to the NLI.
• Iteration is required for Russian Proformas to ensure mis-translation of the item name does not result in customs impound or confiscation of the cargo.
• Up to three drafts of a Proforma Invoice per international shipment type may be produced and delivered to International Partner for review, with an ideal delivery of one draft proforma. Fewer revisions may be required for domestic shipments.
• Typical missions may require various international shipment types including hazardous shipment, food Shipment, commercial shipment, crew care packages and alternate shipment. (Shipments are broken into groups to reduce risk to collateral cargo being confiscated if there are issues clearing customs.)
• A final Proforma invoice is delivered specifically to the Russians for cargo launching on Progess and Soyuz for use when clearing the US cargo compliment through customs.
• Russian Translation is required for cargo launching on Progess and Soyuz.

4.1.7.4 Three-way Protocol:
• A three-way protocol between Roscosmos, RSC-Energia and NASA is required for Progress or Soyuz flights.
• 6 Data fields per manifested line item.
• Of the 6 fields, 3 are defined by CMC through coordination with internal and external sources while 3 are provided by the manifest group.
• Protocol development begins from Manifest Request approval and concludes with shipment of the cargo to the Russians.
• A final protocol is delivered to the Russians for internal signature and NASA signature prior to cargo shipment.
• Russian Translation is required.
4.1.7.5 Shipping Passport:
- A passport is required for Progress or Soyuz flights.
- 7 Data fields per manifested line item.
- Of the 7 fields, 1 is defined by CMC through coordination with internal and external sources while 6 are provided by the manifest group.
- Tracking begins from Manifest Request approval to completion of hardware packing and delivery to the Russians.
- Russian Translation is required.

4.1.7.6 MIDAS Inventory Tracking Report (MITR):
- A MITR is required for all flights.
- 30 Continuously tracked data fields per manifested line item.
- Of the 30 fields, 15 are defined by CMC through coordination with internal and external sources while 15 are provided by the manifest group.
- Tracking begins from Manifest Request approval to vehicle launch.
- An auto generated MITR report can be produced in support of specific milestones or as requested by the Government.

4.1.7.7 As Built Packing List (ABPL):
- An ABPL is required for each packed bag for all flights
- 12 Data fields per manifested line item
- Of the 12 fields, 9 are defined by CMC through coordination with internal and external sources while 3 are provided by the manifest group
- Tracking begins from beginning of hardware packing to completion of bag packing.

4.1.7.8 Transferring Cushion List (TCL):
- A TCL is required for all flights but may be substituted with MR’s and Waste MR’s (WMRs).
- 12 Data fields per manifested line item.
- Of the 9 fields, 2 are defined by CMC through coordination with internal and external sources while 7 are provided by the manifest group.
- Tracking begins from cushion manufacturing and packing to launch.
- CMC is responsible for submitting an MR loader if manifesting foam.
- CMC is responsible for submitting a WMR loader to discard foam that can be trashed once on orbit if waste manifesting foam.

4.1.7.9 Mass Properties Report (MPR):
- An MPR is required for all CRS and USCV flights.
- 18 Data fields per line item.
- Of the 18 fields, 9 are defined by CMC through coordination with internal and external sources while 9 are provided by the manifest group.
- Tracking begins from initial bag layout assessment to completion of hardware packing.
4.1.7.10 Return Manifest Disposition Plan (RMDP):
- An RMDP is required for all flights that return cargo to the ground.
- 15 Data fields per manifested line item.
- Of the 15 fields, 8 are defined by CMC through coordination with internal and external sources while 7 are provided by the manifest group.
- Tracking begins from Return Manifest Request or Waste MR (WMR) approval to vehicle return through de-integration.

4.2 Cargo Analytical and Physical Processing

*Overview:*
CMC works with Hardware Providers to coordinate the delivery of hardware, hardware data, packing, and shipping of hardware to the NLI. This section describes processes intended to perform all integration tasks while meeting all user requirements with minimal impact to an in-line packing process.

4.2.1 Hardware Audit (HA)

*Overview:*
The HA is conducted to verify cargo requirements completion, manifest data, and establish On-Dock (O/D) delivery dates. HA participants include the Visiting Vehicle Team (VVT), Flight Operations Directorate (FOD) (including Crew Office), and Hardware Providers.

*Input:*
Prior to the audit, CMC will provide all participants with an initial Hardware Accountability Matrix Report (HAMR) and will provide a package outlining the cargo integration process and identifying critical information required for cargo integration and international shipping. Participants are requested to note discrepancies to the HAMR. Hardware Providers will furnish required data as defined in SSP 50200-11 to the cargo coordinator prior to the hardware audit.

The Hardware Provider will provide all critical cargo and shipping integration information including but not limited to:
- Part Number
- Serial Number
- Barcode
- Mass
- Dimensions
- Hardware Containment
- Manifest Request Approval
- Operational Nomenclature
- Labeling
- Packing constraints
- Ground handling constraints
- On-orbit stowage constraints
- Cushion retention rationale (if required)
- Launch packing material requirements
On-orbit packing material requirements
Temperature Constraints
Late Load requirements
Export control classification
Export Authorization (License, exemption or exception, as applicable)
Ground handling safety data sheet
Launch Vehicle Safety Certification
Hardware Engineering Drawings
Hardware Imagery
Hardware delivery dates for cargo integration.
Early Destow Requirements (if required)
Schedule B Number
Temporary or Permanent Export

Hardware Providers and FOD representatives will provide inputs to CMC regarding co-location of hardware items and specific labeling requirements that support a common on-orbit procedure as they are known.

Output:
Baseline Hardware Accountability Matrix Report (HAMR)
CMC will define hardware On-Dock dates for all manifested flight hardware.
Actions assigned to Hardware Providers to define and/or update any data requested from the Hardware Audit.
VVT will begin cargo priority definition.

4.2.2 Drawing Review
Overview:
A drawing review is conducted to review the bag layout drawings produced by CMC representing the intended bag packing configuration. The drawing review is led by CMC and includes participation from the Visiting Vehicle Team, Hardware Providers, and NASA Flight Operations Directorate.

Inputs:
CMC will provide bag layouts based on the manifest and inputs received via Manifest Request (MRs), Technical Data Sheet (TDSs), the Hardware Audit (HA), and correspondence with the Hardware Providers.
Hardware Providers, NASA FOD, and VVT will review the planned bag layouts and verify the planned packed configuration meets all provided hardware requirements.
Hardware Providers and NASA FOD will provide any additional inputs to CMC regarding labeling of containment and cushions as they are known.

Outputs:
Updated bag layouts to accommodate all valid inputs.
Post Drawing Review Baseline Bag Layouts are finalized to define how the bags will be packed.
4.2.3 Hardware On-dock
Overview:
Hardware Provider will deliver the hardware to the packing facility at the time defined during the HA. Hardware On-Dock is defined as the point at which the hardware has been handed over to the packing team at the packing facility. Hardware that has been physically delivered to the packing facility, but that has not cleared shipping and receiving or has not been successfully turned over to the packing team, will not be considered On-Dock.

Inputs:
Hardware physically delivered to the packing facility, in a flight ready configuration with all the necessary shipping, receiving, and handover paperwork, ready for cargo integration.

Outputs:
CMC to provide a Hardware On-Dock Status to NASA.

4.2.4 Hardware Verification Review

Overview:
Hardware received On-Dock will undergo a review to verify the completion of all Program hardware requirements prior to the Virtual Cargo Review and Cargo Bag Packing. The hardware verification review will begin as soon as cargo is received On-dock and is complete when the cargo is verified to be compliant with all requirements.

Inputs:
Verification inputs from the On-dock hardware
- Part Number physically verified on the hardware and matching the HAMR.
- IMS barcode per SSP 50007 physically verified on the hardware and matching the HAMR, or Barcode waiver is submitted and approved.
- Mass measured and verified matching the HAMR.
- Dimensions measured and verified matching the HAMR.
- Serial Number physically verified on the hardware and matching the HAMR.
- Hardware containment verified matching the HAMR.
- Operations Nomenclature [OpNom] and labeling per SSP 50254 and SSP 50007 physically verified on the hardware to be consistent across all labels present on the hardware, and matching the HAMR.
- Hardware has no sharp edges per SSP 50005 (for EVA related hardware only).

Hardware Provider data furnished to the Visiting Vehicle Team:
- All assigned actions from the HA are closed.
- Ground, Launch, and On-Orbit Safety documentation, or Yellow-Tag (if required).
- Export Control classification, License, exemption or exception (as applicable).

Hardware Provider data furnished to CMC
- As-Built Packing List detailing configuration controlled Kit Contents for verification against the HAMR and Manifest.
- Hardware pre-flight imagery per SSP 50502.
Outputs:
Identification of all late or non-compliant hardware prior to start of hardware packing
Identification of hardware reconciliation tasks to be performed
CMC furnished contingency hardware imagery per SSP 50502.
Recommendations for non-compliant hardware

4.2.5 Cargo Bag Packing
Overview:
CMC will perform all cargo integration packing per requirements.

Inputs:
Valid community inputs from the Drawing Review, Hardware Verification Review, Virtual Cargo Review, or Contingency Physical Review (if required).

Output:
All integrated cargo will be packed in time to allow for shipping processing and on-time delivery to the NLI.
CMC will publish final compiled bag level Virtual Cargo Review Imagery and data.
As Built Packing List delivered to NASA
Actual Bag Level Mass Properties including weighed bag mass, and center of gravity for 3.0 CTBs or larger
Integrated Bag Level Hazard Assessment
MIDAS Inventory Tracking Report (MITR)
Transferring Cushion List (TCL)
NASA will accept the final packed cargo configuration

4.2.6 Virtual Cargo Review
Overview:
A Virtual Cargo Review will be conducted for ISS cargo as each bag is packed for launch. The Virtual Cargo Review provides insight into the final packed configuration of each bag via imagery and data. A review period is established to provide the opportunity for the community to provide relevant inputs pertaining to crew safety, vehicle safety, and mission success.

Inputs:
CMC will obtain imagery of on-dock cargo taken from all sides including:
- On-Dock cargo (from Hardware Providers or Hardware Verification Review)
- Hardware Labels
- Barcodes
- Detailed hardware specific and procedure dependent areas of interest (plugs (including pins and threads), connectors (including pins and threads), caps, switches (including any labeling), etc.)
- Hardware as installed in protective stowage provisions (foam, bubble wrap, etc.)
- Protective stowage provision labels and handwritten notes
- Layer-by-layer packed bag configurations
- Bag or Launch Container exterior
- Bag or Launch Container exterior labels
Output:
CMC will compile HVR imagery and video to maintain associated bag level relationships between all detailed hardware, high level hardware, and integrated bag level imagery or video.
CMC will publish compiled bag level Virtual Cargo Review Imagery and Video and notify the community via a distribution list.
CMC will define a deadline to submit all Virtual Cargo Review inputs as to not impact bag packing and turnover to the next level integrator and notify the community via a distribution list.
Reviewers will provide comments, questions, and change requests relevant to cargo safety, crew safety, vehicle safety, and mission success.
CMC will provide a disposition to all received reviewer comments. Unresolved dispositions will be deferred to NASA for resolution.

4.2.7 Contingency Physical Review
Overview:
As a substitute for Virtual Cargo Reviews, a Contingency Physical Review (CPR) may be performed on an as requested basis. Approved CPR requests will be scheduled during physical bag packing on a non-interference basis so as to not impact integrated bag turnover to the next level integrator.

Inputs:
Requests for approval should be submitted to NASA with rationale describing why a virtual cargo review is not sufficient to verify all cargo integration requirements have been met.

Outputs:
CMC will establish a CPR date and list of participants. CMC will host a CPR event at the packing facility based on the criteria defined in the authorized CPR request.

4.2.8 Cargo Transportation and Logistics
Overview:
CMC will prepare the integrated cargo for transportation to the NLI.

Inputs:
- CMC packed cargo bags.
- CMC generated shipping paperwork.
- CMC established freight forwarder.
- All hardware export classifications, licenses, exemptions or exceptions obtained prior to shipment to the NLI.
- All Ground, Vehicle, On-Orbit certifications, or yellow-tags obtained prior to shipment the NLI.

Outputs:
- Packed integrated cargo is delivered to the NLI.
4.2.9 Cargo Handover

Overview
Cargo is delivered to the NLI for vehicle integration. A bag level receiving inspection will be performed by the NLI prior to official bag turnover. Should any issues be detected, the NLI will contact CMC for resolution.

Inputs:
The receiving inspection will verify all cargo was received intact with no damage or temperature deviations. Flight specific User Interface Agreement (UIA) may be delivered to the NLI to define any unique requirements for delivered cargo or ORUs.

Outputs:
All issues identified will be elevated to NASA for resolution. Cargo is handed over to the NLI for vehicle integration.

4.2.10 Expedited Cargo Integration

Overview:
An expedited cargo integration process will be implemented when requested by NASA. Expedited cargo will be inserted in the nominal cargo integration flow as early as possible and will undergo all safety-critical integration processes. A delivery and integration schedule will be developed with affected parties to meet the required physical cargo and analytical data turnover to the NLI.

Inputs:
Negotiated Expedited Schedule
Pre-Ship Checklist
Expedited Cargo Tracking Matrix
Authorized Waivers as required

Outputs:
Packed Integrated Cargo including the expedited cargo delivered to the NLI.
Updated analytical data products including the expedited cargo as defined by SSP 50200-11 delivered to the NLI.
Change summary outlining impacts from incorporation of the expedited cargo.

4.2.11 Stowage Integration for Return Cargo

Overview:
CMC performs bag level stowage integration for commercial vehicles for the purpose of defining a packed bag and resulting mass properties based on an approved return or disposal manifest. Stowage Integrators perform an assessment of the return manifest assessing the volume and dimensions of hardware and developing a packed bag level configuration of cargo for loading into the commercial return vehicle by the crew. A bag layout is required only in cases where specific center of gravity or hardware orientation requirements exist.

Inputs:
Manifest
Hardware Mass Properties
Return packing constraints
Ground handling constraints
Temperature Constraints
Early Destow Requirements
Outputs:
Bag level return configuration
Bag level mass properties
Bag layout (where c.g. or orientation constraints exist)
4.2.12 Stowage Integration for Waste Cargo

Overview:
Stowage Integrators perform an assessment of the Waste MR assessing the volume and dimensions of hardware and developing a packed bag level configuration of cargo for loading into the CRS2 commercial waste vehicle by the crew.

Inputs:
Waste Manifest Requests (WMRs)
Waste Chits
Hardware Mass Properties
Temperature Constraints

Outputs:
Bag level return configuration
Bag level mass properties

4.2.13 Return Cargo De-Integration

Overview:
The contractor is responsible for coordinating receipt of early destow cargo and nominal destow cargo and performing de-integration of the packed return bags. The locations for early destow cargo, and nominal destow cargo handover are shown below:

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Early Destow - Cargo Handover Location to CMC</th>
<th>Nominal Landing - Cargo Handover Location to CMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTV</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Progress</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Soyuz</td>
<td>Ellington Field Airport, Houston, TX.</td>
<td>CMC Processing Facility</td>
</tr>
<tr>
<td>CRS1: Orbital</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CRS1: SpaceX</td>
<td>Port of Los Angeles, CA</td>
<td>Port of Los Angeles, CA</td>
</tr>
<tr>
<td>CRS2: Orbital</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CRS2: SpaceX</td>
<td>Cape Canaveral Air Force Station, FL.</td>
<td>Cape Canaveral Air Force Station, FL.</td>
</tr>
<tr>
<td>CRS2: Sierra Nevada</td>
<td>Cape Canaveral Air Force Station, FL.</td>
<td>Cape Canaveral Air Force Station, FL.</td>
</tr>
<tr>
<td>USCV: SpaceX</td>
<td>Local airport in the vicinity of Cape Canaveral, FL (prime); Local airport anywhere on the US Gulf Coast (backup)</td>
<td>Cape Canaveral Air Force Station, FL.</td>
</tr>
</tbody>
</table>
USCV: Boeing

Western U.S. desert areas
(Dugway, Willcox Playa,
White Sands Missile Range
(2 locations), and Edwards)

The contractor nominally receives the cargo and turns over the cargo to the Hardware Provider. All de-integrated cargo will be returned to the points of contacts as directed by the return manifest disposition plan. Deviations should be documented in the as flown return manifest disposition plan (RMDP)

**Inputs:**

- Return Manifest and/or Waste Manifest
- Return Manifest Disposition Plan
- Early Destow Requirements
- Ground handling constraints
- Return point of contact delegates

**Outputs:**

- As flown RMDP
- De-Integrated cargo returned to delegated POCs
- De-integrated bag resources returned to inventory
- Waste inserted into the appropriate waste streams

**4.2.14 International Shipping Details**

International Shipments related to the ISS loosely fall into two categories, Manifested Flight Hardware, and all other shipments (Bi-lateral Hardware Software Exchange Agreement Lists and Schedules [BHSEALS]: Ground Support Equipment, Test Equipment, Non-Manifested Flight Hardware, samples, etc.).

**Types of Shipments:**

**4.2.14.1 Manifested Flight Hardware:**

Currently all manifested flight hardware shipments are executed by CMC. The manifest comprises all hardware to be launched on a specific vehicle, and as a result, it defines then both the location and date for which hardware must be delivered in a packed, flight ready condition in time for vehicle loading. The shipping paperwork reflects the packed configuration of the packed Cargo Transfer Bags (CTBs) containing the individual cargo items. CMC prepares shipping documentation for all domestic and International shipments.

**Domestic Shipments:**

Domestic shipments typically are between the packing facility and the NLI and follow the standard template for domestic shipments with standard forms such as a DD 1149, and Pro-Forma Invoice. Occasionally, CMC will ship non-manifested hardware domestically in support of special support requests. This is typically limited to loaning Class III training CTBs to requestors, or delivering requested foam mockups produced by CMC. Specific
facilities, such as Kennedy Space Center (KSC), will often require a ground safety checklist in addition to shipping paperwork prior to receiving cargo. CMC performs all return cargo shipping for cargo that is not loaded onto the vehicle, or that was delivered to the launch site in support of delivering and processing the cargo prior to cargo handover.

Russian Shipments:

Due to strict Moscow customs regulations, contractual legacy, and the fact that Baikonur is a “closed city” with entry and exit of all people and cargo strictly controlled by Roscosmos, the customs clearance function is contracted to and performed by RSC-Energia. CMC provides RSC-E with the necessary information to clear Moscow customs and deliver cargo to Baikonur. CMC contracts the freight forwarder services to Moscow. RSC-E performs the function of clearing the cargo through Moscow Customs using the documentation produced with information supplied by CMC. RSC-E contracts the freight forwarder from Moscow to Baikonur and produces all customs clearance documentation required to for entry into Baikonur, Kazakhstan. The cargo is nominally shipped via cargo aircraft. Once in Baikonur, the cargo is made available for a post arrival inspection by the Moscow Technical Liaison Office (MTLO). The cargo is inventoried, reviewed for damage, temperature excursion, is unpacked from the shipping containers, and is weighed. Once everything is verified to be in order, the cargo is handed over for loading onto the vehicle. Any cargo deemed hazardous is required to be transported via rail from Moscow to Baikonur.

Tanegashima (JAXA) Shipments:

Cargo shipments to Tanegashima Japan adopt a “Door to Door” shipping philosophy. CMC contracts a freight forwarder to pick the cargo up at the packing facility, and deliver the cargo all the way to the Tanegashima Space Center. CMC produces all customs documentation and works directly with a Japan Aerospace Exploration Agency (JAXA) point of contact to verify the documentation is correct. JAXA coordinates the customs clearance with all appropriate Japanese Government Ministries. Separate Japanese ministries regulate and manage unique elements to shipping. For example, where in the U.S., there is the United States Department of Agriculture (USDA), in Japan there is a Plant and Agriculture ministry, and also a Meat ministry. JAXA coordinates with all the individual ministries and gains the necessary approvals depending on the cargo compliment defined by NASA and presented for approval by CMC. To enter and remain in the country with duty free status, the cargo must be tracked at all times. CMC works with JAXA to maintain a status spreadsheet listing all of the individual and current location of the duty free cargo. When the cargo launches on the HTV-1 vehicle, it is considered an “Export” from Japan. Once in Tanegashima, the cargo is received and inspected by JAXA. The cargo is inventoried, reviewed for damage, temperature excursion, and is unpacked from the shipping containers. The cargo undergoes a receiving inspection by JAXA to verify the integrity of the packed bags, verify the external dimensions do not exceed the maximum allowable dimensions, and weigh the mass of the cargo bags. Once the cargo passes inspection, JAXA formally accepts the cargo bags for loading onto the vehicle. Any cargo deemed hazardous is required to be transported to Japan via hazardous aircraft. Once in Japan, the cargo can be transported by train or boat to the launch site.
CMC Shipping Documentation
- DD 1149 (Shipper)
- Pro-forma Invoice (JSC form 1735)
- Three Way Protocol (Progress and Soyuz Only)
- Airway Bill (For hand Carried International Cargo)
- Shipping Passports (Progress and Soyuz)
- Technical Data Sheet for all hardware (ATV, HTV, Progress and Soyuz)
  - Submitted by the Hardware Providers
  - Furnished to CMC to assist with packing and customs clearance
- Baikonur Loading Passport (Progress and Soyuz)
  - Certifies Cargo is safe for loading onto the vehicle
  - Required for Russian Vehicle Integrators to accept cargo from CMC

External Shipping and Loading Document Dependencies
- USDA Certificate
  - For all food items
  - Provided by the food lab
  - Signed and Approved by the USDA
  - Only available after food items are packed often late relative to CMC packed cargo
  - Required for CMC (or RSC-E for Russian flights) to clear food items through customs or to furnish to RSC-E who clears cargo through customs
- Crew Provisions DUC
  - Provided by Flight Crew Equipment
  - Contains crew personal sensitive information for crew provisions
  - Required as an input to the Passport, Protocol, and Proforma in order to list all items as a part of the shipment
  - Only available after items are packed, and crew provisions are packed late relative to CMC packed cargo
- Sanitation Letter
  - For Progress and Flights Soyuz only
  - Signed and Provided by the Russian Vehicle Visiting Vehicle Lead
  - Certifies the level of cleanliness of the cargo being delivered
  - Required for Russian Vehicle Integrators to accept cargo from CMC
- Export Request (ER) approved for all hardware
  - Submitted by Hardware Providers into the Export Record Database (ERDB)
  - Processed by the Center specific Export Services Team
  - Status is tracked by CMC and reported to NASA
  - Required before CMC can legally ship cargo
- Certificate of Conformance
  - For HTV flights only
  - Signed and Provided by the HTV Visiting Vehicle Lead (VVL)
  - Certifies cargo meets all ground, launch, and on-orbit safety requirements
  - Required as a part of CMC Cargo Handover to HTV Vehicle Integrators
Experience Anecdote:

Occasionally, it is necessary to use softer language to describe the flight hardware than the language reflected on the manifest. For example, a Syringe without a needle may be contained inside a payload kit and the hardware is manifested as “Syringe.” In Russia, a syringe is strongly associated with drug paraphernalia and if customs paperwork reflected there is a syringe among the flight hardware being cleared through customs, the entire shipment would be at risk of being seized. For that reason, it is necessary for the CMC contractor to work directly with the RSC-E shipping specialist to identify these types of potential “red flags” and modify the shipping documentation so that the shipment can be cleared through customs successfully. In the case of the syringe, the documentation would be updated to say “pipette.” A close relationship and constant communication with the IP Customs specialist makes for a successful cargo delivery. Without that close relationship, cargo is at risk of being opened, searched, confiscated, or impounded. Any of these scenarios would cause a significant impact to any vehicle manifest, including potentially impacting the vehicle center of gravity to a point at which a successful launch is no longer a possibility.

4.2.14.2 Non-Manifested Hardware Shipments:

BHSEALS: These documents contain lists of shipments to be exchanged with the International Partners/Participants and include shipments of samples, materials, test equipment, fit check equipment, etc. The processes are bi-lateral with each partner because each country has its own peculiar customs laws, procedures, and processes for shipping and clearing customs.

Non-BHSEALS: A category of shipments was established to define shipments of hardware either being shipped/received overseas for NASA Use Only (NUO) as in not provided or exchanged with an International Partner, or NASA hardware being shipped or received from an overseas vendor (again nothing to do with International Partners). This category also can include international vendor-owned hardware (on loan to NASA or such items).

Documentation:

The following shipping documentation must be completed and signed off in order to ship BHSEALS, non-manifested flight hardware, and NASA USE ONLY hardware:
- JSC Form 290 (Shipper)
- Export Record Database which generates an “Export Composite Record” and “Export Transportation Report” respectively. The Export Composite Record may include supporting Export Control Documentation such as export licenses (if needed)
- NDC (Notification of Document Change to provide management sign-off on the shipment)
- Technical Protocol (establishes authority to ship)
- Three Way Protocol (Russia shipments only)
- Airway bill
Once the Center Export Services Team has obtained the appropriate written export authorization (e.g. export license, exemption, exception) the cargo is authorized to ship.

5.0 CLAUSE H.13: Underlimit Changes

While it is not possible to predict how mission changes and functional circumstances will impact the need to issues changes to this contract in the future. The following provides the history on changes turned on against this clause (changes less than $700K). Fee is not included in the values. (Note: CMC 3 Clause is for changes less than 750K):

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx Value</td>
<td>$.943M</td>
<td>$1.96M</td>
<td>$2.29M</td>
<td>$.82M</td>
<td>$1.80M</td>
<td>$3.12</td>
</tr>
<tr>
<td>of all changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 700K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>authorized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx number</td>
<td>11</td>
<td>15</td>
<td>10</td>
<td>12</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>of changes or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFS associated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.0 History of Unique Tasks on CMC2:

The following table lists unique tasks from CMC2, which should be used to understand the potential scope of CMC3 IDIQ activities. Note that this table does not constitute a guarantee of cost or scope for CMC3 IDIQ activities.

<table>
<thead>
<tr>
<th>GENERAL SCOPE</th>
<th>APPROX. COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bags</td>
<td>$2.91M</td>
</tr>
<tr>
<td>Bags</td>
<td>$.38M</td>
</tr>
<tr>
<td>Bags</td>
<td>$1.88M</td>
</tr>
<tr>
<td>Bags</td>
<td>$.17M</td>
</tr>
<tr>
<td>Camera Equipment</td>
<td>$.88M</td>
</tr>
<tr>
<td>Bags</td>
<td>$2.88M</td>
</tr>
<tr>
<td>Item</td>
<td>Cost</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Bags</td>
<td>$0.86M</td>
</tr>
<tr>
<td>Design/Build C2V2 Antenna</td>
<td>$3.01M</td>
</tr>
<tr>
<td>Design/Build Food Warmer</td>
<td>$1.65M</td>
</tr>
<tr>
<td>Certify ICWC to launch on CRS Visiting Vehicles</td>
<td>$1.29M</td>
</tr>
<tr>
<td>Procure / Certify new laptop hardware</td>
<td>$1.02M</td>
</tr>
<tr>
<td>Design / Build PFCS FSE</td>
<td>$2.27M</td>
</tr>
<tr>
<td>Build Payload Data Architecture</td>
<td>$0.73M</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$19.93M</strong></td>
</tr>
</tbody>
</table>
ATTACHMENT L-9 OPERATIONAL SCENARIOS

1. Addressing Hardware Non-Conformances

Contractor A ordered several cables from their sub-contractor, Supplier A, to be integrated into higher-level assemblies that Contractor A was building for NASA. Supplier A delivered the cables as being certified to meet Space Station Quality (SSQ) requirements for stress crack resistance at high temperatures. After testing, melted spots and cracking of the cable wrap material are discovered. Subsequent testing of inventories of similar Supplier A built cables showed that the majority of the cables exhibited the same failures when tested, meaning they are also suspected of not meeting the SSQ requirements. Additionally, those same cables have already been delivered to the CMC3 facility to be integrated onto the higher-level assembly. Describe your approach to notifying the affected parties, addressing the non-conforming hardware, and working with the sub-contractor to develop a corrective action.

2. Addressing Dynamic High Priority Manifest Changes

The Center for the Advancement of Science in Space (CASIS) has informed NASA of a time-critical research opportunity which needs to launch on the next resupply vehicle. NASA has reviewed overall mission priorities and upcoming ISS operations, and has requested an updated CMC3 packing plan for five cargo bags within the next cargo shipment. The current packing plan for these bags (4 NASA Experiment Containers, one ISS Medical Accessory Kit (IMAK) and 20 Food BOBs) is provided below for reference.
NASA provided the following cargo priorities:

- 14 Standard Menu Food BOBs
- 2 CASIS Experiment Containers
- 4 NASA Experiment Containers
- 6 Crewmember Selected Food BOBs
- 1 IMAK

The cargo details are provided below for reference:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Name</th>
<th>Qty</th>
<th>Total Mass (kg)</th>
<th>Length (cm)</th>
<th>Width (cm)</th>
<th>Height (cm)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEG48102042-901</td>
<td>BULK OVERWRAP BAG</td>
<td>20</td>
<td>110</td>
<td>37.8</td>
<td>12.4</td>
<td>30.5</td>
<td>14 Mandatory Standard Menu 6 Crewmember Selected Food</td>
</tr>
</tbody>
</table>
Describe your approach to incorporating the manifest changes and maximizing the total amount of cargo accommodated, including a listing of the cargo accommodated and not accommodated. There are no other near term launches of visiting vehicles which meet the on-orbit need dates for the cargo.

3. **Addressing Hardware and Bag Issues**

Given the below sample of hardware and bag issues encountered during verification, recommend how the hardware issues should be resolved.

- A systems ORU, planned for launch on the next Commercial Resupply Services flight, “rattles” when rotated during inspection after receipt at the CMC3 cargo facility.
- A returned water sample appears to have leaked into its outer containment ziplock bag.
- A tool, planned for launch to ISS, does not have a completed eLRODS upon arrival at the CMC3 cargo facility.
- Microbial sampling results from individual hardware items packed for launch on the next Commercial Crew Flight have been released after the hardware has been packed by CMC3. The microbial levels are in excess of allowable ISS limits. The hardware is time critical and cannot be delayed from this launch. Cargo turnover for loading is within 3 weeks.
- A portable, handheld utilization experiment has an obvious burr on its outer structure after receipt at the CMC3 cargo facility for launch.
- A Visiting Vehicle provider reports that one of the ISS cargo bags to be loaded on their vehicle appears to be stained. The bag contains Waste and Hygiene Compartment hoses, which nominally contain toxic urine pretreat fluid.
- A delay in a Visiting Vehicle launch results in critical utilization consumables’ certified life expiration prior to the new launch date.

4. **International Shipping and Hardware Deliveries**

Due to an issue discovered with on-orbit medical kits, new medical kits need to be resupplied on-orbit as soon as possible for the on-orbit ISS crewmembers. NASA has commenced preparations to support two options for launching the replacement medical kits: launch on a Russian Progress
vehicle within 6 weeks or launch on a Japanese HTV within 8 weeks. The medical kits will be delivered to the CMC cargo facility in one week. Describe your schedule and approach for receiving the hardware from the provider, parallel plans for packing the medical kits for both vehicles, preparing parallel documentation for expedited shipments to support launch on both vehicles. Include a discussion of coordination that would be performed with the hardware provider, the freight forwarder, Rocket Space Corporation – Energia (RSC-E), and JAXA.
SECTION M – EVALUATION FACTORS FOR AWARD

M.1 FAR 52.252-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://www.acquisition.gov/far/
http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of provision)

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.217-5</td>
<td>JUL 1990</td>
<td>EVALUATION OF OPTIONS</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>CLAUSE NUMBER</th>
<th>DATE</th>
<th>TITLE</th>
</tr>
</thead>
</table>

(End of clause)

M.2 SOURCE EVALUATION BOARD EVALUATION FACTORS FOR AWARD

An initial review of proposals will be conducted to determine acceptability of the proposals in accordance with NASA FAR Supplement (NFS) 1815.305-70, Identification of Unacceptable Proposals. All unacceptable proposals will be eliminated from further evaluation.
Proposals will be evaluated by the Source Evaluation Board (SEB) in accordance with applicable regulations which include the Federal Acquisition Regulation (FAR) and the NASA FAR Supplement. The SEB will carry out the evaluation activities and report its findings to the Source Selection Authority (SSA) who is responsible for making the source selection decision.

The Government will award a contract resulting from this solicitation to the responsible Offeror whose proposal represents the best value to the Government. This procurement shall be conducted utilizing a combination of mission suitability, past performance and cost/price evaluation factors. The lowest price proposals may not necessarily receive an award; likewise, the highest technically rated proposals may not necessarily receive an award.

Of the three evaluation factors; Mission Suitability and Past Performance when combined are significantly more important than Cost/Price. Mission Suitability is approximately equal to Past Performance. Mission Suitability and Past Performance when separately evaluated are each approximately equal to Cost/Price.

The Government will evaluate the Offeror’s proposal using the factors and subfactors below. Although proposals are organized by factors and subfactors, the Government will conduct an integrated evaluation to consider consistency among proposal information. The Offerors are cautioned that a lack of consistency could lead to a weakness or deficiency in one or more of the factors or sub factors.

Therefore, all aspects of the Offeror’s proposal will be considered during the evaluation process, including the Offeror’s proposed Model Contract.

(End of provision)

M.3 VOLUME I – MISSION SUITABILITY FACTOR

The Mission Suitability factor and associated subfactors are used to assess the ability of the Offeror to provide and administer the requirements of the SOW. The Mission Suitability subfactors and their corresponding weights reflecting relative importance are listed below. These weights are intended to be used as a guideline in the source selection decision-making process.

<table>
<thead>
<tr>
<th>Management Approach</th>
<th>300 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Approach</td>
<td>450 points</td>
</tr>
<tr>
<td>Safety &amp; Health Approach</td>
<td>150 points</td>
</tr>
<tr>
<td>Small Business Participation</td>
<td>100 points</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1000 points</strong></td>
</tr>
</tbody>
</table>
Proposals will be evaluated and scored numerically based upon the subfactors set forth below. The Government will interpret failure to provide sufficient detail and rationale, use of ambiguous terms, or inconsistencies noted during the evaluation of proposal information, as a lack of understanding on the part of the Offeror and the Offeror is notified that this may affect their Mission Suitability score. The Offeror is also notified that a lack of resource realism may adversely affect their Mission Suitability score and result in cost realism adjustments under the Cost/Price factor.

**M.3.1 MANAGEMENT APPROACH (MA)**

The Offeror’s management approach (with supporting rationale) for fulfilling the contract requirements will be evaluated using the Management Approach subfactor elements as described below. Failure to capture proposed efficiencies and innovations in the model contract may result in loss of mission suitability points.

MA1. **Management Approach** – The Offeror’s Overall Management Approach (Subfactor 1 MA1) will be evaluated for overall demonstrated understanding, effectiveness, feasibility, efficiency, and innovation.

MA2. **Staffing and Critical Skills Approach** – The Offeror’s Staffing Approach (Subfactor 1 MA2) will be evaluated for overall demonstrated understanding, effectiveness, feasibility, efficiency, and consistency with the overall management approach and rationale. The information in Compensation Templates (a) through (d) will be evaluated as part of the Total Compensation Plan as it relates to the staffing approach.

MA3. **Contract Phase-in Approach** – The Offeror’s Contract Phase-in Plan (MA3) will be evaluated for overall demonstrated understanding, effectiveness, feasibility, efficiency, and completeness.

MA4. **Key Personnel Approach** – The Offeror’s Key Personnel Approach (MA4) will be evaluated for overall demonstrated understanding, effectiveness, feasibility, efficiency, consistency and completeness, including the proposed Key Personnel.

**M.3.2 TECHNICAL APPROACH (TA)**

The Offeror’s demonstrated in-depth understanding of the requirements (with supporting rationale) will be evaluated in Technical Approach subfactor element as described below.

TA1. **Specific Technical Understanding and Resources** - The Government will evaluate the Offeror’s Specific Technical Understanding and Resources response for overall demonstrated comprehensive understanding, effectiveness, soundness, feasibility, efficiency and innovation. For any proposed improvements, innovations, and efficiencies, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract. Failure to capture proposed
efficiencies and innovations in the Model Contract’s Proposed Attachment J-21, Innovations and Efficiencies, may result in loss of mission suitability points.

The evaluation will cover the items found in Section L.16.3.2 Subfactor 2 Technical Approach, Volume I Mission Suitability.

M.3.3 SAFETY AND HEALTH APPROACH

The Offeror’s Safety and Health Approach will be evaluated for overall demonstrated understanding, effectiveness, feasibility, efficiency, and completeness.

M.3.4 SMALL BUSINESS UTILIZATION APPROACH (SBU)

The evaluation of Small Business Subcontracting and Commitment to the Small Business Program applies to all Offerors, except that Small Businesses are not required to submit a Small Business Subcontracting Plan. The evaluation of SDB participation applies to all Offerors.

SBU1. SMALL BUSINESS SUBCONTRACTING

The Small Business Subcontracting Plan, (DRD CMC-PR-06), will be evaluated in terms of reasonableness and soundness of the Offeror’s independent assessment to achieve the proposed overall subcontracting goals, in comparison to the Contracting Officer’s assessment of the appropriate subcontracting goals for this procurement. The Offeror’s Small Business Subcontracting Plan will also be evaluated in terms of meeting the requirements of FAR 19.704, Subcontracting Plan Requirements. The evaluation of the Small Business Subcontracting Plan will be on the basis of total contract value. Additionally, the Offeror’s rationale for proposing higher and/or lower goals than those determined appropriate by the Contracting Officer will also be evaluated. The information provided in the Small Business Subcontracting Tables, Attachment L-3, will be evaluated in addition to the supplied narrative.

Small businesses are not required to submit subcontracting plans. The Government will only evaluate the amount of work proposed to be performed by the small business prime and any small business at the first tier subcontract level. The proposed amount of work to be done by the prime small business and first tier small business subcontractors will be evaluated against the Contracting Officer’s assessment of the overall subcontracting goal for this procurement. Individual subcontracting goals by small business categories will not be evaluated for small business primes and their first tier subcontractors.

SBU2. COMMITMENT TO THE SMALL BUSINESS PROGRAM

The Government will evaluate the extent to which any work performed by a small business subcontractor(s) is identified as “high technology”. NASA also will evaluate the extent of commitment to use the subcontractor(s) (enforceable vs. non-enforceable...
commitments). The Government will evaluate the potential risks or impacts to performance throughout the site when subcontracting out such efforts and the associated mitigations of those risks.

The Government will evaluate the extent to which the identity of the small business subcontractor is specified in the proposal as well as the extent of the commitment to use small businesses and to support their development. (For small business Offerors, NASA will evaluate this only if subcontracting opportunities exist.)

The Government will evaluate the Offeror’s established or planned procedures and organizational structure for small business outreach, assistance, participation in the Mentor Protégé program, counseling, market research and small business identification, and relevant purchasing procedures. (For large businesses Offerors, this information should conform to its submitted Small Business Subcontracting Plan. For small business Offerors, NASA will evaluate this only if subcontracting opportunities exist.)

(End of provision)

M.4 VOLUME II – PAST PERFORMANCE FACTOR

Past Performance indicates how well an Offeror performed on earlier work and can be an indicator of how well it can be expected to perform the work at hand. The SEB will evaluate the past performance of the Offeror and major subcontractors, as defined in Section L.17 Past Performance Factor.

The Government will use past performance information from proposal data required by provisions of Section L.17 Past Performance Factor, information obtained by the SEB based on communications with listed references, as well as data independently obtained from other government and commercial sources, such as the Past Performance Information Retrieval System and similar systems of other governmental departments and agencies, Defense Contract Management Agency (DCMA) channels, interviews with client program managers and contracting officers, and other sources known to the Government, including commercial sources. Offerors are to note that, in conducting this assessment, the Government reserves the right to use both data provided by the Offeror and data obtained from other sources. In accordance with FAR 15.305, an Offeror without a record of relevant past performance or for whom information on past performance is not available, a rating of neutral will be assigned.

Three aspects are taken into consideration when determining the Offerors past performance confidence rating. These aspects are recency, relevance, and performance. A description of each aspect is provided below.
**REGENCY**
Only contract period of performances within 5 years from the date of the CMC3 original solicitation will be considered in the past performance evaluation. Within this 5 year period, more recent performance will receive greater consideration in the performance confidence assessment than those with more distant performance, assuming all other considerations to be equal. The Government will not consider any contract that has no documented performance history.

**RELEVANCE**
If the contract is deemed recent, the Government will then determine the degree of relevance - i.e., level of pertinence - of the contract based on size, content, and complexity. Contracts that exhibit all specific trades/type of work required under the solicitation statement of work will be considered more relevant than contracts limited to specific trades only.
- The term “size” considers the contract value and/or workforce staffing in comparison to the requirements of this solicitation.
- The term “content” considers the contract’s scope of services, work, requirements, or supplies, in comparison to the requirements of this solicitation.
- The term “complexity” considers items such as contract type, experience with special terms and conditions and/or context of performance in comparison to the requirements of this solicitation.

For purposes of this procurement, relevance will be assessed using the following definitions:

<table>
<thead>
<tr>
<th>Relevancy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Relevant</td>
<td>Present/past performance effort involved essentially the same content, complexity, and size of effort this solicitation requires.</td>
</tr>
<tr>
<td>Relevant</td>
<td>Present/past performance effort involved much of the content, complexity, and size of effort this solicitation requires.</td>
</tr>
<tr>
<td>Somewhat Relevant</td>
<td>Present/past performance contractual effort involved some of the content, complexity, and size of effort this solicitation requires.</td>
</tr>
<tr>
<td>Not Relevant</td>
<td>Present/past performance effort involved little or none of the content, complexity, and size of effort this solicitation requires.</td>
</tr>
</tbody>
</table>

This evaluation will consider what the corporate parent, affiliate, or other organizational entities (division(s), business units, segments) are responsible for and/or proposing to do on the CMC3 effort and the specific resources (workforce, management, facilities, or other resources) to be employed and relied upon, such that the corporate parent, affiliate, or other organizational entity your company will have meaningful involvement in contract performance, in determining relevance. Offerors with past performance as part of a joint venture will be evaluated on the entirety of the work performed by the joint venture.

**PERFORMANCE**
The Government will assess the performance quality, schedule adherence, cost control, small business subcontracting, and safety performance of the contracts which are considered to be recent and relevant (how well the contractor performed on the contracts). The quality assessment consists of an in-depth evaluation of all past performance information available, regardless of its source. The quality assessment may result in positive or adverse findings. The Government will consider the number and severity of problems, the effectiveness of corrective actions taken that have resulted in sustained improvements, and the overall record of past performance. This assessment will lead the Government to determine the quality of performance as either Excellent, Very Good, Satisfactory, Marginal, or Poor/Unsatisfactory.

The past performance of a major subcontractor will be compared to the work proposed to be performed by that subcontractor, and weighted accordingly in assigning the overall past performance adjectival rating to the Offeror. The proposed past performance effort of the program manager will receive less consideration in the performance confidence assessment than the proposed past performance effort of the same recency, relevance, and performance quality of that offeror by a prime or subcontractor.

**PAST PERFORMANCE CONFIDENCE RATING**

More recent and more relevant past performance will receive greater consideration in the performance confidence assessment than less recent or less relevant past performance. A performance confidence rating will be assessed at the overall factor level for Past Performance after evaluating aspects of the Offeror’s recent and relevant past performance.

Each of the adjective ratings below has a "performance" component and a “relevance” component as discussed above. As used in the ratings below, the term “pertinent” is equivalent to the term “relevant.” Offeror Performance Confidence Assessment Ratings will be assigned as follows:

**VERY HIGH LEVEL OF CONFIDENCE**

The Offeror’s relevant past performance is of exceptional merit and is very highly pertinent to this acquisition, indicates exemplary performance in a timely, efficient, and economical manner and very minor (if any) problems with no adverse effect on overall performance. Based on the Offeror’s performance record, there is a very high level of confidence that the Offeror will successfully perform the required effort.

**HIGH LEVEL OF CONFIDENCE**

The Offeror’s relevant past performance is highly pertinent to this acquisition; demonstrating very effective performance that would be fully responsive to contract requirements. Offeror’s past performance indicates that contract requirements were accomplished in a timely, efficient, and economical manner for the most part, with only minor problems that had little identifiable effect on overall performance. Based on the Offeror’s performance record, there is a high level of confidence that the Offeror will successfully perform the required effort.
**MODERATE LEVEL OF CONFIDENCE**
The Offeror’s relevant past performance is pertinent to this acquisition, and it demonstrates effective performance. Performance was fully responsive to contract requirements; there may have been reportable problems, but with little identifiable effect on overall performance. Based on the Offeror’s performance record, there is a moderate level of confidence that the Offeror will successfully perform the required effort.

**LOW LEVEL OF CONFIDENCE**
The Offeror’s relevant past performance is at least somewhat pertinent to this acquisition, and it meets or slightly exceeds minimum acceptable standards. Offeror achieved adequate results; there may have been reportable problems with identifiable, but not substantial, effects on overall performance. Based on the Offeror’s performance record, there is a low level of confidence that the Offeror will successfully perform the required effort. Changes to the Offeror’s existing processes may be necessary in order to achieve contract requirements.

**VERY LOW LEVEL OF CONFIDENCE**
The Offeror’s relevant past performance does not meet minimum acceptable standards in one or more areas; remedial action was required in one or more areas. Performance problems occurred in one or more areas which, adversely affected overall performance. Based on the Offeror’s performance record, there is a very low level of confidence that the Offeror will successfully perform the required effort.

**NEUTRAL**
In the case of an Offeror without a record of relevant past performance or for whom information on past performance is not available, the Offeror may not be evaluated favorably or unfavorably on past performance [see FAR 15.305(a) (2) (ii) and (iv)].

**M.5 VOLUME III – COST/PRICE FACTOR**

The Government will evaluate proposed costs and establish the probable cost of doing business with each Offeror. The Offeror's Cost/Price will be evaluated for the validity, realism and adequacy of each cost proposal and the probable cost that will be incurred in the performance of this effort. The evaluation of cost will include an assessment of the cost of doing business with each Offeror, predicted growth in proposed cost during the performance of the work, and the features of each Offeror's situation that would cause its proposed effort to cost more or less than that which was proposed by the Offeror.

To ensure that the final agreed-to prices are fair and reasonable, the Government will perform these analyses in accordance with FAR 15.305-Proposal Evaluation, FAR 15.404-Proposal Analysis, and NASA FAR Supplement (NFS) 1815.305 - Proposal Evaluation.

**EVALUATION OF ISS CORE AND ORION CORE WORK CPAF**
The Government will perform price analysis and cost realism analysis of the proposed Core and Orion Option price to include cost elements such as direct labor FTEs and/or direct
labor hours, direct labor rates, indirect rates, subcontract costs, Non-Labor Resources (NLRs), and fee, including fee rates.

Cost realism will be performed to determine the probable cost of performance for each Offeror. The Government’s probable cost may differ from the proposed cost because it will reflect the Government’s best estimate of the cost of the contract that is most likely to result from the Offeror’s proposal. The probable cost may include adjustments to an Offeror’s proposed cost, and fee when appropriate, to reflect any additions or reductions in cost elements to realistic levels based on the results of cost realism analysis and/or mathematical corrections to the application of formulas and/or rates to either hours or NLRs.

The probable cost for the sum of all contract years including option years (contract years 1 – 6.5) will be used for purposes of evaluation and selection.

**COST AND FEE IDIQ RFP SPECIFIED LEVEL OF RESOURCES**
The Government will perform cost analysis and cost realism analysis of all proposed Fully Burdened Rates (FBRs), including the direct labor rate, indirect rates, and fee components.

For purposes of proposal evaluation and source selection, the proposed cost calculated from the application of the Offeror’s FBRs to the Government specified resources for labor provided, plus the application of the Offeror’s applicable burdens to the Government provided NLR profile, plus the application of the NTE fee rate to either or both the aforementioned labor and NLR resources will be considered, in total for all contract years. However, the Government’s probable cost may differ from the proposed cost as a result of changes to the Offeror’s proposed FBRs and/or any discrepancies between the FBRs used in the cost proposal versus those in Section B of the Model Contract and/or mathematical corrections to the application of rates to either hours or NLRs.

The probable cost for the sum of all contract years will be used for purposes of evaluation and selection.

**PHASE-IN**
The Government will perform price analysis of the proposed phase-in effort.

**PROPOSED AND PROBABLE COSTS FOR SELECTION PURPOSES**
The results of the Government’s cost evaluation will be presented to the Source Selection Authority (SSA) for consideration in making the source selection. The proposed and probable costs of the CPAF ISS Core, CPAF Orion Core Option and the IDIQ with the proposed FFP Phase-in, inclusive of the basic and option periods (all 6.5 years) of performance will be summed and presented to the SSA.

(End of provision)

**M.6 VOLUME IV – RESPONSIBILITY CONSIDERATIONS**

An Offeror must be considered to be responsible for award in accordance with FAR 9.104.
Organizational Conflict of Interest Information, Subcontractor Arrangement Information, Business System Adequacy, and the Government Property Management Plan are used to determine responsibility. The items listed below are important Responsibility Considerations; however, these items may not constitute all Responsibility Considerations that will be addressed by the SEB pursuant to FAR 9.104.

The Contracting Officer may choose to evaluate this information for the Offerors in the Competitive Range or the apparent Successful Offeror only.

(a) BUSINESS SYSTEM ADEQUACY

FAR 16.301-3, Cost-Reimbursable Contracts, Limitations, requires that a contractor's accounting system be adequate for determining costs applicable to the contract prior to the award of a cost-reimbursement contract. Therefore, each Offeror shall indicate whether they have, or do not have, an accounting system that has been determined to be adequate by the Government and shall provide evidence as to the adequacy of their accounting system as determined by the Cognizant Federal Agency, such as DCMA or NASA. An adequate accounting system is not an evaluation criterion. It is a basic contract requirement with a pass/fail determination. A contract may only be awarded to the Offeror(s) who are determined to have an adequate accounting system.

Other business systems, will be reviewed for responsibility in accordance with FAR 9.104-1, General Standards and the Cost Accounting Standards Disclosure Statement will be reviewed in accordance with FAR 30.202-6, Responsibilities. FAR 30.202-6, Responsibilities, states that the Contracting Officer shall not award a CAS-covered contract to an Offeror until the Cognizant Federal Agency Official (CFAO) has made a written determination that a required Disclosure Statement is adequate.

A newly formed Joint Venture (JV) may propose an accounting system that is the same as a legacy system currently in use by one of the parties to the JV. This is a reasonable way to establish prior to award that the accounting system being proposed is adequate to receive a contract award as long as the system being proposed is, in all material respects, the same system that was previously determined to be adequate for determining costs applicable to a specific contract as required by FAR 16.301-3(a)(3). Any JV proposal that places reliance on the adequacy of a legacy accounting system to establish the adequacy of the accounting system being proposed should clearly state that the system being proposed is the same as the system that has already been determined to be adequate. This documentation should identify who (e.g. the agency, independent auditor, contracting officer, other party) determined the accounting system being proposed to be adequate and when that determination was made. In summary, an existing and adequate accounting system can demonstrate a proposed system is adequate for award so long as both accounting systems are the same.

However, if a newly created accounting system is proposed or if the system being proposed has not already been determined adequate, consistent with FAR 16.301-
3(a)(3), the Contracting Officer may obtain additional information to determine its adequacy for contract award.

Following contract award, a more comprehensive post-award accounting system review may be conducted.

(b) ORGANIZATIONAL CONFLICT OF INTEREST (OCI) PLAN

The Government will perform an analysis to ensure an Organizational Conflict of Interest issue that cannot be mitigated does not exist. The OCI Plan will be assessed to verify the Offeror is considered to be responsible for award. If it appears an OCI issue does exist that the Offeror’s plan failed to mitigate, the government must notify the contractor, provide the reasons therefore, and allow the contractor a reasonable opportunity to respond. The contracting officer will make the final determination if the OCI issue exists and can be mitigated.

(c) Property Management Plan

The Property Management Plan (DRD CMC-PR-01) to use/maintain/repair/protect/preserve Government personal property will be evaluated for effectiveness and suitability.

(d) Subcontracting Arrangement Information

The Subcontracting Arrangement Information will be assessed to determine if a formal size determination needs to be made by the Small Business Administration (SBA) and to confirm that the prime contractor making the offer will be performing the primary and vital requirements for the contract. The proposal evaluation may proceed until a final determination is made by the SBA. Offerors are advised that the formal size determination made by SBA may result in the Offeror not being eligible for award.

For any 8(a) joint venture, SBA must approve the joint venture agreement prior to the award of a contract on behalf of the joint venture. All Joint Ventures (regardless of size status) should have a new DUNS number and Cage Code number for the Joint Venture and must be registered in the System for Award Management (SAM). Joint Ventures cannot use the DUNS number or Cage Code for any of the entities in the Joint Venture.

(End of provision)

M.7 VOLUME V – MODEL CONTRACT

The model contract will be evaluated to ensure that it was signed by a person authorized to commit the Offeror, that there is completion of all fill-ins, all pages of the contract are submitted, and that it accurately captures the content as set forth in the Offeror’s proposal. Material errors or inconsistencies in the Model Contract may result in an Offeror being removed from consideration for award.
(End of provision)

(END OF SECTION)