

National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, Texas 77058-3696



July 6, 2026

BG-26-068r1

TO: All Potential Offerors

SUBJECT: Draft Request for Proposal (DRFP), Solicitation No. 80JSC026R0021,
for the Commercial Low Earth Orbit (LEO) Destination Contract
(CLDC) Acquisition

You are invited to review and comment on the National Aeronautics and Space Administration (NASA) Johnson Space Center's (JSC) CLDC draft solicitation.

The principal purpose of this requirement is for NASA to acquire services from a commercially owned and operated LEO Destination that can provide safe, reliable, and cost-effective end-to-end services to succeed the International Space Station (ISS). This will ensure NASA has a sustained human presence in LEO for crew members to perform science and exploration. As part of this service, the Contractor(s) will design, build, and operate the Commercial LEO Destination (CLD) which covers all aspects of development and certification, including design, manufacturing, demonstration/testing, qualification, production, transportation vehicles, including operational missions (cargo/crew) and utilization activities post CLD certification. Given the complexity of the contract, NASA is encouraging use of NASA personnel and expertise using a Government Collaboration Agreement (GCA). NASA has unique personnel and expertise that NASA is making available to the CLD Contractor.

NASA will conduct this acquisition as a full-and-open competition. This competitive acquisition will result in a Multi-Award Indefinite Delivery, Indefinite Quantity (IDIQ) contract with the ability to issue Firm-Fixed-Priced (FFP) task orders. The contract will have an effective ordering period of 8 years from the contract effective date, and four option periods to extend the ordering period as follows: a 2-year Option Period 1, a 2-year Option Period 2, 2-year Option period 3 and a 1-year Option Period 4 for a total potential ordering period of 15 years.

The current planned release date for the Final Request for Proposal (RFP) is late August 2026, with proposals being due approximately sixty (60) calendar days later.

The anticipated contract award date is early Spring 2027, with an effective date occurring

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on the same day as the award. The contracts will primarily be performed off-site at the Contractor's facilities; Contractors may perform some aspect of the work on-site at NASA centers as enabled by NASA Collaborations or Government Task Agreements (GTAs).

The North American Industry Classification System (NAICS) code for this acquisition is 336414, Guided Missile and Space Vehicle Manufacturing, and the small business size standard is 1,300 employees.

Potential Offerors are encouraged to comment on all aspects of the draft solicitation, including the schedules, proposal instructions (DRFP's Section L), and evaluation approaches (DRFP's section M criteria); any perceived safety, security (including information technology security), export control, and/or other programmatic risk issues associated with performance of the work. Offerors should identify potential Organizational Conflicts of Interest (OCI), any unclear or inefficient requirements, unique terms and conditions, and are encouraged to comment on the DRFP Contract Line-Item Number (CLIN) structure and the Offeror's ability to effectively price CLINs. In addition, the Contracting Officer is seeking Industry feedback and recommendations on the following:

- a. Schedule B, Pricing structure (all CLINs) – Industry's understanding of the pricing requirements and any specific feedback for NASA on these requirements to ensure clarity.
- b. Section C, Statement of Work (SOW) including any requirements that could be overly restrictive/prescriptive.
- c. Technical Library and any requirements that are unnecessarily driving cost or design.
- d. Any elements of NASA's approach that could hinder a proposed solution.
- e. NASA's approach to legal and liability framework.
- f. Indemnification Under Public Law 85-804 outlined in Section L.17.5 including activities that would arise that are considered unusually hazardous risks, and any issues faced by Offerors to develop a reasonable risk allocation structure.
- g. Section J, Attachment J-11 and Attachment J-12, Work Plans – including on Performance Based Milestone definitions, milestone percentages, and clarity of instructions for Offeror to propose additional interim milestones including feedback to ensure the milestones are verified mission critical outcomes and focus on achievement of major mission outcomes that exceed contract requirements
- h. Any Proposed Government Furnished Property, Equipment and Services that could be provided by the Government in Attachment J-13 Government Furnished Property, Data and Information for the Final RFP. Government property may be provided for use during performance of the contract. The Government will consider options for the use disposition of Government property after completion of contract performance in accordance with FAR 45.6, Reporting, Reutilization, and Disposal.
- i. The amount and type of Past Performance data requested and/or the value of the Government evaluating Past Performance for this acquisition, if any.
- j. The requirement for providing an End-to-End service including transportation. If Government Furnished Transportation and Support Services (GFTSS) is desired, please

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specify your alternative approach including the scope of services needed, number and type of missions per year, timing, any changes proposed to J-15 to support your proposed architecture and when you would be ready to transition to full End-to-End service.

Potential Offerors should ensure their company is listed in the online databases(s) for the following:

- (1) System for award management and Government Point of Entry (GPE):
<https://www.sam.gov/SAM/>
- (2) U.S. Department of Labor Veterans' Employment and Training Service, VETS-4212 Reports: <https://vets4212.dol.gov/vets4212/>
- (3) US Government's unique entity identifier (UEI): <https://sam.gov/entity-registration>

The following additional information is provided to assist in understanding this acquisition:

- (1) NASA will hold a DRFP Preproposal Conference on July 9, 2026. The purpose is to present key aspects of the DRFP and solicit feedback from Potential Offerors to support NASA's development of the Final RFP. The Government will offer one-on-one communication opportunities for Prime Offerors and Transportation Providers from Monday, July 13, 2026, through Wednesday, July 15, 2026.
- (2) This contract does not include a phase-in period.
- (3) NASA has determined that this acquisition may give rise to a potential Organizational Conflict of Interest (OCI). Offerors should refer to NASA FAR Supplement (NFS) clause 1852.209-71, *Limitation of Future Contracting*, for a description of the potential conflict(s) and any restrictions on future contracting.
- (4) The Offeror shall obtain and maintain National Security Facility Clearance Level (FCL) up to TOP SECRET and, as identified by the Government at the task order level requested by the Critical Design Review. The Offeror will be responsible for providing a SECRET/TOP SECRET security clearances for personnel supporting functions identified by NASA as requiring this level of clearance. The Offeror shall provide personnel that can obtain and maintain a Top Secret/Sensitive Compartmented Information (SCI) clearance. NASA will sponsor SCI clearances.
- (5) Once a final RFP is released, NASA anticipates requiring proposals to be submitted through NASA's Enterprise File Sharing and Sync Box (EFSS Box), a FedRAMP Moderate certified platform. Potential Offerors, especially those who have not previously submitted a proposal utilizing NASA's EFSS Box, are encouraged to review the DRFP instruction entitled L.15, *Electronic Submission of Proposals – Proposal Marking and Delivery Through NASA's EFSS Box*, which provides instructions related to the submission of proposals. Offerors are encouraged to check with their corporate Information Technology (IT) staff to determine if there are firewall restrictions that need to be addressed prior to the submission of proposal files through NASA's EFSS Box.
- (6) Throughout the RFP, NASA designates "TBD" to identify information NASA will complete and "Offeror fill-in" or "OFI" to designate a section to be filled-in/proposed by the Offeror.
- (7) An electronic Technical Documents Library (TDL) is available for various types of

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reference data and other pertinent applicable documents and information regarding this acquisition and its requirements. The CLDC electronic library is available at www.SAM.gov and at the acquisition's website. The Technical Library will continue to be updated until Final RFP.

- (8) NASA anticipates requesting Indemnification information in Responsibility L.17.5 paragraph (f) *Indemnification Under Public Law 85-804 Request*. Potential Offerors are advised that there is no guarantee that indemnification requests, if submitted, will be granted.

To promote competition and understanding of the RFP, Offerors are encouraged to suggest any additional information to be made available in the TDL. For additional TDL information requests to be considered in a timely manner, suggested information must be requested in writing within fourteen (14) calendar days after the release of this draft RFP. The Government does not guarantee requested TDL documents will be made available and will not release documents that are marked as containing confidential, proprietary, competition sensitive, or business information.

Documents related to this acquisition, including this letter, the solicitation, attachments, exhibits, any amendments, and links to online reference/technical/bidders' library will be attainable electronically from the World Wide Web through the Government-wide point of entry website at www.SAM.gov. Potential Offerors are requested to periodically monitor the websites for updates. To view additional information related to this acquisition, potential Offerors can also attain information electronically at the JSC Office Of Procurement website at www.nasa.gov/johnson/jsc-procurement/cldc/.

NASA FAR Supplement (NFS) clause 1852.215-84, *Ombudsman*, is applicable. The Ombudsman for this acquisition is Donna Shafer, JSC Associate Director, donna.m.shafer@nasa.gov

This DRFP is not a solicitation, and NASA is not requesting proposals. This DRFP does not commit NASA JSC to pay any proposal preparation costs, nor does it obligate NASA JSC to procure or contract for this requirement. This request is not an authorization to proceed and does not authorize payment for any charges incurred by the Offeror for performing any of the work called for in this draft solicitation.

Any questions/comments regarding the DRFP should be submitted electronically in writing to Ashley Chaves, Contracting Officer, at jsc-cldc@mail.nasa.gov, within eighteen (18) calendar days after the release of this draft RFP. Comments and/or questions should be provided using the attached "CLDC DRFP Feedback Template" while referencing applicable sections and paragraphs. If a respondent believes their comments contain confidential, proprietary, competition sensitive, or business information, those questions/comments shall be marked appropriately. However, questions that are marked as containing confidential, proprietary, competition sensitive, or business information will not be provided with a NASA response. NASA will consider all comments received in preparation for the final RFP. To the extent a comment leads NASA to revise the acquisition approach or requirements, the change will be reflected in the final RFP. Some draft RFP questions and comments may receive a posted

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response to the GPE if the Contracting Officer determines that a response would facilitate additional understanding of the solicitation. NASA may also respond via the GPE to comments and/or questions received following the issuance of the final RFP.

Ashley Chaves
Contracting Officer

Enclosure:
Draft RFP 80JSC026R0021
CLDC DRFP Feedback Template

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NASA-Johnson Space Center, Houston, Texas

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PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

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CONTRACT TYPE

The Commercial Low-Earth Orbit (LEO) Destination Contract (CLDC) is a Firm-Fixed Price (FFP) contract. All Indefinite Delivery, Indefinite Quantity (IDIQ) Task Orders shall be FFP.

(End of Text)

1852.216-78 FIRM-FIXED-PRICE (DEC 2025) (PCD 25-53A)

The Contractor shall provide all services, facilities and resources necessary to furnish the CLINs below in accordance with table, *Services to be Provided* per the Section C, *Statement of Work* (SOW) and Section J, *Data Requirements Descriptions*; all other requirements specified throughout the contract and any authorized task orders, except for resources provided by the Government under NFS 1852.245-76, *List of Government Property Furnished Pursuant to FAR 52.245-1*, NFS 1852.227-88, *Government-furnished computer software and related technical data*, and, *Use of Government Resources*.

The Government may order services at any time within the ordering period and in accordance with the procedures set forth in this contract in accordance with NFS 1852.216-80 *Task Ordering Procedure* and, *Task Ordering Procedures – Supplement*. Table *Services to be Provided*, summarizes the Total Contract Value.

The total firm-fixed-price of this contract is \$OFI.

SERVICES TO BE PROVIDED

CLIN	CLIN TITLE	Price
1	INITIAL DEVELOPMENT	\$OFI
2	CLDS DEVELOPMENT, DEMONSTRATION & CERTIFICATION	TBD
3	MISSION SERVICES	TBD
3A	SERVICE MISSION A	TBD
3B	SERVICE MISSION B	TBD
3C	STANDARD SERVICE MISSION	TBD
4	PRE-PRICED ADDITIONAL SERVICES	TBD
5	CLDS SPECIAL TASKS & STUDIES	TBD
Total Contract Value		\$OFI

*This clause shall be unilaterally updated periodically to reflect the total value of task orders issued.

(End of Text)

PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

INITIAL DEVELOPMENT (CLIN 1)

CLIN 1 is for the initial Design, Development, Test and Evaluation (DDT&E) in accordance with SOW 3.1. All Contractor-defined interim and mandatory milestones along with schedule, price, and entrance/success criteria are identified in Attachment J-11, *Certification Work Plan*.

The CLIN 1 firm-fixed price of this contract is \$OFI.

(End of Text)

CLDS DEVELOPMENT, DEMONSTRATION & CERTIFICATION (CLIN 2)

CLIN 2 includes the design, manufacturing, testing and evaluation, integration, operational readiness and performance of a crewed demonstration to achieve a Final System Certification of a CLDS to meet the requirements of a CLIN 3C Standard Service Mission in accordance with SOW 3.2.

All Contractor-defined interim and mandatory milestones along with schedule, price, and entrance/success criteria are identified in Attachment J-11, *Certification Work Plan*.

The CLIN 2 firm fixed price of this contract is \$OFI.

(End of Text)

MISSION SERVICES (CLIN 3)

CLIN 3 includes the three (3) types of Missions: Service Mission A, B, and Standard Service Missions in accordance with SOW 3.3. Capabilities and allocations identified are for NASA use as defined in SOW 3.3.1, 3.3.2 and 3.3.3.

The tables indicate multiple mission discount pricing which is applicable for a combination of mission orders scheduled to start in the same calendar year and for the same Mission Service type. All Mission Service prices are Not-To-Exceed (NTE) prices based on the year the mission is ordered.

The pricing tables for each Mission Service type identifies separate pricing for End-to-End Service Missions and CLD Only Service Mission pricing as defined in SOW 3.3 Mission Service Description.

The Contracting Officer may issue Task Orders (TOs) for single or multiple missions per Calendar Year (CY) based on the pricing shown in Section B. The tables below provide pricing for each Mission Service type.

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

SERVICE MISSION A (CLIN 3A)

END-TO-END SERVICE MISSION A PRICING*

Mission A		Mission A	
Qty 1 Mission		Qty 2 Missions (Bulk Buy)	
CY	Crew Qty 2	CY	Crew Qty 2
2029	\$OFI	2029	\$OFI
2030	\$OFI	2030	\$OFI
2031	\$OFI	2031	\$OFI
2032	\$OFI	2032	\$OFI
2033	\$OFI	2033	\$OFI
2034	\$OFI	2034	\$OFI
2035	\$OFI	2035	\$OFI

CLD ONLY SERVICE MISSION A PRICING*

Mission A		Mission A	
Qty 1 Mission		Qty 2 Missions (Bulk Buy)	
CY	Crew Qty 2	CY	Crew Qty 2
2029	\$OFI	2029	\$OFI
2030	\$OFI	2030	\$OFI
2031	\$OFI	2031	\$OFI
2032	\$OFI	2032	\$OFI
2033	\$OFI	2033	\$OFI
2034	\$OFI	2034	\$OFI
2035	\$OFI	2035	\$OFI

*Offeror may N/A the Service Mission A pricing table or specific years if proposal does not include this configuration or the service is not yet available.

SERVICE MISSION B (CLIN 3B)

END-TO-END SERVICE MISSION B PRICING*

Mission B		Mission B	
Qty 1 Mission		Qty 2 Missions (Bulk Buy)	
CY	Crew Qty 2	CY	Crew Qty 2
2029	\$OFI	2029	\$OFI
2030	\$OFI	2030	\$OFI
2031	\$OFI	2031	\$OFI
2032	\$OFI	2032	\$OFI
2033	\$OFI	2033	\$OFI
2034	\$OFI	2034	\$OFI
2035	\$OFI	2035	\$OFI

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PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

CLD ONLY SERVICE MISSION B PRICING*

Mission B		Mission B	
Qty 1 Mission		Qty 2 Missions (Bulk Buy)	
CY	Crew Qty 2	CY	Crew Qty 2
2029	\$OFI	2029	\$OFI
2030	\$OFI	2030	\$OFI
2031	\$OFI	2031	\$OFI
2032	\$OFI	2032	\$OFI
2033	\$OFI	2033	\$OFI
2034	\$OFI	2034	\$OFI
2035	\$OFI	2035	\$OFI

* Offeror may N/A the Service Mission B pricing table or specific years if proposal does not include this configuration or the service is not yet available.

STANDARD SERVICE MISSION (CLIN3C)

END-TO-END STANDARD SERVICE MISSION PRICING

Standard Mission				Standard Mission			
Qty 1 Mission				Qty 2 Missions (Bulk Buy)			
CY	Crew Qty 2	Crew Qty 3	Crew Qty 4	CY	Crew Qty 2	Crew Qty 3	Crew Qty 4
2029	\$OFI	\$OFI	\$OFI	2029	\$OFI	\$OFI	\$OFI
2030	\$OFI	\$OFI	\$OFI	2030	\$OFI	\$OFI	\$OFI
2031	\$OFI	\$OFI	\$OFI	2031	\$OFI	\$OFI	\$OFI
2032	\$OFI	\$OFI	\$OFI	2032	\$OFI	\$OFI	\$OFI
2033	\$OFI	\$OFI	\$OFI	2033	\$OFI	\$OFI	\$OFI
2034	\$OFI	\$OFI	\$OFI	2034	\$OFI	\$OFI	\$OFI
2035	\$OFI	\$OFI	\$OFI	2035	\$OFI	\$OFI	\$OFI
2036	\$OFI	\$OFI	\$OFI	2036	\$OFI	\$OFI	\$OFI
2037	\$OFI	\$OFI	\$OFI	2037	\$OFI	\$OFI	\$OFI
2038	\$OFI	\$OFI	\$OFI	2038	\$OFI	\$OFI	\$OFI
2039	\$OFI	\$OFI	\$OFI	2039	\$OFI	\$OFI	\$OFI
2040	\$OFI	\$OFI	\$OFI	2040	\$OFI	\$OFI	\$OFI
2041	\$OFI	\$OFI	\$OFI	2041	\$OFI	\$OFI	\$OFI
2042	\$OFI	\$OFI	\$OFI	2042	\$OFI	\$OFI	\$OFI

CLD ONLY STANDARD SERVICE MISSION

Standard Mission		Standard Mission	
Qty 1 Mission		Qty 2 Missions (Bulk Buy)	

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PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

CY	Crew Qty 2	Crew Qty 3	Crew Qty 4	CY	Crew Qty 2	Crew Qty 3	Crew Qty 4
2029	\$OFI	\$OFI	\$OFI	2029	\$OFI	\$OFI	\$OFI
2030	\$OFI	\$OFI	\$OFI	2030	\$OFI	\$OFI	\$OFI
2031	\$OFI	\$OFI	\$OFI	2031	\$OFI	\$OFI	\$OFI
2032	\$OFI	\$OFI	\$OFI	2032	\$OFI	\$OFI	\$OFI
2033	\$OFI	\$OFI	\$OFI	2033	\$OFI	\$OFI	\$OFI
2034	\$OFI	\$OFI	\$OFI	2034	\$OFI	\$OFI	\$OFI
2035	\$OFI	\$OFI	\$OFI	2035	\$OFI	\$OFI	\$OFI
2036	\$OFI	\$OFI	\$OFI	2036	\$OFI	\$OFI	\$OFI
2037	\$OFI	\$OFI	\$OFI	2037	\$OFI	\$OFI	\$OFI
2038	\$OFI	\$OFI	\$OFI	2038	\$OFI	\$OFI	\$OFI
2039	\$OFI	\$OFI	\$OFI	2039	\$OFI	\$OFI	\$OFI
2040	\$OFI	\$OFI	\$OFI	2040	\$OFI	\$OFI	\$OFI
2041	\$OFI	\$OFI	\$OFI	2041	\$OFI	\$OFI	\$OFI
2042	\$OFI	\$OFI	\$OFI	2042	\$OFI	\$OFI	\$OFI

PRE-PRICED ADDITIONAL SERVICES (CLIN 4)

CLIN 4 establishes pricing for Additional and Optional Services in support of Mission Service Task Orders in accordance with Section 3.4 of the SOW. In accordance with the Task Ordering Procedure clause, the services provided in this section may be used to price Mission Service Task Orders for Additional and Optional Services.

ADDITIONAL SERVICES

Additional required Services are included in accordance with SOW, Section 3.4.1.

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PART I – THE SCHEDULE
SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS
ADDITIONAL SERVICES (CY2029 – CY2035)

Destination Capabilities & Services	Quantity	Additional % Usage	CY 29	CY 30	CY 31	CY 32	CY 33	CY 34	CY 35
Crew Seat and Crew Accommodations (Mission Service type A)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Crew Seat and Crew Accommodations (Mission Service type B)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Reconfigurable Locker Style Payload (Heritage or non-Heritage), based on MLE units	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Deployable Pressurized Powered Payload	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Cargo Transfer Bag Equivalent (CTBE) Stowage	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Workbench	N/A	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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Glovebox	N/A	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
On-Orbit Conditioned Stowage (Liters)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

ADDITIONAL SERVICES (CY2036 – CY2042)

Destination Capabilities & Services	Quantity	Additional % Usage	CY 36	CY 37	CY 28	CY 39	CY 40	CY 41	CY 42
Crew Seat and Crew Accommodations (Mission Service type A)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Crew Seat and Crew Accommodations (Mission Service type B)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Reconfigurable Locker Style Payload (Heritage or non-Heritage), based on MLE units	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Deployable Pressurized Powered Payload	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

Cargo Transfer Bag Equivalent (CTBE) Stowage	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Workbench	N/A	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Glovebox	N/A	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
On-Orbit Conditioned Stowage Liters)	1	N/A	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

ADDITIONAL TRANSPORTATION SERVICES (CY2029 – CY2035)

Type	Transportation Capability Element	Quantity	CY 29	CY 30	CY 31	CY 32	CY 33	CY 34	CY 35
CARGO	CaTS – Powered locker (Delivery)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Powered locker (Return)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS - Pressurized Delivery (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS - Pressurized Return (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Conditioned	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

	Stowage Delivery (Liter)								
	CaTS – Conditioned Stowage Return (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Trash Disposal (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
CREW	CTS – Powered locker (Launch)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Powered locker (Return)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS - Pressurized Delivery (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS - Pressurized Return (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Conditioned Stowage Delivery (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Conditioned Stowage Return (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

ADDITIONAL TRANSPORTATION SERVICES (CY2036 – CY2042)

Type	Transportation Capability Element	Quantity	CY 36	CY 37	CY 38	CY 39	CY 40	CY 41	CY 42
CARGO	CaTS – Powered locker (Delivery)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Powered locker (Return)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS - Pressurized Delivery (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS - Pressurized Return (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Conditioned Stowage Delivery (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Conditioned Stowage Return (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CaTS – Trash Disposal (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
CREW	CTS – Powered locker locations (Launch)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Powered locker (Return)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

	CTS - Pressurized Delivery (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS - Pressurized Return (CTBE)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Conditioned Stowage Delivery (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
	CTS – Conditioned Stowage Return (Liter)	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

OPTIONAL SERVICES

Optional Services are included in accordance with SOW 3.4.2. Pricing listed below are Not-To-Exceed prices and are based on the year the services are ordered.

OPTIONAL SERVICES (CY2029-2036)

Description	Qty/Usage	CY 29	CY 30	CY 31	CY 32	CY 33	CY 35	CY 36
External Payload	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Incubation (On-Orbit)	20L	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Edge Computing	50%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Small-Arm Centrifuge	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Ultrasound	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Payload Developer Services	See SOW 1.9.2	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
kW of Power	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Additional Data Transfer	(5 Mbps Up/50 Mbps Down)	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for Vacuum Resource Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for Vacuum Exhaust Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for O2 Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for gaseous N2 Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
OFI (additional capability)	OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

OPTIONAL SERVICES (CY2037-2042)

Description	Qty/Usage	CY 37	CY 38	CY 39	CY 40	CY 41	CY 42
External Payload	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Incubation (On-Orbit)	20L	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Edge Computing	50%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Small-Arm Centrifuge	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Ultrasound	25%	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

Payload Developer Services	See SOW 1.9.2	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
kW of Power	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Additional Data Transfer	(5 Mbps Up/50 Mbps Down)	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for Vacuum Resource Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for Vacuum Exhaust Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for O2 Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
Location for gaseous N2 Access	1	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI
OFI (additional capability)	OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI	\$OFI

SPECIAL STUDIES (CLIN 5)

The Contracting Officer may issue task orders or additional services in accordance with the task ordering procedures to define requirements and pricing. Any task order work that does not have established prices shall be priced in accordance with the negotiated rates shown in the table below, when proposing to a Government Request for Task Order Proposal (RFTOP). The labor rates are fully burdened composite rates (prime and all subcontractors) inclusive of profit.

LABOR RATES - SPECIAL STUDIES

CY	Professional / Technical	Ops. /Mfg.	Maximum Indirect Rate applied to Non-labor costs
2027	\$OFI	\$OFI	%OFI
2028	\$OFI	\$OFI	%OFI
2029	\$OFI	\$OFI	%OFI
2030	\$OFI	\$OFI	%OFI
2031	\$OFI	\$OFI	%OFI
2032	\$OFI	\$OFI	%OFI
2033	\$OFI	\$OFI	%OFI
2034	\$OFI	\$OFI	%OFI
2035	\$OFI	\$OFI	%OFI
2036	\$OFI	\$OFI	%OFI

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SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

2037	\$OFI	\$OFI	%OFI
2038	\$OFI	\$OFI	%OFI
2039	\$OFI	\$OFI	%OFI
2040	\$OFI	\$OFI	%OFI
2041	\$OFI	\$OFI	%OFI
2042	\$OFI	\$OFI	%OFI

(End of Text)

JSC 52.216-90 IDIQ MINIMUM AND MAXIMUM ORDERING LIMITS (NOV 2018)

In accordance with clause FAR 52.216-22, *Indefinite Quantity*, the contract guaranteed minimum amount to be ordered under this contract is \$100,000,000 and the contract Not-to-Exceed (NTE) amount* which may be ordered under this contract is \$TBD. The Government is not obligated to order more than the minimum specified but may order up to the NTE amount. The Contractor is obligated to fulfill orders issued, up to the NTE amount within the limits specified in clause FAR 52.216-19, *Order Limitations*.

*These values are based on dollars.

(End of Clause)

(End of Section)

PART I – THE SCHEDULE

SECTION C – DESCRIPTION/SPECIFICATIONS/REQUIREMENTS

SECTION C – DESCRIPTION/SPECIFICATIONS/REQUIREMENTS

STATEMENT OF WORK (SOW)

The Contractor shall provide all facilities, resources, personnel, items or services necessary to perform the requirements specified in the contract.

The Statement of Work is incorporated into and made part of this contract as Attachment J-01 *Statement of Work*.

(End of Text)
(End of Section)

PART I – THE SCHEDULE

SECTION D – PACKING AND MARKING

SECTION D – PACKING AND MARKING

NFS 1852.245-74 IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT. (DEC 2025) (DEVIATION)

(a) The Contractor must 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 must 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 must 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 must 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.

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

NASA/Lyndon B. Johnson Space Center
Central Receiving, Bldg. 420
Recipient Mail Code: Name/Phone number: TBD
Contract or Purchase Order #: TBD
2101 NASA Parkway
Houston, TX 77058-3607

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PART I – THE SCHEDULE

SECTION D – PACKING AND MARKING

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

(End of clause)

(End of Section)

PART I – THE SCHEDULE

SECTION E–INSPECTION AND ACCEPTANCE

SECTION E – INSPECTION AND ACCEPTANCE

CLAUSES INCORPORATED BY REFERENCE

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

FAR Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.246-4	AUG 1996	INSPECTION OF SERVICES – FIXED-PRICE. (Applies to CLIN 3,4,5)
52.246-7	AUG 1996	INSPECTION OF RESEARCH AND DEVELOPMENT – FIXED-PRICE. (Applies to CLIN 1 and CLIN 2)
52.246-11	DEC 2014	HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT. Fill-In: SAE Aerospace Quality Management System, AS9100. <i>Refer to Attachment J-05, Applicable Documents List, for version number</i>
NASA FAR Supplement Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
1852.246-73	SEP 2025	HUMAN SPACE FLIGHT ITEM (DEVIATION)

(End of by reference clauses)

**NFS 1852.246-71 GOVERNMENT CONTRACT QUALITY ASSURANCE FUNCTIONS.
(SEP 2025) (DEVIATION)**

(a) Definitions. For the purpose of this clause:

(1) *Risk Based Analysis (RBA)* - An iterative analysis led by the Government, based on a comprehensive understanding of the design, development, testing, critical manufacturing/assembly processes, and operations used to identify areas of risk.

(b) Applicability. This clause applies to safety critical items, processes and products identified by an RBA.

(c) Contractor support for RBAs. The Contractor must support any RBA by providing technical expertise, as requested by the Government. The definition of safety critical is found in CLDP-STD-3102 *CLDP Hazard Analysis and Safety Process Standard*.

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PART I – THE SCHEDULE
SECTION E–INSPECTION AND ACCEPTANCE

(d) In accordance with the inspection clause of this contract, the Government may perform the following functions at the locations indicated:

Quality Assurance Function	Location
Product Examination	Contractor Facility
Process Witnessing	
Record Review	
Surveillance	
Auditing	

The Quality Assurance (QA) Functions outlined above do not preclude nor exempt the Contractor's responsibilities in performing QA functions.

(End of clause)

(End of Section)

PART I – THE SCHEDULE

SECTION F– DELIVERIES OR PERFORMANCE

SECTION F – DELIVERIES OR PERFORMANCE

CLAUSES INCORPORATED BY REFERENCE

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

FAR Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.242-15	AUG 1989	STOP-WORK ORDER
52.242-17	APR 1984	GOVERNMENT DELAY OF WORK
52.247-34	JAN 1991	F.O.B. DESTINATION <i>Note: Applicable only where hardware deliverables are contemplated (e.g., test articles, incidental hardware, or property transfers).</i>

(End of by reference clauses)

PLACE OF PERFORMANCE

The principal place of performance shall be OFI. The services to be performed under this contract shall be performed at the contractor's facility and/or as identified by contractor and specified in each task order issued.

(End of Text)
(End of Section)

PART I – THE SCHEDULE

SECTION G–CONTRACT ADMINISTRATION DATA

SECTION G – CONTRACT ADMINISTRATION DATA

CLAUSES INCORPORATED BY REFERENCE

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

FAR Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.216-32	SEP 2019	TASK-ORDER AND DELIVERY-ORDER OMBUDSMAN Fill-In: https://www.hq.nasa.gov/office/procurement/regs/Procurement-Ombuds-Comp-Advocate-Listing.pdf
NASA FAR Supplement Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
1852.239-70	MAR 2026	AUTHORIZATION FOR RADIO FREQUENCY USE
1852.227-70	JAN 2026	NEW TECHNOLOGY-OTHER THAN A SMALL BUSINESS FIRM OR NONPROFIT ORGANIZATION (DEVIATION)
1852.227-72	JAN 2026	DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (DEVIATION)
1852.245-75	DEC 2025	PROPERTY MANAGEMENT CHANGES (DEVIATION)
1852.245-78	DEC 2025	PHYSICAL INVENTORY OF CAPITAL PERSONAL PROPERTY (DEVIATION)

(End of by reference clauses)

JSC 52.204-92 NASA SECURITY PROGRAM AND IDENTIFICATION OF EMPLOYEES (JUL 2022)

(a) The contractor shall adhere to Center and Agency-wide program policy and guidance for security operations and the Contractor shall comply with the following:

- NPR 1600.1, NASA Security Program Procedural Requirements (current version)
- NPD 1600.9, NASA Insider Threat Program
- NPD 1600.3, Policy on Prevention of and Response to Workplace Violence

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- NPR 1600.3, Personnel Security (current version)

- NPR 1600.4, Identity and Credential Management. (Current Version)

(b) For any contract requiring a Facility Clearance Level (FCL) for access to Classified National Security Information (CNSI), the contractor shall adhere to the Agency-wide program policy and guidance related to the protection of CNSI by complying with the following:

- NPR 1600.2, NASA Classified National Security Information (current version)

(c) For any contract requiring an FCL for access to CNSI and requiring access to Communications Security (COMSEC) equipment, the contractor shall adhere to the Agency-wide program policy and guidance related to the protection of COMSEC equipment by complying with the following:

- NPR 1600.6, Communications Security (COMSEC) (NPR 1600.6 is a protected document that can be obtained by contractors that have a need-to-know. The JSC point of contact is the JSC COMSEC Account Manager (CAM)).

(d) At all times while on NASA property, the contractor, subcontractors, their employees, and agents shall wear NASA issued credentials. NASA credentials 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) credentials within the NASA Identity and Access Management (IdMAX) system.

(e) Credentials will be issued at the following locations:

- Johnson Space Center (JSC) Badging Office, Building 110, Monday through Friday excluding holidays.
- White Sands Test Facility (WSTF), Protective Services Office Building (PSOB), Building 108, Monday through Friday excluding holidays. WSTF visitor credentials will be issued on a 7-day-a-week, 24-hour-a-day basis.

(f) The FSO/DO needing identity requester rights, must complete the following training in SATERN: Personal Identity Verification (PIV) – ICAM Overview “AG-PIVICAM-OVERVIEW” and Personal Identity Verification (PIV) – Requester Module “AG-PIVIDENTITY-REQUESTER.” After completion of the training, the FSO/DO will request the following rights in NAMS: Agency ICAM Infrastructure; with the Identity Requester role. Lastly, submit a JSC Form (JF) 200, NASA JSC Agreement Maintenance Card to be added as a

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Requester for the contract/agreement of responsibility. This will allow the contractor to have identity requester privileges within IdMAX.

(g) For temporary credential requests, the FSO/DO will submit the credential request within IdMAX and instruct the employee to visit the JSC Badging Office to complete the enrollment process for the temporary credential. The employee will need to present two forms of matching I-9 identification documents to process a temporary credential. The list of acceptable I-9 documents can be found on the U.S. Citizenship and Immigration Services (USCIS) website located at www.uscis.gov

(h) For permanent credential requests, the FSO/DO will submit the request within IdMAX. NASA Personnel Security will notify the employee via email to begin background investigation processing and will provide the employee the necessary forms to complete the eQIP process electronically. Once the background investigation process is complete, the employee will be notified to go to the JSC Badging Office or the NASA Facility nearest to the employee for enrollment. Employees will present two forms of matching I-9 identification documents to process for a permanent credential; and will receive a temporary 30-day credential or Interim Agency Smart Badge until the PIV credential is ready for pickup. When the PIV credential arrives, the employee will receive an email notification for credential pickup.

(i) The contractor shall be held accountable for issued credentials, keys, and other items. The contractor must assure credentials (returned to JSC Badging Office) and keys (returned to JSC Locksmith Office) are returned upon completion of work under the contract in accordance with the procedures listed on JF 760, JSC Termination/Retiree and Return for Future Use Checklist.

(End of clause)

NFS 1852.232-80 SUBMISSION OF VOUCHERS FOR PAYMENT. (APR 2018)

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

(b) Except for classified vouchers, the Contractor shall submit all vouchers and invoices 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 are stipulated in the payment clause(s) contained in this contract.

(2) Vouchers submitted under cost type contracts and invoices submitted under fixed- price contracts 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

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information:

(i) *Vouchers.*

- (A) 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.
- (B) Breakdown of billed other direct costs (ODCs) and associated Contractor generated supporting documentation for billed ODCs.
- (C) Indirect rate(s) used to calculate the amount of billed indirect expenses.
- (D) Progress reports, as required.

(ii) *Invoices.*

- (A) Description of goods and services delivered as part of the contract's terms and conditions, including the dates of delivery/performance.
- (B) Progress reports, as required.
- (C) Date goods and services were performed.

(iii) *Fee vouchers.*

- (A) Listing of all provisionally billed fee by period or date earned since contract award.
- (B) A reconciliation of all billed and earned fee.
- (C) A clear explanation of the fee calculations.

(b) *Non-electronic payment requests.* The Contractor may submit a non-electronic voucher/invoice using the steps for non-electronic payment requests described at <https://www.nssc.nasa.gov/vendorpayment>, when 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.
- (2) The contract includes provisions allowing the Contractor to submit vouchers or invoices using the steps for non-electronic payment. In such instances the Contractor agrees to submit non-electronic payment requests using the method or methods specified in Section G of the contract.

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(c) Improper vouchers/invoices. The NSSC Payment Office will notify the Contractor of any apparent error, defect, or impropriety in a voucher/invoice 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.

(d) *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.

(e) 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)

NFS 1852.245-73 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (DEC 2025) (DEVIATION)

(a) The Contractor with furnished and acquired property must submit an electronic property submissions in NASA's Accountable Property System of Record (APSR)/NASA Electronic Submission System (NESS) annually; and a final property submission via <https://ness.nasa.gov/contractor> when the period of performance or award has ended. Once electronic property submission is completed, the contractor will be able to download their electronic forms, 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 the APSR/NESS is not required by this clause; however, the Contractor must include data on property in the possession of subcontractors in the electronic annual property submission. The Contractor must mail the original signed NF 1018 directly to the cognizant NASA Center Industrial Property Officer and a copy to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor is required by their contract to report with zero value award, that never had property associated.

(c)(1) The annual reporting period must be from October 1 of each year through September 30 of the following year. The report must be submitted in time to be received by October 31st. 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 31st.

(2) Some activity may be estimated for the month in which the report is submitted, if necessary, to ensure the electronic annual or final property submission 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

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accordance with FAR Subpart 4.705, Specific Retention Periods. Contractors must 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 must have formal policies and procedures, which address the validation of the electronic annual property or final property submission 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 the electronic annual or final property submission after submittal the contractor must contact the cognizant NASA Center Industrial Property Officer (IPO) within 10 days after discovery of the error to discuss corrective action. If there is an error found during the Contractor's property submission, it will be disapproved, and Contractor will receive an automatic email explaining what is needed for it to be approved.

(3) In addition to an annual report, if at any time during performance of the contract, NASA-owned property in the custody of the Contractor has a value of \$10 million or more, the Contractor must also submit a report no later than the 21st of each month in accordance with the requirements of paragraph (c)(2) of this clause.

(4) 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 the electronic annual or final property submission reports in accordance with NFS subpart 1845.7101, any monthly report in accordance with (c)(3) of this clause, and any supplemental instructions for the current reporting period issued by NASA. Such reserve must 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 must not be construed as a waiver of any Government right.

(d) An electronic final report must be submitted in the APSR/NESS 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)

NFS 1852.245-76 LIST OF GOVERNMENT PROPERTY FURNISHED PURSUANT TO FAR 52.245-1 (DEC 2025) (DEVIATION)

For performance of work under this contract, the Government will make available Government property identified below or in **Attachment J-13, Government Furnished Property and Data/Information**, 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 must use this property in the performance of this contract at Contractor facilities and other location(s) as may be approved by the Contracting Officer. Under FAR 52.245-1, the Contractor is accountable for the identified property.

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(End of Clause)

NFS 1852.245–82 OCCUPANCY MANAGEMENT REQUIREMENTS (DEC 2025)
(DEVIATION)

(a) In addition to the requirements of the clause at FAR 52.245–1, *Government Property*, as included in this contract, the Contractor must comply with the following in performance of work in and around Government real property:

- (1) NPD 8800.14F, Policy for Real Estate Management.
- (2) NPR 8831.2F, Facilities Maintenance and Operations Management.

(b) The Contractor must 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 must restore damaged property to its original condition at the Contractor's expense.

(c) The Contractor must 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 must vest in the Government.

(d) The Contractor must 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)
(End of Section)

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CLAUSES INCORPORATED BY REFERENCE

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

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

Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
1852.225-70	DEC 2025	EXPORT LICENSES (DEC 2025)(DEVIATION) ALTERNATE I (DEC 2025) (DEVIATION) Fill-in: Johnson Space Center
1852.226-71	FEB 2026	SAFETY AND HEALTH MEASURES AND MISHAP REPORTING
1852.226-73	FEB 2026	MAJOR BREACH OF SAFETY OR SECURITY.
1852.226-74	FEB 2026	SAFETY AND HEALTH (SHORT FORM)
1852.242-72	DEC 2025	DENIED ACCESS TO NASA FACILITIES (DEVIATION)

(End of by reference clauses)

TASK ORDERING PROCEDURES - SUPPLEMENT

(a) Applicability. This clause supplements NFS 1852.216-80, *Task Ordering Procedure*.

(b) General. The procedures for selecting contractors for order awards under this contract are governed by FAR 16.507 and supplements. Unless otherwise specified, a fair opportunity will be provided for each Request for Task Order Proposal (RFTOP). The following defines the process by which fair opportunity will be afforded, how Task Orders (TOs) will be processed and priced, and how a TO will be awarded.

(c) Fair Opportunity Process. For each RFTOP, fair opportunity shall be provided to each of the prime contractors via direct electronic communication.

(1) Unless the contracting officer determines that an exception to fair opportunity procedures applies per FAR part 16.507-6(b)(2), the RFTOP will include, at a minimum, the following information:

(i) Evaluation criteria and factors for award,

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(ii) Proposal due date.

(2) Unless otherwise waived by the Contracting Officer, it is mandatory for contract holders under multiple awards to respond to each RFTOP provided the requirements are identified in The Schedule and do not conflict with the contract ordering limitations identified at FAR 52.216-19, *Order Limitations*.

(3) All competitive Task Order Proposals shall be submitted by the date and time specified in the request. The Contracting Officer will evaluate a Task Order proposal per the evaluation criteria stated in the RFTOP. Each RFTOP will use evaluation criteria tailored for the specific acquisition but will at a minimum include Mission Suitability (technical approach) and price.

(4) Contractors will be notified of NASA's award of a Task Order. If requested by the participant in accordance with FAR 16.507-5(c), an opportunity for a post-award debriefing will be provided to any participant that submitted an offer.

(d) Multi-Phase Competition Procedures

(1) Services will be procured with the award of task orders issued against the basic Indefinite Delivery, Indefinite Quantity Multiple Award contract. The following steps describe the competition process.

(i) Phase 1: Initial Task Orders. Upon selection of an IDIQ Multiple Award Contract, each awardee will receive an initial task order for CLIN 1 as the contract minimum guarantee.

(ii) Phase 2: CLIN 2 Competition. The Government will compete CLIN 2 among contractors per the Multi-Phase Competition Procedures and its selection criteria for award which would result in a minimum buy increase for the selected contractors per the clause, *IDIQ Minimum Guarantee Supplement and Conditions*.

(iii) Subsequent Task Orders CLINs 3-4. The Government may order Mission and additional services from contractors who have a CLIN 2 Award and may order up to the stated maximum value throughout the period of this contract.

(iv) The Government may order CLIN 5 at any time from any contractor per the Task Ordering Procedures of the contract.

(2) Phase 2 Competition Procedures: CLIN 2 (Certification and Demo) Proposal Process. The CO will issue a RFTOP to all Phase 1 prime contractors. The RFTOP will include specific instructions for the submission of Phase 2 proposals, the CLIN 2 Model Task Order and may allow or incorporate Model Contract updates or revisions if applicable. The purpose

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of the Phase 2 Competition is for NASA to evaluate the Phase 1 Contractors' progress, maturity, approach and changes to make a phase 2 selection. However, the following draft evaluation factors are provided as preliminary information.

(i) Demonstration of successful completion of Phase 1 requirements and milestones and successful completion of the IPR milestone submittals.

(ii) Mission Suitability Sub-factors will focus on the Offeror's ability to obtain NASA Certification of an end-to-end CLDS, the estimated date for the Offeror's readiness to support NASA's purchase of a Mission Services to the CLD, and the inherent and residual risk in the Offeror's CLDS.

After completion of CLIN 1, contractors may propose major changes to the transportation cost, additional enhancements/capabilities, and price reductions as part of the CLDC RFTOP process. Contractors are required to provide sufficient detail for NASA to determine required justification to the previously accepted CLDC services and/or a CLDC Configuration Change (e.g., a new Configuration). Information other than cost and pricing data may be required at the TO level for fixed price orders. NASA has the unilateral discretion to accept or reject proposed price changes and absent the government's clear acceptance of a pricing change, the established contract pricing will remain in force.

These evaluation factors are not final and will be further identified in Phase 2 RFTOP. NASA reserves the right to change any factors and the date upon which proposals are requested. Any such changes in evaluation factors will not necessitate issuance of a new, formal solicitation.

Selection Criteria for Award: The Government will award the offeror(s) whose proposal is deemed most advantageous to the Government based upon an integrated assessment using the evaluation criteria. The Government will evaluate proposals against established selection criteria specified in the RFTOP.

(e) CLIN 3-4 (Mission Services and Pre-Priced Additional Services) Task Ordering Process. The Governments' RFTOP will provide specific TO requirements. When submitting a TO Proposal (or Task Plan as referred in NFS 1852.216-80), the Contractor shall indicate that the proposal is compliant with the contract terms, statement of work, and the specific requirements contained in the RFTOP, and shall include the following at a minimum:

(1) A Work Plan in response to each Request for Task Order Proposal (RFTOP) and, if applicable, in accordance with Attachment J-12 Mission Service Work Plan Template for Missions.

(2) Any Contractor-proposed mission success criteria and specific milestone payment percentages in addition to the mandatory milestones specified by the Government.

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(End of Clause)

USE OF GOVERNMENT RESOURCES

(a) General. While the majority of work to be completed under this contract shall be performed at Contractor or subcontractor facilities, and the responsibility for adequately staffing this contract and completing full contract performance resides solely with the Contractor, the Contractor may request use of government resources. Additionally, due to the complexity of the development and services, NASA highly desires to collaborate where use of NASA personnel, equipment or infrastructure would reduce vehicle or crew safety and/or schedule risks.

(b) Purpose. As listed within this contract, use of Government resources, as defined in this clause, are intended to assist the transition of functions from an area of Government expertise to a Commercial expertise. This clause applies to the Contractor’s use of those Government resources listed in Attachment J-14 *Government Task Agreements*, including property, facilities, assets, information and data not furnished under this contract, or services, whether obtained from NASA or another Government Agency; it does not apply to Government Furnished Property (GFP), Equipment (GFE), or Data or Information (GFD or GFI) otherwise provided under this contract under Attachment J-13, *Government Furnished Property and Data Information*.

(c) Use of NASA resources.

(1) Types of resources.

(i) Use of NASA on-site resources under Government Task Agreements (GTAs).

(A) Proposing GTAs. The Contractor may propose to perform a portion of the work required under this contract using the property, facilities, assets, services, or other specialized resources uniquely available on-site (“on-site resources”) from a NASA Center, Component Facility, or the Jet Propulsion Laboratory (JPL) (any one of which is a “Performing Organization” hereinafter in this clause). Such proposed requests must be within the scope of the contract and are subject to the availability of those resources and the Performing Organization’s ability and willingness to provide them. The Contractor shall limit requests for the use of on-site resources to only those Performing Organization facilities, services, or other resources that are unique or not otherwise reasonably available commercially. The Contractor shall document its planned use of or modifications to on-site resources through the execution and submission with proposal of one or more GTAs, which are executed under the authority of this contract and 51 USC 20113(e). The Contractor shall identify any current Reimbursable Space Act Agreements (RSAA) in place they desire to convert to GTAs.

(B) Modifications to GTAs. During contract performance, the Contractor and the Performing Organization may agree to modify GTAs and/or execute additional GTAs if they mutually determine such agreements are necessary to respond to new or changed circumstances that arise. GTA modifications are required when the requested

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scope is inconsistent with the original GTA Terms (e.g., more test runs are needed). The Contractor shall be responsible for the cost of any such new or modified GTA, and the Parties shall effectuate the addition of new or modified GTAs, and corresponding contract price adjustments, pursuant to FAR 52.243-1 *Changes - Fixed-Price* (ALT I) as incorporated herein.

(C) Procedures for all GTAs. The Contractor shall follow the instructions for use of GTAs as provided in solicitation Attachment J-14, *Government Task Agreements*. The Offeror shall contact the corresponding Center Partnership Office Point of Contact to negotiate the terms of each GTA. The Partnership Office Point of Contact shall provide a cost for each GTA, but the Contractor shall not include this cost in its proposed prices or NTEs.

(ii) Access to NASA personnel and expertise using a Government Collaboration Agreement (GCA). NASA has unique personnel and expertise that NASA is making available to the CLD Contractor in accordance with the terms of this clause.

(A) During contract performance, at no cost to the Contractor, the CLD Contractor may request up to ten (10) NASA personnel to provide specific areas of expertise in designated Collaboration roles. GTAs are not required for this Collaboration effort. Collaboration can span DDT&E including substantial SME involvement in design development and/or use of GFE as well as use support in development of ground and flight systems and real-time operations. The Contractor shall identify any current Reimbursable Space Act Agreements (RSAA) in place they desire to convert to GCAs.

In addition to the ten (10) NASA personnel, NASA is offering and the Contractor may request an additional ten (10) NASA personnel in areas outlined below where NASA has a strong desire to collaborate:

Collaboration Area
ECLSS (OGA, CDRA, Toilet/Waste Collection, Fire Systems, Water & Urine Processing)
Exercise (Countermeasures/Vibration Isolation System)
Rendezvous and Docking/Undocking/Plume Effects
Docking Mechanisms, Loads and Dynamics
Spacecraft Power & Propulsion Systems
Flight Systems and Ground Operations (VSM/Communication/Data)
Cold Stowage Systems
Materials and Processes
Flight Software

(B) During contract performance, the Contractor shall document its collaboration requests in writing to the CO and Contracting Officer's Representative (COR). The

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Contractor shall request specific areas of technical subject matter expertise (e.g., engineering, operations, or safety) and the duration and amount of the requested resources, but the Contractor shall not request specific NASA personnel by name or title.

(C) NASA has the sole authority to determine whether it will provide any portion of the collaboration resources requested by the Contractor. During contract performance, NASA reserves the right to unilaterally change its approach to collaboration at any time, including the right to modify the specific personnel offered to the Contractor and the amount, type, and/or duration of its support, including the right to cease collaboration at any time. At all times during collaboration, the personnel remain employed by, and under the supervisory control of, NASA.

(D) While collaborative communication between the Contractor and personnel provided is expected in furtherance of the personnel's advisory roles, the Contractor shall not direct or supervise the work of the personnel provided by NASA. NASA employees shall not direct or supervise the work of the Contractor's employees, subcontractors, or other affiliates. NASA will use reasonable efforts to ensure equitable resources are provided to all potential CLD Contractors in support of its respective collaboration approaches but makes no guarantees that identical resources will be provided.

(E) Personnel who are provided will continue to collaborate with other NASA technical experts and will take appropriate measures to protect the contractor's intellectual property while doing so. NASA personnel, while acting in advisory roles, shall not assess Contractor compliance with NASA requirements related to any contractor deliverable or milestone which is the responsibility of the Contractor.

(F) The Contractor and the U.S. Government are expected to jointly own joint inventions and other intellectual property produced jointly by NASA personnel and Contractor personnel under a GCA. Data and inventions first produced by the Contractor under a GCA will be governed by the applicable data and invention rights terms of this contract.

(G) Specific resources will be narrowly tailored to a Contractor's unique development approach and associated needs and objectives.

(2) Disclaimer. NASA makes no warranty whatsoever as to the availability or suitability of NASA property, facilities, assets, information and data, services, or personnel made available under this clause. The Contractor assumes all responsibility for determining the suitability for use of all NASA resources, including technical suitability, schedule availability, and cost or schedule impact. NASA provides all resources as-is. The Contractor uses all NASA resources at their own risk. The Contractor remains responsible for performing as set forth in the applicable Work Plan and other terms of the contract.

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(3) Authority to commit the Government. The CO retains sole authority to commit the Government in matters which would change contract price, quantity, delivery schedule, or any other requirement of this contract, including interpretation of technical requirements. The CO may designate a representative (COR) to assist with contract administration within the limitations of authority as specified in its COR appointment letter. Individuals performing collaboration agreements or task agreements have no authority to commit the Government, and nothing in this clause shall be construed to confer authority, actual or apparent, to these individuals. Such individuals may offer their opinions, advice, knowledge, or expertise to the Contractor during performance, but the Contractor is not bound to comply with this input and does so on its own accord and at its own risk.

(4) Impermissible use of NASA as a subcontractor or supplier. The Contractor shall not use the NASA resources made available pursuant to paragraphs (c)(1) of this clause to provide any end-item deliverable, including spacecraft components, subsystems, or elements, nor any ground or flight hardware or software, that is the responsibility of the Contractor under the terms of this contract. The Contractor shall not rely on NASA for the provision of complete flight or ground operations in support of this effort. This paragraph does not prohibit the Contractor's use of GFE, GFP, GFD, GFI, GFS or any other Government Furnished item or service provided by the Government pursuant to another term of this contract.

(d) Contractor Waiver of Claims for Injury, Death, Damage, or Loss and Waiver of Claims and Indemnification for Data. As used in this Clause, the term "Related Entities" includes, but is not limited to, an entity's grantees, investigators, customers, users, and its contractors and subcontractors at any tier. In the case of the Government, Related Entities also include the JPL.

(1) Contractor Waiver of Claims for Injury, Death, Damage, or Loss. By utilizing NASA resources, including USG Crew or other resources under a GTA, GCA, or otherwise, in support of contract performance, the Contractor hereby waives any claims against the Government, its employees, its Related Entities, and employees of the Government's Related Entities for any injury to, or death of, Contractor's employees or the employees of Contractor's Related Entities, or for damage to, or loss of, Contractor's property or the property of its Related Entities arising from or related to activities conducted pursuant to this Clause, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.

(2) Waiver of Contractor Claims and Indemnification for Data. The Contractor agrees to waive any and all claims against the Government, its employees, its Related Entities, and employees of the Government's Related Entities and shall indemnify and release the Government, its employees, its Related Entities, and employees of the Government's Related Entities from every claim or liability, including attorney's fees, court costs, and expenses, arising out of, or in any way related to, the misuse or unauthorized modification, reproduction, release, performance, display, or disclosure of the information and/or data provided under this clause by the Contractor, Contractor's employees, Contractor's Related Entities, the employees of Contractor's Related Entities, or by any person to whom the Contractor has released or disclosed such information and/or data.

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(3) These unilateral waivers of claims apply to all activities under a GTA or GCA, notwithstanding whether such activities would otherwise be within the scope of the Cross-Waiver of Liability set forth in NFS 1852.228-78, *Cross-Waiver of Liability for Science or Space Exploration Activities Unrelated to the International Space Station*.

(e) Mandatory flow-down to Contractor's Related Entities. The Contractor shall include this clause, suitably modified to identify the parties, in all agreements with its Related Entities, regardless of tier, which involve use, production, or provision of information and/or data under this clause in any way. At all tiers, the clause shall be modified to define information and/or data provided under this clause as it is defined in this contract and to identify the parties as follows: references to the Government are not changed, references to the Contractor are changed to refer to the Related Entity so that the Related Entity has all rights and obligations to the Government of the Contractor in the clause. In agreements, at any tier, the Government, the Related Entity, and the Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the Related Entity and the Government with respect to the matters covered by the clause.

(f) Use of resources from a Government Agency other than NASA. The Contractor shall obtain and maintain any contracts or agreements between the Contractor and any Government Agency other than NASA ("Other Government Agency") necessary to perform the requirements of this contract in accordance with the Contractor's proposal. Such contracts or agreements may authorize the use of Government property, facilities, assets, or services in performance of this contract (except as may be expressly stated in this contract as furnished by the Government). The terms and conditions of such contracts or agreements will govern the use of those Government resources. Any costs associated with such contracts or agreements shall result in no increase in the price of this contract. Any disputes that arise under such contracts or agreements shall be resolved in accordance with the terms and conditions of those contracts or agreements. The Contractor shall notify the Contracting Officer, COR, or designee of any contracts or agreements between the Contractor and any Other Government Agency under this paragraph. NASA makes no warranty whatsoever as to the availability or suitability for use of Government property, facilities, assets, or services made available by any Other Government Agency under the terms and conditions of other contracts or agreements. The Contractor assumes all responsibility for determining the suitability for use of all property, facilities, assets, or services acquired or made available to the Contractor by an Other Government Agency under other contracts or agreements. The Contractor further acknowledges and agrees that any use of such Other Government Agency property, facilities, assets, or services shall not relieve the Contractor of full performance responsibility under this contract.

(g) Safeguarding of Contractor's confidential or proprietary information. Federal law and regulations (e.g., 18 U.S.C. § 1905, Disclosure of confidential information generally; 5 C.F.R. § 2635.703 Use of nonpublic information) prohibit NASA personnel from disclosing the Contractor's proprietary information unless authorized by law to do so. NASA will use reasonable efforts to ensure that Contractor confidential or proprietary information is protected throughout contract performance.

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(h) Contractor responsibility. Notwithstanding the Contractor’s use of Government resources, the Contractor remains fully responsible for the performance of all requirements as set forth in this contract. The Government’s provision of the resources described in this clause shall not be construed as: authorization; endorsement or approval of milestones; certification or final acceptance or rejection of certification success; or as a defense to any finding of mission failure or final acceptance or rejection of contract deliverables.

(i) Use of pre-existing Data provided under this clause.

(1) Definitions. For the purpose of this clause, the definition of “Data” is the same as the definition in FAR 52.227-14, *Rights in Data – General* and the definition of “Related Entity” is the same as the definition in NFS 1852.228-78, *Cross-Waiver of Liability for Science or Space Exploration Activities Unrelated to the International Space Station*.

(2) Use under this contract. Pre-existing data provided under this clause, regardless of the source of such data, may only be used for performing work under this contract and in accordance with any restrictive markings unless otherwise provided for in this contract or in a written agreement made part of this contract and signed by the Contracting Officer and an authorized representative from every non-Government party using or providing such data.

(3) Title and license rights. Title to or license rights in data provided under this clause shall not be affected by its provision under this clause or its incorporation into or attachment to any data not owned by or licensed to the Government.

(j) Use of data first produced under this clause. The provisions of this section apply to data first produced under this clause and any modified or enhanced versions of pre-existing data provided under this clause where such modified or enhanced versions are first produced under this clause. (e.g. GTA or GCA)

(1) Data first Produced by the Contractor or the Contractor’s Related Entities. Rights in data first produced by the Contractor shall be governed by FAR 52.227-14 *Rights in Data – General* or FAR 52.227-17, *Rights in Data - Special Works*, as specified and made applicable in the clause , *Applicability of Rights in Data – Special Works*.

(2)(i) Data first Produced by the Government. Title to and rights in data first produced by the Government, including by Government Astronauts, in the performance of activities under a GTA or GCA, shall remain with the Government unless otherwise agreed to in writing by the Contracting Officer. To the extent that data produced jointly by the Government and its Related Entities under a GTA is not segregable, the rights in data first produced by the Government under this contract will be consistent with the rights in data produced by its Related Entities under the GTA.

(ii) Unless otherwise specified in the GTA or elsewhere in this contract, the Contractor

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may use data first produced by NASA under a GTA for any purpose. If the Contractor requests that data first produced by NASA under a GTA be protected, and NASA determines it would be Limited Rights Data (as defined in FAR 52.227-14 *Rights in Data – General*) if obtained from the Contractor, NASA will mark such data with a restrictive notice and use reasonable efforts to protect it for five years after its development, consistent with 51 U.S.C. 20131. During this restricted period the Data first produced by NASA may be disclosed and used (under suitable protective conditions) for U.S. Government Purposes (as defined in FAR 52.227-14 *Rights in Data – General*) only, and thereafter for any purpose. The Contractor must not disclose the Data without NASA's written approval of the CO during the restricted period. The restrictions placed on NASA do not apply to Data disclosing a federally owned invention for which patent protection is being considered.

(3) Data Produced by the Government's Related Entities. Title to and rights in data produced by the Government's Related Entities shall be determined in accordance and consistent with the terms of the agreement(s) between NASA and the Related Entities under which the data is produced. The Government's rights may be limited by the terms of the agreement with a Related Entity, in which case the Contractor may need to negotiate directly with the Related Entity if additional rights are desired. In addition, even if The Government's use of data first produced by a Related Entity is not constrained, the Related Entity may retain rights in the data. If the Contractor wishes to obtain all rights in such data, direct negotiation with the Related Entity may be required. The Contractor shall coordinate with the applicable Center to determine any constraints on the Government's rights in data expected to be produced by the Government's Related Entities under the GTA prior to entering into the GTA.

(k) Marking data provided or produced under this clause. All data provided or produced under this clause by the Contractor, Government, or their Related Entities that has restrictions on its use by the Contractor, Government, or their Related Entities shall be marked as described below.

(1) Marking data provided or produced under this clause.

(i) Data provided or produced by the Contractor (including its Related Entities) under this clause with restrictions on its use shall be marked in accordance with FAR 52.227-14 *Rights in Data – General*.

(ii) Data produced jointly with the Government's Related Entities. Data produced jointly by the Contractor, with or without the Contractor's Related Entities, and one or more of the Government's Related Entities, with or without the Government, shall be marked in accordance with the rights in data specified in the GTA or in another written agreement made part of this contract, if applicable.

(l) Inventions of NASA and its Related Entities.

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(1) No invention or patent rights in NASA or its Related Entity's inventions are exchanged or granted under this clause except as provided herein.

(2) Upon request, NASA will use reasonable efforts to grant Contractor a negotiated license, under 37 C.F.R. Part 404, to any NASA invention made under a GTA or GCA.

(3) Upon request, NASA will use reasonable efforts to grant Partner a negotiated license, under 37 C.F.R. Part 404, to any invention made under this Agreement by employees of a NASA Related Entity, or jointly between NASA and NASA Related Entity employees, where NASA has title.

(End of Clause)

GOVERNMENT'S RIGHT TO REMOTELY-SENSED DATA

(a) This clause covers the U.S. Government's (USG) right to detect and monitor the CLDS during launch, while in-orbit, during any failed attempt to reach orbit, and at any time CLDS leaves orbit.

(b) The Contractor consents for the USG to collect remotely-sensed data on the CLDS and any visiting vehicles to or from the destination; to use such data for USG purposes. The Contractor shall obtain consent from its transportation sub-contractors and element owner providers. The remotely-sensed data may be used, modified, reproduced, released, performed, displayed, or disclosed within the USG, including USG support contractors, under suitable protective conditions.

(c) The Government may not, without written permission, of the Contractor release or disclose the data outside the Government, except as otherwise required by law, use the technical data for manufacture, or authorize the technical data to be used by a party outside the Government.

(End of Clause)

ON-RAMP

(a) The purpose of this clause is to notify the Contractor that NASA may conduct subsequent competitions. This clause does not limit the right for the Government to issue a solicitation in the future to seek an additional source(s) for the same or similar effort/services.

(b) In accordance with this clause, the original solicitation (as amended or revised) shall remain open throughout the ordering period. The decision to request proposals under this clause will be solely at NASA's discretion and will only occur after the action has been synopsized by posting to the Governmentwide Point of Entry (GPE) (i.e., SAM.gov). When requested, Offerors will be allowed to submit proposals that may result in contract award(s) to new Contractors and/or the

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addition of new capabilities to existing contracts.

(c) Upon award of each additional contract, the Government shall notify all present Contractors of the award.

(End of Clause)

LICENSES, PERMITS, AND OTHER AUTHORIZATIONS

(a) The Contractor shall obtain and maintain the necessary licenses, permits and clearances that may be required by the Federal Aviation Administration (FAA), Department of Transportation, Department of Commerce, Federal Communications Commission, Food and Drug Administration, Department of Defense, NASA, or any other Governmental agencies in order to provide services under this contract.

(b) The Contractor shall meet all contract requirements; in addition to all requirements necessary to obtain and maintain licenses, permits and clearances. The Contractor shall retain all associated documentation and information when processing licenses, permits, and clearances. On request by the Contracting Officer or their delegated representative, the Contractor shall allow NASA personnel access to relevant information or documentation and follow applicable marking procedures. In the event conflicts arise, the Contractor is responsible for resolving the conflict and shall immediately notify the Contracting Officer and their delegated representative of the conflict. The Contractor shall describe the methods they used to resolve the conflict and if the resolution results in a waiver, exemption, or nonconformance, then the Contractor shall promptly notify the Contracting Officer and their delegated representative in writing.

(c) All costs and fees associated with obtaining licenses, permits and clearances shall be included in the price where applicable.

(End of Clause)

ADJUSTMENTS TO LAUNCH SCHEDULE

(a) Applicability. This clause covers launch delays for crew and cargo at the convenience of NASA and the Contractor.

(b) Task orders issued to Contractors require performance of Mission Task Orders with limited flexibility to adjust launch dates. To provide flexibility to both the Contractor and NASA, standard launch windows will be established for each planned launch within the Task Order. The standard launch window will be defined by NASA establishing the initial window for each mission at Authority To Proceed (ATP). Thereafter, with mutual agreement between the Contractor and NASA, the launch window will be reduced according to the table as identified within each applicable Task Order.

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Crew & Cargo Launch Windows

Months Prior to Launch Date – First Day to Last Day	Standard Launch Windows (Days)
ATP through L-8wk	90d
L-8wk through L-4wk	30d
L-4wk through Launch	7d

(c) At each major programmatic review, NASA and the Contractor shall review the established window and mutually agree on the next reduced launch window corresponding to the launch windows identified within the applicable Task Order.

(d) For Mission Task Orders ordered prior to completion of certification, each party, NASA or Contractor, may request a cumulative maximum delay of thirty (30) calendar days per mission regardless of fault without a change in the fixed price of the mission.

(e) If either NASA or the Contractor desires a change to the launch date, a written notice of the desired change will be given. Any request for changes to the launch date should be submitted within twenty-four (24) hours of identifying the need to request a change in the launch date. For any request for changes to launch date submitted greater than thirty (30) days prior to launch, NASA and the Contractor shall reach mutual agreement on a new launch date. Any requests for changes to the launch date submitted between thirty (30) days prior to launch and launch day shall be a priority and resolved as soon as possible. If mutual agreement on the revised launch date cannot be reached, the Contracting Officer shall have the right to unilaterally establish a new schedule.

(f) In the event of a NASA- or Contractor-requested delay of the launch window beyond the days allowable, the Contracting Officer shall direct the Contractor, in writing, of the revised launch window. For a NASA requested delay, the Government will allow the Contractor to submit a proposal for the effect of any delay beyond the days allowable on the task order price of all affected Mission Task Orders, launch schedule, or other terms of the contract. For a Contractor requested delay, NASA reserves the right to seek an equitable adjustment. Upon failure to agree to an adjustment, the Contracting Officer shall have the right to unilaterally adjust the task order. The requirement to make substantial progress in general conformance with the Work Plan, however, is not waived for any postponement of the Task Order.

(g) While this provision shall in no way be deemed to limit the rights of the Government under the default clause of this contract, there will be no basis for an equitable adjustment when the delay in delivery or performance arises solely out of causes beyond the control of NASA or Contractor and not due to the fault or negligence of NASA or Contractor. Such causes may include, but are not limited to the following:

(1) Delays resulting from:

(i) Range Mission Rules and Range Launch Requirements (Mandatory and Required

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Assets),

(ii) acts of God,

(iii) acts (including delay or failure to act) of any Governmental authority (De Jure or De Facto),

(iv) wars (declared or undeclared),

(v) riots,

(vi) revolution,

(viii) hijacking,

(ix) fires,

(x) freight embargoes,

(xi) sabotage,

(xii) epidemics,

(xiii) strikes and

(xiv) interruptions of essential services such as electricity, natural gases, fuels and water,

(2) or any condition which jeopardizes the safety of the employees of the Contractor, NASA, or its subcontractors;

(3) or a CTS failure investigation, provided NASA retains its original position in the order of the queue sequence and that all data related to the failure investigation is made available to NASA without restriction.

(h) Use of Government Furnished Service (GFS) Transportation. During performance, if NASA provides GFS Transportation, the provisions of this clause apply to this contract. The Contracting Officer will notify the Contractor if NASA provides these flights, and any schedule adjustments arising from incorporating these missions shall be subject to this clause.

(End of Clause)

UNITED STATES COMMERCIAL PROVIDER AND DOMESTIC SOURCE CRITERIA

(a) In accordance with the National Space Policy (2020), in order for the Government “to promote a robust domestic commercial space industry and strengthen United States leadership as

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the country of choice for conducting commercial space activities,” NASA plans to purchase and use United States commercial space capabilities and services to meet the requirements of this Contract, and the Contractor shall do the same in the performance of this Contract. Accordingly, the Contractor shall be a United States Commercial Provider as defined by 51 United States Code (U.S.C.) §50101 and shall comply with 51 U.S.C. §50131 in performance of this contract by acquiring space transportation services from United States commercial providers.

(b) Also, the Contractor shall comply with the National Space Transportation Policy (2013) and 51 U.S.C. § 30703 by using U.S. manufactured launch vehicles to launch a NASA payload. A launch vehicle will qualify as a domestic end product only if the cost of its components mined, produced, or manufactured in the United States must exceed fifty (50) percent of the cost of all of its components. The cost of each component includes transportation costs to the place of incorporation into the launch vehicle and any applicable duty (whether or not a duty-free entry certificate is issued).

(c) Failure to comply with the requirements of this clause may result in termination of this contract. NASA may elect not to terminate the contract; however, such an election is not a waiver of its right to do so in the future.

(End of clause)

STATEMENT ON WAIVER OF RIGHTS TO INVENTIONS

The CLDS certified and used under this contract will be commercially developed, and the developers may pursue other commercial uses of their systems outside of this contract. NASA has determined that the interest of the United States would be served by waiving to the Contractor, in accordance with 51 U.S.C. 20135(g), rights to inventions or class of inventions made by the Contractor in the performance of this contract. Therefore, upon petition submitted by the Contractor, as set forth in NFS 1852.227-70, NASA will waive such rights to the Contractor.

(End of clause)

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP)

(a) Definitions. As used in this clause-

(1) *Closed-loop reporting* means providing a written response of no impact, no usage, or impact with rationale at program milestone and readiness reviews or according to contract or other specified reporting times/events for each GIDEP Notice and NASA Advisory.

(2) *GIDEP Notices* means "GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, and GIDEP Agency Action Notices."

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(3) *NASA Advisory* means a NASA-issued problem report that addresses significant issues involving parts, materials, processes, software, or safety and requires screening and response comparable to GIDEP Notices.

(b) Applicability. This clause is applicable to all hardware, software, firmware, materials, and services provided under this contract and subsequent Task Orders.

(c) Participation. The Contractor shall participate in the GIDEP in accordance with the requirements of the *GIDEP Operations Manual* (GIDEP S0300-BT-PRO-010) and the GIDEP Requirements Guide (S0300-BU-GYD-010), available from the GIDEP Operations Center, PO Box 8000, Corona, California 92878-8000.

(d) Closed-loop reporting. The Contractor shall review all GIDEP Notices and designated NASA Advisories and conduct closed-loop reporting to determine if they affect the Contractor's products/services provided to the Government. The Contractor shall respond by stating, in writing, whether or not each GIDEP Notice, and NASA Advisory affects the Contractor's products and services provided to the Government within 45 days of the publication or receipt of the notice or advisory. The Contractor is responsible for stating whether or not each GIDEP Notice, and NASA Advisories affects subcontractor-provided products and services which are provided to the Government.

(e) For GIDEP Notices and NASA Advisories that affect the Contractor's products and services provided to the Government, the Contractor shall take action to eliminate or mitigate any negative effect and inform the Government of such actions to ensure GIDEP Notices and NASA Advisories adhere to closed-loop reporting.

(f) The Contractor shall generate applicable GIDEP Alerts in accordance with the requirements of GIDEP S0300-BT-PRO-010 and S0300-BU-GYD-010 whenever failed or nonconforming items, available to other buyers, are discovered during the course of the Contract. As applicable, the Contractor shall coordinate Alert content with their subcontractor prior to submission to GIDEP.

(End of clause)

SUBCONTRACTING WITH RUSSIAN ENTITIES FOR GOODS OR SERVICES

(a) Definitions. As defined in this clause:

(1) The term *Russian entities* means:

(i) Russian persons, or

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

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(A) The State Corporation for Space Activities (Roscosmos),

(B) Any organization or entity under the jurisdiction or control of Roscosmos,
or

(C) 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, 2030, 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.

(3) This clause implements the reporting requirement in section 6(i) of the *Iran, North Korea, and Syria Nonproliferation Act*, as amended (INKSNA). This clause also implements section 6(a) and the exception in section 7(1)(B) of INKSNA, as amended by Public Law 116-94 (Dec. 20, 2019), that is applicable through December 31, 2030. NASA has applied the restrictions in INKSNA to include funding of Russian entities via U.S. Contractors.

(b) The Contractor shall not subcontract with Russian entities without first receiving written approval from the Contracting Officer. In order to obtain this written approval to subcontract with any Russian entity as defined in paragraphs (a), the Contractor shall provide the Contracting Officer 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):

(1) 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 be made under the subcontract.

(2) 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:

(i) BIS's Entity List (see <https://www.ecfr.gov/current/title-15/subtitle-B/chapter-VII/subchapter-C/part-744/appendix-Supplement%20No.%204%20to%20Part%20744>)

(ii) BIS's Denied Persons List (see <https://media.bis.gov/licensing/end-user-guidance/denied-persons-list-dpl>.)

(iii) OFAC's List of Specially Designated Nationals (see <https://sanctionslist.ofac.treas.gov/Home/SdnList>)

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(iv) BIS Unverified List (see <https://www.ecfr.gov/current/title-15/subtitle-B/chapter-VII/subchapter-C/part-744/appendix-Supplement%20No.%206%20to%20Part%20744>)

(v) State Department’s List of Parties Statutorily Debarred for Arms Export Control Act Convictions (see

https://deccspmdtc.servicenowservices.com/ddtc_public?id=ddtc_kb_article_page&sys_id=7188dac6db3cd30044f9ff621f961914)

(vi) State Department’s Lists of Proliferating Entities (see <https://www.state.gov/bureau-of-arms-control-and-nonproliferation/nonproliferation-sanctions>)

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

(c) After receiving approval to subcontract, the Contractor shall provide the Contracting Officer with a report every six (6) 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

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

(e) 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, 2030. No payments for such work may be made by the Contractor to the subcontractor, or by NASA to the Contractor, after December 31, 2030. The Contractor is responsible for ensuring the completion of and payment for such subcontracted work insufficient time to enable payment by NASA to the Contractor on or before December 31, 2030.

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(f) 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 Contracting Officer to enter into any tier subcontract that involves entities defined in paragraph (a).

(g) Performance of this contract after December 31, 2030, may be subject to prohibitions on payments to Russian entities under INKSNA.

(End of clause)

MINIMUM DATA RIGHTS TO THE GOVERNMENT

(a) Consistent with the terms of FAR 52.227-14 *Rights in Data – General* and FAR 52.227-17 *Rights in data-Special Works*, respectively, the Government expects that the contractor will provide the following minimum rights in each category of data identified and defined in the table below. Assertions under the clause *Identification and Representation of data with Restrictive or Limiting Markings* are not required for data that are developed with mixed funding in performance of the contract. For avoidance of doubt, all data in which the Government will have greater than Limited or Restricted Rights is expected to be first produced in performance of the contract, including under Government Task Agreements, or under another Government contract. If data fall within multiple categories, the data will be treated as data in the category that provides more rights to the Government. Additional data may be designated as to be delivered with government purpose rights or as special works under a task order.

MINIMUM RIGHTS TO THE GOVERNMENT

Category of Data Data Description	Definition	Rights in Data			
		<u>Special Works¹</u>	<u>Unlimited²</u>	<u>GPR²</u>	<u>Limited/ Restricted²</u>
DRDs	Attachment J-02, unless in categories below or otherwise specifically identified in contract				X
Milestone Data Deliverables	SOW Section 2.2				X
Imagery	<i>Applicability of Rights in data – Special Works</i>	X			
Research Data	SOW Section 2.15, <i>Applicability of Rights in data – Special Works</i> , and CLDP-PLN-1122	X			

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Research-Related Mission Data	Also referred to as “Mission Data” in CLDP-PLN-1122	X			
Media	<i>Communications and Applicability of Rights in data – Special Works and SOW 2.15</i>	X			
Derivative works of Detailed NASA Design Data; corrections or changes to technical data/software furnished by the Gov’t	<i>Use of Government Resources, Rights in Data – General and Attachment J-13</i>			X	
CLDS Health & Status Data (except Mission Data/Research-Related Mission Data) ³					X
Contractor-produced GTA Data ⁴	<i>Use of Government Resource</i>			X	
Government IV&V Data	SOW 2.10.5			X	
Insight	<i>Government Insight</i>				X
Data first produced in performance of the contract that does not fall into another rights category	<i>Rights in Data – General</i>		X		

Note:

(1) Rights in data subject to FAR 52.227-17, *Rights in Data - Special Works*.

(2) Unlimited Rights, Government Purpose Rights (GPR), Restricted Computer Software, Limited Rights, and Restricted Rights are defined in FAR 52.227-14, *Rights in Data – General*.

(3) CLDS Health and Status Data refers to the comprehensive set of information collected and monitored to ensure the safety, performance, and success of the CLDS. The data covers the operational status of the components of the CLDS including the transportation systems, destination, and ground and mission systems.

(4) Data may be subject to additional restrictions on use under the GTA or associated agreement.

(End of Clause)

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IDENTIFICATION AND REPRESENTATION OF DATA WITH RESTRICTIVE OR LIMITING MARKINGS

(a) This clause does not apply to restrictions based solely on copyright.

(b) Consistent with FAR 52.227-15(b), Limited Rights Data, Restricted Computer Software, and other data with authorized restrictive or limiting markings to be delivered in performance of this contract will be identified and listed pursuant to this clause. The Contractor shall not deliver any data in performance of this contract with restrictive or limiting markings unless the data are listed herein or later identified and certified by the Contractor that such data qualify for restriction in accordance with the terms of FAR 52.227-14 of this contract, as specified in paragraph (c) or (d) of this clause.

(c) Pre-Award Identification.

(Start of Identification and Representation)

For data not first produced in performance of this contract, the Contractor represents it has accurately identified, through recorded information, the stages of technical development and the source of funds at a lowest segregable level pertaining to an item, component, process, or computer software.

As an authorized representative of the Contractor, the undersigned hereby certifies that the data related thereto and identified below qualify for restriction in accordance with the terms of FAR 52.227-14 of this contract:

Technical Data* or Computer Software** to be Furnished with Restrictions	Basis for Representation***	Represented Rights Category****	Name of Person Representing Restrictions*****
Contractor Fill-in *****	Contractor Fill-in *****	Contractor Fill-in *****	Contractor Fill-in *****

* A representation of limited rights data is applicable to a lowest segregable level pertaining to an item, component, or process. Identify the lowest level pertaining to an item, component, or process.

** A representation of restricted computer software is applicable to a lowest segregable level pertaining to computer software. Identify the lowest segregable level pertaining to computer software.

*** Generally, the development of an item, component, process, or computer software at private expense is the only basis for representing limited or restricted rights on the Government. If development was not at private expense, enter the specific reason for asserting that the Government's right should be limited or restricted.

**** Enter represented rights category (e.g., limited rights, restricted rights, SBIR rights,

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Government Purpose Rights).

***** Corporation, individual, or other person, as appropriate.

*****Contractor fill-in after award as applicable.

Date Printed Name and Title Signature

Date	
Printed Name and Title	
Signature	

(End of Identification and Representation)

(d) Post-Award Identification. In addition to the representations made within this clause before award, for data not first produced in performance of this contract, other representations may be made after award when based on new information or inadvertent omission unless the inadvertent omission would have materially affected the Government's source selection decision, a payment decision, or both. Such identification and representations may be made after award whereby the Contractor shall submit a request to the Contracting Officer as soon as practicable after initial identification in the following format and signed by an official authorized to obligate the Contractor. The Contracting Officer will consider such a request and determine whether to accept the request by incorporating it in a contract modification if accepted. Such post-award identification shall be made in the following format:

(Start of Identification and Representation)

Identification and Representation of Data with Restrictive or Limiting Markings

The Contractor asserts additional data not previously identified pursuant to the *Identification and Representation of data with Restrictive or Limiting Markings* clause of this contract and required to fulfill the data delivery requirements qualify as limited rights data, or restricted computer software, or other authorized restrictive marking. The Contractor represents it has accurately identified, through recorded information, the stages of technical development and the source of funds at a lowest segregable level pertaining to an item, component, process, or computer software. Furthermore, the Contractor represents it has verified such recorded information.

As an authorized representative of the Contractor, the undersigned hereby certifies that the data identified below qualify for restriction in accordance with FAR 52.227- 14 of this contract:

Technical Data* or Computer Software** to be Furnished with Restrictions	Basis for Representation***	Represented Rights Category****	Name of Person Representing Restrictions*****
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Draft Request for Proposal (RFP) - 80JSC026R0021
Commercial Low Earth Orbit (LEO) Destination Contract (CLDC)

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Contractor Fill-in *****	Contractor Fill-in *****	Contractor Fill-in *****	Contractor Fill-in *****
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* A representation of technical data asserted as limited rights data is applicable to a lowest segregable level pertaining to an item, component, or process. Identify the lowest segregable level pertaining to an item, component, or process.

** A representation of restricted computer software is applicable to a lowest segregable level pertaining to computer software. Identify the lowest segregable level pertaining to computer software.

*** A representation of other data shall be made at a lowest segregable level (i.e., broad descriptions are generally unacceptable due to indefiniteness). Generally, the development data entirely at private expense is the only basis for representing limited or restricted rights on the Government. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be limited or restricted.

**** Enter represented rights category (e.g., limited rights, restricted rights, SBIR rights, Government Purpose Rights).

***** Corporation, individual, or other person, as appropriate.

***** Contractor fill-in after award as applicable.

Date Printed Name and Title Signature

Date	
Printed Name and Title	
Signature	

(End of Identification and Representation)

(e) If requested by the Contracting Officer, the Contractor shall provide sufficient recorded information to justify the validity of the restriction asserted to the data identified in this clause. Such written justification shall include historical documentary evidence that clearly identifies the stages of technical development and the source of funds at a lowest segregable level pertaining to an item, component, process, or computer software. Conclusory statements without supporting historical documentary evidence shall constitute a failure to provide written justification to substantiate the propriety of the markings. Costs and expenses associated with providing sufficient recorded information to justify the validity of the restriction asserted to the data are unallowable costs under this contract. The Contractor shall substantiate its asserted restriction at its own expense.

(f) Based on the Contractor's actions or deliberate inaction, an omission regarding failing to identify data or a failure by the Contractor to identify, analyze, or verify data as described in this clause may be deemed as an act in deliberate ignorance or reckless disregard of the truth or

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falsity of the information. The Contractor may not rely on past or commensurate actions or inactions by the Government regarding data not previously identified to the Government as limited rights data or restricted computer software yet delivered to the Government with restrictive or limiting markings and actually or constructively accepted by the Government.

(g) Subcontracting. If applicable, the Contractor shall obtain from its subcontractors sufficient recorded information to justify the validity of the restriction asserted to the data identified in this clause necessary to fulfill the Contractor's obligation in paragraph (e) of this clause. If a subcontractor refuses to accept terms affording the Contractor to provide such sufficient recorded information to the Contracting Officer, the Contractor shall promptly notify the Contracting Officer of the refusal and shall not proceed with the subcontract award without authorization in writing from the Contracting Officer.

(h) Any Pre-Award Identification and Post-Award Identification authorized in accordance with this clause will be incorporated into Volume V (Model Contract) as Attachment J-04, *Authorized Limited Rights and Restricted Rights Data*.

(End of Clause)

GOVERNMENT INSIGHT

(a) Introduction. In accordance with SOW 2.3, Government Insight, as defined below, provides NASA an understanding of the Contractor's activities and data through an effective working relationship, participation in the Contractor's processes, working panels and boards, and access to products and data. This clause describes the intended primary working-level interface between the Contractor and the Government during contract administration. It is intended to facilitate an exchange of information adequate for nominal activities.

(b) Definitions. As used in this clause -

(1) *Data* is defined the same as the definition of *Data* in FAR 52.227-14 *Rights in Data – General*.

(2) *Insight* means the Government gaining, via communication and access under suitable protective conditions an understanding of the Contractor's activities, technical approach, and data, including those performed by or delegated to subcontractors or suppliers, to the extent, necessary to assess technical progress, schedule performance, risk management, Risk Based Assessments (RBA) and compliance with requirements leading to final certification. Insight includes access to planning, data, analyses, tests, reviews, and failure reporting and investigation activities associated with safety-critical or certifiable systems, whether performed by the Contractor or by lower-tier entities. Insight is not approval or disapproval authority, but it may provide information for the Government to use in, and expedite, approval procedures otherwise contemplated by this contract.

(3) *Insight Data* is defined as data and other information to which the Government is

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provided access for Government Insight.

(c) Insight Procedures. The Contractor will provide sufficient access to all data and activities necessary to meet the requirements herein, including those set forth in CLDP-PLN-3016, *Commercial Low-Earth Orbit Development Program (CLDP) Insight Management Plan*.

(1) Access. The Contractor shall provide the Government access to all data and activities necessary for the Government to achieve insight. This access includes the Contractor facilitating the ability of the Government, both remotely and on-site at the Contractor's facilities, to locate and review all data and activities. The Contractor shall provide prompt and continuous access to such data. These activities and data shall be traceable in a useable and readable format.

(2) Facilitating the use and transformation of Insight data. The Contractor shall permit, and when requested, facilitate the Government in downloading or otherwise having access and use of data subject to Insight (e.g., printing, identifying, classifying insight data). The Government may store such data on Government systems or at Government facilities and transform the data as deemed necessary by the Government to effectuate insight.

(d) Notification.

(1) The Contractor shall notify the Contracting Officer's Representative of technical meetings, control boards, reviews, tests, training events and areas identified for Government Quality Assurance associated with performance under this contract within a timeframe (e.g., 10 business days prior to the event) that permits meaningful Government participation through the entire event.

(2) For non-NASA missions to a CLDS or that utilize the same or substantially similar space transportation vehicles as those developed or utilized under this contract, in the event of anomalies or launch or mission failures, the Contractor shall provide for NASA to fully participate in the Contractor's Mishap Investigation Board or equivalent entity if NASA requests participation.

(3) The Contractor shall notify NASA of qualification acceptance, integration, flight, or early development test anomalies involving vehicles, systems, subassemblies, components, or software that are used for or the same or substantially similar to those components of its CLDS. This includes anomalies from proof-of-concept testing, AI&T activities, human-rating or certification flight demonstrations, and joint or cross-program tests (e.g., involving Visiting Vehicles or CLDP systems). The Contractor shall make available to NASA all problem reports or discrepancy reports on vehicle systems' failures and anomalies. This shall include insight into fleet-wide problems, anomalies, Material Review Board actions, deviations or waivers to systems, subsystems, materials, processes, and test equipment,

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including those used on non- NASA missions. The Contractor shall ensure these requirements are flowed down to all applicable subcontractors and suppliers.

(e) Joint Test Activities. If joint test activities are agreed upon during performance, the requirements of this paragraph will apply. Joint Test related activities will be Contractor-led and shall include active and steady state Government participation both on site and remotely. NASA will convene a dedicated team for planning of joint tests. Government team members will not provide direction to Contractor personnel on design changes or procedures, or any other aspect of CLDS development, production, or operation. Government team members will not approve or disapprove any aspect of the Contractor's CLDS design or performance of the contract. Any action(s) taken by the Contractor in response to any direction given by any person other than the Contracting Officer or their delegated official shall be at the Contractor's risk. The team will provide a formal, unambiguous, programmatic structure for Government input to the Contractor. In addition, the Government lead on the team will provide integrated, consolidated insight to the CLDP. By its structure, the team will prevent unintended, informal Government inputs to the Contractor. To the maximum extent possible, the team will work together and strive to resolve issues at the lowest level.

(1) Examples of the Government's Joint Test insight activities include assessments of crew operational interfaces with the Destination and human-in-the-loop assessments of operational suitability. These assessments will include, but are not limited to handling qualities, situational awareness, workload and operational complexity, usability, layout, displays and controls, and flight crew suits. In addition, insight may occur through participation during the planning and build up phase of ground testing (e.g., simulator training and evaluations, mockup demonstrations, etc.), during test flights, and during the post-test flight evaluation process. Insight gained through integrated operations assessments will ultimately feed into NASA's verification approval decisions (before demonstration flight) and validation approval decisions (post demonstration flight).

(f) Effects of insight.

(1) Insight should result in an effective working relationship between the Government and the Contractor leading to NASA certification of the Contractor's CLDS and effective provision of services thereafter.

(2) If, through insight, the Government observes any of the following: Contractor non-compliance with requirements or the other terms and conditions of the contract; a difference in interpretation of test results; or disagreement with the Contractor's technical approach, the NASA insight team will elevate the issue through the appropriate CLDP boards. Through an effective, functioning relationship, the Government and Contractor should strive to resolve issues at the lowest working level and minimize issues elevated to program boards. Program boards will disposition recommendations in a timely manner and provide oversight resolution if necessary. Resulting board decisions and direction will be transmitted to the Contractor through the Contracting Officer.

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(3) Insight does not affect or modify the Contractor’s responsibility for full performance as set forth in this contract. The Government’s insight under this clause shall not be construed as: authorization; endorsement or approval of milestones; certification or final acceptance or rejection of certification success; or as a defense to any finding of mission failure or final acceptance or rejection of contract deliverables.

(4) The parties agree that information obtained through insight does not constitute notice, actual or constructive, for any purpose.

(g) Government use and handling of insight data. Data accessed or obtained by the Government under this clause is subject to the other terms of this contract, including the terms and conditions pertaining to technical data and computer software established in section I clause FAR 52.227-14 *Rights in data – General (Deviated)* as incorporated into this contract. The data generated, accessed, or obtained as of a result of Government insight is expected to be limited rights data, as defined in paragraph (a) of the clause at section I clause FAR 52.227-14 *Rights in data – General (Deviated)*.

(h) Flow down to subcontractors and suppliers. The Contractor shall ensure the Government has insight into the activities and (including related data) of all subcontractors and suppliers performing or supporting any safety work, any launch and transportation vehicle, or creating or producing data required to certify any portion of the CLDS. Fulfillment of this clause may require the Contractor to execute third-party data rights agreements with its suppliers, as well as rights to information developed under other programs, to provide adequate Insight on parts and services procured by the Contractor. The Contractor shall incorporate the applicable provisions of this clause into its contracts with subcontractors and suppliers at any tier to which this clause applies, or shall otherwise obtain signed commitments to comply with the terms of this clause and related contract requirements from those entities. This flow down requirement shall be in addition to any other applicable flow down requirement under this contract, including the requirement under section I clause FAR 52.227-14 *Rights in data – General (Deviated)*.

(i) Insight Implementation Plan. The Contractor’s Insight Implementation Plan (DRD CLDC-104) shall comply with the requirements of this clause and specify, in detail, how the Contractor will accomplish the requirements of this clause. Where the plan and this clause conflict, this clause shall govern.

(j) Results of Insight. Should insight activities identify non-compliance with this contract, difference in interpretation of test results, or disagreement with the Contractor’s technical approach, the Government insight team will elevate the issue through the appropriate LEO Program boards. Program boards will disposition recommendations in a timely manner and provide oversight resolution if necessary. Resulting board decisions and direction will be transmitted to the Contractor through the Contracting Officer and their delegated technical representative.

(k) Contractor Responsibility. Notwithstanding the insight set forth in this Clause, the Contractor assumes full performance responsibility as set forth in this contract. The Government’s insight

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or JTT participation under this clause shall not be construed as authorization, endorsement or approval of milestones, certification or final acceptance or rejection of any payment milestone.

(End of Clause)

CONTRACTOR CERTIFICATION FOR SAE AS9100

(a) This clause supplements the requirements identified in FAR 52.246-11 *HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT*.

(b) The Contractor shall have and maintain third-party SAE AS9100 certification from a recognized registrar. In addition, if the Government has accepted the Contractor's SAE AS9100 certification and the Contractor subsequently changes registrars, loses its registration status, or is put on notice of losing its registration status, the Contractor shall notify the Contracting Officer within three days of receiving such notice from its registrar. The Contractor should ensure that all subcontractors and any sub-tier suppliers performing design, development, manufacturing, integration, test, or certification-related activities for CLDS maintain SAE AS9100 certification or equivalent aerospace-industry QMS certification acceptable to the Government. The Contractor should verify that neither it nor its subcontractors or sub-tier suppliers are subject to adverse quality, performance, or restriction notices issued through GIDEP or other Government-recognized quality notification systems that may impact CLDS performance, safety, or certification.

(c) The Contractor shall coordinate with any Certification Registrars or Databases or Certifying Organizations to allow NASA access to certification documentation and audit information pertinent to this contract. This insight may include (but not limited to) Level 2 access to contract-relevant manufacturers in the International Aerospace Quality Group (IAQG) Online Aerospace Supplier Information System® (OASIS), the National Aerospace and Defense Contractors Accreditation Program (NADCAP) or equivalent.

(d) The Contractor shall ensure all sub-tier suppliers for critical materials, components, or subsystems are compliant with AS9100.

(e) If the Contractor is not SAE AS9100 certified, the Government will perform, or have a third party perform, an SAE AS9100 compliance audit no earlier than six (6) months after contract award. Compliance audits will normally be re-accomplished every thirty-six (36) months, but the Government may conduct annual surveillance audits. The Contractor shall support the audits as required.

(End of clause)

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SUCCESS DETERMINATION

(a) General. The overall goal of NASA is to develop criteria that appropriately and fairly define the Contractor's performance. Success criteria for Service Missions will be defined on a per-mission basis and mutually agreed to by NASA and the Contractor.

(b) Acceptance. Final acceptance of service will be accomplished following the Contracting Officer's success determination. The Contracting Officer will notify the Contractor in writing of both Success Determination and Acceptance.

(c) Investigation and Corrective Action. In the event of an anomaly or failed mission, a Contractor-chaired investigation board with NASA participation, if activated, will determine the cause of anomaly or failure. The board will evaluate all available data necessary in order to determine if the mission failure was attributable to the Destination, Crew or Cargo Visiting Vehicle, or conditions which the Contractor is expected to control or avoid. Based on the findings and recommendations of the board, NASA shall make the final determination as to Partial Success or Failed mission.

(d) Destination Success Criteria. (1) The total payment price and milestone percentage of the Post Increment Review (PIR) shall be defined upon submission of the contractors Mission Service Work Plan in accordance with Attachment J-12 *Mission Service Work Plan Template*. For each Mission Service Task Order (MSTO), NASA will provide the initial unique Destination success criteria to be included with the PIR milestone and the corresponding payment percentage breakdown of the PIR price two months before the Mission Certification Review (MCR). The final criteria and specific breakdown of the payment percentages of this payment will be agreed to at the CLDS MCR. If an agreement cannot be reached, the Contracting Officer will establish the criteria and specific breakdown of the payment percentages by the time of the Operations Readiness Review (ORR). The final criteria will be incorporated into a Mission Service Task Order revision. Criteria will be established per the following guidelines:

(i) Criteria that reflects the Contractor's Destination capabilities and services. An example is as follows: "Successful operation of destination laboratory facilities supporting utilization."

(ii) Criteria will be established that only reflects the Contractor's capabilities, services and performance, independent of NASA.

(iii) The Contractor shall submit the list of relevant data expected to be used for the evaluation of Destination success criteria one month prior to the MCR. The types of data NASA would consider as relevant information include, but are not limited to, types of data defined in CLDC DRD-203 *TIER*.

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(2) Procedures. The Contracting Officer shall determine whether the PIR is considered a Success, Partial Success, or a Failure, based on the defined success criteria and corresponding relevant data. Within fifteen (15) calendar days from receipt of the DRD CLDC-205 *Post Increment Report*, the Contracting Officer will either determine the PIR criteria a Success or inform the Contractor of NASA's intent to determine the PIR objectives as Partial Success or Failure and withhold the PIR milestone payment or any portion thereof.

(3) If NASA informs the Contractor of a Partial Success or Failure, NASA will withhold the payment for PIR milestone and may further utilize the submittal of DRD CLDC-205, *Post Increment Report*, other relevant data, and if activated, findings from the Contractor-chaired investigation board to complete its final assessment. The Contracting Officer shall submit a final determination within ninety (90) calendar days from the Contracting Officers initial determination of a Partial Success or Failure. In the event it is determined that the PIR objectives are a Failure in accordance with the success criteria, the PIR milestone payment shall be forfeited by the Contractor and is not recoupable.

(e) Crew Mission Success Criteria. (1) The total payment and milestone percentage of the Crew Visiting Vehicle (CVV) Post Flight Review (PFR) shall be defined upon submission of the contractors Mission Service Work Plan in accordance with Attachment J-12 *Mission Service Work Plan Template*. For each MSTO, NASA will provide the initial unique CVV success criteria to be included in the CVV PFR milestone and the corresponding payment percentage breakdown of the CVV PFR price two months before the Mission Certification Review (MCR). The final criteria and specific breakdown of the payment percentage of this payment will be agreed to at the CVV MCR. If an agreement cannot be reached, the Contracting Officer will establish the criteria and specific breakdown of the payment percentages by the time of the Operational Readiness Review (ORR). The final criteria will be incorporated into a Mission Service Task Order revision. Criteria will be established per the following guidelines:

(i) Criteria that reflects the Contractor's mission capabilities and services. An example is as follows: "Successful delivery of crew to the Destination, Successful return/disposal of NASA cargo."

(ii) Criteria will be established that only reflect the Contractor's performance, independent of NASAs.

(iii) Criteria will consider ascent aborts or earlier than pre-launch planned End-Of-Mission timeframe, contingency spacecraft crew support, and inability to dock with the Destination.

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(2) The Contractor shall submit the list of relevant data and parameters to be used for the evaluation of mission success criteria one month prior to the MCR. The types of data NASA would consider as relevant information include:

(i) Vehicle data that represents critical systems for all flight phases (such as ascent, approach, docking, mating, and entry).

(ii) Available launch and orbital vehicle data verifying DRD CLDC-132, *Vehicle Interface Definition Document (IDD)* environments.

(iii) Closeout photos both on the ground and on orbit documenting crew/cargo configuration at launch and prior to landing.

(iv) Any supplemental data that may support the Contractor's performance.

(3) Procedures. The Contracting Officer shall determine whether the CVV PFR criteria is considered a Success, Partial Success or Failure, based on the defined success criteria and corresponding relevant data. Within fifteen (15) calendar days from receipt of the DRD CLDC-206, *Visiting Vehicle Post Flight Report*, the Contracting Officer will either determine the CVV PFR objectives a success or will inform the Contractor of NASA's intent to determine the CVV objectives as Partial Success or Failure and withhold the CVV PFR milestone payment or any portion thereof.

(4) If NASA informs the Contractor of a Partial Success or Failure, NASA will withhold the payment for the CVV PFR milestone and may further utilize the submittal of DRD CLDC-206, *Visiting Vehicle Post Flight Report*, other relevant data, and if activated, findings from the Contractor-chaired investigation board to complete its assessment. The Contracting Officer shall submit a final determination within ninety (90) calendar days from the Contracting Officers initial determination of a Partial or Failure. In the event of a failure in accordance with the success criteria, the CVV PFR milestone payment shall be forfeited by the Contractor and are not recoupable.

(f) Cargo Mission Success Criteria. (1) The total payment and milestone percentage of the Cargo Visiting Vehicle (CaVV) Post Flight Review (PFR) shall be defined upon submission of the contractors Mission Service Work Plan in accordance with Attachment J-12 *Mission Service Work Plan Template*. For each MSTO, NASA will provide the initial unique CaVV PFR success criteria to be included in the CaVV PFR milestone and the corresponding payment percentage breakdown of the CaVV PFR price two months before the Cargo Integration Review (CIR). The final criteria and specific breakdown of the payment percentage of this payment will be agreed to

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at the CIR. If an agreement cannot be reached, the Contracting Officer will establish the criteria and specific breakdown of the payment percentages by the time of the CaVV ORR. The final criteria will be incorporated into a Mission Service Task Order revision. Criteria will be established per the following guidelines:

(i) Criteria that reflects the Contractor’s mission capabilities and services. An example is as follows: “Successful delivery, return or disposal of cargo to/from the Destination.”

(ii) Criteria will be established that only reflect the Contractor’s performance, independent of NASAs.

(iii) Criteria will consider ascent aborts or earlier than pre-launch planned End-Of-Mission timeframe, contingency cargo support, and inability to dock with the Destination.

(2) The Contractor shall submit the list of relevant data and parameters to be used for the evaluation of mission success criteria one month prior to the CIR. The types of data NASA would consider as relevant information include:

(i) Vehicle data that represents critical systems for all flight phases (such as ascent, approach, docking, mating, and entry).

(ii) Available launch and orbital vehicle data verifying DRD CLDC-132, *Vehicle Interface Definition Document (IDD)* environments.

(iii) Closeout photos both on the ground and on orbit documenting cargo configuration at launch and prior to landing.

(iv) Any supplemental data that may support the Contractor’s performance.

(3) Procedures. The Contracting Officer shall determine whether the CaVV PFR criteria is considered a Success, Partial Success or Failure, based on the defined success criteria and corresponding relevant data. Within fifteen (15) calendar days from receipt of the DRD CLDC-206, *Visiting Vehicle Post Flight Report*, the Contracting Officer will either determine the CaVV PFR objectives a success or will inform the Contractor of NASA’s intent to determine the CaVV PFR objectives as Partial Success or Failure and withhold the CaVV PFR milestone payment or any portion thereof.

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(4) If NASA informs the Contractor of a Partial Success or Failure, NASA will withhold the payment for the CaVV PFR milestone and may further utilize the submittal of DRD CLDC-206, *Visiting Vehicle Post Flight Report*, other relevant data, and if activated, findings from the Contractor-chaired investigation board to complete its assessment. The Contracting Officer shall submit a final determination within ninety (90) calendar days from the Contracting Officers initial determination of a Partial or Failure. In the event of a failure in accordance with the success criteria, the CaVV PFR milestone payment shall be forfeited by the Contractor and are not recoupable.

(g) In the event the government obtains remedies under this clause due to a Partial Mission Success or a Failed Mission determination, the rights and remedies contained in this Clause are in lieu of any rights and remedies in case of default applicable to this mission only, including the rights and remedies in the inspection clauses, FAR 52.232-32 *Performance-Based Payments*, paragraph (j) *Special terms regarding default*, and; NFS 1852.226-73 *Major Breach of Safety or Security*

(End of clause)

ASSOCIATE CONTRACTOR AGREEMENTS

(a) The Contractor shall enter into Associate Contractor Agreements (ACA) for any portion of the contract requiring joint participation with other NASA Contractors in the accomplishment of the SOW requirements. The agreements shall include the basis for sharing information, data, technical knowledge, expertise, and/or resources essential to the integration and operations of the CLD System to Payloads, Cargo, transportation systems, in-space and ground systems, and other essential activities. This should ensure the greatest degree of cooperation for the development of the CLD Program to meet the terms of the contract.

NASA Contract / Agreement Number	Title of NASA Contract or Agreement	Contractor / Entity
TBD	TBD	TBD
TBD	TBD	TBD
TBD	TBD	TBD
TBD	TBD	TBD
TBD	TBD	TBD

(b) ACAs shall include the following general information:

(i) Identify the associate Contractors and their relationships to NASA.

(ii) Identify the NASA program(s) involved and the relevant Government contracts of the associate Contractors.

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- (iii) Describe the associate Contractor interfaces by general subject matter.
- (iv) Specify the categories of information to be exchanged or support to be provided between the Contractor and the associate contractors.
- (v) Include the expiration date (or event) of the ACA.
- (vi) Identify potential conflicts between relevant Government contracts and the ACA; include agreements on protection of proprietary data and restrictions on contractor employees.
- (c) The Contractor and associate contractors are strongly encouraged to seek out and foster cooperative efforts that will benefit the CLD Program with increased safety, efficiency, and productivity.
- (d) The Contractor's efforts in this cooperation will be evaluated as part of the contract performance feedback process.
- (e) The Contractor is not relieved of any contract requirements or entitled to any adjustments to the contract terms because of a failure to resolve a disagreement with an associate contractor.
- (f) Liability for the improper disclosure of any proprietary data contained in or referenced by any agreement shall rest with the parties to the agreement, and not with the Government.
- (g) All costs associated with the ACAs shall be included in the negotiated price for this contract. Agreements may be amended as required by the Government during contract performance.

(End of clause)

MITIGATION OF ORGANIZATIONAL CONFLICTS OF INTEREST (OCIs)

- (a) Mitigation plan. In accordance with SOW 2.1, *Program Management*, the Organizational Conflict of Interest Avoidance/Mitigation Plan (OCI Plan) and its obligations are hereby incorporated into the Contract at Attachment J-07, *Organizational Conflicts of Interest (OCI) Plan*.
- (b) Changes. Either the Contractor or the Government may propose changes to the OCI Plan. Such changes are subject to the mutual agreement of the parties and will become effective only upon incorporating the change into a revised OCI Plan. In the event that the Government and the Contractor cannot agree upon a mutually acceptable change, the Government reserves the right to make a unilateral change to the OCI Plan as necessary, with the approval of the head of the contracting activity, subject to Contractor appeal as provided in the Disputes clause.
- (c) Violation. The Contractor shall report any violation of the OCI Plan, whether by its own personnel or those of the Government or other contractors, to the Contracting Officer (CO). This

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report shall include a description of the violation and the actions the Contractor has taken or proposes to take to mitigate and avoid repetition of the violation. After conducting such further inquiries and discussions as may be necessary, the CO and the Contractor shall agree on appropriate corrective action for the Contractor to take, if any, or the CO will direct the Contractor to take corrective action.

(d) Breach. Any breach of the above restrictions or any nondisclosure or misrepresentation of any relevant facts required regarding OCI to be disclosed may result in termination of this contract for default or other remedies as may be available under this Contract, law, or regulation.

(e) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (e), in subcontracts where the work includes or may include tasks related to the organizational conflict of interest. The terms Contractor and Contracting Officer shall be appropriately modified to reflect the change in parties and to preserve the Government's rights.

(f) Notification. If the Contractor identifies an actual or potential OCI that has not already been adequately disclosed and resolved (or waived in accordance with FAR 9.503), the Contractor shall make a prompt and full disclosure in writing to the CO. This disclosure shall include a description of the action the Contractor has taken or proposes to take in order to resolve the conflict. This reporting requirement also includes subcontractors' actual or potential OCIs not adequately disclosed and resolved prior to award.

(g) OCI Plan. The Contractor shall periodically update the plan, based on changes such as changes to the legal entity, the overall structure of the organization, subcontractor arrangements, contractor management, ownership, ownership relationships, or modification of the work scope.

(End of Clause)

OUTER SPACE TREATY ARTICLE 6

The Contractor shall notify NASA and any other required authority(ies) regarding any changes to the mission plan during transit to the Destination in Low-Earth Orbit (LEO), while conducting Destination operations, and during transit from the Destination. Per this contract SOW Section 2.16, *Mission Operations*, the mission plan includes NASA, Contractor, and other non-USG utilization activities. The Contractor shall also notify NASA when any termination of CLD operations occurs. These actions will support the United States Government's obligation to provide continuing supervision as required by Article VI of the United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies for activities conducted on behalf of NASA.

(End of Clause)

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NASA PRIORITY

The Contractor shall prioritize NASA requirements with respect to non-NASA customer mission objectives when planning and re-planning operations for performance under this contract and subsequent Task Orders.

(End of Clause)

COMMUNICATIONS

(a) NASA reserves the right to be a part of the release of any preliminary media products (releases, imagery, video, audio, advisories, contracts, and web articles), media interviews, news conferences, contingency statements, media scouts, photo opportunities and film crew activities related to any CLD prototype(s), demonstration models, or service vehicles. NASA reserves the right to participate in any initial public release by the Contractor of media products (imagery, video, audio, or other media content) first produced in the performance of this contract, including, but not limited to, launch, landing, NASA mission preparation, NASA mission execution, accident/mishap events, and NASA mission incidental CLD discoveries.

(b) NASA retains all rights to its own media products including media of NASA astronauts and employees.

(c) The Contractor will work with NASA to execute NASA-initiated media events where NASA HQ OCOMM determines, after good faith consultation with the Contractor, that a media event is warranted. The Contractor may, consistent with Federal law and this Contract, release general information regarding its activities conducted within the scope of the Contract. For purposes of this Communications clause, “HQ OCOMM” shall mean the Lead Public Affairs Officer for the Space Operations Mission Directorate as identified to the Contractor by the COR.

(i) The Contractor will coordinate with HQ OCOMM, or their designee, in advance of release of any media products for review and approval, including without limitation releases, advisories, contracts, web articles, media interviews, news conferences, contingency statements, media scouts, photo opportunities, and film crew activities regarding NASA efforts or activities in connection with the Contract. The coordination will be implemented in a timely manner prior to release with negotiations taking place at least three (3) business days before release.

(ii) The use of any direct media statement/quote by a NASA official shall be submitted to the NASA-designated Communication Officers (Headquarters and appropriate Center) for NASA concurrence to ensure accuracy and appropriateness prior to its release.

(iii) NASA will coordinate, with the Contractor, public releases of information to obtain comments and technical corrections related to the Contractor’s efforts or activities in connection with the Contract prior to NASA’s release of information to the public with enough time for both parties to negotiate and review in advance. The Contractor shall use its best efforts to provide its review and comments back to NASA within three (3) business days

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of the request. If the Contractor does not provide comments within three (3) business days, the submitted content will be considered acceptable for release. For breaking news items, there may be a need for more timely release of information to the public in which case the NASA Communications team will coordinate with the Contractor for imminent release.

(iv) Upon request, the Contractor shall assist HQ OCOMM in developing the mission commentary for NASA broadcasts by furnishing background material.

(v) The Contractor may also be requested to provide information to support the development of press kit documents and for NASA news conferences. Any concept imagery submitted in support of press kit documents and for NASA news conferences shall be submitted as soon as possible to NASA, and NASA shall have the right to use such imagery for US Government purposes, and such imagery will be appropriately credited according to NASA policies. Imagery which features Contractor-owned Hardware may depict company logos as they appear in context on such Hardware, but the imagery provided to NASA should not contain any graphic overlays, including company logos.

(vi) At a minimum of forty-five (45) business days in advance, or otherwise as expressly requested by HQ OCOMM, the Contractor shall work with the Contracting Officer Representative (“COR”) to coordinate any communications and branding requirements for any launches, aircraft-take offs, landings, major milestones, and tests under this Contract.

(vii) If the Contractor has knowledge that the press is inquiring about an event that meets criteria set forth in NFS 1852.226-74, *Safety and Health (Short Form)*, the Contractor shall promptly notify the Contracting Officer, or designee, of the event. The Contracting Officer, or designee, will facilitate access to HQ OCOMM, or its designee. HQ OCOMM or its designee will work with the Contractor to generate a coordinated response to the Press and the public.

(viii) When communicating its own general information to the public related to NASA missions, including, but not limited to, CLD missions, the Contractor shall reference NASA’s involvement in the funding and development of the Contractor’s commercial products or services that were developed in support of this Contract.

(d) With exception of live coverage, the Contractor shall protect NASA crew members’ audio and imagery in the course of all Contract activities in order to protect NASA crew member privacy rights. For downlinked audio and imagery, the Contractor shall route the data in real-time to the NASA Mission Control Center. NASA will monitor feed(s) and instruct the Contractor to remove the feed from release to the public in the event of a privacy concern. For imagery and audio recorded during flight operations and recovered post-flight, the Contractor shall send a copy of the data to NASA for review. The Contractor shall not release any video and/or audio with NASA crew members in view until the NASA review is complete. NASA will inform the Contractor if any data is restricted. Restricted data cannot be released by the Contractor, either internally or externally, or used in any way. Data that does not contain NASA crew members may be used by the Contractor after proper coordination in accordance with paragraph (a) above.

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(e) For purposes of this clause, the term “Media” shall include, but not be limited to, audio, imagery, video, virtual or augmented reality, or other works of mass communications for NASA’s missions, including, but not limited to, media capture of all rendezvous events, descent and ascent flight profiles, and operations in LEO. The Government shall have the rights as set forth in FAR 52.227-17 *Rights in Data – Special Works*. When the Contractor is granted the rights to use, release to others, reproduce, distribute, or publish any Media, such use, release, reproduction, distribution or publication shall adhere to the NASA Guidelines (*e.g.* Images and Media, located at <https://www.nasa.gov/nasa-brand-center/images-and-media/>, and Film and Documentary, located at <https://www.nasa.gov/nasa-brand-center/film-and-documentary-guidelines/>).

(f) Consistent with Federal law and NASA policy, Contractor shall coordinate with HQ OCOMM to include the NASA Insignia, and any other NASA Identifier elements requested by NASA, on Contractor-owned Hardware, and buildings which are actually used in connection with a NASA payload, with NASA crew, or with providing a service to NASA, as applicable. For purposes of this Contract, “Hardware” shall include space vehicles, space transportation or demonstration vehicles, including rockets, orbital and robotic spacecraft, aircraft, component systems, equipment, flight or EVA suits, payloads, structures, ground infrastructure including gantries. The following shall be applicable to such use of NASA Identifiers:

(i) The location, size, and exact use of the NASA Insignia (Meatball) must be approved by HQ OCOMM and shall follow the guidelines set forth in the latest NASA Graphics Standards Manual. Contractor trademarks, logos, or other markings, including those of a subcontractor, international partner contractor, or contract service Contractor, are permitted to appear on Hardware along with the NASA Insignia or other identifiers where such Hardware is owned by the Contractor (or international partner contractor, or contract service Contractor), and the Contractor is providing NASA a service, such as flying a payload, if approved in advance by HQ OCOMM, with consideration given to whether such markings are appropriate given government requirements related to ethics, promotional appearances, and otherwise, and whether any such considerations may be mitigated by proper sizing or placement of such markings.

(ii) Notwithstanding the foregoing, prominent Contractor markings are not permitted to appear on Hardware when such Hardware is being visibly worn, used, or operated by a government astronaut. Whether or not a Contractor marking is prominent shall be determined by NASA in its sole discretion. The NASA Logotype (Worm) may NOT be substituted for the NASA Insignia (Meatball), as per NASA Graphics Standards Manual.

(iii) Per the NASA Graphics Standards Manual, the NASA Logotype (Worm) may be used as a supporting graphic element with the NASA Insignia (Meatball). All such uses must be approved by HQ OCOMM. The NASA Insignia shall be displayed, when possible, so that it is visible at launch, take-off (as is the case for aircraft), landing, and during other mission activities (i.e. on a CLD or any place other partner logos are shown).

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(iv) In situations where NASA is one of many payloads on or users of Contractor-owned Hardware, use of NASA Insignia and Identifiers shall be appropriately sized with branding of similarly situated payload Contractors or users, with separation, sizing, placement or supporting language as reasonably requested by HQ OCOMM to address any NASA concerns regarding potential endorsement.

(v) The NASA Insignia shall not be displayed next to “billboard” branding on commercial missions/projects. For purposes hereof, “‘billboard’ branding” shall mean logos, graphics, trademarks, trade dress or other branding elements of any entity other than Contractor and its subcontractors. Whether or not any particular branding is “billboard” branding, or, the Insignia or other NASA Identifiers may be permitted with any non-NASA branding, or, separation, sizing, placement or supporting language can be used with the Insignia and any non-NASA branding to mitigate NASA concerns regarding endorsement and other considerations, will be at the discretion of NASA after consultation with the Contractor. When Contractor-owned hardware is used under Contract, no branding of any outside third-party partner, sponsor, advertiser, or other party shall appear on Hardware intended or expected to be worn, used or operated by a government astronaut, pilot or other NASA employee.

(g) The Contractor shall not use the words “National Aeronautics and Space Administration” or the letters “NASA” in connection with a product or service in a manner reasonably calculated to convey any impression that such product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. Any partnerships for non-NASA cargo, payloads, and services which the Contractor desires to make with a third party relating to NASA missions must be in accordance with NASA Guidelines (e.g. Image and Media, Advertising, Merchandise, Film and Documentary, and Partnerships) and require NASA review and approval in accordance with the clause *Commercial Activity Guidance*. In addition, the Contractor shall submit to HQ OCOMM in advance any proposed public use of the NASA name or initials for NASA review and approval. NASA approval shall be based on applicable law and policy governing the use of the NASA name and initials. NASA’s approval will not be unreasonably withheld. Use of NASA emblems/devices (i.e., NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. The Contractor shall not publicly use such emblems/devices without prior NASA review and approval from the NASA Headquarters Office of Communications in accordance with such regulations.

(h) NASA does not endorse any commercial product, service, or activity. NASA’s certification of the Hardware under this Contract does not constitute certification or endorsement by NASA that the Hardware is safe for public use. NASA’s certification means the Contractor’s Hardware has met NASA’s safety requirements. The Contractor agrees that nothing in this Contract will be construed to imply that NASA authorizes supports, endorses, or sponsors any product or service of the Contractor resulting from activities conducted under this Contract.

(i) The Contractor shall include the terms of this clause in all subcontracts awarded under this contract.

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(1) For LEO activities, the Contractor shall provide ephemeris data to NASA or another authorized entity responsible for conjunction assessment and collision avoidance of spaceflight activities. The Contractor should reference the NASA/SP-20205011318 Conjunction Assessment Best Practices Handbook as a guide to follow. [link: https://nodis3.gsfc.nasa.gov/OCE_docs/OCE_50.pdf]

(2) This clause shall be flowed down and included in contracts with all subcontractors, and third- party users, when applicable.

(End of Clause)

JURISDICTION AND CONTROL OF SPACE OBJECTS

The CLDS is expected to be registered by the United States. Consistent with the Outer Space Treaty, the United States retains jurisdiction and control over objects launched into outer space which are listed on the U.S. registry, and over any personnel thereof, while in outer space or on a celestial body. Regardless, all modules of the CLD where U.S. Government astronauts are required to have access must be registered in the United States. Further, the Contractor shall require parties that engage in activities on or related to the U.S.-registered modules on a CLD to agree in writing that such activities will be governed by the law of the United States and that those parties submit to the exclusive jurisdiction of United States courts.

(End of Clause)

**AUTHORITY AND RESPONSIBILITIES OF THE DESTINATION AND CREW
VISITING VEHICLE (CVV) COMMANDER, CHAIN-OF-COMMAND AND
SUCCESSION ON-ORBIT; RELATIONSHIP BETWEEN GROUND AND ON-ORBIT
MANAGEMENT**

(a) Introduction. This clause is for the Destination Commander during on-orbit operations of the Destination and CVV Commander during operations of crew within the CVV. It outlines the Commander's roles, responsibilities, and experience. This clause supplements the scope and contents of DRD CLDC-129 *Crew Code of Conduct*.

(b) Experience Requirements. Given the role of the Commander in decision making and the responsibility of the lives of the crew, a potential Commander shall have the following capabilities in accordance with CLDC-128 *Operations and Training Plan* , CLDC-129 *Crew Code of Conduct*, and SOW 2.21.

(i) Spaceflight experience of at least 14 days in orbit within the last 10 years.

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- (ii) Experience leading teams of highly skilled and intelligent people from different backgrounds.
 - (iii) Experience fully and accurately communicating within a chain-of-command in a timely manner during critical activities.
 - (iv) Experience following a chain-of-command direction during activities.
 - (v) Demonstrated ability giving critical feedback when the receiver is not receptive to the message. Demonstrated ability receiving critical feedback and implementing corrective actions in a timely manner.
 - (vi) Experience maintaining order, enforcing procedures, and taking effective actions in challenging and evolving operational environments during a mission.
- (c) Authority and Responsibilities of the Commander. In addition to the Crew Code of Conduct (CCOC) as defined in SOW 2.21, the Commander is subject to the standards and the command-specific provisions set forth below:
- (1) The Commander will seek to maintain a harmonious and cohesive relationship among the Crew and foster an appropriate level of mutual confidence and respect through an interactive, participative, and relationship-oriented approach which duly takes into account the international and multicultural nature of the Crew.
 - (2) During Pre-Flight and Post-Flight Activities, the Commander is the leader of the crew and is responsible for forming the individual Crew into a single integrated team. During pre-flight activities, the Commander, to the extent of their authority, should lead the Crew through the training curriculum and mission preparation activities and seeks to ensure the Crew are adequately prepared for the mission, acting as the Crew's representative for training, medical, operations and utilization authorities. During post-flight activities, the Commander coordinates as necessary with these authorities to ensure the Crew completes the required post-flight activities.
 - (3) During On-Orbit Operations, the Commander is responsible for and will, to the extent of their authority and the CVV and Destination capabilities, assure the safety of all crewmembers, assure the protection of the elements, equipment, and payloads, from all owners and partners; and accomplish the mission needs. During On-Orbit Operations, the Commander's main responsibilities are to:
 - (i) Conduct operations in or on the CVV or Destination as directed by the Flight Director (or equivalent) and in accordance with the Flight Rules and procedures.
 - (ii) Direct the activities of the Crew as a single integrated team to ensure the successful completion of the mission.

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(iii) Fully and accurately inform the Flight Director (or equivalent), in a timely manner of the Destination configuration, status, commanding and other operational activities (on-board; to include off nominal or emergency situations).

(iv) Enforce procedures for the physical and information security of operations and utilization data.

(v) Maintain order.

(vi) Ensure crew safety, health and well-being including crew rescue and return.

(vii) Take all reasonable action necessary for the protection of the Destination elements, equipment or payloads, from all owners and partners.

(d) Scope of Authority. During all phases of on-orbit activity, the Destination Commander, working with the authority of the Flight Director (or equivalent), shall have the authority to use any reasonable and necessary means to fulfill their responsibilities. This authority, which shall be exercised consistent with the General Standards and the Disciplinary Regulations in the Crew Code of Conduct as defined in SOW 2.21, extends to:

(1) The Destination elements, equipment and payloads.

(2) The Destination Crew Members.

(3) Activities of any kind occurring in or on the Destination.

(4) Data and personal effects in or on the CVV or Destination where necessary to protect the safety and well-being of the Crew and the CVV or Destination elements, equipment and payloads.

(e) Authority Issues. Any matter outside the Commander's authority shall be within the purview of the Flight Director (or equivalent). Additionally, issues regarding the Commander's use of authority shall be referred to the Flight Director (or equivalent) as soon as practicable, who will refer the matter to appropriate authorities for further handling. Although other Crew may have authority over and responsibility for certain CVV or Destination elements, equipment, payloads or tasks, the Commander remains ultimately responsible, and solely accountable to the Flight Director (or equivalent) for the successful completion of the activities and the mission.

(f) Chain-of-Command and Succession On-Orbit. The Commander is the highest authority among the Crew Members on-orbit. A panel managed by the Contractor shall determine the order of succession among the Crew Members in advance of flight and the Flight Rules set forth when implementing a change of command.

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(g) Relationship of the Destination Commander to CVV and other Commanders. The Flight Rules define the authority of the CVV Commander and any other Commanders and set forth the relationship between their respective authorities and the authority of the CVV Commander.

(h) Relationship Between the Commander (On-Orbit Management) and the Flight Director (or equivalent) for Ground Management. The Flight Director (or equivalent) is responsible for directing the mission. A Flight Director (or equivalent) shall direct real-time CLDS operations at all times. The Commander, working under the direction of the Flight Director (or equivalent); in accordance with the Flight Rules, is responsible for conducting on-orbit operations in the manner best suited to the effective implementation of the mission. The Commander, acting on their own authority, is entitled to change the daily routine of the Crew where necessary to address contingencies, perform urgent work associated with crew safety, protection of the CLDS elements, equipment or payloads, or conduct critical flight operations. Unless directed otherwise, the Commander should implement the mission as directed by the Flight Director (or equivalent). Specific roles and responsibilities of the Commander and the Flight Director (or equivalent) are described in the Flight Rules. The Flight Rules outline decisions planned in advance of the mission and are designed to minimize the amount of real-time discussion required during mission operations.

(End of Clause)

MISHAP REPORTING

(a) This clause applies to performance of the contract on contractor-owned property. For performance on federal-controlled facilities, see NFS 1852.226-71 *Safety and Health Measures and Mishap Reporting* and NFS 1852.226-74 *Safety and Health (Short Form)*.

(b) Definitions, as used in this clause,

(1) *Close Call* means an event in which there is no injury, or only minor injury requiring first aid, and/or no equipment/property damage or minor equipment/property damage (less than \$20,000), but which possesses a potential to cause a mishap.

(2) *Exposure* means at least one of the following:

(i) Vulnerability of population, property, or other value system to a given activity or hazard; or

(ii) Other measure of the opportunity for failure or mishap events to occur.

(3) *Lost-Time Injury/Illness* means a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift it occurred; or a nonfatal non-traumatic illness/disease that causes disability at any time.

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(4) *Mission Failure* means a mishap of whatever intrinsic severity that prevents the achievement of the success criteria or objectives as identified in the Mission Specific Order.

(5) *NASA Mishap* is an unplanned event that results in at least one of the following:

- (i) Injury or fatality to non-NASA personnel, caused by NASA operations.
- (ii) Damage to public or private property (including foreign property) not under the ownership or control of the Contractor and/or its subcontractors under this contract, caused by NASA operations or NASA-funded development or research projects.
- (iii) Damage to property (including foreign property) under the ownership or control of the Contractor and/or its subcontractors under this contract, caused by NASA operations.
- (iv) Occupational injury or illness, or fatality to NASA Personnel.
- (v) Mission failure of any flight or major test before the scheduled completion of the planned primary mission.
- (vi) Destruction of, or damage to, NASA property or NASA equipment.

(6) *NASA Operations* means any activity or process that is under NASA direct control or includes major NASA involvement.

(7) *NASA Personnel* means any person employed by NASA, or other Government personnel performing services on behalf of NASA.

(8) *Substantial Damage to property or equipment* means damage or failure which adversely affects the structural strength, performance, or operational characteristics of the property or equipment, and which would normally require major repair or replacement of the affected component(s).

(9) *Serious Injury* means any injury resulting from a mishap in which any one or more of the following apply:

- (i) Requires hospitalization for more than forty-eight (48) hours, commencing within seven (7) days from the date the injury was received.
- (ii) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose).
- (iii) Causes severe hemorrhages or nerve, muscle, or tendon damage.
- (iv) Involves any internal organ.

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- (v) Involves second- or third-degree burns, or any burns affecting more than five (5) percent of the body surface.
- (c) The Contractor shall notify and immediately report (by phone) to the Contracting Officer (CO), or a designee, any of the following associated with any work performed under this Contract:
- (1) NASA or Contractor Mishaps which result in Serious injury; fatality; Lost-Time Injury/Illness; any environmental damage; any Mission Failure; or Substantial Damage to or loss of equipment or property damage of at least \$50,000.
- (d) The Contractor shall notify and promptly report (by phone) to the CO, or a designee, any of the following associated with any work performed under this Contract:
- (1) Close Calls involving NASA Personnel, NASA property, or NASA equipment.
 - (2) Exposures involving NASA Personnel, NASA property, or NASA equipment, which could result in fatality; or Lost-Time Injury/Illness.
- (e) The Contractor shall include in the notification outlined in paragraphs (b) and (c): a brief description of the incident, the location and time of the incident, number of fatalities, number of hospitalized employees, type of injury, type of damage, and contact person and phone number.
- (1) The Contracting Officer, or designee, will facilitate access to NASA Office of Communications. NASA Office of Communications will work with the Contractor to generate a coordinated response to the news media and the public.
 - (2) The Contractor shall provide NASA the ability to lead and coordinate communications with crew members' families.
- (f) The Contractor shall ensure the impoundment of operations personnel, data, telemetry, and recovered hardware to ensure integrity of mishap information for coordinating an immediate mishap response without affecting essential safety operations of the safety of the flight crew.
- (g) The Contractor shall conduct an initial mishap investigation for all mishaps reported to NASA. The Contractor shall allow NASA participation in the investigation and make all data and resulting reports available to NASA within 15 days of completion of the investigation and development of corrective action plans. The Contractor is not required to include in any report an expression of opinion as to the fault or negligence of any employee. The report shall include any verification activities identified by the Contractor to ensure that corrective actions to be implemented by NASA or a third party have been implemented, if applicable.
- (h) NASA reserves discretionary authority to investigate any mishaps or close calls that involve personnel, NASA equipment, or NASA property, that occur in the performance of this contract.

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The Contractor shall provide personnel support and data, as necessary, to support a NASA investigation.

(i) If the Contractor conducts a mishap investigation in the performance of activities not under this contract, but relevant to the Commercial Low-Earth Orbit Destination System design, production and operations, the Contractor shall make available to NASA all data and resulting reports.

(j) The Contractor shall maintain the data of any mishap investigation referenced above for the term of this Contract plus three (3) years.

(k) When applicable, the Contractor shall support a Commission appointed by the President per 51U.S.C § 70701 et seq, or other applicable authority.

(End of Clause)

INFORMED CONSENT AND ASSUMPTION OF RISK FOR NON- U.S. GOVERNMENT (USG) CREW

(a) Definitions, for the purpose of this clause:

(1) *Protected Space Operations*: as defined in the clause, *Cross-Waiver of Liability for Science or Space Exploration Activities unrelated to the International Space Station*.

(2) *Property Damage*: damage to, loss of, or loss of use of property.

(3) *Personal Injury*: bodily injury to, or other impairment of health of, or death of, a person.

(4) *CLD Mission*: preparation for, transportation to, execution of, and return to Earth from activities conducted during a Destination increment, beginning at assignment of a Non-USG Crew member and ending upon return of the Non-USG Crew member to their home location and completion of any post-flight activities.

(b) Informed Consent and Assumption of Risk. Prior to assigning Non-USG Crew to a CLD Mission, the Contractor shall obtain a written informed consent and assumption of risk statement, signed individually by each Non-USG Crew member and notarized, that evidences that each Non-USG Crew member has been informed of, understands and assumes all risks associated with Protected Space Operations, including spaceflight, on-orbit operations, and activities supporting Protected Space Operations. The informed consent and assumption of risk statement shall acknowledge that the Destination is not designed as a passenger transport or residence, and that Protected Space Operations involve inherently dangerous operations.

(1) The informed consent and assumption of risk statement shall acknowledge the risks inherent in space flight, including while on a CLDS, and those associated with the specific

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mission. The informed consent and assumption of risk statement shall acknowledge that NASA is not providing oversight or certification for the CLDS, including for the launch or crew transportation vehicles, as safe for carrying Non-USG Crew.

(2) The informed consent and assumption of risk statement shall acknowledge that the contractor, not NASA, is responsible for all activities associated with CLD Mission execution, except as specifically set forth in the contract, including but not limited to: selection, training, and medical qualification of Non-USG Crew ; providing necessary supplies, life support, and medical care for Non-USG Crew during all phases of flight; crew safety for all phases of the mission; and nominal and off-nominal Launch and landing operations, including emergency rescue.

(3) The informed consent and assumption of risk statement shall include a release of the U.S., its officers, agents and employees from any and all causes of action, claims, demands or suits arising directly or indirectly, in whole or in part, from Personal Injury or Property Damage the Non-USG Crew may suffer for all Protected Space Operations. Such release will bind each Non-USG Crew member, Non-USG Crew members' estates, survivors, subrogees or anyone claiming by or through them and their heirs and assigns. The release will supplement the cross-waiver in the clause NFS 1852.228-78, *Cross-Waiver of Liability for Science or Space Exploration Activities Unrelated to the International Space Station*. The release shall also expressly state that the Non-USG Crew member agrees that in the event that he/she requests or requires medical assistance during a CLD Mission, of Government crew, or NASA medical doctors, including contractors, may provide medical care, and their actions will be covered by this release, protecting those individuals rendering assistance from claims by the Non-USG Crew member, Non-USG Crew members' estates, survivors, subrogees or anyone claiming by or through them and their heirs and assigns. The Non-USG Crew member shall agree that the federal laws of the United States of America shall apply to determine the validity of the release.

(End of clause)

INSURANCE FOR DAMAGE/LOSS; INJURY/DEATH TO PERSONS AND PROPERTY THAT ARE NOT THIRD PARTIES

(a) Definitions, for the purpose of this clause:

(1) *CLDS Activities* means all activities in transit to or from, in proximity to, and on the CLDS, or in preparation for such activities, including activities under this contract and Destination Commercial Activities (as defined in the, Cross-Waiver of Liability).

(2) *Destination Commercial Customer*. Any person or entity, including a State (foreign or domestic), or an agency or institution of a State, that provides, owns, or contracts with the

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contractor for services related to the Destination, including to transport Non-NASA Cargo or Payloads to the Destination.

(3) *Government Property* means all property owned or leased the United States, its agencies and its Related Parties, including property owned by non-Government entities or other partners (including international partners) sponsored by the US Government.

(4) *Party or Parties*. The Contractor or NASA, or both.

(5) *Related Party* means

(i) Any of the Parties' directors, officers, agents, or employees

(ii) Any of the Parties' Contractors, subcontractors, suppliers, vendors, customers, partners, or users at any tier involved directly or indirectly in CLDS Activities

(iii) Any entity having any right, title or interest, whether through sale, lease or service arrangement or otherwise, directly or indirectly, in the CLDS or services related to the CLDS.

(iv) Any of the Parties' customers or users at any tier and the contractors, subcontractors, or suppliers of said customers or users at any tier.

(v) For avoidance of doubt, a Related Party includes Non-USG Crew, as defined in SOW Section 1.8, and Destination Commercial Customers.

(6) *Protected Space Operations*, as defined in the clause, *Cross-Waiver of Liability for Science or Space Exploration Activities unrelated to the International Space Station*.

(7) All other terms are as defined in the clause, *Informed Consent and Assumption of risk for Non-USG Crew* unless stated otherwise.

(b) General. The contractor shall maintain insurance in the type and amount specified below for Property Damage and Personal Injury arising out of or resulting from any contractor or contractor Related Party Protected Space Operations. The insurance requirements in this clause do not apply to activities under CLIN 1. For the purpose of this clause, contractor Protected Space Operations include any activities performed by Government astronauts in support of contractor responsibilities or commercial mission activities.

(1) The required insurance policy(ies) shall provide that the insurer waives any right of subrogation against U.S. Government contractors, subcontractors, Related Parties, and the

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Government, including an explicit exclusion of any claim for subrogation arising from payments made under the policy

(2) The amount of required insurance, and the terms and conditions for the insurance, shall be subject to written approval by the Contracting Officer (CO). Once approved, insurance policies may not be modified or canceled without the prior, written approval of the CO.

(3) The insurance required hereunder shall be endorsed to name NASA (and any other parties designated by NASA) as an additional insured, shall be primary and noncontributory with any insurance which may be carried by or for the benefit of NASA, and shall afford coverage for all claims under the terms of this contract or any Task Order, based on any act, omission, event or condition that occurred or arose (or the onset of which occurred or arose) during the policy period as caused or committed by the contractor or its Related Parties.

(c) Insurance for damage to Government Property. The Contractor shall maintain insurance coverage for Property Damage to Government Property arising out of or resulting from any contractor or contractor Related Party Protected Space Operations, except as otherwise approved by the Contracting Officer in writing. Such insurance shall be in an amount of \$2 million, unless otherwise specified in the applicable task order. The Government will waive claims for Damage (as defined in the clause, *Cross-Waiver of Liability for Science or Space Exploration Activities unrelated to the International Space Station*) to Government Property only to the extent such claims exceed the maximum insurance amount.

(1) Insurance policies for Property Damage to Government Property under this clause shall attach no later than issuance of each Mission Service Order and shall remain in force for the duration of each Order.

(2) In the event Government Property is damaged as a result of the Protected Space Operations, the contractor shall be solely responsible for the repair and restoration of such property subject to NASA direction. However, the contractor's liability for such repair and restoration shall not exceed the agreed upon insurance policy limit. The Government may request that all insurance proceeds be made payable directly to the party making the repairs or providing a replacement. Such repair or replacement shall be to the Government's satisfaction. If losses or damages exceed available insurance, the Government shall have the right to prioritize the application of insurance proceeds.

(d) Insurance for Property Damage to Destination Elements. If an NLS Category 2 launch vehicle is utilized to launch a destination element, the Contractor shall maintain insurance coverage for Property Damage to the destination element, including all hardware and secondary payloads, of at least \$500,000,000, or amount reasonably available on the market, as determined by the CO and set forth in the applicable Task Order. Such insurance shall attach at element integration into the launch vehicle and remain in full force and effect until completion of licensed launch and orbital insertion.

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If a NLS Category 3 launch vehicle is utilized to launch a destination element, no insurance is required.

(e) NASA makes no representation or warranty that coverage or limits will necessarily be adequate to protect the Contractor, and such coverage and limits shall not be deemed as a limitation on the Contractor's liability. NASA makes no representation or warranty that coverage or limits will be adequate to protect the Contractor from losses, financial or otherwise, and such coverage and limits shall not be deemed as representing maximum potential exposure outside of the terms of this Contract. The Contractor shall procure additional insurance to cover such claims that Contractor deems commercially responsible.

(f) The Contractor shall indemnify and hold the U.S. Government harmless against such liability not adequately covered by the required insurance up to the amounts stated herein or in the applicable Task Order, for all damages the U.S. Government may incur as a result thereof, including costs and expenses of defending against any suit or claim.

(End of Clause)

INDEMNIFICATION BY CLD CONTRACTOR

If the U.S. Government incurs liability as a result of Contractor's or Private Astronaut's failure to properly flow down the CLD Cross-Waiver as required in the clause, *Cross-Waiver of Liability for Science or Space Exploration Activities Unrelated to the International Space Station*, the Contractor shall indemnify and hold the U.S. Government harmless against such liability, for all damages the U.S. Government may incur as a result thereof, including costs and expenses of defending against any suit or claim. The rights and obligations of the Parties under this section shall survive this Contract's or any Task Order's termination, expiration, or completion.

(End of Clause)

SETTLEMENT

(a) Settlement of Loss by United States Government. It is understood and agreed that, to the extent a claim or suit is brought against the United States Government and/or NASA without naming Contractor or any of their Related Entities, the United States Government will have final authority concerning the disposition, defense, or settlement of such claim or suit in accordance with the Federal law and Department of Justice regulations. NASA will consult with Contractor on an expedited basis on such claims and shall give due consideration to any reasonable request of Contractor relating to the proposed defense or settlement of such claims or proceedings. The final decision whether or how to defend or settle such claims or proceedings shall be with the United States Government. NASA shall immediately notify Contractor of such decision sufficiently in advance of any deadlines by which formal responses are due in any such proceedings to enable Contractor to undertake its own defense.

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(b) Settlement of Loss by Contractor or its Related Entities. It is understood and agreed that, to the extent a claim or suit is brought against the CLD Contractor or one of its Related Entities, without naming the United States Government or NASA, or any of their Related Entities, CLD Contractor or its Related Entities will have final authority concerning the disposition, defense, or settlement of such claim or suit. In all cases, CLD Contractor will consult with NASA on an expedited basis on such claims and shall give due consideration to any reasonable request of NASA relating to the proposed defense or settlement of such claims or proceedings. Any legal interest, right, or lien that the United States Government may have in the claim, suit, or settlement must be dispositioned before final disposition of the case. The final decision whether or how to defend or settle such claims or proceedings shall be with the CLD Contractor or its Related Entities. CLD Contractor shall immediately notify NASA of such decision sufficiently in advance of any deadlines by which formal responses are due in any such proceedings to enable the United States Government to undertake its own defense.

(End of clause)

APPLICABILITY OF RIGHTS IN DATA – SPECIAL WORKS

(a) Applicability. The clause FAR 52.227-17, *Rights in Data - Special Works*, as provided below in Section I, *Contract Clauses*, applies only to the portions of this contract that call for the production of data as set forth in the subparagraphs below in the performance of the contract, or as otherwise specified in this contract or agreed to by the Parties in writing. FAR 52.227-14, *Rights in Data – General (Deviation)*, as modified by NFS 1852.227-14 (as provided below in Section I of the contract) applies to all other data. All data set forth in the subparagraphs below are expected to be first produced in performance of the contract.

(1) All data first produced in the performance of this contract onboard the CLDS by assets used by or on behalf of the U.S. Government, including, but not limited to: USG Crew, USG Payloads, USG Payload Facilities, and other future assets. This data includes raw data and any analyzed results.

(2) Imagery. All data that include NASA crew, payloads, or other assets of the U.S. Government in the content produced, such as in audio, video, or images, or other multi-media content gathered on or from the CLDS.

(3) Media: Media includes, but is not limited to, audio, imagery, video, virtual or augmented reality, or other works of mass communications for NASA's missions, including, but not limited to, media capture of all rendezvous events, descent and ascent flight profiles, and operations in LEO. In addition to the requirements imposed through this clause and FAR 52.227-17, *Rights in Data - Special Works*, media shall be treated as specified in the clause, *Communications*.

(4) Research Data, as defined in CLDP-PLN-1122, *Science Data Management Plan*. This data includes raw data and any analyzed results.

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(5) Mission Data, as defined in CLDP-PLN-1122, *Science Data Management Plan* (also referred to as Research-Related Mission Data in Clause Minimum Data Rights To The Government). Unless otherwise set forth in this contract or notified by the contracting officer in writing, the contractor may use, release, reproduce, distribute, or publish mission data without prior coordination with the contracting officer.

(6) Other data as set forth in a Request for Task Order Proposals (RFTOP).

(b) If any of the data in the subparagraphs under (a) above are not first produced in performance of this contract, and the contractor identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (c)(1) of the clause at FAR 52.227-17, the license will include the right of U.S. Government payload representatives to use the data for research associated with their payload or a facility operating their payload; or for publication in papers describing the results of the research or performance of the payload/facility without permission from the contractor.

(End of Clause)

COMMERCIAL ACTIVITY GUIDANCE

(a) During the span of this contract, all external communications that occur during CLD Operations (Ground, Flight & On-Orbit), or related to the Destination, shall not undermine the interests of the United States in the peaceful use of outer space. This includes but is not limited to ensuring that conduct of the Partner and any non-Government Astronauts is not inappropriate for a general audience and is not partisan political activity or political advocacy, and does not imply endorsement by NASA.

(b) The Contractor shall ensure that all activities that occur during CLD Operations (Ground, Flight & On-Orbit) are subject to the following:

(1) Are consistent with U.S. Laws, U.S. Regulations, U.S. Treaties, NASA Policies and Contract Requirements;

(2) Follow NASA Media and Branding Guidelines (NASA Brand Center; Guidelines for using NASA Images and Media Guidelines);

(3) Ensuring content is not inappropriate for a general audience and is not partisan political activity or political advocacy

(4) Follow Crew Code of Conduct

(5) Do not imply or suggest NASA or USG endorsement - using NASA personnel insignia or emblem, or other materials outside of the DRD CLDC-203 *Tactical Increment Execution Report* (TIER) and CLDC DRD CLDC-009 *Commercial Activities Management Plan*

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(6) Not reflecting poorly or unfavorably on the relationships or operations of the United States Government

(c) The Contractor shall ensure that all activities during CLD Operations (Ground, Flight & On-Orbit) do not undermine the interests of the United States in the peaceful use of outer space. NASA also generally prohibits the following activities during CLD Operations (Ground, Flight & On-Orbit) without specific NASA approval, in accordance with paragraph (d):

(1) Military Operations (Excludes: Recruiting, Humanitarian, Science, Training)

(2) Activities related to Designated Countries (Tier II & III)

(d) For proposed activities or communications that appear to conflict with the requirements under this clause, the contractor shall submit a formal letter to the Contracting Officer for approval, which describes the proposed activity or communication and the contractor's rationale for deviation. The Contracting Officer will determine whether NASA approves or denies the proposed activity or communication.

(End of Clause)

GOVERNMENT TECHNICAL ASSESSMENT

(a) Government technical assessments. The Government reserves the right to utilize Government-performed technical assessments for launch and/or on-orbit readiness of the Contractor's services. In the event the Government determines that the Contractor cannot provide adequate assurances that the services will be safely available for use, the Government reserves the right to delay launch of the service.

(b) Allocation of Government's rights with respect to removal of crew or cargo pre-launch and on-orbit. In the event the Government decides to exercise its rights under this clause, the Government has the right to have its crew or cargo removed from the visiting vehicle or destination and safely returned to NASA. This removal and return is the Contractor's responsibility; at the Contractor's expense, without adjustment to contract price.

(c) In the event the Government delays the delivery, as a result of exercising its rights under this clause, and the causes of the delay were within the control of or due to the fault or negligence of the Contractor or its Subcontractors at any tier, then the clause *Adjustments to Launch Schedule*, shall govern and the Contractor shall be deemed to have caused the delay. If the Government delays the delivery and the causes of the delay were not within control or due to the fault or negligence of the Contractor or its Subcontractors at any tier, then the clause *Adjustments to Launch Schedule*, shall govern and the Government shall be deemed to have caused the delay.

(d) For the purposes of this clause, the burden of proof for showing that the causes of delay were within control or fault and/or negligence on the part of the Contractor or its Subcontractors at any

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tier rests with the Government. For the purposes of this clause, the burden of proof for showing that the causes of delay were within control or fault and/or negligence on the part of the Government at any tier rests with the Contractor.

(End of Clause)

IDIQ MINIMUM GUARANTEE SUPPLEMENT & CONDITIONS

(a) Contract holder(s) who receive a CLIN 2 *CLDS Development, Demonstration and Certification* Task Order Award shall receive a supplement to the IDIQ Guaranteed Minimum as follows:

(1) Four (4) CLIN 3 Service Missions.

(i) At least two (2) of the four (4) minimum guaranteed missions shall be a Standard Service Mission.

(b) Minimum Guarantee Conditions.

(1) Notwithstanding other rights and remedies contained within this contract, if the CLDS does not meet the Standard Service capability after two years of the date identified in the Certification Commitment table below, NASA may unilaterally lower its minimum obligations under JSC 52.216-90. NASA may either:

(i) Reduce the Minimum Guarantee quantity of Service Missions by one (1) Service Mission for each year of delay, or

(ii) Reduce the Minimum Guarantee by an amount equal to the value of one (1) Service Mission for each year of delay.

NASA may only begin to apply these reductions starting on the first day of the third year following the missed Certification Commitment date.

(2) The Contractor is allowed a two (2) year grace period delay from the Certification Commitment date. NASA also reserves the right to remove its Minimum Guarantee obligations in whole if any Mission Service type is not available to be ordered during the Base Ordering Period.

(c) Required date of completion. The Contractor shall achieve the following capabilities no later than the following schedule:

STANDARD SERVICE MISSION COMMITMENT	
REQUIRED CAPABILITY	DATE OF COMPLETION
Successful Certification of First Standard Service Mission	OFI

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(d) Certification Date Commitment Modification: Modifications or updates to the Certification Work Plan or other schedules do not constitute a change to the Contractor’s Commitment date in this table. NASA and Contractor may mutually agree through a contract modification if an update to this table is required.

(e) Section (a) – (d) applies to all or future awards made for CLIN 2, including Contractor(s) On-Ramped after initial IDIQ contract award.

(f) CLDC Contract holder(s) who do not receive a CLIN 2 Task Order shall only receive the IDIQ Guaranteed Minimum as described in the clause *IDIQ Minimum and Maximum Ordering Limits*.

(End of Clause)

AMERICAN TAXPAYER PROTECTIONS

(a) Prohibition on subsidizing foreign and private space tourism and sovereign astronaut seats and Mission Services. U.S. taxpayer funds under this contract shall not be used to finance, discount, rebate, or otherwise subsidize seats for foreign and private space tourists or sovereign astronauts.

(b) Nondiscriminatory, fair market pricing; Most Favored Pricing for the U.S. Government.

(1) Pricing and or equitable barter values shall be uniform and nondiscriminatory across domestic and foreign customers for services, except for objectively supported differences as determined by NASA (e.g., mission risk, duration, unique payload integration).

(2) Most Favored- Pricing-. For any service purchased by NASA under this contract, the price and commercial terms shall be no less favorable than the best (lowest) price and most favorable terms offered to any other customer, foreign or domestic, for services during the same period. The Contractor shall not provide discounted, preferential, or materially advantageous valuations to sovereign nations or third parties in a manner that results in NASA paying a higher effective rate than commercial customers or sovereign nations. This requires the contractor to establish a common commercial value for services ensuring any negotiated agreements or barter with sovereign nations are not valued at an amount less than the price paid by NASA.

(c) Remedies.

(1) Pricing remedy. If the Contracting Officer determines a violation of paragraph (b), the Contractor shall issue an equitable adjustment equal to the difference between the amount paid by NASA and the most favorable price/terms offered to any other customer for services,

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plus any ancillary value (e.g., credits, in-kind benefits) allocated to that customer within 60 days.

(End of clause)

PERFORMANCE-BASED PAYMENTS - SUPPLEMENT

(a) Applicability. This clause supplements FAR 52.232-32, *Performance-Based Payments*, by establishing interim milestone events on a deliverable-item basis. Each CLIN may include one or multiple deliverable items and/or mission events (which may require additional Mission Success Determination beyond the delivery item's acceptance criteria (see the clause *Success Determination*)). Delivery milestones represent the culmination of a series of interim milestones that collectively reflect the work necessary to achieve the deliverable or mission event. The contract may establish more than one series of cumulative performance events or criteria, which may be performed in parallel.

(b) Payment Schedule. Milestone acceptance criteria, payment amounts, and limitations for interim and deliverable milestones are specified in Attachment J-11, *Certification Work Plan*, and in each Task Order Work Plan as Mission Service Task Orders are issued (reference Attachment J-12 *Mission Service Work Plan Template*). The sum of interim-milestone financing payments for each delivery item shall not exceed 90% of that delivery item's price, in accordance with FAR 32.1004(b)(2)(ii). If contract modifications are issued, the payment schedule will be adjusted as necessary to reflect the actions required by those modifications.

(c) Acceptance and payment. The Contracting Officer will determine whether the interim milestone performance satisfies the acceptance criteria within thirty (30) calendar days of successful completion of the final NASA Program Event and the Contractor's request for payment. Acceptance for delivery milestones requiring additional Mission Success Determination will be processed in accordance with the clause *Success Determination*. The Contracting Officer will unilaterally determine the Contractor's successful accomplishment of each milestone event based on criteria listed in Attachment J-11 and each Task Order Work Plan, as well as compliance with contract terms, including SOW and deliverable requirements. Interim milestones are cumulative events, and payments will be made in succession. Therefore, all preceding payment events must be successfully accomplished before payment for the next event, unless prior written consent of the Contracting Officer is obtained. Interim -milestone payments are contract financing payments and are not subject to interest penalty provisions of FAR Subpart 32.9, *Prompt Payment*. Delivery-milestone payments are not financing payments and, unlike interim milestone payments, once paid, are not subject to repayment by the Contractor unless conditions in FAR 52.232-32(j), *Special Terms Regarding Default*, apply.

(d) Liquidation of performance-based payments. Full liquidation of performance-based financing payments will occur upon Government acceptance of final services under each delivery milestone. However, final payment for delivery milestones requiring additional Mission Success Determination is subject to liquidation adjustments for any withheld payments and other remedies if Full Mission Success is not achieved.

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(End of Clause)

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 (OCI). Accordingly, the attention of prospective offerors is invited to FAR Subpart 9.5—Organizational Conflicts of Interest.

(b) The nature of this conflict may be related to the following types of OCIs:

(1) Unequal Access to Information: This type of OCI occurs when the Contractor, as part of their work under this Contract, gains access to non-public or proprietary information that would provide it a significant advantage in competing for a different government contract. This could include source selection information, technical data, or other confidential details. Even if the Contractor doesn't actively use the information, the access itself may constitute an OCI.

(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)

JSC 52.219-90 SMALL BUSINESS SUBCONTRACTING GOALS (JUL 2022)

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 (FAR).

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The total small business goal, expressed as a percent of total contract value for the contract, is TBD%. The small business percentage goal, includes the following goals expressed as a percent of total contract value:

Small Disadvantaged Business Concerns	<u>TBD%</u>
Woman-Owned Small Business Concerns	<u>TBD%</u>
HUBZone Small Business Concerns	<u>TBD%</u>
Veteran-Owned Small Business Concern	<u>TBD%</u>
Service-Disabled, Veteran-Owned Small Business Concern	<u>TBD%</u>
HBCUs (includes other minority institutions)	<u>TBD%</u>

(End of Clause)

JSC 52.223-94 JSC ENVIRONMENTAL COMPLIANCE (FEB 2025)

(a) This clause is JSC-unique for any work that is done at Johnson Space Center (JSC), as defined in (b) of this clause, under this contract, and the requirements are in addition to any U.S. Environmental Protection Agency (EPA), U.S. Occupational Safety and Health Administration (OSHA), or other applicable federal or state regulations or statutes, including those promulgated and enforced by the Texas Commission on Environmental Quality (TCEQ), the Texas Department of State Health Services (TDSHS) and the Texas Department of Licensing and Regulation (TDLR). Therefore, the following requirements do NOT supersede but rather supplement any statutory or regulatory requirements for any entity subject to this clause.

(b) The Contractor shall comply with all applicable federal, state, and site-specific regulations, public laws, and current executive orders, as well as the following applicable NASA and Johnson Space Center site-specific permits, plans, and management directives for activities affecting human health or the environment. Johnson Space Center (JSC) includes the JSC main campus, NASA-Ellington Field (EF), Sonny Carter Training Facility (SCTF), and El Paso Forward Operating Location (EPFOL). NASA and JSC site-specific directives include, but are not limited to:

- (1) NPD 8500.1, NASA Environmental Management;
- (2) NPR 8530.1, NASA Sustainable Acquisitions;
- (3) NPR 8553.1, NASA Environmental Management Program;
- (4) NPR 8570.1, NASA Energy Management Program;

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- (5) NPR 8580.1, NASA National Environmental Policy Act Management Requirements;
- (6) JPD 8500.1, JSC Environmental Excellence Policy;
- (7) JPR 8550.1, JSC Environmental Compliance Procedural Requirements;
- (8) JPR 8553.1, JSC Environmental Management System Manual;
- (9) JPR 8750.1, Energy and Water Conservation Plan;
- (10) JPR 1040.4, JSC Emergency Preparedness Program
- (11) JPR 1700.1, JSC Health and Safety Handbook
- (12) JWI 1040.26, Hazardous Substance Spill/Release Response; and
- (13) JWI 8553.1, EMS Aspect/Impact Assessment and EMP Process.

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

- (1) Those “hazardous chemicals” and “extremely hazardous substances” subject to the emergency planning notification and reporting requirements in the EPA’s Emergency Planning and Community Right-to-Know (EPCRA) Regulation, 40 CFR Parts 355 and 370, and counterpart TCEQ regulations without regard for quantity.
- (2) Those "hazardous substances" and “hazardous chemicals” release notification and reporting requirements under EPA’s EPCRA, 40 CFR Parts 302 and 372, and counterpart TCEQ regulations, without regard for quantity.
- (3) Those materials defined as "highly hazardous chemicals" in OSHA Process Safety Management Regulation, 29 Code of Federal Regulation (CFR) Part 1910.119, without regard for quantity.
- (4) Those industrial and hazardous wastes generated, as a result of Contractor’s activities, as defined by the US EPA and TCEQ regulations, and as further defined and described in JPR 8550.1, JSC Environmental Compliance Procedural Requirements.
- (5) Oil, as defined and regulated under 40 CFR 112, Spill Prevention Control and Countermeasures and counterpart TCEQ regulations.
- (6) Other regulated materials (and waste) containing hazardous constituents or exhibit hazardous properties (e.g., flammable, reactive, corrosive, toxic) that are specifically identified by other statutes or regulations (e.g., PCBs, asbestos, hazardous air pollutants).

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- (7) Any radioisotope material or device that produces ionizing radiation.
- (8) Any Class 1M, 2, 2M, 3A, 3R, 3B or 4 laser system as defined by the American National Standards Institute No. Z136.1 (most current version).
- (9) Any explosive or any pyrotechnics.
- (10) Any pesticide.
- (d) As applicable, the Contractor shall track and provide complete and accurate data on sustainable acquisitions of designated products or services, including JF1121 (Request for Sustainable Acquisitions Waiver for EPA-CPG items), or equivalent authorized waivers obtained if any, waste reduction/pollution prevention, waste generation/disposal and recycling/waste diversion, and as well as construction/demolition and facility modification activities per DRD CLDC-007 *Environmental Compliance Reports*.
- (e) The contractor shall notify JSC Occupational Health/Space Medicine Operations (SD) prior to any initial use, quantity change or different application of hazardous materials, including as applicable, obtaining a waiver (JF594, Request for Waiver to Use a Prohibited or Restricted Chemical) prior to purchasing a prohibited or restricted hazardous material, per DRD CLDC-007 *Environmental Compliance Reports*.
- (f) If the Contractor manufactures, processes, otherwise uses, procures, or accumulates onsite hazardous materials as defined in this clause, the contractor shall develop and maintain an inventory listing the identity, hazards and quantity of the hazardous materials purchased, stored, processed, manufactured, and/or used onsite at JSC for the performance of the contract and provide quarterly/annual reports per DRD CLDC-007 *Environmental Compliance Reports*. The Contractor shall utilize the JSC hazardous material tracking and reporting system, including obtaining a JSC specific Safety Data Sheet (SDS) identification number, as described within JPR 1700.1. Refer to Chapter 9 of JPR 1700.1, relating to controlling inventory and reporting hazardous material usage and releases.
- (g) As applicable, the Contractor shall provide data on the use, management, and disposition of ozone depleting substances (ODS), per DRD CLDC-007 *Environmental Compliance Reports*.
- (h) As applicable, the Contractor shall provide, track and ensure the adequacy of appropriate training of its employees in the use and management of hazardous materials (including regulated wastes). Refer to JPR 1700.1, JSC Safety and Health Requirements and JPR 8550.1, JSC Environmental Compliance Procedural Requirements for employee training requirements, including initial training and applicable refresher training. The Contractor shall maintain complete and accurate records demonstrating compliance with applicable training requirements and make them available upon request.
- (i) As applicable, the Contractor shall use and manage all hazardous materials properly and take all necessary precautions (e.g., engineering controls, personnel protective equipment, etc.) to

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avoid or mitigate potential adverse effects to humans -and the environment. Should an unauthorized release occur, the Contractor shall immediately contact the JSC Emergency Dispatch Center (EDC) at (281) 483-3333, to request assistance.

(j) As applicable, the Contractor shall develop, maintain, and update, an Associated Contractor Agreement (ACA) with the JSC Environmental Management Office (EMO) Environmental Support Services Contractor (ESS) specifying the nature of compliance related tasks, notifications/reports, frequencies, and expectations for timely, accurate, and complete documentation. The Contractor shall notify the Contract Officer, Contract Officer Representative and JSC EMO's ESSC CO/COR on the status of the ACA negotiation process, upon initial ACA execution and subsequent updates of the ACA, in accordance with DRD CLDC-007 *Environmental Compliance Reports*.

(k) The Contractor shall collaborate with the JSC EMO and correct in a timely manner all identified environmental findings associated with its contract work (via eTrak or other authorized system), and complete, maintain, and make available to the Contracting Officer, JSC EMO, JSC Energy Manager, and/or regulatory agency inspection and authorized compliance audit personnel all documentation/records upon request, relating to environmental compliance (e.g., operating logs, equipment maintenance, calibration, and training records, JPR 8550.1 records, etc.) even if not routinely submitted to the respective offices listed above. Per the JSC Environmental Management System (JPR 8553.1), JSC Environmental Management Office (EMO) serves as the single point of contact with federal and state regulatory agencies and their representatives. If contacted formally or informally by external regulatory agency representatives, including but not limited to alleged noncompliance, the Contractor shall immediately notify the Contracting Officer and the JSC Environmental Management Office by phone at (281) 483-6207, followed by an email to JSC-DL-JE-Environmental@nasa.gov and jsc-environmentaloffice@mail.nasa.gov.

(m) Should a Notice of Violation, Notice of Noncompliance, Notice of Deficiency, or similar regulatory agency notice or enforcement action including onsite inspections, functional reviews, and internal compliance oversight audits, be issued to the Government 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 investigating the allegations, correcting any problems, and defending against any enforcement actions arising out of such actions or inactions.

(n) The Contractor shall insert the substance of this clause, including this paragraph, with appropriate changes of designations of the parties, in subcontracts under which environmental requirements apply (including sustainable acquisitions and recycling/waste diversion reporting) and/or hazardous materials will be utilized, or may reasonably be expected to be utilized, onsite at JSC. The Contractor shall be responsible for tracking and ensuring the overall performance and environmental compliance of its subcontractors.

(o) 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)

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**NFS 1852.228-78 CROSS-WAIVER OF LIABILITY FOR SCIENCE OR SPACE
EXPLORATION ACTIVITIES UNRELATED TO THE INTERNATIONAL SPACE
STATION (SEP 2025) (DEVIATION)**

(a) The purpose of this clause is to extend a cross-waiver of liability for work done in support of Agreements between Parties involving the exploitation, exploration and use of outer space through the Commercial Low-Earth Orbit (LEO) Destination (CLD) System (CLDS). This cross-waiver of liability shall be broadly construed to achieve the objective of furthering participation in space exploration, use, and investment.

(b) As used in this clause, the term:

(1) “*Agreement*” refers to any NASA agreement, NASA contract, or other NASA instrument that contains the cross-waiver of liability provision authorized in 14 Code of Federal Regulations (CFR) Part 1266.104, the cross-waiver in this clause, or another cross-waiver covering some or all of the Protected Space Operations, as defined herein. The term *Agreement* also includes this contract.

(2) “*Destination Commercial Activities*” refers to any contractor activities occurring on or in transit to the Destination even if they are not associated with activities under an Agreement.

(3) “*Damage*” means:

(i) Bodily injury to, or other impairment of health of, or death of, any person;

(ii) Damage to, loss of, or loss of use of any property;

(iii) Loss of revenue or profits; or

(iv) Other direct, indirect, or consequential Damage;

(4) “*Launch*” means the intentional ignition of the first-stage motor of the Launch Vehicle intended to place or try to place a Launch Vehicle (which may or may not include a Transfer Vehicle, Payload, or Crew) from Earth:

(i) in a suborbital trajectory;

(ii) in Earth orbit in outer space, including LEO;

(iii) otherwise in outer space,

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(iv) including activities involved in the preparation of a Launch Vehicle, Transfer Vehicle, or Payload for launch.

(5) “*Launch Services*” means:

(i) Activities involved in the preparation of a Launch Vehicle, Transfer Vehicle, Payload, or Crew (including Crew training), if any, for Launch; and

(ii) The conduct of a Launch.

(6) “*Launch Vehicle*” means an object, or any part thereof, intended for launch, launched from Earth, or returning to Earth which carries Payloads or persons, or both. For avoidance of doubt, for this contract, crew and cargo transportation vehicles are considered Launch Vehicles.

(7) “*Party*” means a party to an Agreement.

(8) “*Payload*” means all property to be flown or used on or in a Launch Vehicle or the CLDS.

(9) “*Protected Space Operations*” means all Launch or Transfer Vehicle activities, CLDS activities, and Payload activities on Earth, in outer space, or in transit between Earth and outer space performed in implementation of an Agreement, and all Destination Commercial Activities. For Protected Space Operations that are performed in implementation of an Agreement, Protected Space Operations begin at the signature of the Agreement and end when all activities performed in implementation of the Agreement are completed. For Protected Space Operations that are Destination Commercial Activities, Protected Space Operations begin at the execution of this contract and end at its expiration or termination. It includes, but is not limited to:

(i) Research, design, development, test, manufacture, assembly, integration, operation, or use of Launch or Transfer Vehicles, the CLDS, Payloads/Facilities, or instruments, as well as related support equipment and facilities and services; and

(ii) All activities related to ground support, test, training, simulation, or guidance and control equipment, and related facilities or services. Protected Space Operations excludes activities on Earth which are conducted on return of the Destination from space to further develop a payload's product or process for use other than for CLDS activities.

(10) “*Reentry*” means to purposefully return or attempt to return a Launch or Transfer Vehicle, Payload, or Crew from the Destination, Earth orbit, or from outer space to Earth.

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(11) “*Reentry Services*” means:

- (i) Activities involved in the preparation of a Launch Vehicle, Payload, or Crew (including Crew training), if any, for Reentry; and
- (ii) The conduct of a Reentry.

(12) “*Related entity*” means:

- (i) A contractor or subcontractor of a Party at any tier;
- (ii) A user or customer of a Party at any tier; or
- (iii) A contractor or subcontractor of a user or customer of a Party at any tier. The terms “contractors” and “subcontractors” include suppliers of any kind.
- (iv) The term “Related Entity” may also apply to a State, or an agency or institution of a State, having the same relationship to a Party as described in paragraphs B(12)(i) through B(12)(iii) of this Article, or otherwise engaged in the implementation of Protected Space Operations as defined in paragraph B(9) above.
- (v) Non-USG Crew that are involved in activities on or related to a CLDS, notwithstanding whether Non-USG Crew are employees of the Contractor.

(13) “*Transfer Vehicle*” means any vehicle that operates in space and transfers Payloads or persons or both between two different space objects, between two different locations on the same space object, or between a space object and the surface of a celestial body. A Transfer Vehicle also includes a vehicle that departs from and returns to the same location on a space object. For avoidance of doubt, for this contract, crew and cargo transportation vehicles are considered Transfer Vehicles.

(c) Cross-waiver of liability: (1) The Contractor agrees to a waiver of liability pursuant to which it waives all claims against any of the entities or persons listed in paragraphs (c)(1)(i) through (c)(1)(vi) of this clause based on Damage arising out of Protected Space Operations. This waiver shall apply only if the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged due to its involvement in Protected Space Operations. It is anticipated that all activities performed within the scope of work of the contract and Destination Commercial Activities in which the Contractor or its Related Entities participate will be considered Protected Space Operations. The waiver shall apply to any claims for Damage, whatever the legal basis for such claims, against—

- (i) A Party as defined in paragraph (b)(7) of this clause;

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(ii) A Party to a different NASA Agreement that includes flight on the same Launch Vehicle;

(iii) A Related Entity of any entity identified in paragraphs (c)(1)(i) through (c)(1)(ii) of this clause; or

(iv) The employees of any of the entities identified in (c)(1)(i) through (c)(iii) of this clause.

(2) The Contractor shall extend the cross-waiver of liability as set forth in paragraph (c)(1) of this clause to its Related Entities by requiring them, by contract or otherwise, to:

(i) Waive all claims against the entities or persons identified in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause; and

(ii) Require that their Related Entities waive all claims against the entities or persons identified in paragraphs (c)(1)(i) through (c)(1)(iv) of this clause.

For avoidance of doubt, the Contractor shall extend this cross-waiver to its Non-USG Crew and Destination Commercial Customers, as defined in Clause *Insurance for Damage/Loss; Injury/Death to Persons and Property that are not Third Parties* of this Contract, as well as to any entity providing Launch Services and Reentry Services as defined in paragraphs (b)(4) and (b)(11) above that are involved in any/all activities arising out of Protected Space Operations.

(3) For avoidance of doubt, this cross-waiver of liability includes a cross-waiver of claims arising from the *Convention on International Liability for Damage Caused by Space Objects*, entered into force on 1 September 1972, in which the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property is damaged due to its involvement in Protected Space Operations. However, this cross-waiver shall not apply if the United States Government incurs liability under the Liability Convention as a result of Destination Commercial Activities not under an Agreement.

(4) Notwithstanding the other provisions of this clause, this cross-waiver of liability shall not be applicable to:

(i) Claims between the Contractor and its Related Entities or between its Related Entities, unless the Contractor and its Related Entities have agreed in writing to waive such claims;

(ii) Claims made by a natural person (with the exception of Non-USG Crew members, Non-USG Crew members' estates, survivors, subrogees, or anyone claiming by or through them, and Destination Commercial Customers as defined in Clause *Insurance for Damage/Loss; Injury/Death to Persons and Property that are not Third Parties* of this Contract, except when a subrogee is a Party to an Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury to, or other impairment of health, or death of such person;

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(iii) Claims for Damage caused by willful misconduct;

(iv) Intellectual property claims;

(v) Claims for Damage resulting from a failure of a Party to extend the cross-waiver of liability to its subcontractors or Related Entities, pursuant to paragraph (c)(2) of this clause;

(vi) Claims by a Party arising out of or relating to another Party's failure to perform its obligations under this Contract or any associated Mission Specific Task Order; or

(vii) Claims resulting from liability incurred by the US Government under the Liability Convention as a result of Destination Commercial Activities not under an Agreement

(viii) Claims arising from activities under a GTA or GCA (see, *Use of Government Resources*)

(5) Nothing in this clause shall be construed to create the basis for a claim or suit where none would otherwise exist.

(d) Waiver of claims Between the Government and the Contractor:

(1) This clause provides for a reciprocal waiver of claims between the Government and the Contractor, and their Related Entities as described in paragraph (c) above, except the Government waives claims only to the extent such claims exceed the maximum amount of insurance required under this contract. This reciprocal waiver of claims shall not apply to rights and obligations arising from the application of any of the other clauses in this contract, or to rights and obligations that are not Protected Space Operations as defined in paragraph (b)(9) above.

(2) Pursuant to paragraph (c)(2) above, the Contractor shall extend this waiver of claims to its Related Entities by requiring them, by contract or otherwise, to waive all claims against the Government and its Related Entities. For avoidance of doubt, the Contractor shall require its Private Astronauts and owners of Destination Commercial Customers, as defined in the clause *Insurance for Damage/Loss; Injury/Death to Persons and Property that are not Third Parties* of this Contract, to waive claims against the Government and the Government's Related Entities.

(3) The Contractor shall ensure that proper Federal Aviation Administration (FAA) licenses are obtained, in accordance with 51 U.S.C. § 50901 et seq., for Launch and

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Reentry Services as defined by FAA. This waiver of claims shall not be applicable to the extent that Launch and Reentry Services subject to the FAA license.

(End of clause)

NFS 1852.232-77 LIMITATION OF FUNDS (FIXED-PRICE CONTRACT) (MAR 1989)

(a) Of the total price of the issued order(s), the sum of **\$TBD** is presently available for payment and allotted to this contract. It is anticipated that from time-to-time additional funds will be allocated to the contract in accordance with the following schedule, until the total price of said items is allotted:

SCHEDULE FOR ALLOTMENT OF FUNDS

Contract Line-Item Number (CLIN)	Presently available for payment
CLIN 1	TBD
CLIN 2	TBD
CLIN 3	TBD
CLIN 3A	TBD
CLIN 3B	TBD
CLIN 3C	TBD
CLIN 4	TBD
CLIN 5	TBD
TOTAL	TBD

(b) The Contractor agrees to perform, or have performed, work on the item(s) specified in paragraph (a) of this clause up to the point at which, if this contract is terminated pursuant to the Termination for Convenience of the Government clause of this contract, the total amount payable by the Government (including amounts payable for subcontracts and settlement costs) pursuant to paragraphs (f) and (g) of that clause would, in the exercise of reasonable judgment by the Contractor, approximate the total amount at the time allotted to the contract. The Contractor is not obligated to continue performance of the work beyond that point. The Government is not obligated in any event to pay or reimburse the Contractor more than the amount from time to time allotted to the contract, anything to the contrary in the Termination for Convenience of the Government clause notwithstanding.

(c) (1) It is contemplated that funds presently allotted to this contract will cover the work to be performed until **TBD**.

(2) If funds allotted are considered by the Contractor to be inadequate to cover the work to be performed until that date, or an agreed date substituted for it, the Contractor shall notify the Contracting Officer in writing when, within the next 60 days, the work will reach a point at which, if the contract is terminated pursuant to the Termination for Convenience of the

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Government clause of this contract, the total amount payable by the Government (including amounts payable for subcontracts and settlement costs) pursuant to paragraphs (f) and (g) of that clause will approximate 75 percent of the total amount then allotted to the contract.

(3) (i) The notice shall state the estimated date when the point referred to in paragraph (c)(2) of this clause will be reached and the estimated amount of additional funds required to continue performance to the date specified in paragraph (c)(1) of this clause, or an agreed date substituted for it.

(ii) The Contractor shall, 60 days in advance of the date specified in paragraph (c)(1) of this clause, or an agreed date substituted for it, advise the Contracting Officer in writing as to the estimated amount of additional funds required for the timely performance of the contract for a further period as may be specified in the contract or otherwise agreed to by the parties.

(4) If, after the notification referred to in paragraph (c)(3)(ii) of this clause, additional funds are not allotted by the date specified in paragraph (c)(1) of this clause, or an agreed upon date substituted for it, the Contracting Officer shall, upon the Contractor's written request, terminate this contract on that date or on the date set forth in the request, whichever is later, pursuant to the Termination for Convenience of the Government clause.

(d) When additional funds are allotted from time to time for continued performance of the work under this contract, the parties shall agree on the applicable period of contract performance to be covered by these funds. The provisions of paragraphs (b) and (c) of this clause shall apply to these additional allotted funds and the substituted date pertaining to them, and the contract shall be modified accordingly.

(e) If, solely by reason of the Government's failure to allot additional funds in amounts sufficient for the timely performance of this contract, the Contractor incurs additional costs or is delayed in the performance of the work under this contract, and if additional funds are allotted, an equitable adjustment shall be made in the price or prices (including appropriate target, billing, and ceiling prices where applicable) of the items to be delivered, or in the time of delivery, or both.

(f) The Government may, at any time before termination and, with the consent of the Contractor, after notice of termination, allot additional funds to this contract.

(g) The provisions of this clause with respect to termination shall in no way be deemed to limit the rights of the Government under the default clause of this contract. The provisions of this Limitation of Funds clause are limited to the work on and allotment of funds for the items set forth in paragraph (a). This clause shall become inoperative upon the allotment of funds for the total price of said work except for rights and obligations then existing under this clause.

(h) Nothing in this clause shall affect the right of the Government to terminate this contract pursuant to the Termination for Convenience of the Government clause of this contract.

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(End of Clause)

NFS 1852.235-71 ESSENTIAL PERSONNEL AND FACILITIES (AUG 2025)
(DEVIATION)

(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 must:

(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 must 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 must constitute the Contracting officer's consent required by this clause.

(c) The Contractor must obtain the Contracting officer's prior written approval anytime the Contractor plans to continue the research work during a continuous period in excess of 3 months without the participation of an approved principal investigator or project leader.

(d) The list of personnel and/or facilities (shown below or 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.

Essential Personnel (fill-in name):

OFI, Program Manager
OFI, Chief Financial/Revenue Officer

Key Facilities (fill-in name):

OFI, Manufacturing Production Facility
OFI, Flight Vehicle Processing Facility
OFI, Ground Processing Facility
OFI, Launch Facility
OFI, Mission Control Facility

**Offeror may add additional Key Facilities as applicable. List here the personnel and/or facilities considered essential, unless they are specified in the contract Schedule.*

(End of Clause)

(End of Section)

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CLAUSES INCORPORATED BY REFERENCE:

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

Clauses incorporated by reference:

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1):

Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.202-1	JUN 2020	DEFINITIONS.
52.203-3	APR 1984	GRATUITIES.
52.203-5	MAY 2014	COVENANT AGAINST CONTINGENT FEES.
52.203-6	JUN 2020	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT. ALTERNATE I NOV 2021
52.203-7	JUN 2020	ANTI-KICKBACK PROCEDURES.
52.203-8	MAY 2014	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY.
52.203-10	MAY 2014	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY.
52.203-12	JUN 2020	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS.
52.203-13	NOV 2021	CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT.
52.203-14	NOV 2021	DISPLAY OF HOTLINE POSTER(S).FILL-IN: NASA OIG, https://oig.nasa.gov/hotline/
52.203-19	JAN 2017	PROHIBITION ON REQUIRING CERTAIN INTERNAL CONFIDENTIALITY AGREEMENTS OR STATEMENTS.
52.204-9	JAN 2011	PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL
52.204-10	JAN 2026 (PCD 26-03)	REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS.
52.204-13	JAN 2026 (PCD 26-03)	SYSTEM FOR AWARD MANAGEMENT MAINTENANCE.
52.204-14	JAN 2026 (PCD 26-03)	SERVICE CONTRACT REPORTING REQUIREMENTS.

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52.204-15	JAN 2026 (PCD 26-03)	SERVICE CONTRACT REPORTING REQUIREMENTS FOR INDEFINITE-DELIVERY CONTRACTS.
52.204-19	DEC 2014	INCORPORATION BY REFERENCE OF REPRESENTATIONS AND CERTIFICATIONS.
52.209-6	JAN 2026 (PCD 26-03)	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, PROPOSED FOR DEBARMENT, OR VOLUNTARILY EXCLUDED.
52.209-10	JAN 2026 (PCD 26-03)	PROHIBITION ON CONTRACTING WITH INVERTED DOMESTIC CORPORATIONS.
52.210-1	JAN 2026 (PCD 26-03)	MARKET RESEARCH.
52.211-15	APR 2008	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS.
52.215-2	JAN 2026 (PCD 26-03)	AUDIT AND RECORDS-NEGOTIATION.
52.215-8	JAN 2026 (PCD 26-03)	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT.
52.215-11	JAN 2026 (PCD 26-03)	PRICE REDUCTION FOR DEFECTIVE CERTIFIED COST OR PRICING DATA—MODIFICATIONS
52.215-17	OCT 1997	WAIVER OF FACILITIES CAPITAL COST OF MONEY.
52.215-19	JAN 2026 (PCD 26-03)	NOTIFICATION OF OWNERSHIP CHANGES.
52.217-8	NOV 1999	OPTION TO EXTEND SERVICES. FILL-IN: 30 days
52.219-4	FEB 2026 (PCD 25-48A)	NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS.
52.219-8	FEB 2026 (PCD 25-48A)	UTILIZATION OF SMALL BUSINESS CONCERNS.
52.219-9	FEB 2026 (PCD 25-48A)	SMALL BUSINESS SUBCONTRACTING PLAN. ALTERNATE II (FEB 2026)
52.219-16	FEB 2026 (PCD 25-48A)	LIQUIDATED DAMAGES - SUBCONTRACTING PLAN.
52.219-28	FEB 2026 (PCD 25-48A)	POSTAWARD SMALL BUSINESS PROGRAM REREPRESENTATION. ALTERNATE I (MAR 2020)
52.222-3	JAN 2026 (PCD 26-03)	CONVICT LABOR.
52.222-35	JAN 2026	EQUAL OPPORTUNITY FOR VETERANS.

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	(PCD 26-03)	
52.222-36	JAN 2026 (PCD 26-03)	EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES.
52.222-37	JAN 2026 (PCD 26-03)	EMPLOYMENT REPORTS ON VETERANS.
52.222-40	JAN 2026 (PCD 26-03)	NOTIFICATION OF EMPLOYEE RIGHTS UNDER THE NATIONAL LABOR RELATIONS ACT.
52.222-50	JAN 2026 (PCD 26-03)	COMBATING TRAFFICKING IN PERSONS.
52.222-54	JAN 2026 (PCD 26-03)	EMPLOYMENT ELIGIBILITY VERIFICATION.
52.222-90	APR 2026	ADDRESSING DEI DISCRIMINATION BY FEDERAL CONTRACTORS. (DEVIATION)
52.223-5	MAY 2024	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION.
52.223-11	JAN 2026 (PCD 26-03)	OZONE-DEPLETING SUBSTANCES.
52.223-12	JAN 2026 (PCD 26-03)	MAINTENANCE, SERVICE, REPAIR, OR DISPOSAL OF REFRIGERATION EQUIPMENT AND AIR CONDITIONERS.
52.223-23	JAN 2026 (PCD 26-03)	SUSTAINABLE PRODUCTS AND SERVICES.
52.224-1	APR 1984	PRIVACY ACT NOTIFICATION.
52.224-2	APR 1984	PRIVACY ACT.
52.224-3	JAN 2017	PRIVACY TRAINING.
52.225-8	OCT 2010	DUTY-FREE ENTRY.
52.226-7	MAY 2024	DRUG-FREE WORKPLACE.
52.226-8	MAY 2024	ENCOURAGING CONTRACTOR POLICIES TO BAN TEXT MESSAGING WHILE DRIVING.
52.227-1	JUN 2020	AUTHORIZATION AND CONSENT.
52.227-2	JUN 2020	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT.
52.227-11	MAY 2014	PATENT RIGHTS-OWNERSHIP BY THE CONTRACTOR
52.227-16	JUN 1987	ADDITIONAL DATA REQUIREMENTS.
52.227-17	DEC 2007	RIGHTS IN DATA - SPECIAL WORKS.
52.228-5	JAN 1997	INSURANCE - WORK ON A GOVERNMENT INSTALLATION.
52.229-3	JAN 2026 (PCD 26-03)	FEDERAL, STATE, AND LOCAL TAXES.
52.229-11	JAN 2026 (PCD 26-03)	TAX ON CERTAIN FOREIGN PROCUREMENTS - NOTICE AND REPRESENTATION.
52.232-1	APR 1984	PAYMENTS.

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52.232-8	FEB 2002	DISCOUNTS FOR PROMPT PAYMENT.
52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS.
52.232-11	APR 1984	EXTRAS.
52.232-17	MAY 2014	INTEREST.
52.232-23	MAY 2014	ASSIGNMENT OF CLAIMS.
52.232-25	JAN 2017	PROMPT PAYMENT.
52.232-33	OCT 2018	PAYMENT BY ELECTRONIC FUNDS TRANSFER - SYSTEM FOR AWARD MANAGEMENT.
52.232-39	JUN 2013	UNENFORCEABILITY OF UNAUTHORIZED OBLIGATIONS.
52.232-40	MAR 2023	PROVIDING ACCELERATED PAYMENTS TO SMALL BUSINESS SUBCONTRACTORS.
52.233-1	JAN 2026 (PCD 26-03)	DISPUTES. JAN 2026 (PCD 26-03) ALTERNATE I
52.233-3	JAN 2026 (PCD 26-03)	PROTEST AFTER AWARD. JAN 2026 (PCD 26-03) ALTERNATE I
52.233-4	JAN 2026 (PCD 26-03)	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM.
52.237-2	APR 1984	PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION.
52.240-91	JAN 2026 (PCD 26-03)	SECURITY PROHIBITIONS AND EXCLUSIONS.
52.240-92	JAN 2026 (PCD 26-03)	SECURITY REQUIREMENTS.
52.240-93	JAN 2026 (PCD 26-03)	BASIC SAFEGUARDING OF COVERED CONTRACTOR INFORMATION SYSTEMS.
52.242-5	JAN 2017	PAYMENTS TO SMALL BUSINESS SUBCONTRACTORS.
52.242-13	JUL 1995	BANKRUPTCY.
52.243-1	JAN 2026 (PCD 26-03)	CHANGES - FIXED-PRICE. JAN 2026 (PCD 26-03) ALTERNATE I
52.244-2	JUN 2020	SUBCONTRACTS.
52.244-6	JAN 2026 (PCD 26- 03)NOV 2025	SUBCONTRACTS FOR COMMERCIAL PRODUCTS AND COMMERCIAL SERVICES.
52.245-1	SEP 2021	GOVERNMENT PROPERTY. (APR 2012) ALTERNATE I
52.245-9	APR 2012	USE AND CHARGES.
52.246-25	FEB 1997	LIMITATION OF LIABILITY - SERVICES.
52.246-26	AUG 2024	REPORTING NONCONFORMING ITEMS.
52.249-2	APR 2012	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE).
52.249-8	APR 1984	DEFAULT (FIXED-PRICE SUPPLY AND SERVICE).

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52.253-1	JAN 2026 (PCD 26-03)	COMPUTER GENERATED FORMS.
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NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES:

Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
1852.203-70	(SEP 2025) (DEVIATION)	DISPLAY OF INSPECTOR GENERAL HOTLINE POSTERS.
1852.203-71	(SEP 2025) (DEVIATION)	REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS.
1852.215-84	NOV 2023	OMBUDSMAN.
1852.219-75	APR 2015	INDIVIDUAL SUBCONTRACTING REPORTS.
1852.219-77	FEB 2026 (DEVIATION)	NASA SMALL BUSINESS SUPPLIER DEVELOPMENT PROGRAM.
1852.219-79	FEB 2026	MENTOR REQUIREMENTS AND EVALUATION.
1852.226-70	FEB 2026 (DEVIATION)	DRUG- AND ALCOHOL-FREE WORKFORCE.
1852.227-11	(JAN 2026) (DEVIATION)	PATENT RIGHTS—OWNERSHIP BY THE CONTRACTOR.
1852.227-88	APR 2015	GOVERNMENT-FURNISHED COMPUTER SOFTWARE AND RELATED TECHNICAL DATA.
1852.228-75	SEP 2025 (DEVIATION)	MINIMUM INSURANCE COVERAGE.
1852.237-72	DEC 2025	ACCESS TO SENSITIVE INFORMATION. (DEVIATION)
1852.237-73	DEC 2025 (DEVIATION)	RELEASE OF SENSITIVE INFORMATION.
1852.240-76	(JAN 2026) (DEVIATION)	SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES.
1852.246-74	SEP 2025 (DEVIATION)	CONTRACTOR COUNTERFEIT ELECTRONIC PART DETECTION AND AVOIDANCE.

(End of by reference clauses)

FAR 52.215-21 REQUIREMENTS FOR CERTIFIED COST OR PRICING DATA AND DATA OTHER THAN CERTIFIED COST OR PRICING DATA - MODIFICATIONS. (JAN 2026)(PCD 26-03) ALTERNATE III (OCT 1997). ALTERNATE IV (JAN 2026)(PCD 26-03)

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

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(b) Provide data described below: *Data Other than Certified Cost or Pricing Data* is required as requested by the Contracting Officer.

(c) Submit the cost portion of the proposal via the following electronic media: mail (email), electronic spreadsheet (Excel), and electronic letter (i.e., pdf).

(End of clause)

FAR 52.216-18 ORDERING. (AUG 2020)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from contract award through December 30, 2035.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) A delivery order or task order is considered “issued” when -

(1) If sent by mail (includes transmittal by U.S. mail or private delivery service), the Government deposits the order in the mail;

(2) If sent by fax, the Government transmits the order to the Contractor's fax number;

or

(3) If sent electronically, the Government either –

(i) Posts a copy of the delivery order or task order to a government document access system, and notice is sent to the Contractor; or

(ii) Distributes the delivery order or task order via email to the Contractor's email address.

(d) Orders may be issued by methods other than those enumerated in this clause only if authorized in the contract.

(End of clause)

FAR 52.216-19 ORDER LIMITATIONS. (OCT 1995)

(a) Minimum order. When the Government requires supplies or services covered by this contract in an amount of less than \$10,000, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order.* The Contractor is not obligated to honor -

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(1) Any order for a single item in excess of **TBD**:

(2) Any order for a combination of items in excess of \$3B; or

(3) A series of orders from the same ordering office within 15 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.

(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum- order limitations in paragraph (b) above.

(d) Notwithstanding paragraphs (b) and (c) above, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 15 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

FAR 52.216-22 INDEFINITE QUANTITY. JAN 2026 (PCD 26-03) ALT II JAN 2026 (PCD 26-03)

(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 ordering period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order, which may include order options to be exercised after the ordering period of this contract but before the end of the period of performance of the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order, including options exercised, to the same extent as if the order were completed during the contract's ordering period; provided, that

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the Contractor shall not be required to make any deliveries under this contract after two years beyond the ordering period defined in FAR 52.216-8, *Ordering*.

(e) The Government may cancel this contract in whole or in part by providing written notice. The cancellation will take effect 30 calendar days after the contractor receives the notice of cancellation. No further orders may be issued against the contract, but orders already awarded will be completed unless a termination action is taken against the order.

(f) The Contractor may request to cancel this contract by submitting a written cancellation request to the contracting officer. The cancellation will take effect 30 calendar days after the Government receives the cancellation request, unless the contracting officer informs the contractor, before cancellation is effective, that cancellation is not approved. A contractor who requests cancellation is not eligible for the minimum guarantee. If cancelled, no further orders may be issued against the contract, but orders already awarded will be completed unless a termination action is taken against the order.

(End of clause)

NFS 1852.216-80 TASK ORDERING PROCEDURE. (DEC 2025) (DEVIATION)
ALTERNATE II (APR 2018)

(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 30 calendar 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

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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.
- (d) The contractor shall provide acknowledgement of receipt to the contracting officer within calendar 3 days after receipt of the task order.
- (e) 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.
- (f) The contracting officer may amend tasks in the same manner in which they were issued.
- (g) 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.
- (h) Contractor shall submit progress reports, as required. When required, the reports shall contain, at a minimum, the following information:
- (1) Contract number, task order number, and date of the order.
 - (2) Price and billed amounts to date for each task order.
 - (3) Significant issues/problems associated with the task order.
 - (4) Status of all task orders issued under the contract.
 - (5) Invoice number.

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(End of clause)

FAR 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT. (MAR 2000)

(a) The Government may extend the term of this contract by written notice to the Contractor within 30 days prior to the contract expiration; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 60 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract must be considered to include this option clause and be modified per the following:

Option 1: FAR 52.216-18, *Ordering*, will be modified to state:

“Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from April 1, 2027 through March 31, 2037.

Option 2: FAR 52.216-18, *Ordering*, will be modified to state:

“Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from April 1, 2027 through March 31, 2039.

Option 3: FAR 52.216-18, *Ordering*, will be modified to state:

“Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from April 1, 2027 through March 31, 2041.

Option 4: FAR 52.216-18, *Ordering*, will be modified to state:

“Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from April 1, 2027 through March 31, 2042.

(c) The total duration of this contract, including the exercise of any options under this clause, must not exceed 15 years.

(End of clause)

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**NFS 1852.225-71 RESTRICTION ON FUNDING ACTIVITY WITH CHINA (DEC 2025)
(DEVIATION)**

(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 must 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 must include the substance of this clause in all subcontracts made hereunder.

(End of clause)

**FAR 52.227-14 RIGHTS IN DATA – GENERAL, (MAY 2014) (DEVIATION)
ALTERNATE I, (DEC 2007) (DEVIATION) ALTERNATE II, (DEC 2007) (DEVIATION)
ALTERNATE III (DEC 2007) (DEVIATION), ALTERNATE V, (DEC 2007), AS
MODIFIED PER NFS 1852.227-14 (APR 2015)**

(a) *Definitions.* As used in this clause—

(1) *Computer database* or *database*, means a collection of recorded information in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

(2) *Computer software* means—

(i) Computer programs that comprise a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations; and

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(ii) Recorded information comprising source code listings, design details, algorithms, processes, flow charts, formulas, and related material that would enable the computer program to be produced, created, or compiled.

(iii) Does not include computer databases or computer software documentation.

(3) *Computer software documentation*, means owner’s manuals, user’s manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

(4) *Data*, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

(5) *Detailed NASA Design Data*, means any technical data provided by the Government to the contractor under this contract and listed in and noted as such in Attachment J-13 Table J-13-2.

(6) *Developed with mixed funding* means development was accomplished partially at private expense. It includes development in which the Government’s contribution is not readily segregable for any work element to be performed under this contract.

(7) *Form, fit, and function data*, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, and data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements. For computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithms, processes, formulas, and flow charts of the software.

(8) *Government purpose*, means any activity in which the United States Government is a party, including, but not limited to, cooperative activities with international or multi-national organizations, or sales, barter or transfers by the United States Government to foreign governments or international organizations. Government purpose includes competitive procurement.

(9) *Government purpose rights* means the rights to:

(i) Use, modify, reproduce, manufacture, release, perform, display, or disclose data within the Government without restriction; and

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(ii) Release or disclose data outside the Government and authorize persons to whom release, or disclosure has been made to use, modify, reproduce, manufacture, release, perform, display, or disclose that data for United States Government purposes.

(9) *Limited rights* means the rights of the Government as set forth in the Limited Rights Notice of paragraph (g)(3).

(10) *Limited rights data* means data, other than computer software, developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged, including minor modifications.

(11) *Minor modification* means a modification that does not significantly alter the nongovernmental function or essential physical characteristics of an item or component or change the purpose of a process or software.

(12) *Restricted computer software*, means computer software developed at private expense and that is a trade secret, is commercial or financial and confidential or privileged, or is copyrighted computer software, including minor modifications of the computer software.

(13) *Restricted rights*, as used in this clause, means the rights of the Government in restricted computer software, as set forth in a Restricted Rights Notice of paragraph (g) if included in this clause, or as otherwise may be provided in a collateral agreement incorporated in and made part of this contract, including minor modifications of such computer software.

(14) *Technical data*, means recorded information (regardless of the form or method of the recording) of a scientific or technical nature (including computer databases and computer software documentation). This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. The term includes recorded information of a scientific or technical nature that is included in computer databases (See 41 U.S.C. 116).

(15) *Unlimited rights*, means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

(b) Allocation of rights.

(1) Unlimited rights in data. Except as provided in paragraph (c) of this clause, the Government shall have unlimited rights in—

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- (i) Data first produced in the performance of this contract exclusively at Government expense;
- (ii) Form, fit, and function data delivered;
- (iii) Data delivered under this contract (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this contract;
- (iv) All other data delivered under this contract unless provided otherwise for data identified with Government purpose rights in accordance with paragraph (g)(5) of this clause or for limited rights data or restricted computer software in accordance with paragraph (g)(3) of this clause; and
- (v) Data furnished to the Government, under this or any other Government contract or subcontract thereunder, with –
 - (A) Government purpose rights or limited rights and the restrictive period or condition(s) has/have expired; or
 - (B) Government purpose rights and the Contractor's exclusive right to use such data for commercial purposes has expired.

(2) Government Purpose Rights in Data.

- (i) Except when the Government is entitled to unlimited rights in data as provided in section (b)(1) of this clause, the Government shall have government purpose rights for the duration of this contract, or such other period as may be negotiated, in—
 - (A) Data first produced by the contractor under a Government Task Agreement (GTA), Government Collaboration Agreement (GCA), or otherwise in collaboration with Government employees under this contract;
 - (B) Derivative works of Detailed NASA Design Data or data that are corrections or changes to other technical data or computer software furnished to the Contractor by the Government; and
 - (C) Government Independent Verification & Validation Data, as defined in SOW section 2.10.5.

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(D) Data described in paragraph (b)(7) below; and

(E) Other data first produced in performance of this contract and identified as to be delivered with Government Purpose Rights under the terms of this contract.

(ii) The Government shall have government purpose rights in the categories of data identified in paragraph (b)(2)(i) notwithstanding the fact that such data would otherwise meet the definition of Limited Rights Data or Restricted Computer Software. All Government purpose data shall be marked in accordance with paragraph (g)(5) of this clause.

(iii) The Government shall not release or disclose data in which it has government purpose rights unless—

(A) Prior to release or disclosure, the intended recipient is subject to a non-disclosure agreement; or

(B) The recipient is a Government Contractor, recipient, grantee, or partner receiving access to the data under suitable protective conditions for the performance of a Government contract, cooperative agreement, grant, or other transaction of the Government.

(iv) The Contractor has the exclusive right, including the right to license others, to use for any commercial purpose data in which the Government has obtained government purpose rights under this contract during the time-period specified in the Government purpose rights legend prescribed in paragraph (g)(5) of this clause.

(3) *Limited Rights in Data and Restricted Rights in Restricted Computer Software:* Except when the Government is entitled to unlimited rights in data as provided in section (b)(1) of this clause or government purpose rights as provided in section (b)(2) of this clause, the Government shall have limited or restricted rights, respectively, in:

(i) Data or computer software developed with mixed funding in performance of this contract;

(ii) Insight data, as defined in Clause *Government Insight*, first produced or specifically used under this contract; and

(iii) Other limited rights data or restricted computer software not first produced in performance of this contract

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All data and computer software in which the Government shall have limited or restricted rights shall be marked in accordance with paragraph (g)(3) and (4), respectively, of this clause.

(4) The Contractor shall have the right to—

(i) Assert copyright in data first produced in the performance of this contract to the extent provided in paragraph (c)(1) of this clause;

(ii) Use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, unless provided otherwise in paragraph (d) of this clause;

iii) Substantiate the use of, add, or correct limited rights, restricted rights, or copyright notices and to take other appropriate action, in accordance with paragraphs (e) and (f) of this clause; and

(iv) Protect from unauthorized disclosure and use those data that are limited rights data or restricted computer software to the extent provided in paragraph (g) of this clause.

(5) There shall be a presumption that minor modifications to data identified and accepted by the CO as limited rights data or restricted computer software comprise limited rights data or restricted computer software.

(6) Data delivered under this contract, in which the Government previously obtained less than limited or restricted rights, as defined in paragraph (g) of this clause, pursuant to the terms of another contract or agreement, comprises limited rights data or restricted computer software under this contract.

(7) In the event this contract is terminated for default, the Government shall have Government purpose rights in all data first produced, and all software first developed, wholly or in part at private expense in performance of this contract. In the event this contract is terminated for default while any portion of the vehicle is on orbit, the Government shall have Government purpose rights in all data first produced in performance of this contract or delivered with limited rights or restricted rights to continue operations if desired.

(c) Copyright—

(1) Data first produced in the performance of this contract.

(i) Unless provided otherwise in paragraph (d) of this clause, the Contractor may, without prior approval of the Contracting Officer, assert copyright in scientific and technical articles based on or containing data first produced in the performance of this contract and

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published in academic, technical or professional journals, symposia proceedings, or similar works. The prior, express written permission of the Contracting Officer is required to assert copyright in all other data first produced in the performance of this contract.

(ii) When authorized to assert copyright to the data, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402, and an acknowledgment of Government sponsorship (including contract number).

(iii) For data other than computer software, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly by or on behalf of the Government. For computer software, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly (but not to distribute copies to the public) by or on behalf of the Government.

(iv) The Contractor shall mark each scientific and technical article based on or containing data first produced in the performance of this contract and submitted for publication in academic, technical, or professional journals, symposia proceedings or similar works with a notice, similar in all material respects to the following, on the cover or first page of the article, reflecting the Government’s non-exclusive worldwide license in the copyright.

GOVERNMENT RIGHTS NOTICE

This work was authored by employees of [insert the name of the Contractor] under Contract No. [insert contract number] with the National Aeronautics and Space Administration. The United States Government retains and the publisher, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, or allow others to do so, for United States Government purposes. All other rights are reserved by the copyright owner.

(End of Notice)

(2) *Data not first produced in the performance of this contract.* The Contractor shall not, without the prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract unless the Contractor—

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(i) Identifies the data; and

(ii) Grants to the Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (c)(1) of this clause or, if such data are restricted computer software, the Government shall acquire a copyright license as set forth in paragraph (g)(4) of this clause (if included in this contract) or as otherwise provided in a collateral agreement incorporated in or made part of this contract.

(3)(i) The Contractor agrees not to assert claim to copyright, publish or release to others any computer software first produced in the performance of this contract unless the Contracting Officer authorizes through a contract modification.

(ii) The prohibition on "release to others", as set forth in (d)(3)(i), does not prohibit release to another Federal Agency for its use or its contractors' use, as long as any such release is consistent with any restrictive markings on the software. Any restrictive markings on the software shall take precedence over the aforementioned release. Any release to a Federal Agency shall limit use to the Federal Agency or its contractors for Government purposes only. Any other release shall require the Contracting Officer's prior written permission.

(iii) If the Government desires to obtain copyright in computer software first produced in the performance of this contract and permission has not been granted as set forth in paragraph (d)(3)(i) of this clause, the Contracting Officer may direct the contractor to assert, or authorize the assertion of, a claim to copyright in such data and to assign, or obtain the assignment of, such copyright to the Government or its designated assignee.

(3) *Removal of copyright notices.* The Government will not remove any authorized copyright notices placed on data pursuant to this paragraph (c) and will include such notices on all reproductions of the data.

(d) *Release, publication, and use of data.* The Contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, except—

(1) As prohibited by Federal law or regulation (*e.g.*, export control or national security laws or regulations);

(2) As expressly set forth in this contract, including a GTA; or

(3) If the Contractor receives or is given access to data necessary for the performance of this contract that contain restrictive markings, the Contractor shall treat the data in accordance

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with such markings unless specifically authorized otherwise in writing by the Contracting Officer.

(4)(i) The Contractor agrees not to assert claim to copyright, publish or release to others any computer software first produced in the performance of this contract unless the Contracting Officer authorizes through a contract modification.

(ii) The prohibition on "release to others", as set forth in (d)(3)(i), does not prohibit release to another Federal Agency for its use or its contractors' use, as long as any such release is consistent with any restrictive markings on the software. Any restrictive markings on the software shall take precedence over the aforementioned release. Any release to a Federal Agency shall limit use to the Federal Agency or its contractors for Government purposes only. Any other release shall require the Contracting Officer's prior written permission.

(iii) If the Government desires to obtain copyright in computer software first produced in the performance of this contract and permission has not been granted as set forth in paragraph (d)(3)(i) of this clause, the Contracting Officer may direct the contractor to assert, or authorize the assertion of, a claim to copyright in such data and to assign, or obtain the assignment of, such copyright to the Government or its designated assignee.

(e) Unauthorized marking of data.

(1) Notwithstanding any other provisions of this contract concerning inspection or acceptance, if any data delivered under this contract are marked with the notices specified in paragraph (g)(3), (g) (4), or (g)(5) if included in this clause, and use of the notices is not authorized by this clause, or if the data bears any other restrictive or limiting markings not authorized by this contract, the Contracting Officer may at any time either return the data to the Contractor, or cancel or ignore the markings. However, pursuant to 41 U.S.C. 4703, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer will make written inquiry to the Contractor affording the Contractor 60 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Contractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 60-day period (or a longer time approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.

(iii) If the Contractor provides written justification to substantiate the propriety of the markings within the period set in paragraph (e)(1) of this clause, the Contracting Officer will

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consider such written justification and determine whether or not the markings are to be cancelled or ignored. If the Contracting Officer determines that the markings are authorized, the Contractor will be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer will furnish the Contractor a written determination, which determination will become the final agency decision regarding the appropriateness of the markings unless the Contractor files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government will continue to abide by the markings under this paragraph (e)(3) until final resolution of the matter either by the Contracting Officer's determination becoming final (in which instance the Government will thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(4) The time limits in the procedures set forth in paragraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(5) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Contractor is not precluded by paragraph (e) of the clause from bringing a claim, in accordance with the Disputes clause of this contract, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this contract.

(f) *Omitted or incorrect markings.*

(1) Data delivered to the Government without any restrictive markings shall be deemed to have been furnished with unlimited rights. The Government is not liable for the disclosure, use, or reproduction of such data.

(2) If the unmarked data has not been disclosed without restriction outside the Government, the Contractor may request, within 6 months (or a longer time approved by the Contracting Officer in writing for good cause shown) after delivery of the data, permission to have authorized notices placed on the data at the Contractor's expense. The Contracting Officer may agree to do so if the Contractor—

(i) Identifies the data to which the omitted notice is to be applied;

(ii) Demonstrates that the omission of the notice was inadvertent;

(iii) Establishes that the proposed notice is authorized; and

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(iv) Acknowledges that the Government has no liability for the disclosure, use, or reproduction of any data made prior to the addition of the notice or resulting from the omission of the notice.

(3) If data has been marked with an incorrect notice, the Contracting Officer may—

(i) Permit correction of the notice at the Contractor’s expense if the Contractor identifies the data and demonstrates that the correct notice is authorized; or

(ii) Correct any incorrect notices.

(g) Protection of limited rights data, restricted computer software, and data identified as government purpose rights.

(1) The Contractor may withhold from delivery qualifying limited rights data or restricted computer software. As a condition to this withholding, the Contractor shall—

(i) Identify the data being withheld; and

(ii) Furnish form, fit, and function data instead.

(2) Limited rights data that are formatted as a computer database for delivery to the Government shall be treated as limited rights data and not restricted computer software.

(3) Notwithstanding paragraph (g)(1) of this clause, the contract may identify and specify the delivery of data developed with mixed funding, or the Contracting Officer may require by written request the delivery of limited rights data that has been withheld or would otherwise be entitled to be withheld. If delivery of that data is required, the Contractor shall affix the “Limited Rights Notice” to the data and the Government will treat the data, subject to the provisions of paragraphs (e) and (f) of this clause, in accordance with the notice:

Limited Rights Notice (Dec 2007) (Deviation)

(a) These data are submitted with limited rights under Government Contract No. _____ (and subcontract _____, 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, if any; provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

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- (i) Use (except for manufacture) by support service contractors or personnel.
- (ii) Evaluation by non-government evaluators.
- (iii) Use (except for manufacture) by others pursuant to a contract, funding agreement, other agreement or arrangement related to CLDS activities.
- (iv) Maintenance, repair, or overhaul work.
- (v) Release to a foreign government, or its instrumentalities, if required to serve the interests of the U.S. Government, for information or evaluation, or for maintenance, repair, or overhaul work by the foreign government.
- (b) In the event this contract is terminated for Contractor default, the Government shall have Government purpose rights in all limited rights data first produced in performance of this contract.
- (c) This notice shall be marked on any reproduction of these data, in whole or in part.
(End of notice)

(4) Notwithstanding paragraph (g)(1) of this clause, the contract may identify and specify the delivery of computer software developed with mixed funding, or the Contracting Officer may require by written request the delivery of restricted computer software that has been withheld or would otherwise be entitled to be withheld. If delivery of that computer software is required, the Contractor shall affix the “Restricted Rights Notice” to the computer software and the Government will treat the computer software, subject to paragraphs (e) and (f) of this clause, in accordance with the notice:

Restricted Rights Notice (Dec 2007) (Deviation)

- (a) This computer software is submitted with restricted rights under Government Contract No. _____ (and subcontract _____, if appropriate). It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (b) of this notice or as otherwise expressly stated in the contract.
- (b) This computer software may be—
 - (1) Used or copied for use with the computer(s) for which it was acquired, including use at any Government installation to which the computer(s) may be transferred;
 - (2) Used or copied for use with a backup computer if any computer for which it was acquired is inoperative;
 - (3) Reproduced for safekeeping (archives) or backup purposes;
 - (4) Modified, adapted, or combined with other computer software, provided that the modified, adapted, or combined portions of the derivative software incorporating any of the delivered, restricted computer software shall be subject to the same restricted rights;
 - (5) Disclosed to and reproduced for use by support service Contractors or their subcontractors in accordance with paragraphs (b)(1) through (4) of this notice; and
 - (6) Used or copied for use with a replacement computer.
- (c) Notwithstanding the foregoing, if this computer software is copyrighted computer software, it is licensed to the Government with the minimum rights set forth in paragraph (b) of this notice.

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- (d) Any other rights or limitations regarding the use, duplication, or disclosure of this computer software are to be expressly stated in, or incorporated in, the contract.
- (e) In the event this contract is terminated for Contractor default, the Government shall have Government purpose rights in all computer software first developed wholly or in part at private expense in performance of this contract.
- (f) This notice shall be marked on any reproduction of this computer software, in whole or in part.

(End of notice)

- (ii) Where it is impractical to include the Restricted Rights Notice on restricted computer software, the applicable short-form notice may be used instead:

Restricted Rights Notice Short Form (Jun 1987)

Use, reproduction, or disclosure is subject to restrictions set forth in Contract No. _____ (and subcontract, if appropriate) with _____ (name of Contractor and subcontractor).

(End of notice)

- (iii) If restricted computer software is delivered with the copyright notice of 17 U.S.C. 401, it will be presumed to be licensed to the Government without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause.

- (5) The Contractor is authorized to identify data set forth in paragraph (b)(2) of this clause as data with Government Purpose Rights. If delivery of data with Government Purpose Rights is required, the Contractor shall affix the following “Government Purpose Rights” Notice to the data and the Government will treat the data, subject to the provisions of paragraphs (e) and (f) of this clause, in accordance with the notice:

GOVERNMENT PURPOSE RIGHTS NOTICE

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Government Purpose Rights Notice (Deviation)

These data are submitted with Government Purposes Rights under Government Contract No. _____ (and subcontract _____, if appropriate).

(a) The Government's rights in this data include the rights to use, modify, reproduce, manufacture, release, perform, display, or disclose technical data, computer software, or computer software documentation within the Government without restriction; and release or disclose technical data, computer software, or computer software documentation outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, manufacture, release, perform, display, or disclose that data for United States government purposes. The Government's rights in this data shall become unlimited rights on the expiration date in paragraph (b).

(b) Expiration Date: OFI

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

(End of Notice)

(h) *Subcontracting.* The Contractor shall obtain from its subcontractors all data and rights therein necessary to fulfill the Contractor's obligations to the Government under this contract. If a subcontractor refuses to accept terms affording the Government those rights, the Contractor shall promptly notify the Contracting Officer of the refusal and shall not proceed with the subcontract award without authorization in writing from the Contracting Officer.

(i) *Relationship to patents or other rights.* Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government except as specifically set forth in paragraph (b) of this clause.

(j) The Contractor agrees, except as may be otherwise specified in this contract for specific data deliverables listed as not subject to this paragraph, that the Contracting Officer may, up to three years after acceptance of all deliverables under this contract, inspect at the Contractor's facility any data withheld pursuant to paragraph (g)(1) of this clause, for purposes of verifying the Contractor's assertion of limited rights or restricted rights status of the data or for evaluating work performance. When the Contractor whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if a particular representative made the inspection, the Contracting Officer shall designate an alternate inspector.

(End of Clause)

FAR 52.227-17 RIGHTS IN DATA-SPECIAL WORKS (DEC 2007)

(a) *Definitions.* As used in this clause-

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(1) *Data* means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

(2) *Unlimited rights* means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

(b) Allocation of Rights. The Government shall have-

(1) Unlimited rights in all data delivered under this contract, and in all data first produced in the performance of this contract, except as provided in paragraph (c) of this clause.

(2) The right to limit assertion of copyright in data first produced in the performance of this contract, and to obtain assignment of copyright in that data, in accordance with paragraph (c)(1) of this clause.

(3) The right to limit the release and use of certain data in accordance with paragraph (d) of this clause.

(4) The Contractor shall have, to the extent permission is granted in accordance with paragraph (c) of this clause, the right to assert claim to copyright subsisting in data first produced in the performance of this contract.

(c) Copyright. Data first produced in the performance of this contract.

(1) The Contractor shall not assert or authorize others to assert any claim to copyright subsisting in any data first produced in the performance of this contract without prior written permission of the Contracting Officer. When copyright is asserted, the Contractor shall affix the appropriate copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. The Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license for all delivered data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.

(2) If the Government desires to obtain copyright in data first produced in the performance of this contract and permission has not been granted as set forth in paragraph (c)(1) of this clause, the Contracting Officer shall direct the Contractor to assign (with or without registration), or obtain the assignment of, the copyright to the Government or its designated assignee.

(3) *Data not first produced in the performance of this contract.* The Contractor shall not,

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without prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract and that contain the copyright notice of 17 U.S.C. 401 or 402, unless the Contractor identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (c)(1) of this clause.

(d) *Release and use restrictions.* Except as otherwise specifically provided for in this contract, the Contractor shall not use, release, reproduce, distribute, or publish any data first produced in the performance of this contract, nor authorize others to do so, without written permission of the Contracting Officer.

(e) *Indemnity.* The Contractor shall indemnify the Government and its officers, agents, and employees acting for the Government against any liability, including costs and expenses, incurred as the result of the violation of trade secrets, copyrights, or right of privacy or publicity, arising out of the creation, delivery, publication, or use of any data furnished under this contract; or any libelous or other unlawful matter contained in such data. The provisions of this paragraph do not apply unless the Government provides notice to the Contractor as soon as practicable of any claim or suit, affords the Contractor an opportunity under applicable laws, rules, or regulations to participate in the defense of the claim or suit, and obtains the Contractor's consent to the settlement of any claim or suit other than as required by final decree of a court of competent jurisdiction; and these provisions do not apply to material furnished to the Contractor by the Government and incorporated in data to which this clause applies.

(End of Clause)

FAR 52.232-32 PERFORMANCE-BASED PAYMENTS. (APR 2012)

(a) Amount of payments and limitations on payments. Subject to such other limitations and conditions as are specified in this contract and this clause, the amount of payments and limitations on payments shall be specified in the contract's description of the basis for payment.

(b) Contractor request for performance-based payment. The Contractor may submit requests for payment of performance-based payments not more frequently than monthly, in a form and manner acceptable to the Contracting Officer. Unless otherwise authorized by the Contracting Officer, all performance-based payments in any period for which payment is being requested shall be included in a single request, appropriately itemized and totaled. The Contractor's request shall contain the information and certification detailed in paragraphs (l) and (m) of this clause.

(c) Approval and payment of requests.

(1) The Contractor shall not be entitled to payment of a request for performance-based payment prior to successful accomplishment of the event or performance criterion for which payment is requested. The Contracting Officer shall determine whether the event or performance criterion for which payment is requested has been successfully accomplished in accordance with the terms of the contract. The Contracting Officer may, at any time, require

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the Contractor to substantiate the successful performance of any event or performance criterion which has been or is represented as being payable.

(2) A payment under this performance-based payment clause is a contract financing payment under the Prompt Payment clause of this contract and not subject to the interest penalty provisions of the Prompt Payment Act. The designated payment office will pay approved requests on the 30th day after receipt of the request for performance-based payment by the designated payment office. However, the designated payment office is not required to provide payment if the Contracting Officer requires substantiation as provided in paragraph (c)(1) of this clause or inquiries into the status of an event or performance criterion, or into any of the conditions listed in paragraph (a) of this clause, or into the Contractor certification. The payment period will not begin until the Contracting Officer approves the request.

(3) The approval by the Contracting Officer of a request for performance-based payment does not constitute an acceptance by the Government and does not excuse the Contractor from performance of obligations under this contract.

(d) Liquidation of performance-based payments.

(1) Performance-based finance amounts paid prior to payment for delivery of an item shall be liquidated by deducting a percentage or a designated dollar amount from the delivery payment. If the performance-based finance payments are on a delivery item basis, the liquidation amount for each such line item shall be the percent of that delivery item price that was previously paid under performance-based finance payments or the designated dollar amount. If the performance-based finance payments are on a whole contract basis, liquidation shall be by either predesignated liquidation amounts or a liquidation percentage.

(2) If at any time the amount of payments under this contract exceeds any limitation in this contract, the Contractor shall repay to the Government the excess. Unless otherwise determined by the Contracting Officer, such excess shall be credited as a reduction in the unliquidated performance-based payment balance(s), after adjustment of invoice payments and balances for any retroactive price adjustments.

(e) Reduction or suspension of performance-based payments. The Contracting Officer may reduce or suspend performance-based payments, liquidate performance-based payments by deduction from any payment under the contract, or take a combination of these actions after finding upon substantial evidence any of the following conditions:

(1) The Contractor failed to comply with any material requirement of this contract (which includes paragraphs (h) and (i) of this clause).

(2) Performance of this contract is endangered by the Contractor's (i) failure to make progress, or (ii) unsatisfactory financial condition.

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(3) The Contractor is delinquent in payment of any subcontractor or supplier under this contract in the ordinary course of business.

(f) Title.

(1) Title to the property described in this paragraph (f) shall vest in the Government. Vestiture shall be immediately upon the date of the first performance-based payment under this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.

(2) "Property," as used in this clause, includes all of the following described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices:

(i) Parts, materials, inventories, and work in process;

(ii) Special tooling and special test equipment to which the Government is to acquire title;

(iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment and other similar manufacturing aids, title to which would not be obtained as special tooling under paragraph (f)(2)(ii) of this clause; and

(iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the Government by other clauses of this contract.

(3) Although title to property is in the Government under this clause, other applicable clauses of this contract (e.g., the termination clauses) shall determine the handling and disposition of the property.

(4) The Contractor may sell any scrap resulting from production under this contract, without requesting the Contracting Officer's approval, provided that any significant reduction in the value of the property to which the Government has title under this clause is reported in writing to the Contracting Officer.

(5) In order to acquire for its own use or dispose of property to which title is vested in the Government under this clause, the Contractor shall obtain the Contracting Officer's advance approval of the action and the terms. If approved, the basis for payment (the events or performance criteria) to which the property is related shall be deemed to be not in compliance with the terms of the contract and not payable (if the property is part of or needed for performance), and the Contractor shall refund the related performance-based payments in accordance with paragraph (d) of this clause.

(6) When the Contractor completes all of the obligations under this contract, including liquidation of all performance-based payments, title shall vest in the Contractor for all

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property (or the proceeds thereof) not-

(i) Delivered to, and accepted by, the Government under this contract; or

(ii) Incorporated in supplies delivered to, and accepted by, the Government under this contract and to which title is vested in the Government under this clause.

(7) The terms of this contract concerning liability for Government-furnished property shall not apply to property to which the Government acquired title solely under this clause.

(g) *Risk of loss.* Before delivery to and acceptance by the Government, the Contractor shall bear the risk of loss for property, the title to which vests in the Government under this clause, except to the extent the Government expressly assumes the risk. If any property is lost (see 45.101), the basis of payment (the events or performance criteria) to which the property is related shall be deemed to be not in compliance with the terms of the contract and not payable (if the property is part of or needed for performance), and the Contractor shall refund the related performance-based payments in accordance with paragraph (d) of this clause.

(h) *Records and controls.* The Contractor shall maintain records and controls adequate for administration of this clause. The Contractor shall have no entitlement to performance-based payments during any time the Contractor's records or controls are determined by the Contracting Officer to be inadequate for administration of this clause.

(i) *Reports and Government access.* The Contractor shall promptly furnish reports, certificates, financial statements, and other pertinent information requested by the Contracting Officer for the administration of this clause and to determine that an event or other criterion prompting a financing payment has been successfully accomplished. The Contractor shall give the Government reasonable opportunity to examine and verify the Contractor's records and to examine and verify the Contractor's performance of this contract for administration of this clause.

(j) *Special terms regarding default.* If this contract is terminated under the Default

(1) the Contractor shall, on demand, repay to the Government the amount of unliquidated performance-based payments, and (2) title shall vest in the Contractor, on full liquidation of all performance-based payments, for all property for which the Government elects not to require delivery under the Default clause of this contract. The Government shall be liable for no payment except as provided by the Default clause.

(k) *Reservation of rights.*

(1) No payment or vesting of title under this clause shall

(i) excuse the Contractor from performance of obligations under this contract, or

(ii) constitute a waiver of any of the rights or remedies of the parties under the contract.

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(2) The Government's rights and remedies under this clause

(i) shall not be exclusive, but rather shall be in addition to any other rights and remedies provided by law or this contract, and

(ii) shall not be affected by delayed, partial, or omitted exercise of any right, remedy, power, or privilege, nor shall such exercise or any single exercise preclude or impair any further exercise under this clause or the exercise of any other right, power, or privilege of the Government.

(l) Content of Contractor's request for performance-based payment. The Contractor's request for performance-based payment shall contain the following:

(1) The name and address of the Contractor;

(2) The date of the request for performance-based payment;

(3) The contract number and/or other identifier of the contract or order under which the request is made;

(4) Such information and documentation as is required by the contract's description of the basis for payment; and

(5) A certification by a contractor official authorized to bind the Contractor, as specified in paragraph (m) of this clause.

(m) Content of Contractor's certification. As required in paragraph (l)(5) of this clause, the Contractor shall make the following certification in each request for performance-based payment:

I certify to the best of my knowledge and belief that –

(1) This request for performance-based payment is true and correct; this request (and attachments) has been prepared from the books and records of the Contractor, in accordance with the contract and the instructions of the Contracting Officer;

(2) (Except as reported in writing on), all payments to subcontractors and suppliers under this contract have been paid, or will be paid, currently, when due in the ordinary course of business;

(3) There are no encumbrances (except as reported in writing on) against the property acquired or produced for, and allocated or properly chargeable to, the contract which would affect or impair the Government's title;

(4) There has been no materially adverse change in the financial condition of the

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Contractor since the submission by the Contractor to the Government of the most recent written information dated ; and

(5) After the making of this requested performance-based payment, the amount of all payments for each deliverable item for which performance-based payments have been requested will not exceed any limitation in the contract, and the amount of all payments under the contract will not exceed any limitation in the contract.

(End of clause)

NFS 1852.240-75 SECURITY CLASSIFICATION REQUIREMENTS (SEP 2025)
(DEVIATION)

Performance under this contract will involve access to and/or generation of classified information, work in a security area, or both, up to the level of Top Secret. See Federal Acquisition Regulation clause 52.240-90 in this contract and DD Form 254, Contract Security Classification Specification, Attachment J-18.

(End of Clause)

FAR 52.240-93 BASIC SAFEGUARDING OF COVERED CONTRACTOR
INFORMATION SYSTEMS. JAN 2026 (PCD 26-03)

(a) Definitions. As used in this clause—

Covered contractor information system means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.

Federal contract information—

(1) Means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government; but

(2) Does not include information provided by the Government to the public (such as on public websites) or simple transactional information (such as information necessary to process payments).

Information means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).

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Information system means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).

Safeguarding means measures or controls that are prescribed to protect information systems.

(b) Safeguarding requirements.

(1) Basic requirements. The Contractor shall safeguard its covered contractor information systems by implementing, at minimum, the following security controls:

- (i) Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).
- (ii) Limit information system access to the types of transactions and functions that authorized users are permitted to execute.
- (iii) Verify and control/limit connections to and use of external information systems.
- (iv) Control information posted or processed on publicly accessible information systems.
- (v) Identify information system users, processes acting on behalf of users, or devices.
- (vi) Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.
- (vii) Sanitize or destroy information system media containing Federal Contract Information before disposal or release for reuse.
- (viii) Limit physical access to organizational information systems, equipment, and the respective operating environments to authorized individuals.
- (ix) Escort visitors and monitor visitor activity; maintain audit logs of physical access; and control and manage physical access devices.
- (x) Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.
- (xi) Implement subnetworks for publicly accessible system components that are physically or logically separated from internal networks.

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(xii) Identify, report, and correct information and information system flaws in a timely manner.

(xiii) Provide protection from malicious code at appropriate locations within organizational information systems.

(xiv) Update malicious code protection mechanisms when new releases are available.

(xv) Perform periodic scans of the information system and real-time scans of files from external sources as files are downloaded, opened, or executed.

(2) Other requirements. This clause does not relieve the Contractor of any other specific safeguarding requirements specified by Federal departments and agencies relating to covered contractor information systems generally or other Federal safeguarding requirements for controlled unclassified information (CUI) as established by Executive Order 13556.

(c) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (c), in subcontracts under this contract (including subcontracts for the acquisition of commercial products, other than commercially available off-the-shelf items, or commercial services), in which the subcontractor may have Federal contract information residing in or transiting through its information system.

(End of clause)

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):

<https://www.acquisition.gov/far-overhaul/far-part-deviation-guide/far-overhaul-part-52>

<https://www.hq.nasa.gov/office/procurement/regs/NFS.pdf>

<https://www.hq.nasa.gov/office/procurement/regs/pcd.pdf>

(End of clause)

FAR 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES. (NOV 2020)

(a) 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

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(DEVIATION) after the date of the clause.

(b) The use in this solicitation or contract of any NASA FAR Supplement (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)

(End of Section)

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SECTION J–ATTACHMENTS

PART III – ATTACHMENTS (DRAFT)

SECTION J – LIST OF ATTACHMENTS

ATTACHMENT	TITLE
J-01	Statement Of Work
J-02	Data Requirements Descriptions (DRDs) Cover Page Instructions
J-03	CLDS Requirements & Standards
J-04	Authorized Limited Rights and Restricted Rights Data
J-05	Applicable Documents List
J-06	Program Management Plan
J-07	Organizational Conflicts of Interest (OCI) Plan
J-08	Small Business Subcontracting Plan
J-09	Safety and Mission Assurance Plan
J-10	Insight Implementation Plan
J-11	Certification Work Plan
J-12	Mission Service Work Plan Template
J-13	Government Furnished Property and Data/Information
J-14	Government Task Agreements
J-15	Government Furnished Transportation and Support Services
J-16	Government Property Management Plan
J-17	Integrated CLDS Architecture
J-18	Contract Security Classification Specification (DD254)

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ATTACHMENT J-01 STATEMENT OF WORK

National Aeronautics and Space Administration
Johnson Space Center

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ATTACHMENT J-02 DATA REQUIREMENTS DESCRIPTIONS (DRDs)

CONTRACT DATA REQUIREMENTS LIST

National Aeronautics and Space Administration
Johnson Space Center

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ATTACHMENT J-03 CLDS REQUIREMENTS AND STANDARDS

Requirements Documents

The documents listed in the table below are applicable to this contract and establish the Commercial LEO Destination System (CLDS) requirements.

**Table J-03.1 Commercial Low Earth Orbit (LEO) Destination Contract (CLDC)
Requirements, Standards and Plans**

Document Number	Revision	Document Title
CLDP-STD-1102	Revision A	Commercial Low-Earth Orbit Development Program Payload Interface Standard for Heritage Hardware
CLDP-STD-1106	Revision B	Commercial Low-Earth Orbit Development Program (CLDP) Utilization Capabilities Standard
CLDP-PLN-1108	Revision A	Commercial Low-Earth Orbit Development Program Human Systems Integration Plan
CLDP-PLN-1111	Revision B	Commercial Low-Earth Orbit Development Program Crew Health and Operations Concept
CLDP-PLN-1122	Revision B	Commercial Low-Earth Orbit Development Program Science Data Management Plan
CLDP-STD-1123	Revision B	Medical Standards and Capabilities
CLDP-REQ-1130	Revision D	Requirements and Standards for the Commercial Low-Earth Orbit Development Program
CLDP-STD-1150	Revision B	Commercial Low-Earth Orbit Development Program Operations Standards
CLDP-PLN-2000	Revision A	Commercial Low-Earth Orbit Destination System Certification Plan
CLDP-PLN-2110	Revision A	Commercial Low-Earth Orbit Development Program Mission Integration Plan
CLDP-PLN-3016	Revision A	Commercial Low-Earth Orbit Development Program (CLDP) Insight Management Plan
CLDP-PLN-3017	Revision B	Commercial Low-Earth Orbit Development Program Utilization Integration Plan (UIP)
CLDP-STD-3102	Revision B	Commercial Low-Earth Orbit Development Program Hazard Analysis and Safety Process Standard

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**ATTACHMENT J-04 AUTHORIZED LIMITED RIGHTS AND RESTRICTED RIGHTS
DATA**

(As Proposed by Offeror)

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ATTACHMENT J-05 APPLICABLE DOCUMENTS LIST

Document Number	Revision	Document Title
20040041349		Columbia Accident Investigation Board Report
10 CFR 20.1003	Basic	Title 10 – Energy; Chapter I -- Nuclear Regulatory Commission; Part 20 -- Standards for Protection Against Radiation; Subpart A -- General Provisions
683-95293	B March 12, 2015	COUPLING ASSY, IMV
ACGIH TLVs and BEIs	Basic 2014	ACGIH TLVs and BEIs
ANSI C78-377	16-Sep-24	Electric Lamps – Specifications for the Chromaticity of Solid State Lighting Products
ANSI S1.43-1997	Basic June 12, 1997	Specifications for Integrating-Averaging Sound Level Meters
ANSI X9.52	Basic	Triple Data Encryption Algorithm Modes Of Operation
ANSI Z136.1	2022	American National Standard for Safe Use of Lasers
ANSI/AIAA-S-080	A 2018	Space Systems - Metallic Pressure Vessels, Pressurized Structures and Pressurized Components
ANSI/AIAA-S-081	B 2018	Space Systems - Composite Overwrapped Pressure Vessels
ANSI/ASA S3.2-2020	Basic December 9, 2020	American National Standard Method For Measuring The Intelligibility Of Speech Over Communication Systems
ANSI/ESD S20.20	2021	ESD Association Standard for the Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
AS9100D		Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations
BB-A-1034B	27-Dec-95	Compressed Air, Breathing – Amendment 1
CA-WI-16		Flight Operations Directorate (FOD) Spaceflight Personnel Certification Plan
CCT-MOA-LSP-1		Memorandum of Agreement between Commercial Crew Program and Launch Services Program Concerning NASA CTS Launch Vehicle Certification

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CCT-P-4001,		Commercial Crew Program Control Board Charter and Process
CCT-PLN-1120		Crew Transportation Technical Management Processes
CCT-PLN-2000		NASA Crew Transportation Technical System Certification Plan
CCT-PLN-2110		Commercial Crew Transportation (CCT) Mission Implementation Plan
CCT-REF-1131	15-Nov-17	CCT-REQ-1130 Requirement Interpretation Letters
CK-WI-28A		FOD Safety and Test Readiness Review Process for Ground Support and Test Readiness Review Process for Ground Support Activities at Non-NASA Facilities
CLDP-JPD-4001		International Space Station Program - Commercial Low-Earth Orbit Development Program Joint Program Review Control Board Charter and Process
CLDP-JPD-4002		CLDP - CCP Joint Program Control Board Charter
CLDP-MOA-1201		International Space Station Program - Commercial Low-Earth Orbit Development Program MOA
CLDP-MOA-1205		Commercial Crew Program - Commercial Low-Earth Orbit Development Program Memorandum of Agreement
CLDP-P-4001		Commercial Low-Earth Orbit Development Program Control Board Charter
CLDP-P-4007		Commercial Low-Earth Orbit Development Program Safety Review Board Charter
CLDP-P-4010		Commercial Low-Earth Orbit Development Program Change Management Process
CLDP-P-4014		CLDP Payload Research and Operations Control Board Charter
CLDP-P-4017		CLDP Safety and Mission Assurance Control Board Charter
CLDP-P-4031		CLDP Data Management Processes
CLDP-PLN-1000		Commercial Low-Earth Orbit Development Program Plan
CLDP-PLN-1103		Commercial Low Earth Orbit Development Program Technical Engineering Management Plan

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CLDP-PLN-1110		Commercial Low Earth Orbit Development Program Concept of Operations
CLDP-PLN-1111	B	Commercial Low-Earth Orbit Development Program Crew Health Operations Concept
CLDP-PLN-2000	A	Commercial Low Earth Orbit Development Program Certification Plan
CLDP-PLN-2100		NASA Commercial LEO Development Program (CLDP) Certification of Flight Readiness Plan (CoFR)
CLDP-PLN-2110	A	CLDP Mission Integration Plan
CLDP-PLN-2200		Commercial Low Earth Orbit Development Program Risk Management Plan
CLDP-PLN-3016	A	Commercial Low-Earth Orbit Development Program Insight Management Plan
CLDP-PLN-3017	B	Commercial Low-Earth Orbit Development Program Utilization Integration Plan
CLDP-PLN-3100		Commercial LEO Development Program Safety and Mission Assurance (S&MA) Plan
CLDP-PLN-3115	A	Commercial Low-Earth Orbit Development Program Reliability, Maintainability, Logistics, and Supportability Management Plan Development Guide
CLDP-PLN-4000		Commercial Low Earth Orbit Development Program Information and Configuration Management Plan
CLDP-PLN-4010		CLDP Change Management Process
CLDP-PLN-4012		CLDP Knowledge Management Plan
CLDP-REQ-1130	Baseline	Requirements and Standards for Commercial LEO Development Program
CLDP-STD-1101	A	CLDP Docking System Specification
CLDP-STD-1102	A	CLDP Payload Interface Standard for Heritage Hardware
CLDP-STD-1106	B	CLDP Utilization Capabilities Standard
CLDP-STD-1123	Basic	Commercial Low-Earth Orbit Development Program Medical Standards and Capabilities
CLDP-STD-1140	A	CLDP Technical Standards Design Evaluation
CLDP-STD-1150	B	Commercial Low-Earth Orbit Development Program Operations Standards
CLDP-STD-1170	Basic	Common Communications for Commercial Destinations in Low-Earth Orbit (C3DL) Radio Frequency (RF) Interface Standard

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CLDP-STD-3102	A	Commercial Low-Earth Orbit Development Program Hazard Analysis and Safety Process Standard
Code of Federal Regulations, Chapter 18 of Title 48		Federal Acquisition Regulation (FAR) - NASA FAR Supplement (NFS)
ES-24-030	Basic	NASA-STD-6001 Clarification Memorandum
FIPS 200		Minimum Security Requirements for Federal Information and Information Systems
FIPS Publication 140-3	Basic May 22, 2019	Security Requirements for Cryptographic Modules
FIPS Publication 197	Basic November 2001	Advanced Encryption Standard (AES)
GEIA-STD-0005-1	A March 1, 2012	Performance Standard for Aerospace and High-Performance Electronic Systems Containing Lead-free Solder
GEIA-STD-0005-2	A May 1, 2012	Standard for Mitigating the Effects of Tin Whiskers in Aerospace and High-Performance Electronic Systems
HEOMD-003-04	A July 2022	International Space Power System Interoperability Standards (ISPSIS)
HRP-47072	G March 2015	Human Research Program Requirements Document
ICES-2019-58	Basic	The Impacts of Cabin Atmosphere Quality Standards and Control Loads on Atmosphere Revitalization Process Design
ICES-2024-461	Jul-24	Predicting the Microgravity Performance of Terrestrial Portable Fire Extinguishers
IEC 60479-5	Basic November 1, 2007	Effects of current on human beings and livestock - Part 5: Touch voltage threshold values for physiological effects
IEC 60601-1	3-Jan-15	Medical electrical equipment — Part 1-11: General requirements for basic safety and essential performance Collateral standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment
IEC 60990	2016	Methods of measurement of touch current and protective conductor current
IEC 61672-1	Basic	Electroacoustics - Sound level meters - Part 1: Specifications

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IEEE C95.1	Basic October 21, 2020	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields
IES TM-30	2024	Method for Evaluating Light Source Color Retention
IENT-STD-CC1246	Basic	PRODUCT CLEANLINESS LEVELS – APPLICATIONS, REQUIREMENTS, AND DETERMINATION
IPC A-640	A April 2022	Acceptance Requirements for Optical Fiber, Optical Cable, and Hybrid Wiring Harness Assemblies
IPC D-620	A December 2021	Design and Critical Process Requirements for Cable and Wiring Harnesses
IPC J-STD-001	G Change 1 October 2017	Requirements for Soldered Electrical and Electronic Assemblies
IPC J-STD-001S Addendum	GS March 2018	Space and Military Applications Electronic Hardware Addendum to IPC J-STD-001 Requirements for Soldered Electrical and Electronic Assemblies
IPC A-640		Acceptance Requirements for Optical Fiber, Optical Cable, and Hybrid Wiring Harness Assemblies
IPC/WHMA-A-620	E October 2023	Requirements and Acceptance for Cable and Wire Harness Assemblies
IPC/WHMA-A-620-S	E October 2023	Space Applications Electronic Hardware Addendum to IPC/WHMA-A-620E
IPC-2152	Aug-09	Standard for Determining Current Carrying Capacity in Printed circuit Board Design
IPC-2220 series		IPC-2220 Series Documents included in series: IPC-2221, IPC-2222, IPC-2223, IPC-2225, IPC- 2226, IPC-2228 Revision per individual document below.
IPC-2221	B November 20, 2012	Generic Standard on Printed Board Design
ISO 14644-2	Basic 2021	Cleanrooms and associated controlled Environments Part 2: Monitoring to provide evidence of cleanroom performance related to air cleanliness by particle concentration

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ISO 20283-5:2016	Basic	Mechanical Vibration — Measurement of Vibration on Ships Part 5: Guidelines for Measurement, Evaluation and Reporting of Vibration with regard to Habitability on Passenger and Merchant Ships
ISO 2631-1:1997	2-Jun-97	Mechanical Vibration and Shock - Evaluation of Human Exposure to Whole-Body Vibration
ISO 3382	Basic	Acoustics — Measurement of Room Acoustic Parameters
ISO 6954:2000	Basic 2000	Mechanical Vibration Guidelines for the Measurement, Reporting and Evaluation of Vibration with Regard to Habitability on Passenger and Merchant Ships
ISO 7731:2003	Basic	Ergonomics - Danger Signals for Public and Work Areas - Auditory Danger Signals
ISS MD 106		Charter for the Space Station Program Control Board
JPR 1700.1M		JSC Safety and Health Requirements
JPR 1800.5		Biosafety Review Board Operations and Requirements
JSC 07268A		Human Space Systems Operational Design Criteria Manual
JSC 08080-2	24-Sep-15	JSC Design and Procedural Standards
JSC 20584	D February, 2026	Spacecraft Maximum Allowable Concentrations for Airborne Contaminants
JSC 20793	D March 08, 2017	Crewed Space Vehicle Battery Safety Requirements
JSC 22538		NASA Flight Crew Health Stabilization Program (HSP)
JSC 26895	A	Guidelines for Assessing the Toxic Hazard of Spacecraft Chemicals and Test Materials
JSC 27050		Postflight Rehabilitation Plan
JSC 35199	A July 2023	MCC Interface Specification
JSC 62809	G November 8, 2024	Human Rated Spaceflight Pyrotechnic Specification
JSC 63414	A November 2023	Spacecraft Water Exposure Guidelines (SWEGs)

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JSC 64825		Guidelines for Assessing the Flammability Hazard of Spacecraft Chemicals and Test Materials
JSC 65828	B July 15, 2014	Structural Design Requirements and Factors of Safety for Spaceflight Hardware
JSC 65829	B Change 3 March 2024	Loads and Structural Dynamics Requirements for Spaceflight Hardware
JSC 65985	C	Requirements for Human Spaceflight for the Trailing Deployable Aerodynamic Decelerator (TDAD)
JSC 65993	Basic December 2010	Commercial Human-Systems Integration Requirements (CHSIR)
JSC 65995	Basic May 2011	Commercial Human System Integration Processes (CHSIP)
JSC 66320	B	Optical Property Requirements for Glasses, Ceramics, and Plastics in Spacecraft Window Systems
JSC 66869		Guidelines for the Assessment of Chemicals and Materials for Impacts to Environmental Control and Life Support Systems and Habitable Volumes of Crewed Spacecraft
JSC 67035	A	Best Practices and Guidelines (BP&G) for Thin Wall Pressure Boundaries (TWPB) for Human Spaceflight Applications
JSC 67378	1 April 20, 2020	Nutritional Requirements for Exploration Missions up to 365 days
JSC 67721	A May 22, 2025	Certification Guidelines for Crewed Inflatable Softgoods Structures
JSC 67723	Basic April 27, 2025	Standard for the Control of Catastrophic Hazards in Human Rated Spacecraft Propulsion Systems
JSC-28379	1-Mar-98	Medical Effects of Iodine: Proceedings of NASA/JSC Conference
JSC-35228	September 2025 Basic	Conjunction Assessment and Collision Avoidance Standard for Commercial LEO
KNPR 8715.3		KSC Safety Procedural Requirements
LSP-PLN-324.01		Launch Vehicle Certification
M2M-30159	J December 19, 2025	Moon to Mars Design Specification for Natural Environments
MIL-A-27420	30-Apr-70	Air, Liquid, for Breathing Purposes
MIL-P-27401C	20-Jan-75	Propellant Pressurizing Agent, Nitrogen

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MIL-PRF-27210J	7-Aug-13	Performance Specification: Oxygen, Aviator's Breathing, Liquid and Gas
MIL-PRF-27401	Revision G	Performance Specification, Propellant Pressurizing Agent, Nitrogen
MIL-STD-1472H	15-Sep-20	Design Criteria Standard Human Engineering
MIL-STD-1564A	11-Nov-77	Procedure for Calibration and Analysis of Trace Contaminants in Aviator's Breathing Oxygen by Infrared Spectroscopy
MIL-STD-981	C May 2020	Department of Defense Standard Practice: Design, Manufacturing and Quality Standards for Custom Electromagnetic Devices for Space Applications
MSFC-DWG-20M02540	E January 15, 1992	Assessment of Flexible Lines for Flow Induced Vibrations
MSFC-SPEC-3746	Basic April 16, 2020	Flow-Induced Vibration Assessment Requirements for Metal Bellows and Flexhoses
MSFC-SPEC-521	D June 13, 2025	Electromagnetic Compatibility Requirements For Equipment and Subsystems
MSFC-SPEC-626	Basic May 11, 1990	Test Control Document for Assessment of Flexible Lines for Flow Induced Vibration
MSFC-STD-3790	10-Jun-25	Electromagnetic Environmental Effects (E3) System Level Requirements for Space Vehicles
NAII 2190.1		Export Control Operations Manual
NASA/SP-2008-565	Basic	Columbia Crew Survival Investigation Report
NASA/SP-2010-3407	1 June 05, 2014	Human Integration Design Handbook (HIDH)
NASA/SP-2010-576		NASA Risk-Informed Decision Making Handbook
NASA/SP-20210010952		NASA Human Systems Integration (HSI) Handbook
NASA/SP-20230002470	Feb-23	NASA Spacecraft Conjunction Assessment and Collision Avoidance Best Practices Handbook Rev 1
NASA/TM-2008-214775		International Space Station Human Behavior and Performance Competency Model, Vol 1, and Vol 2
NASA/TM-2013-217380	1 March 1, 2017	Application of the Brinkley Dynamic Response Criterion to Spacecraft Transient Dynamic Events
NASA/TM-2020-20205001486	Basic November 21, 2019	Guidance for Human Error Analysis (HEA)

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NASA/TM-2020-220555	3-Jan-20	NASA Meteoroid Engineering Model (MEM) Version 3
NASA/TM-20205008196	1-Nov-20	Artemis Sustained Translational Acceleration Limits: Human Tolerance Evidence from Apollo to International Space Station
NASA/TM–20210018053, NESC-RP-19-01489	1-Jul-21	Avionics Radiation Hardness Assurance (RHA) Guidelines
NASA/TP-2014-218556	Basic	Human Integration Design Processes (HIDP)
NASA/TP-2015-218570	2-Feb-22	Life Support Baseline Values and Assumptions Document
NASA-HDBK-2203		NASA Software Engineering and Assurance Handbook
NASA-HDBK-5010	A December 15, 2023	Fracture Control Implementation Handbook for Spaceflight Hardware
NASA-HDBK-8739.18		Procedural Handbook for NASA Program and Project Management of Problems, Nonconformances, and Anomalies
NASA-STD-1006	A July 15, 2022	Space System Protection Standard
NASA-STD-2831		NASA Metadata Standard for Data Discoverability
NASA-STD-3001 Vol. 1	B January 5, 2022	NASA Space Flight Human-System Standard Volume 1: Crew Health
NASA-STD-3001 Vol. 2	E January 2025	NASA Space Flight Human System Standard Volume 2: Human Factors, Habitability, and Environmental Health
NASA-STD-4003	Revision A	Electrical Bonding for NASA Launch Vehicles, Spacecraft, Payloads, and Flight Equipment
NASA-STD-5005	D Change 2 9/30/2024	Standard for the Design and Fabrication of Ground Support Equipment
NASA-STD-5012	C December 31, 2025	Strength and Life Assessment Requirements For Liquid Fueled Space Propulsion System Engines
NASA-STD-5017	B December 06, 2022	Design and Development Requirements for Mechanisms
NASA-STD-5018	Basic Change 1 November 27, 2017	Strength Design and Verification Criteria for Glass, Ceramics, and Windows in Human Spaceflight Applications

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NASA-STD-5019	A Change 4 July 29, 2024	Fracture Control Requirements for Spaceflight Hardware
NASA-STD-5020	B August 06, 2021	Requirements for Threaded Fastening Systems in Spaceflight Hardware
NASA-STD-5021	Basic August 06, 2019	Thermal Protection System Design Standard for Crewed Spacecraft
NASA-STD-6001	B Change 3 June 9, 2025	Flammability, Offgassing, and Compatibility Requirements and Test Procedures
NASA-STD-6016	C Change 1 November 15, 2023	Standard Materials and Processes Requirements for Spacecraft
NASA-STD-6030	Basic April 21, 2021	Additive Manufacturing Requirements for Spaceflight Systems
NASA-STD-7009	A December 07, 2016	Program Modeling and Simulation
NASA-STD-7012	A February 22, 2023	Leak Test Requirements
NASA-STD-8719.14	C November 05, 2021	Process for Limiting Orbital Debris
NASA-STD-8719.17	D April 26, 2023	NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS)
NASA-STD-8719.29	Basic	NASA Technical Requirements for Human-Rating
NASA-STD-8729.1	13-Jun-17	NASA Reliability and Maintainability (R&M) Standard for Spaceflight and Support Systems
NASA-STD-8739.1	B October 04, 2021	Workmanship Standard for Polymeric Application on Electronic Assemblies
NASA-STD-8739.8	B September 8, 2022	Software Assurance and Software Safety Standard
NCRP Report No. 132	2000	Recommendations of Dose Limits for Low Earth Orbit
NESC-IB-24-01986		Failure-Tolerant Avionics for Crewed Space Systems Recommended Best Practices
NIST SP 800-122		Guide to Protecting the Confidentiality of Personally Identifiable Information (PII).
NIST SP 800-57 Part 1	May-20	Recommendation for Key Management: Part 1

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NPD 1000.0		NASA Governance and Strategic Handbook
NPD 1000.3		The NASA Organization
NPD 1382.17		NASA Privacy Policy
NPD 2200.1D		Management of NASA Scientific and Technical Information
NPD 2230.1		Research Data and Publication Access
NPD 2810E		NASA Information Security Policy
NPD 7100.8		Protection of Human Research Subjects
NPD 8900.1		Medical Operations Responsibilities in Support of Human Space Flight Programs
NPD 8900.5		NASA Health and Medical Policy for Human Space Exploration
NPR 1382.1		NASA Privacy Procedural Requirements
NPR 1441.1E		NASA Records Management Program Requirements
NPR 1450.10D		NASA Correspondence Management and Communications Standard and Style
NPR 1800.1D		NASA Occupational Health Program Procedures
NPR 2190.1C		NASA Export Control Program
NPR 2200.2D		Requirements for Documentation, Approval and Dissemination of Scientific and Technical Information
NPR 2810.1		Security of Information and Information Technology
NPR 2810.7		Controlled Unclassified Information
NPR 7120.5	F 8/3/2021	NASA Space Flight Program and Project Management Requirements
NPR 7120.8		NASA Research and Technology Program and Project Management Requirements
NPR 7123.1	D 7/5/2023	NASA Systems Engineering Processes and Requirements
NPR 7150.2	D March 08, 2022	NASA Software Engineering Requirements
NPR 8079.1	27-Jun-23	NASA Spacecraft Conjunction Analysis and Collision Avoidance for Space Environment Protection
NPR 8621.1B		NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping

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NPD 8610.7D	D May 15, 2023	Launch Services Risk Mitigation Policy for NASA-Owned and/or NASA-Sponsored Payloads/Missions
NPR 8705.2	C July 10, 2017	Human-Rating Requirements for Space Systems
NPR 8910.1		Care and Use of Animals
NSTS 12820		Space Shuttle Operational Flight Rules, Volume A, All Flights
NSTS 16007		Shuttle Launch Commit Criteria and Background
OCHMO 80771201MED		NASA Medical Standard for Crewmembers
OCHMO-STD-100.1		NASA Astronaut Medical Standard, Selection, and Annual Recertification
OSHA 29 CFR 1910.95	Basic	Occupational Noise Exposure
Privacy Act of 1974	Basic Latest	Privacy Act of 1974, as amended (https://www.justice.gov/opcl/privacy-act-1974)
S1025.100		Flight and Ground Crew Emergency Egress/Escape Test
SAE-AS-50881	H January 13, 2023	Wiring, Aerospace Vehicle
SAE-AS-8047	Basic August 09, 2021	Performance Standard for Cabin Crew Portable Protective Breathing Equipment for Use During Aircraft Emergencies
Schafer & Bagian	Basic 64: 979, 1993	Aviation, Space, and Environmental Medicine
SD-WI-008		Internal to Human Health and Performance Human in the Loop Assessment Work Instruction
SMC-S-010	2013 April 12, 2013	Space and Missile Systems Center Standard, Technical Requirements for Electronic Parts, Materials, and Processes Used in Space Vehicles
SMC-S-011	2015 July 31, 2015	Space and Missile Systems Center Standard, Parts, Materials, and Processes Control Program for Expendable Launch Vehicles
SMC-S-016	5-Sep-14	AFSC Space and Missile Systems Center Standard: Test Requirements for Launch, Upper-Stage, and Space Vehicles
SMC-S-025	Basic July 26, 2017	Evaluation and Test Requirements for Liquid Rocket Engines
SOMD-CSD-10001		CLD System Human Rating Certification Requirements and Standards for NASA Missions
SSCMAN 91-710	27-Dec-22	Range Safety User Requirements Manual
SSP 30575	Basic	Space Station Interior and Exterior Operational Location Coding System

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SSP 41000	C September 21, 2017	System Specification for the International Space Station
SSP 50005	2-Apr-20	International Space Station Flight Crew Integration Standard
SSP 50253		Operations Data File Standards
SSP 50305		Payload Operations Integration Center (POIC) Generic User Interface Definition Document (PGUIDD)
SSP 50808	G March 2018	International Space Station (ISS) to Commercial Orbital Transportation Services (COTS) Interface Requirements Document (IRD)
WHO Environmental Health Criteria 12	Basic 1980	NOISE
[no document number]		Centers for Disease Control and Prevention, Third National Health and Nutrition Examination Survey (NHANES III) (https://www.cdc.gov/nchs/nhanes/nh3data.htm)
[no document number]		Desirable Characteristics of Data Repositories For Federally Funded Research in 2022 (https://bidenwhitehouse.archives.gov/wp-content/uploads/2022/05/05-2022-Desirable-Characteristics-of-Data-Repositories.pdf)
[no document number]		Diagnostic and Statistical Manual of Mental Disorders (DSM) – Latest Version
[no document number]		Health Information Portability and Accountability Act
[no document number]		Health Information Technology for Economic and Clinical Health Act
[no document number]		Health Insurance Portability and Accountability Act (HIPAA) (https://www.hhs.gov/hipaa/for-professionals/security/laws-regulations/index.html)
[no document number]		NASA Data Strategy 2021
[no document number]		NASA’S Public Access Plan: Increasing Access to the Results of Scientific Research
[no document number]		Satellite Orbital Safety Best Practices 9/1/2022
[no document number]		The National Science and Technology Council, Desirable Characteristics of Data Repositories for Federally Funded Research, 2022, DOI: https://doi.org/10.5479/10088/113528

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ATTACHMENT J-06 PROGRAM MANAGEMENT PLAN

(As proposed by Offeror)

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ATTACHMENT J-07 ORGANIZATION CONFLICT OF INTEREST (OCI) PLAN

(As proposed by Offeror)

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ATTACHMENT J-08 SMALL BUSINESS SUBCONTRACTING PLAN AND REPORTS

(As proposed by Offeror)

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ATTACHMENT J-09 SAFETY AND MISSION ASSURANCE PLAN

(As proposed by Offeror)

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ATTACHMENT J-10 INSIGHT AND COLLABORATION IMPLEMENTATION PLAN

(As proposed by Offeror)

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ATTACHMENT J-11 CERTIFICATION WORK PLAN

[Instructions to be deleted upon Model Contract submission]

[In accordance with section L.17.3.2, the offeror shall use the format provided below and may propose tailoring and submit the Certification Work Plan as Attachment J-11. The proposed tailoring may adjust timing, content, entrance and success criteria, or combine and consolidate milestones]

The Certification Work Plan defines the milestones and associated timeframe, completion criteria, and percentage of total payment that is needed for CLINs 1 and 2. The Contractor's milestones should be based on CLD-PLN-2000, *CLDP Certification Plan* and CLDP-PLN-2110, *CLDP Mission Integration Plan* and represent essential design certification decision points and demonstration mission milestones identified by the Contractor to accurately measure the success of the preceding phase of work and an entry point for subsequent work efforts.

Additionally, prior to conducting each milestone, a Joint Implementation Plan (JIP) will be developed to document the details and deliverables associated with each entrance and exit criteria between the Contractor and NASA.

1.0 CLIN1 Initial Development Milestones

The CLIN 1 scope establishes the initial phase to support the overall design, development and system readiness of the CLDS, to support the next phase and continuation of the CLDS certification and demonstration. The Initial Development milestones will determine the contractor's business maturity and the CLDS technical validity through the completion of an Integrated Progress Review (IPR).

TABLE 1 CLIN 1 INITIAL DEVELOPMENT MILESTONES

Milestone Payment Number	Milestone	Contractual Due Date (Contract Award+month)	Contractual Due Date (mm/yyyy)	Payment Percentage for Milestone	Payment Amount
CLIN 1-1	Certification Baseline Review (CBR)	CA+OFI mo.	OFI	OFI% (10-20%)	\$OFI
CLIN 1-OFI	Preliminary Design Review (PDR) <i>(if required)</i>	CA+OFI mo.	OFI	OFI% (10-20% if required)	\$OFI
CLIN 1-OFI	Critical Design Review (CDR) ¹	CA+OFI mo. (NLT CA+12 mo.)	OFI	OFI% (40-60%)	\$OFI

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CLIN 1-OFI	Integrated Progress Review ¹	CA+OFI mo. (NLT CA+15 mo.)	OFI	OFI% (10-20%)	\$OFI
TOTAL CLIN 1				100%	\$OFI

Notes:

1. Milestones are defined as delivery milestones per the clause 52.232-32, *Performance-Based Payments*. All other milestones will be considered as Interim milestones.

Milestone CLIN 1-1: Certification Baseline Review (CBR)

Purpose:

The purpose of the CBR is to establish the Contractor's technical management processes, system architecture, and initial technical and programmatic baseline. The CBR evaluates the CLDS Contractor's integrated program plan to meet NASA requirements and readiness to proceed with DDT&E.

CBR establishes the certification milestones and forward plan for the Contractor to certify the CLDS and establishes the initial outline of NASA's participation in the Contractor's CLDS development.

Entrance Criteria:

1. A preliminary CBR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the CBR.
2. CLDS baseline architecture to be certified to include:
 - a) Destination configuration, baseline functional and utilization capabilities.
 - b) Assembly sequence for an evolutionary CLDS design, as applicable, including any mission specific or interim configuration changes prior to the planned certified CLDS design.
 - c) Ground infrastructure for operations and utilization, including interfaces with 3rd party and NASA facilities.
 - d) Crew and cargo transportation systems.
 - e) Destination element launch and delivery systems.
 - f) Open major tradeoffs and options.

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- g) Communications architecture (space-to-space, and space-to-ground).
- h) Description of Destination operational environment (natural and induced).
- 3. Contractor's CLDS requirements are baselined and trace to NASA's CLDS Requirements and implement the Contractor's Concept of Operations and design reference missions.
- 4. Development and Certification schedule, including critical path items and long- lead parts procurement.
- 5. Technology readiness assessment and maturation plans.
- 6. Approach to system validation, including the use of on-orbit demonstrations and ground testing.
- 7. Proposed variances and alternate standards have been identified and provided to NASA for adjudication.
- 8. Top safety, technical, programmatic risks (including business case) are identified with mitigations plans in place.
- 9. Key Technical Performance Metrics (TPMs) and margin management plan are baselined.
- 10. Approach and methodology for logistics and sparing to support planned CLDS operational life as outlined in CLDP-PLN-3115, CLDP Reliability, Maintainability, Logistics, and Supportability Management Plan Development Guide
- 11. Plans for managing operations and training defining the approach, development plans, training plans, and schedule for operational processes and products.
- 12. Approach for development and certification of Safety requirements, standards, and processes as outlined in CLDP-STD-3102, CLDP Hazard Analysis and Safety Process Requirements Document.
- 13. The plan for development and certification of utilization requirements, standards, definition of processes and services available to utilization customers as outlined in CLDP-STD-1106 and roles and responsibilities as outlined in CLDP-PLN-3017.
- 14. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
- 15. Identify use and/or planned use of Government Furnished Services (GFS), including Government Furnished Equipment (GFE), and how this is implemented into CLDS certification.
- 16. Approach to Radio Frequency (RF) spectrum management for both internal and external users to ensure user compatibility and performance.
- 17. Approach to Electrical, Electronic and Electromechanical (EEE) parts selection and radiation hardness assurance.
- 18. Approach for providing a food system that meets nutritional and food safety requirements.

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19. Licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS have been identified and plans to obtain are established.
20. Approach to Human Systems Integration, including human-centered design with an iterative approach to 1) task analysis, 2) Human-in-the-Loop testing that evaluates system usability and crew workload, and 3) human error analysis.
21. Processes for NASA to access the Contractors data systems have been identified and communicated to NASA as outlined in CLDP-PLN-3016, Insight Management Plan.

Success Criteria:

1. Contractor's CLDS requirements are traceable to NASA's Requirements, baselined and under configuration control.
2. Initial variances and alternate standards have been identified and provided to NASA for adjudication.
3. Plans for CLDS performance and design margin management identify key technical parameters.
4. The top safety, technical, quality, and programmatic risks are identified, assessed, mitigation plans identified and clearly documented.
5. The CLDS architecture, including remaining tradeoffs, is credible and responsive to NASA requirements.
6. The Contractor's schedule estimates meet the CLDS requirements within available resources with acceptable risk.
7. The Contractor's has a credible and comprehensive logistics and sparing approach that meets reliability and maintainability requirements and will sustain the CLD through it's operational life.
8. Trade studies to be completed by PDR are defined and action plans are in place.
9. To Be Determined (TBD) and To Be Resolved (TBR) items are clearly identified with acceptable plans and schedule for their disposition.
10. NASA comments to programmatic and technical deliverables have been dispositioned and closure plans have been agreed to by NASA.
11. NASA access to the Contractors data systems have been granted and demonstrated for key NASA personnel.
12. A plan and schedule have been defined for the resolution of all actions and open items resulting from the CBR.
13. A human systems integration approach is applied to CLDS design.

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14. Roles and responsibilities for shared accountability are agreed to, including implementation of any Government Furnished Services

Milestone CLIN 1-OFI: Preliminary Design Review (PDR) *(if required)*

Purpose:

The purpose of the Preliminary Design Review (PDR) is to demonstrate that the preliminary CLDS design defines all interfaces and satisfies all requirements within acceptable risk and schedule constraints. The PDR establishes the preliminary CLDS design which will be used and referenced at CDR and the basis for proceeding with detailed design and final verification planning.

The timing and the content of the PDR will be dependent on the level of maturity of the Contractor's CLDS approach and technical design as presented at the CBR.

Entrance Criteria:

1. Previous planned program milestone reviews have been successfully completed; actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary PDR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the PDR.
3. All planned lower-level (subsystem) design reviews have been successfully conducted, and any actions and issues have been dispositioned.
4. Phase 1 Safety Data Package, Hazard Reports, and supporting documentations are completed prior to PDR and any design updates are incorporated.
5. Results of reliability, maintainability, logistics, and supportability analyses have been incorporated into the CLDS design.
 - a) Preliminary logistics and sparing plan, including an estimate of critical spares, test/verification assets, and training assets with an explanation on how the estimate was derived
6. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
7. A preliminary design that can be shown to satisfy all technical requirements, interfaces, and performance measures or has identified variances with rationale, with evidence that requirements/variances are flowing to/from all vendors.

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8. Subsystem designs (hardware and software) are provided with supporting trade- off analyses and data.
9. Updates to system requirements and alternate standards, including status of NASA approval of alternate standards.
10. Updated CLDS baseline architecture
11. Overview of software architecture definition and process/criteria for software acceptance
12. Updated technology readiness assessment(s) and technology maturation plan.
13. Updated risk assessment, including top risks and mitigation plans.
14. Updated technical resource estimates, margins, and technical performance measures.
15. Plan and status of release of engineering drawings.
16. Approach to achieving operational performance in the RF environment planned for the Destination.
17. Verification burndown plan for NASA’s CLDS requirements.
18. A summary of how the Human-In-The-Loop (HITL) usability evaluations for human-system interfaces and integrated human-system performance evaluation results are used to influence the system design.
19. A summary of how the human error analysis is used to:
 - a) Understand and manage potential catastrophic hazards which could be caused by human errors.
 - b) Understand the relative risks and uncertainties within the system design.
 - c) Influence decisions related to the system design, operational use, and application of testing.
 - i) Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.
 - ii) Plans for managing operations and training reflect updates to approach, development plans, and schedule for operational processes and products.
 - iii) Approach for system-level radiation effects assessment included in plans for managing EEE parts and radiation hardness assurance.
20. Updated development and Certification schedule, including critical path items and long-lead parts procurement. Procurement evidence and status including supply chain risk management
21. Approach to maintain crewmembers’ health, safety, and performance through a mission as outlined in CLDP-PLN-1111 Crew Health Operations Concept

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22. Description of how the crew and ground control workload is being validated for the mission, and how the contractor identified and implemented necessary mitigations to significant findings.

Success Criteria:

1. The preliminary design (including from vendors) demonstrates expected maturity to satisfy the requirements at an acceptable level of risk.
2. The top-level requirements, including technical performance measures, are agreed upon, finalized, stated clearly, and consistent with the preliminary design.
3. Alternate standards are approved and implemented into requirements
4. The flow down of verifiable requirements is complete, or, if not, an adequate plan exists for timely resolution of open items. Requirements are traceable to parent technical requirements and to goals and objectives.
5. The program schedule is credible and within program constraints.
6. Definition of the system interfaces (both external entities and between internal elements) is consistent with the overall technical maturity.
7. Associated risk, including system security, have been identified and represent an acceptable level of risks.
8. Program risks are understood and have been credibly assessed, and plans, a process, and resources exist to effectively manage them.
9. Safety and Mission Assurance (S&MA) (e.g., system safety, quality, reliability, and maintenance) has been adequately addressed in preliminary designs and any applicable S&MA products satisfy requirements, are at the appropriate maturity level.
10. Define and show adequate technical margins (e.g., mass, power) exist to complete the development within budget, schedule, and known risks.
11. The operational concept is technically sound, includes human systems and utilization, and includes the flow down of requirements.
12. Technical trade studies are complete to sufficient detail and remaining trade studies are identified, plans exist for their closure, and potential impacts are understood.
13. TBD and TBR items are clearly identified with acceptable plans and schedule for their disposition.
14. Phase 1 Safety Review (i.e. defining, establishing, and incorporating requirements; and identifying control strategies) is complete and closure plans for open work are established.
15. Preliminary analysis of the primary subsystems has been completed and summarized, highlighting performance and design margin challenges.

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16. Appropriate modeling and analytical results are available and have been considered in the design.
17. Human Systems Integration aspects are included in the management and technical planning.
18. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
19. Analysis shows technical and regulatory compliances for each RF link based on design requirements and operational performance specification, and internal and external user compatibility and performance.
20. Preliminary medical and behavioral support plans are in place.
21. Preliminary logistics support plan and sparring estimate supports planned service life, testing/verification asset and training asset needs.

Milestone CLIN 1-OFI: Critical Design Review (CDR)

Purpose:

The purpose of the Critical Design Review (CDR) is to demonstrate that the CLDS design satisfies all requirements within acceptable risk and schedule constraints, and that the maturity of the CLDS detailed design is appropriate to proceed with fabrication, assembly, integration, and test.

The CDR establishes the detailed CLDS design and establishes final verification plan prior to execution of the test and evaluation phase.

Entrance Criteria:

1. Previous planned program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary CDR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the CDR.
3. All planned lower-level design reviews have been successfully conducted, and any actions and issues have been dispositioned.
4. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
5. The detailed design meets all technical requirements and performance measures or has variances requiring approval, with evidence that requirements/variances are flowing to/from all vendors.

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6. Updated technical resource estimates, margins, and technical performance measures (TPMs).
7. Evidence that fabrication, assembly, integration, and test plans are developed and ready to baseline, including joint testing with external entities.
8. Updated development and Certification schedule, including critical path items and procurement plans.
9. Updated baseline CLDS architecture since last review, including CLDS software architecture
10. Updated technology readiness assessment and technology maturation plan.
11. Updated risk assessment and mitigation plans.
12. Phase 2 Safety Data Package, Hazard Reports, and supporting documentations are completed prior to CDR and any design updates are incorporated.
13. Updated reliability, maintainability, logistics, and supportability analysis results have been incorporated into the CLDS design.
14. Technical trade studies are complete to sufficient detail to proceed with fabrication, assembly, integration, and test.
15. Adequate technical margins (e.g., mass, power) exist to complete the development within budget, schedule, and known risk.
16. Operational limits and constraints are defined.
17. Functional on-orbit demonstration plan identifying the necessary activation, checkout, assembly, outfitting, and demonstration objectives
18. Updated logistics and sparing plan, including a detailed estimate of critical spares, test/verification assets, and training assets with an explanation on how the estimate was derived
19. Procurement evidence and status including supply chain risk management.
20. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.
21. RF link performance for the operation of the Destination (based on measured hardware performance), including mechanisms to mitigation interference, ensures user compatibility and performance.
22. TBD and TBR items are clearly identified with acceptable plans and schedule for their disposition.
23. Plans to manage EEE parts and radiation hardness assurance updated with preliminary system-level radiation effects assessment
24. Plans for managing operations and training reflect updates to approach, development plans, and schedule for operational processes and products.

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25. Updated verification burndown plan for NASA's CLDS requirements.
26. A summary of how the Human-In-The-Loop usability evaluations for human- system interfaces and integrated human-system performance evaluation results (to date) were used to influence the system design.
27. Description of how the crew and ground control workload is being validated for the mission, and how the contractor identified and implemented necessary mitigations to significant findings.
28. Summary of task analysis performed since PDR, definition of tasks that have been identified as focus areas for testing and/or analysis during design, and description of how task analysis results have influenced system design.
29. Status of Launch Vehicle Integration, open issues and closure plan

Success Criteria:

1. Evidence that the detailed design meets the requirements with adequate margins, including content from vendors.
2. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
3. Interface Control Documents are sufficiently mature to proceed with fabrication, assembly, integration, and test.
4. The program schedule is credible and within program constraints.
5. The CLDS risks have been identified, and mitigation strategies appear reasonable.
6. Verification and validation plans are baselined.
7. The plans for integrated end-to-end testing are necessary and sufficient for system verification, validation, and demonstration.
8. Adequate technical margins (e.g., mass, power) exist to complete the development within budget, schedule, and known risk.
9. Data supporting that the maturity of the CLDS design and Contractor processes and plans are appropriate to support full-scale fabrication, assembly, integration, and testing.
10. RF spectrum licenses, plans and processes ensure user compatibility and performance and compliance to licenses.
11. TBD and TBR items are clearly identified with acceptable plans and schedules for their disposition.
12. S&MA (e.g., system safety, quality, reliability, and maintenance) has been adequately addressed in designs and any applicable S&MA products satisfy requirements, are at the

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appropriate maturity level, and indicate that the CLDS safety residual risk will be at an acceptable level.

13. Phase 2 Safety Review (i.e. defining, establishing, and incorporating requirements; and identifying control strategies) is complete and closure plans for open work are established.
14. Human Systems Integration aspects are included in the design.
15. Analysis of the primary subsystems has been completed and summarized, highlighting performance and design margin challenges.
16. Detailed logistics support plan and sparring supports planned service life, test/verification asset and training asset needs and is integrated into the procurement plan

Milestone CLIN 1-OFI: Integrated Progress Review (IPR)

Purpose:

The purpose of the Integrated Progress Review (IPR) is to assess status of manufacturing, software development, system analysis, safety assessment, assembly, integration, and test, mission and operations planning and certification. Focus is placed on progress of subsystem and integration hardware (e.g., cables, plumbing, secondary structure), manufacturing, qualification and integrated system and interface testing, readiness to install into the flight element, element transportation, and visiting vehicle integration.

Entrance Criteria:

1. A preliminary IPR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the IPR
2. Programmatic Status
 - a) Updated schedule readiness assessment, including risks against critical path
 - b) Status of the top risks (technical, cost, schedule), including their probability, potential impact, and mitigation plans
 - c) Status of critical subcontracts, including updates on timelines for long-lead materials and alternative sourcing strategies for high-risk components
 - d) Updates to management plans, processes, and tools provided at CDR, as applicable
 - e) Commercial Business Model is updated with adequate definition, and revenue/investment commitments are provided to demonstrate progress towards business case closure
3. Destination Development

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- a) Provide progress and status on performance to plan and any updates, including but not limited to, for the following activities:
 - i) Closure of open CDR issues and actions, including any requirements, design, and analysis updates
 - ii) Hardware and Software development testing, including development of new systems in accordance with the Technology Development Plan
 - iii) Updated results of Human-In-The-Loop testing and Human Error Analysis and any impacts to design, as applicable
 - iv) Manufacturing schedule (e.g. schedule, metrics, ECDs), including development of production engineering and manufacturing processes and procedures
 - v) Status and burn down plan of production drawings or equivalent engineering data (such as the Bill of Materials identifying all critical parts)
- b) Critical hardware delivery, including item, manufacturer, manufacturing location, and planned start and completion month
- c) Development of required facilities, resources, personnel, and tooling
- d) Approved list of materials and specifications for manufacturing, including availability of Qualified suppliers for materials to be procured per the Quality Assurance Plan
- e) System failures, discrepancies and non-conformances and corrective action plans
- f) Identification and procurement status of any alternative sources for high risk resources (e.g. materials, electronic components), as appropriate
- g) Development of Mission Systems (including training), ICDs, facilities, and operational documentation demonstrating the following:
 - i) Mission System build progress, including subcontractor activities
 - ii) Security infrastructure implementation
- h) Development of Ground Systems and operational documentation, including Launch and Return operations and Crew and cargo pre and post launch support plans
- i) Training of the Crew complement and flight and ground control teams
- j) Development of Utilization and Payload integration processes including tools planned to be used to collect data from payload developers/principal investigators to perform payload integration
- k) Development of Assembly, Integration and Test (AI&T) plans and procedures mapped to verification and validation requirements, including:
 - i) Availability of components requires for AI&T

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- ii) Test schedules reflecting availability of GSE, component fabrication, procurement delivery, SW development, and prerequisite tests/analysis
- l) Readiness and availability of integration facilities, including clean rooms, ground support equipment, handling fixtures, overhead cranes, and electrical test equipment
- m) System/subsystem/component testing to demonstrate that the design has sufficient margin and provides required capabilities, including progress as applicable for the following:
 - i) Environmental testing
 - ii) Qualification, protoflight, and acceptance to ensure compliance with acceptable margins and factors of safety
 - iii) Hardware-software integrated testing from subsystem to mission-level Integrated hardware system function testing in flight scenarios (e.g., cabin environment, propulsion systems)
 - iv) Payload/Payload Facility (interface, functional, and environmental)
- n) Plan for module-to-module interface testing for on-orbit assembly
- o) Plan for joint integration testing with external systems (e.g., Launch Vehicles, Ground and Mission Systems, customer payload operations centers)
- p) Safety and Mission Assurance readiness for Destination and Transportation, including:
 - i) Closure of open work from Phase 2 Safety Review
 - ii) Updates to established hazards (including maintenance and integrated) including causes, operational controls, crew survivability methods, and verification methods
 - iii) Updates to fault tree, fault tree analysis events, FMECAs, Critical Item Lists. Any updates to system design and/or analysis resulting from hazard assessment
- 4. Transportation Readiness and Progress
 - a) Provide progress and status on performance to plan and any updates, including but not limited to, for the following activities:
 - i) Visiting Vehicles:
 - (1) Updates to Destination-to-Visiting Vehicles interface requirements
 - (2) Results of Visiting Vehicle to Destination interface verification activities, including any ground support equipment
 - (a) Docking system testing
 - (b) Capture and Berthing (if applicable)
 - (c) Comm system design and testing for both Space-to-Space and Space-to-Ground

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- (3) Status on updated certification of heritage Visiting Vehicles
- (4) Status of Visiting Vehicle availability and readiness to support the mission
- ii) Element Launch Vehicle (LV):
 - (1) Updates to Launch Vehicle to Module interface requirements
 - (2) LV-to-Module interface testing for all phases of flight
 - (3) Status of Launch Vehicle availability and integration, including open issue and closure plan

Success Criteria:

1. System requirements are fully met in the final production configuration or are progressing to plan and mechanical and electrical interfaces are on plan to be verified against ICDs
2. Hardware and Software (ground & flight) development testing (with focus on critical systems) is progressing to plan
3. Models and simulations used to support critical decisions and/or functions in design, development, manufacturing, and testing have been validated or are progressing to plan
 - a) Validated models and simulations of components, subsystems, and integrated systems have been used to establish appropriate test cases and performance expectations for testing and evaluation
4. Production engineering and planning are sufficiently mature to support the planned fabrication schedule including assessment that manufacturing is controlled at the appropriate quality level to meet design tolerances
5. Materials are available, specifications are approved, and component procurements in place to meet planned production schedules
6. Component delivery schedules have been verified, and components are available for integration at the next higher assembly or are progressing to plan
7. Evidence that the supplier production is on plan to support AI&T
8. Evidence to support that adequate facilities, resources, personnel, and tools are in place to support production and AI&T or are progressing to plan
9. Engineering model testing for risk reduction is complete or are progressing to plan
10. All known system discrepancies have been identified and dispositioned in accordance with an agreed-upon plan based on root cause identification
11. Adequate spares, emulators and training hardware have been planned and budgeted
12. Production and support staff are qualified to applicable process standards and support personnel have been adequately trained or are progressing to plan

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- a) Production processes and methods are consistent with quality requirements and compliant with regulations
- b) The quality control organization is ready to support the integration effort
- 13. Evidence to support Visiting Vehicle integration and interface testing is proceeding jointly with Visiting Vehicle providers per requirements and plan
- 14. A US commercial launch vehicle is available, reserved, and is capable of supporting CLD orbital insertion missions consistent with the 2011 Coordinated Strategy among USAF, NRO, and NASA New Entrant Launch Vehicle Certification
- 15. All established hazards (including maintenance and integrated) including causes, controls, crew survivability methods, and verification methods are complete at a Phase 2 level, documented in hazard reports, and are implemented in the design or are progressing to plan including:
 - a) System design and/or analysis updates
 - b) Operational controls are documented (i.e. in corresponding operational control database) with a baselined plan and schedule to implement in Operational documentation
 - c) Verification methods are documented with a baselined closure plan to support upcoming Phase 3 Safety Review
 - d) Critical failure modes are linked to hazard causes (e.g. reflected in FMECA)
 - e) Fault tree, fault tree analysis events, FMECAs, Critical Item Lists, and Crew Survivability Methods are updated to ensure traceability across the CLDS and confirm that safety processes are integrated into the Contractor's system and safety engineering processes
 - f) Hazard reporting system is updated and contains systematically captured hazard titles, causes, controls, and verification methods (e.g. IDs mapped to PNIDs for critical items at a minimum), and configuration controlled supporting documentation (e.g. concept of operations, design descriptions, schematics) to ensure full traceability between hazards, causes, and controls
 - g) Potential non-compliances/variances and mitigation plans are identified with a baselined closure plan that includes NASA approval as required

2.0 CLIN 2 CLDS Development, Demonstration & Certification Milestones

The CLIN 2 scope establishes the milestones and requirements to complete the CLDS Certification, which includes design, manufacturing, testing and evaluation, integration and operational readiness to complete the uncrewed and crewed Demonstration(s) of the CLDS Element(s) and Capabilities. The Certification Work Plan may include interim milestones to identify success criteria to order Mission A and Mission B.

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CLIN 2 includes the identification of the Contractor's element configuration necessary to provide mission services, and allows for subsequent element and capability certifications needed to meet a completed configuration to meet NASA Mission Service requirements.

TABLE 2 CLDS CERTIFICATION & CREWED DEMONSTRATION MILESTONES

CLDS SYSTEM/ELEMENT 1 CERTIFICATION MILESTONES					
Milestone Payment Number	Milestone	Contractual Due Date (ATP/Launch +/- time)	Contractual Due Date (mm/yyyy)	Payment Percentage for Milestone	Payment Amount
CLIN 2-OFI	Certification Status Review (CSR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Manufacturing and Test Readiness Review (MTRR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Software Status Review (SSR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	System Integration Review (SIR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	<i>Other relevant milestones (If proposed)</i>	ATP+OFI mo.	OFI	OFI% (NTE 15%)	\$OFI
CLIN 2-OFI	Assembly Integration and Test Progress Review (APR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Design Certification Review (DCR) ¹	L-OFI mo.	OFI	OFI% (NLT 15%)	\$OFI
CLIN 2-OFI	Operations Readiness Review (ORR)	L-OFI mo.	OFI	5%	\$OFI
CLIN 2-OFI	Flight Readiness Review (FRR)	L-OFI mo.	OFI	N/A	N/A
CLIN 2-OFI	Launch Readiness Review (LRR)	L-OFI days	OFI	N/A	N/A

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CLIN 2-OFI	Activation and Checkout Demonstration	Launch+OFI days/months	OFI	5%	\$OFI
CLIN 2-OFI	System Certification Review ¹	N/A	OFI	20%	\$OFI
CLIN 2-OFI	Mission A Certification Readiness Review (if Mission A offered)	N/A	OFI	OFI% (NTE 5%)	\$OFI
CLIN 2-OFI	Mission B Certification Readiness Review (if Mission B offered)	N/A	OFI	OFI% (NTE 5%)	\$OFI
CLIN 2-OFI	Final System Certification Review ⁴	L-OFI mo.	OFI	N/A	N/A
SUB-TOTAL				20-40%	\$OFI
ADDITIONAL CLDS ELEMENT/CAPABILITY CERTIFICATION <i>(this workplan content is repeated for each additional element as needed)</i>					
Milestone Payment Number	Milestone	Contractual Due Date (ATP/Launch +/- time)	Contractual Due Date (mm/yyyy)	Payment Percentage for Milestone	Payment Amount
CLIN 2-OFI	Interim Design Review	ATP+OFI mo.	OFI	OFI% (NLT 10%)	\$OFI
CLIN 2-OFI	Software Status Review (SSR)	ATP+OFI mo.	OFI	OFI% (NLT 10%)	\$OFI
CLIN 2-OFI	System Integration Review (SIR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	<i>Other relevant milestones (If proposed)</i>	ATP+OFI mo.	OFI	OFI% (NTE 15%)	\$OFI
CLIN 2-OFI	Assembly Integration and Test Progress Review (APR)	ATP+OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Design Certification Review (DCR) ¹	L-OFI mo.	OFI	OFI%	\$OFI

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				(NLT 15%)	
CLIN 2-OFI	Operations Readiness Review (ORR)	L-OFI mo.	OFI	5%	\$OFI
CLIN 2-OFI	Flight Readiness Review	L-OFI mo.	OFI	N/A	N/A
CLIN 2-OFI	Launch Readiness Review (LRR)	L-OFI days	OFI	N/A	N/A
CLIN 2-OFI	On-Orbit Demonstration <i>(Crewed/Uncrewed as proposed)</i>	L-OFI mo.	OFI	5%	\$OFI
CLIN 2-OFI	System Certification Review ¹	N/A	OFI	20%	\$OFI
SUB-TOTAL⁵				20-40%	\$OFI
CLDS CREWED DEMONSTRATION DESTINATION MILESTONES <i>(This workplan content is repeated for each additional crewed demonstration as needed)</i>					
Milestone Payment Number	Milestone	Contractual Due Date (ATP/Launch +/- time)	Contractual Due Date (mm/yyyy)	Payment Percentage for Milestone	Payment Amount
CLIN 2-TBD	Mission Baseline Review (MBR)	L-OFI mo.	TBD	OFI% (NLT 5%)	\$OFI
CLIN 2-TBD	OFI (If proposed)	L-OFI mo.	TBD	OFI% (NTE 15%)	\$OFI
CLIN 2-OFI	Mission Integration Review (MIR) ¹	L-OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Utilization Integration Review (UIR)	L-OFI mo.	OFI	OFI% (NLT 10%)	\$OFI
CLIN 2-OFI	Flight Ops Review (FOR)	L-OFI mo.	OFI	OFI% (NLT 5%)	\$OFI
CLIN 2-OFI	Mission Certification Review (MCR) ¹	L-OFI mo.	OFI	OFI% (NLT 10%)	\$OFI
CLIN 2-OFI	Operations Readiness Review (ORR)	L-OFI mo.	OFI	5%	\$OFI
CLIN 2-OFI	Agency Flight Readiness Review (AFRR) ²	L-OFI mo./weeks	OFI	N/A	N/A

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CLIN 2-OFI	Crewed On-Orbit Demonstration	Launch+OFI days/months	OFI	15%	\$OFI
CLIN 2-OFI	System Certification Review ¹	N/A	OFI	20%	\$OFI
CLIN 2-OFI	Post Increment Review ³	Increment End + 60 days	OFI	N/A	N/A
SUB-TOTAL				20-40%	\$OFI
CTS CREWED DEMONSTRATION TRANSPORTATION MILESTONES <i>(This workplan content is repeated for each additional crewed demonstration as needed)</i>					
Milestone Payment Number	Milestone	Contractual Due Date (ATP/Launch +/- time)	Contractual Due Date (mm/yyyy)	Payment Percentage for Milestone	Payment Amount
CLIN 2-TBD	Vehicle Baseline Review (VBR)	L-OFI mo.	TBD	OFI% (NLT 10%)	\$OFI
CLIN 2-TBD	OFI (If proposed)	L-OFI mo.	TBD	OFI% (NTE 15%)	\$OFI
CLIN 2-OFI	Mission Integration Review (MIR) ¹	L-OFI mo.	OFI	OFI% (NLT 15%)	\$OFI
CLIN 2-OFI	Mission Certification Review (MCR) ¹	L-OFI mo.	OFI	OFI% (NLT 15%)	\$OFI
CLIN 2-OFI	Operations Readiness Review (ORR)	L-OFI mo.	OFI	5%	\$OFI
CLIN 2-OFI	Agency Flight Readiness Review (AFRR) ²	L-OFI no./weeks	OFI	N/A	N/A
CLIN 2-OFI	Launch Readiness Review (LRR)	L-OFI days	OFI	N/A	N/A
CLIN 2-OFI	Post-Docking Review <i>(if proposed)</i>	Docking+OFI days	OFI	5%	\$OFI
CLIN 2-OFI	Post Flight Review ¹	Landing + 60 days	OFI	20%	\$OFI
SUB-TOTAL				20-40%	\$OFI
TOTAL CLIN 2				N/A	\$OFI

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Notes:

1. Milestones are defined as delivery milestones per the clause, 52.232-32, *Performance-Based Payments*. All other milestones will be considered as Interim milestones.
2. Destination and CTS Agency Flight Readiness Review may be combined into one Agency FRR.
3. CLDS Crewed Demonstration Destination PIR may be combined with the preceding SCR.
4. Final System Certification Review conducted after completion of final on-orbit configuration and required uncrewed and crewed demonstrations.
5. Sub-Total of all additional CLDS element/capability milestones combined cannot exceed 40% of the CLIN 2 total price.

*[Instructions to be deleted upon Model Contract submission
[In accordance with section L.16.3.2 the offeror shall use the template provided below and
submit Milestone Descriptions for each milestone proposed in the table above]*

CLDS SYSTEM/ELEMENT 1 CERTIFICATION MILESTONES

Milestone CLIN 2-OFI: Certification Status Review (CSR)

Purpose:

The CSR is a system level review conducted to provide an updated status on the Contractor's architectural, technical, and programmatic baseline based on design updates, test results or any other significant changes in CLDS configuration. This review confirms that updates to the architecture, requirements allocations, technical baseline, programmatic products, and certification approach remain consistent with the concept of operations, NASA requirements and provides updates to the Contractor's Certification Plan. The Contractor will identify entrance and success criteria to be agreed to by NASA.

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Manufacturing and Test Readiness Review (MTRR)

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Purpose:

The purpose of the MTRR is to assess progress of manufacturing and test activities including long lead schedule items, manufacturing and hardware issues and resolution plans, MRB dispositions, MUA status, major subsystem designs in critical path, engineering test unit build up, qualification model maturity, strategy for achieving verification success, and any other items associated with build readiness.

Entrance Criteria:

1. Manufacturing and test progress, and schedule forecast to support Assembly, Integration and Test activities (including component, subsystem, HITL, and environmental aspects)
2. Status is available for manufacturing and test nonconformance's, issues and resolution plans
3. Bill of materials has been updated and all critical parts are identified and tracked
4. Status is available for all Material Review Board dispositions
5. Status is available for all Material Usage Agreements (MUA), including any requiring NASA concurrence (e.g. Category 1)
6. Resources to support manufacturing and testing have been identified and allocated, including long lead items, facilities, and personnel
7. Manufacturing, production and testing costs and schedules have been baselined, including delivery schedule for long lead items
8. Risk assessment and mitigation plans are up to date
9. Software development needed for major manufacturing and testing has been identified and implemented
10. Status is available for development of all communications (space-to-space and space-to-ground) and associated regulatory approvals

Success Criteria:

1. High confidence that the build and test requirements will be met by the planned manufacturing and related test configurations
2. Evidence is provided that the CLDS, including vendors, comply with program and mission requirements, facility requirements, standards, processes, and procedures
3. CLDS requirements and design are implemented into the final production configuration
4. Design-for-manufacturing considerations have been incorporated to ensure ease and efficiency of production and assembly

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5. Drawings are approved and released
6. Manufacturing and production plans are sufficiently mature and baselined
7. Adequate resources are in place to support production and personnel are trained and available
8. Qualified suppliers have been identified and are on contract for materials procurement
9. Adequate CLDS spares have been planned and budgeted to support manufacturing and test
10. Required facilities and tools are identified, sufficient, and available for manufacturing and test, and specified special tools and test equipment are available in sufficient quantities
11. Manufacturing and production processes or methods are consistent with quality requirements and compliant with regulations
12. Audits and insight indicate high likelihood production processes and methods are within acceptable risks and results to date indicate high likelihood of supplier quality control success

Milestone CLIN 2-OFI: Software Status Review (SSR)

Purpose:

The purpose of the Software Status Review is to review evidence of software development, test progress and issue resolutions plans are sufficient to support planned completion and deployment of software in support of CLDS development. The completed software releases will accommodate system testing, analysis, demonstration, training, and operations and are within acceptable risk to safety, cost, and schedule.

Entrance Criteria:

1. Architecture and software design updates are available. This includes all major software functions, internal and external interfaces, and engineering subsystem open questions and dependencies.
2. Status of software development artifacts are updated, available for review, and baselined upon completion (under configuration management).
3. Updated software requirements exist (as allocated from the system-level requirements; requirements flow-down captured and traceability evidence is available for review).
4. Status of software development progress via the following:
 - a) Peer Review status
 - b) Code development progress

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- c) Unit/integration software development test progress
- d) Preparedness for project milestone deliverables
- 5. Status of software test progress via the following:
 - a) Peer Review status
 - b) Verification and validation approach and out brief
 - c) Test procedures (code/manual) development progress
 - d) Non-flight development of other necessary software: Model/simulations, ground software progress
 - e) Planned MC/DC (Modified Condition/Decision Coverage) test status and identification of functions requiring this coverage
 - f) Planned Monte Carlo Analysis modeling strategy, including model availability, parameter ranges, and simulation readiness
- 6. Open issues, risks, and mitigation plan affecting software are identified, with any associated action item status

Success Criteria:

- 1. The software design/architecture is credible, stable, feasible, and accurate to system functional needs including performance, timing, interfaces, margins, computing resource usage, and constraints.
- 2. Software-to-software and software-to-hardware interface definitions (command and data) are understood enough to support next-phase development.
- 3. Software technical requirements are fully defined, allocated, and traceable to system-level requirements, with no open issues/questions blocking design maturation.
- 4. Evidence demonstrates measurable progress in software code development, test development, consistent with the provider's plans and schedules, and adequate to support downstream verification and validation events.
- 5. Risk posture is acceptable, with:
 - a) Known software risks are identified and understood
 - b) Mitigation plans are targeted and resourced
 - c) No unmanaged risks that jeopardize schedule, cost, or safety are acceptable
- 6. As significant progress in the software system has been noted, verification and validation maturity could be assessed via products like the following:
 - a) Tests with verifiable artifacts are complete

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- b) Models/sims pipeline maturity at expected fidelity
 - c) Clear mapping demonstrating how requirements will be verified
 - d) Hardware-in-the-loop / Software-in-the-loop verification clearly identified
 - e) MC/DC testing results (or preliminary MC/DC coverage evidence)
 - f) Monte Carlo Analysis modeling performed (or initial results available) demonstrating system robustness across expected variability ranges, including statistical evidence of stability and boundary performance
7. Document rationale for deviating from software delivery process or plans, including incremental builds, regression test philosophy, configuration management approach, and delivery cadence sufficiently defined to meet program needs.

Milestone CLIN 2-OFI: System Integration Review (SIR)

Purpose:

The purpose of the System Integration Review (SIR) is to ensure that the component parts of the system, element or capability is on schedule and technically mature to begin assembly, integration, and test prior to final flight/launch configuration. SIR also ensure that the ground processing facilities, labs, support personnel, integration plans, and procedures are on schedule and ready to support assembly, integration, and test efforts. SIR is applicable for an incremental CLDS development approach.

The Contractor is expected to lead an SIR with NASA participation prior to the formal test and evaluation phase accordance with the Contractor's Certification Plan.

Entrance Criteria:

- 1. Previous planned program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
- 2. A preliminary SIR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the SIR.
- 3. Adequate technical margins (e.g., mass, power) exist to complete the development within budget, schedule, and known risk.
- 4. Integration plans have been identified, including those associated with the integration to the current on-orbit system.
- 5. System, element, and capabilities are on schedule to be available for integration.

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6. Integration facilities and ground support equipment are ready or will be available when required.
7. All known system discrepancies have been identified, dispositioned, and are on schedule for closure.
8. Updated baseline CLDS architecture since last review
9. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the design.
10. Technical and Programmatic deliverables have been delivered to NASA for review consistent with contract requirements.
11. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.

Success Criteria:

1. Integration plans and procedures are provided and on track for completion and approval to support system integration.
2. Previous component, subsystem, and system test results form a satisfactory basis for proceeding to integration.
3. Schedule estimates are credible with adequate margins and within defined constraints.
4. Risks impacting NASA facilities and/or personnel, as applicable are identified and accepted by NASA.
5. For activities involving NASA resources (i.e., facilities or personnel), the Contractor has demonstrated compliance with applicable NASA and supporting Center requirements, standards, processes, and procedures.
6. TBD and TBR items are clearly identified with acceptable plans and schedule for their dispositions.
7. The integration procedures and workflow have been clearly defined and documented prior to their need date.
8. The review of the integration plans and associated evidence provides a reasonable expectation that the integration will proceed successfully.
9. All training necessary to properly integrate the system has been performed.
10. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
11. Evidence that the results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the design.

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Milestone CLIN 2-OFI: *Other relevant milestones (If proposed)*

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Assembly Integration and Test Progress Review (APR)

Purpose:

The APR assesses readiness to integrate secondary structure and components into the shell, readiness to begin vehicle-level powered operations, progress through the assembly, integration and test phase, status of lower-level qualification, provide insight into testing completion and hardware integration, and assess completion of Phase 3 safety review. The APR should be conducted between SIR and DCR.

Entrance Criteria:

1. Previous program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary APR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA
3. Status of LV Integration preparation
4. Status of development and inputs to flight operations and training products
5. Status of lower-level qualification, including completion of qualification that can be completed prior to integration into the CLDS
6. HITL and avionics (hardware and software) simulator test progress, issues, and schedule

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7. Status on progress of Assembly, Integration, and Test of the CLDS, including testing with Visiting Vehicles, Mission Systems, and Ground Systems (e.g. control centers)
8. Readiness and forward schedule to begin vehicle-level powered operations
9. Readiness and schedule to proceed to launch or dwell
10. Status of Verification and Validation activities and VCN closure
11. Summary of IMS, Schedule Readiness Assessment (SRA), critical path, and integration activities with NASA and Visiting Vehicle providers, including GFE
12. Status of logistics planning and updated list of critical spares

Success Criteria:

1. Assembly Integration & Test activities are on schedule
2. Verification (VCN) burndown is on schedule and any waivers, deviations or exceptions requiring NASA approval are identified with a jointly agreed to closure plan
3. Phase 3 Safety Review and associated products are at least 50% complete.
4. Integration and Test non-conformance and issues have a baselined disposition plan to close before DCR
5. Logistics support plan and sparing supports planned service life and is integrated into the procurement plan

Milestone CLIN 2-OFI: Design Certification Review (DCR)

Purpose:

The DCR ensures that the design and build of the CLDS complies with functional and performance requirements, as demonstrated in verification, validation, qualification, and acceptance evidence.

The Contractor is expected to lead a DCR with NASA participation prior to the element/vehicle closeout and integration with the launch vehicle in accordance with the Contractor's Certification Plan. For an incremental CLDS design, a DCR is expected prior to the launch of each subsequent element and capability.

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Entrance Criteria:

1. Previous planned program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary DCR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the DCR.
3. Verification and validation products to close NASA's CLDS requirements have been provided to NASA and are ready for review:
 - a) Verification Closure Notices (VCNs).
 - b) Exceptions Deviations and Waivers.
 - c) Validation test reports.
4. Phase 3 Safety Review is complete prior to DCR.
5. Identification of any open verification and validation testing nonconformances.
6. Establish closure plans for any open requirement and hazard control verifications to be closed prior to the on-orbit demonstration or because of the on-orbit demonstration.
7. Provide evidence that CLDS operations and utilization processes and services are in place and have been validated.
8. Status of open CLDS operational supporting and enabling products (e.g., flight rules, procedures) with a closure plan to complete by flight.
9. Results of joint integrated analysis and testing (e.g. Destination and Transportation).
10. Updated baseline CLDS design since last review.
11. Plans for managing operations and training reflect updates to approach, development plans, and schedule for operational processes and products.
12. Assessment of the as-built vs as-designed CLDS.
13. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
14. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.
15. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
16. Updated functional activation, checkout, assembly, outfitting, and on-orbit demonstration plan

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Success Criteria:

1. All VCNs approved by NASA, or closure plans for open VCNs established to be completed by flight.
2. Phase 3 Safety Review (i.e., finalized requirements, controls, and verification documentation) is complete or closure plans for open work are defined.
3. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by flight.
4. Operations and training processes are in place and have been validated.
5. Utilization processes and services are in place and have been validated.
6. Nonconformances from verification and validation testing have been resolved, and any workarounds have been incorporated into supporting and enabling operational products.
7. Any open waivers and exceptions to NASA requirements and standards will be closed by flight.
8. Safety, technical, and programmatic risks with approved mitigation plans are dispositioned and documented.
9. Plans to manage EEE parts and radiation hardness assurance updated with final system-level radiation effects assessment.
10. Documentation is updated to reflect the as-built CLDS.
11. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

Milestone CLIN 2-OFI: Operations Readiness Review (ORR)

Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented

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Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Update on CLD certification closure activities, including
 - a. Verification closure notices.
 - b. Open waivers and exceptions to NASA requirements and standards.
 - c. Open work resulting from validation testing or integrated testing.
3. Verification and validation products to NASA's requirements planned to be closed at ORR have been provided to NASA and are ready for review.
4. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
5. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
6. Operations documentation (e.g., handbook, procedures, operations products) has been written, verified, and approved.
7. Users/operators have been trained on the correct operation of the System.
8. Operational contingency planning has been completed, and operations personnel have been trained on their use.
9. Successful completion of a Joint Medical Operations Readiness Review including identification of any open work and closure plans
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware

Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in an operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. NASA approval of VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.

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4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.
5. Operations plans and schedules are consistent with mission objectives.
6. Increment risks have been identified, planned mitigations are adequate, and residual risks are accepted.
7. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
8. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
9. Licenses, permits and clearances that may be required by state, federal and foreign government in support of the increment have been obtained or schedule to obtain supports the planned need.
10. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
11. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution
12. The program/project cost and schedule estimates are credible and within program/project constraints.

Milestone CLIN 2-OF1: Flight Readiness Review (FRR)

Purpose:

The FRR is a Contractor-led milestone with NASA participation that assesses the Contractor's readiness to proceed into the launch count for the element mission. The FRR typically occurs at L-1 week.

The FRR examines the system's readiness for a safe and successful launch and mission operations. The FRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were identified at the ORR are presented. Any remaining open actions coming out of FRR or new issues that are identified after FRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

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Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch “GO” decision based on the established GO/no-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, Federal Aviation Administration (FAA), and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
11. The CLDS has been certified to meet NASA’s requirements.

Success Criteria:

1. The flight vehicle/system, mission systems, and ground systems are ready for flight/mission operations.
2. The hardware is deemed acceptably safe for flight/mission operations.
3. Certification that flight operations can safely proceed with acceptable risk has been achieved.
4. Flight and ground software elements are ready to support launch and flight operations.
5. Interfaces have been checked and demonstrated to be functional.
6. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
7. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.
8. The flight environmental factors are within constraints.

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9. All open safety and mission risk items have been addressed, and the residual risk is deemed acceptable.
10. Supporting organizations are ready to support flight/mission operations.
11. All software is tested, validated, and loaded.
12. All necessary spectrum (radio frequency) authorizations have been obtained.
13. Licenses, permits and clearances required for launch have been approved, or plans in place to ensure closure prior to launch.
14. Plans are in place to gain approval for any licenses, permits and clearances not required for launch, but required for the Increment, are in place and support planned operations. This includes operational restrictions until approvals granted.
15. Successful completion of a Joint Medical Operations Readiness Review
16. The AFRR conducted a successful GO-poll to proceed to the LRR

Milestone CLIN 2-OFI: Launch Readiness Review (LRR)

Purpose:

The LRR is a Contractor-led Review with the Launch Provider and NASA insight that examines the launch pad and LV readiness, and reconfirms the readiness determination from the FRR. The LRR typically occurs at L-2d.

The intent of the review is to confirm launch readiness to execute a safe and successful launch.

Entrance Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The CTS/CLD AFRR conducted a successful GO-poll to proceed to the LRR.

Success Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established

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3. The LRR conducted a successful GO-poll to proceed into the launch count.

Milestone CLIN 2-OFI: Activation and Checkout Demonstration

Purpose:

NASA expects the Contractor to conduct on-orbit activation, checkout, assembly, outfitting, and demonstrations. On-orbit demonstrations are performed to provide critical validation of complex systems performance and safety in the intended operational environments (which cannot be reproduced during ground testing). On-orbit demonstrations are not limited to validating the on-orbit spacecraft but will also extend to ground capabilities, tools, processes, services, and plans required to execute a mission.

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: System Certification Review

Purpose:

The purpose of the System Certification Review (SCR) is to validate that the CLDS has met all requirements through end-to-end testing and on-orbit demonstrations, address any residual risk to crew safety and mission assurance, and establish the certification baseline. An SCR is conducted after launch and successful on-orbit activation, checkout, assembly, and demonstration of the CLDS. NASA expects an interim SCR to be conducted prior to a crewed mission that would occur during the on-orbit activation, checkout, and demonstration phase. An SCR may be combined with mission integration milestones. Reference CLDP-PLN-2110, CLDP Mission Integration Plan for details on mission integration milestones. For an incremental CLDS design, the Contractor may propose additional SCRs.

Entrance Criteria:

1. Successful completion of planned on-orbit CLD activation, checkout and demonstration

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objectives.

2. Verification and validation products to close open CLDS requirements are developed and submitted to NASA for review (e.g. updated VCNs).
3. Updated Safety Data packages, Hazard Reports and supporting documentation, to address changes in operations or configuration based on on-orbit demonstrations and lessons learned, are approved by NASA.
4. Lessons learned and associated corrective action plans are established.
5. Anomalies and failures incurred during the CLD operation and on-orbit activation, checkouts and demonstrations are dispositioned and closure plans are established.
6. Assessment of the predicted vs actual CLD performance in the on-orbit environment.
7. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
8. Operations and training products and processes reflect updates based on actual operation of the CLDS or plans in place to update prior to the next mission.
9. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
10. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.

Success Criteria:

1. All NASA's requirements are closed or have NASA approved variances in place.
2. Document safety, technical, and programmatic risks with defined mitigation plans.
3. Updates to mission, operations, and utilization processes and products based on data collected during the on-orbit activation, checkout and demonstration are complete or plans to implement are in place.
4. Updates to models and tools based on data collected during the on-orbit demonstration are complete or plans to implement are in place.
5. Design changes to the baseline CLDS design or operational constraints because of data collected during the on-orbit demonstration are documented and plans in place to implement.
6. Any open waivers, deviations and exceptions to NASA requirements and standards are closed.
7. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

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Milestone CLIN 2-OFI: Mission A Certification Readiness Review *(if Mission A offered)*

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Mission B Certification Readiness Review *(if Mission B offered)*

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Final System Certification Review

Purpose:

The purpose of the Final System Certification Review (SCR) is to validate that the CLDS has met all requirements through end-to-end testing and final on-orbit demonstrations, address any residual risk to crew safety and mission assurance, and establish the certification baseline. An SCR is conducted after launch and successful on-orbit activation, checkout, assembly, and demonstration of the CLDS. An SCR may be combined with mission integration milestones. Reference CLDP-PLN-2110, CLDP Mission Integration Plan for details on mission integration milestones.

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Entrance Criteria:

1. Successful completion of planned on-orbit CLD activation, checkout and demonstration objectives.
2. Verification and validation products to close open CLDS requirements are developed and submitted to NASA for review (e.g. updated VCNs).
3. Updated Safety Data packages, Hazard Reports and supporting documentation, to address changes in operations or configuration based on on-orbit demonstrations and lessons learned, are approved by NASA.
4. Lessons learned and associated corrective action plans are established.
5. Anomalies and failures incurred during the CLD operation and on-orbit activation, checkouts and demonstrations are dispositioned and closure plans are established.
6. Assessment of the predicted vs actual CLD performance in the on-orbit environment.
7. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
8. Operations and training products and processes reflect updates based on actual operation of the CLDS or plans in place to update prior to the next mission.
9. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
10. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.

Success Criteria:

1. All NASA's requirements are closed or have NASA approved variances in place.
2. Document safety, technical, and programmatic risks with defined mitigation plans.
3. Updates to mission, operations, and utilization processes and products based on data collected during the on-orbit activation, checkout and demonstration are complete or plans to implement are in place.
4. Updates to models and tools based on data collected during the on-orbit demonstration are complete or plans to implement are in place.
5. Design changes to the baseline CLDS design or operational constraints because of data collected during the on-orbit demonstration are documented and plans in place to implement.
6. Any open waivers, deviations and exceptions to NASA requirements and standards are closed.

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7. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

ADDITIONAL CLDS ELEMENT/CAPABILITY CERTIFICATION

(the entrance/success criteria are repeated for each additional element as needed)

Milestone CLIN 2-OFI: Interim Design Review (IDR)

Purpose:

The purpose of the Interim Design Review (IDR) is to evaluate the development status of a CLD element or capability and is applicable for an incremental CLDS development approach. The IDR evaluates the design maturity of the element or capability as well as the integration of the design into the CLDS and impact on verification and certification. Depending on the design maturity and complexity, an IDR may be conducted early in the design flow (i.e., PDR timeframe) or later (i.e., CDR time frame) and is expected for every major element certification.

The Contractor is expected to lead the IDR with NASA participation in accordance with the Contractor's Certification Plan for each element or capability. NASA expects an IDR to be conducted commensurate with a design at the CDR level. The Contractor will identify entrance and success criteria that align with the Contractor's plan to be agreed to by NASA.

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Software Status Review (SSR)

Purpose:

The purpose of the Software Status Review is to review evidence of software development, test progress and issue resolutions plans are sufficient to support planned completion and deployment of software in support of CLDS development. The completed software releases will accommodate system testing, analysis, demonstration, training, and operations and are within acceptable risk to safety, cost, and schedule.

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Entrance Criteria:

1. Architecture and software design updates are available. This includes all major software functions, internal and external interfaces, and engineering subsystem open questions and dependencies.
2. Status of software development artifacts are updated, available for review, and baselined upon completion (under configuration management).
3. Updated software requirements exist (as allocated from the system-level requirements; requirements flow-down captured and traceability evidence is available for review).
4. Status of software development progress via the following:
 - a) Peer Review status
 - b) Code development progress
 - c) Unit/integration software development test progress
 - d) Preparedness for project milestone deliverables
5. Status of software test progress via the following:
 - a) Peer Review status
 - b) Verification and validation approach and out brief
 - c) Test procedures (code/manual) development progress
 - d) Non-flight development of other necessary software: Model/simulations, ground software progress
 - e) Planned MC/DC (Modified Condition/Decision Coverage) test status and identification of functions requiring this coverage
 - f) Planned Monte Carlo Analysis modeling strategy, including model availability, parameter ranges, and simulation readiness
6. Open issues, risks, and mitigation plan affecting software are identified, with any associated action item status

Success Criteria:

1. The software design/architecture is credible, stable, feasible, and accurate to system functional needs including performance, timing, interfaces, margins, computing resource usage, and constraints.
2. Software-to-software and software-to-hardware interface definitions (command and data) are understood enough to support next-phase development.

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3. Software technical requirements are fully defined, allocated, and traceable to system-level requirements, with no open issues/questions blocking design maturation.
4. Evidence demonstrates measurable progress in software code development, test development, consistent with the Contractor's plans and schedules, and adequate to support downstream verification and validation events.
5. Risk posture is acceptable, with:
 - a) Known software risks are identified and understood
 - b) Mitigation plans are targeted and resourced
 - c) No unmanaged risks that jeopardize schedule, cost, or safety are acceptable
6. As significant progress in the software system has been noted, verification and validation maturity could be assessed via products like the following:
 - a) Tests with verifiable artifacts are complete
 - b) Models/sims pipeline maturity at expected fidelity
 - c) Clear mapping demonstrating how requirements will be verified
 - d) Hardware-in-the-loop / Software-in-the-loop verification clearly identified
 - e) MC/DC testing results (or preliminary MC/DC coverage evidence)
 - f) Monte Carlo Analysis modeling performed (or initial results available) demonstrating system robustness across expected variability ranges, including statistical evidence of stability and boundary performance
7. Document rationale for deviating from software delivery process or plans, including incremental builds, regression test philosophy, configuration management approach, and delivery cadence sufficiently defined to meet program needs.

Milestone CLIN 2-OFI: Assembly Integration and Test Progress Review (APR)

Purpose:

The APR assesses readiness to integrate secondary structure and components into the shell, readiness to begin vehicle-level powered operations, progress through the assembly, integration and test phase, status of lower-level qualification, provide insight into testing completion and hardware integration, and assess completion of Phase 3 Phase 3 safety review. The APR should be conducted between SIR and DCR.

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Entrance Criteria:

1. Previous program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary APR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA
3. Status of LV Integration preparation
4. Status of development and inputs to flight operations and training products
5. Status of lower-level qualification, including completion of qualification that can be completed prior to integration into the CLDS
6. HITL and avionics (hardware and software) simulator test progress, issues, and schedule
7. Status on progress of Assembly, Integration, and Test of the CLDS, including testing with Visiting Vehicles, Mission Systems, and Ground Systems (e.g. control centers)
8. Readiness and forward schedule to begin vehicle-level powered operations
9. Readiness and schedule to proceed to launch or dwell
10. Status of Verification and Validation activities and VCN closure
11. Summary of IMS, Schedule Readiness Assessment (SRA), critical path, and integration activities with NASA and Visiting Vehicle providers, including GFE
12. Status of logistics planning and updated list of critical spares

Success Criteria:

1. Assembly Integration & Test activities are on schedule
2. Verification (VCN) burndown is on schedule and any waivers, deviations or exceptions requiring NASA approval are identified with a jointly agreed to closure plan
3. Phase 3 Safety Review and associated products are at least 50% complete.
4. Integration and Test non-conformance and issues have a baselined disposition plan to close before DCR
5. Logistics support plan and sparing supports planned service life and is integrated into the procurement plan

Milestone CLIN 2-OFI: Design Certification Review (DCR)

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Purpose:

The DCR ensures that the design and build of the CLDS complies with functional and performance requirements, as demonstrated in verification, validation, qualification, and acceptance evidence.

The Contractor is expected to lead a DCR with NASA participation prior to the element/vehicle closeout and integration with the launch vehicle in accordance with the Contractor's Certification Plan. For an incremental CLDS design, a DCR is expected prior to the launch of each subsequent element and capability.

Entrance Criteria:

1. Previous planned program milestone reviews have been successfully completed, actions and issues have been dispositioned and plans to complete open work are defined.
2. A preliminary DCR agenda, success criteria, and instructions to the review board have been agreed to by the Contractor and NASA prior to the DCR.
3. Verification and validation products to close NASA's CLDS requirements have been provided to NASA and are ready for review:
 - a) Verification Closure Notices (VCNs).
 - b) Exceptions, Deviations and Waivers.
 - c) Validation test reports.
4. Phase 3 Safety Review is complete prior to DCR.
5. Identification of any open verification and validation testing nonconformances.
6. Establish closure plans for any open requirement and hazard control verifications to be closed prior to the on-orbit demonstration or because of the on-orbit demonstration.
7. Provide evidence that CLDS operations and utilization processes and services are in place and have been validated.
8. Status of open CLDS operational supporting and enabling products (e.g., flight rules, procedures) with a closure plan to complete by flight.
9. Results of joint integrated analysis and testing (e.g. Destination and Transportation).
10. Updated baseline CLDS design since last review.
11. Plans for managing operations and training reflect updates to approach, development plans, and schedule for operational processes and products.
12. Assessment of the as-built vs as-designed CLDS.

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13. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
14. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.
15. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
16. Updated functional activation, checkout, assembly, outfitting, and on-orbit demonstration plan

Success Criteria:

1. All VCNs approved by NASA, or closure plans for open VCNs established to be completed by flight.
2. Phase 3 Safety Review (i.e., finalized requirements, controls, and verification documentation) is complete or closure plans for open work are defined.
3. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by flight.
4. Operations and training processes are in place and have been validated.
5. Utilization processes and services are in place and have been validated.
6. Nonconformances from verification and validation testing have been resolved, and any workarounds have been incorporated into supporting and enabling operational products.
7. Any open waivers, deviations and exceptions to NASA requirements and standards will be closed by flight.
8. Safety, technical, and programmatic risks with approved mitigation plans are dispositioned and documented.
9. Plans to manage EEE parts and radiation hardness assurance updated with final system-level radiation effects assessment.
10. Documentation is updated to reflect the as-built CLDS.
11. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

Milestone CLIN 2-OFI: Operations Readiness Review (ORR)

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Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented

Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Update on CLD certification closure activities, including
 - a. Verification closure notices.
 - b. Open waivers and exceptions to NASA requirements and standards.
 - c. Open work resulting from validation testing or integrated testing.
3. Verification and validation products to NASA's requirements planned to be closed at ORR have been provided to NASA and are ready for review.
4. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
5. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
6. Operations documentation (e.g., handbook, procedures, operations products) has been written, verified, and approved.
7. Users/operators have been trained on the correct operation of the System.
8. Operational contingency planning has been completed, and operations personnel have been trained on their use.
9. Successful completion of a Joint Medical Operations Readiness Review including identification of any open work and closure plans

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10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware

Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in an operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. NASA approval of VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.
4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.
5. Operations plans and schedules are consistent with mission objectives.
6. Increment risks have been identified, planned mitigations are adequate, and residual risks are accepted.
7. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
8. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
9. Licenses, permits and clearances that may be required by state, federal and foreign government in support of the increment have been obtained or schedule to obtain supports the planned need.
10. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
11. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution
12. The program/project cost and schedule estimates are credible and within program/project constraints.

Milestone CLIN 2-OFI: Flight Readiness Review (FRR)

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Purpose:

The FRR is a Contractor-led milestone with NASA participation that assesses the Contractor's readiness to proceed into the launch count for the element mission. The FRR typically occurs at L-1 week.

The FRR examines the system's readiness for a safe and successful launch and mission operations. The FRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were identified at the ORR are presented. Any remaining open actions coming out of FRR or new issues that are identified after FRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch "GO" decision based on the established GO/no-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, Federal Aviation Administration (FAA), and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
11. The CLDS has been certified to meet NASA's requirements.

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Success Criteria:

1. The flight vehicle/system, mission systems, and ground systems are ready for flight/mission operations.
2. The hardware is deemed acceptably safe for flight/mission operations.
3. Certification that flight operations can safely proceed with acceptable risk has been achieved.
4. Flight and ground software elements are ready to support launch and flight operations.
5. Interfaces have been checked and demonstrated to be functional.
6. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
7. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.
8. The flight environmental factors are within constraints.
9. All open safety and mission risk items have been addressed, and the residual risk is deemed acceptable.
10. Supporting organizations are ready to support flight/mission operations.
11. All software is tested, validated, and loaded.
12. All necessary spectrum (radio frequency) authorizations have been obtained.
13. Licenses, permits and clearances required for launch have been approved, or plans in place to ensure closure prior to launch.
14. Plans are in place to gain approval for any licenses, permits and clearances not required for launch, but required for the Increment, are in place and support planned operations. This includes operational restrictions until approvals granted.
15. Successful completion of a Joint Medical Operations Readiness Review
16. The AFRR conducted a successful GO-poll to proceed to the LRR

Milestone CLIN 2-OFI: Launch Readiness Review (LRR)

Purpose:

The LRR is a Contractor-led Review with the Launch Provider and NASA insight that examines the launch pad and LV readiness, and reconfirms the readiness determination from the FRR. The LRR typically occurs at L-2d.

The intent of the review is to confirm launch readiness to execute a safe and successful launch.

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Entrance Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The CTS/CLD AFRR conducted a successful GO-poll to proceed to the LRR.

Success Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The LRR conducted a successful GO-poll to proceed into the launch count.

Milestone CLIN 2-OFI: On-Orbit Demonstration (*Crewed/Uncrewed as proposed*)

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: System Certification Review (SCR)

Purpose:

The purpose of the System Certification Review (SCR) is to validate that the CLDS has met all requirements through end-to-end testing and on-orbit demonstrations, address any residual risk to crew safety and mission assurance, and establish the certification baseline. An SCR is conducted after launch and successful on-orbit activation, checkout, assembly, and demonstration of the

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CLDS. NASA expects an interim SCR to be conducted prior to a crewed mission that would occur during the on-orbit activation, checkout, and demonstration phase. An SCR may be combined with mission integration milestones. Reference CLDP-PLN-2110, CLDP Mission Integration Plan for details on mission integration milestones. For an incremental CLDS design, the Contractor may propose additional SCRs.

Entrance Criteria:

1. Successful completion of planned on-orbit CLD activation, checkout and demonstration objectives.
2. Verification and validation products to close open CLDS requirements are developed and submitted to NASA for review (e.g. updated VCNs).
3. Updated Safety Data packages, Hazard Reports and supporting documentation, to address changes in operations or configuration based on on-orbit demonstrations and lessons learned, are approved by NASA.
4. Lessons learned and associated corrective action plans are established.
5. Anomalies and failures incurred during the CLD operation and on-orbit activation, checkouts and demonstrations are dispositioned and closure plans are established.
6. Assessment of the predicted vs actual CLD performance in the on-orbit environment.
7. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
8. Operations and training products and processes reflect updates based on actual operation of the CLDS or plans in place to update prior to the next mission.
9. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
10. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.

Success Criteria:

1. All NASA's requirements are closed or have NASA approved variances in place.
2. Document safety, technical, and programmatic risks with defined mitigation plans.
3. Updates to mission, operations, and utilization processes and products based on data collected during the on-orbit activation, checkout and demonstration are complete or plans to implement are in place.

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4. Updates to models and tools based on data collected during the on-orbit demonstration are complete or plans to implement are in place.
5. Design changes to the baseline CLDS design or operational constraints because of data collected during the on-orbit demonstration are documented and plans in place to implement.
6. Any open waivers, deviations and exceptions to NASA requirements and standards are closed.
7. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

CLDS CREWED DEMONSTRATION DESTINATION MILESTONES

(This workplan content is repeated for each additional crewed demonstration as needed)

Milestone CLIN 2-OFI: Mission Baseline Review (MBR)

Purpose:

Baseline the Increment objectives, to include crew vehicle and cargo vehicle complement, and associated baseline CLD configuration while docked, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have a defined configuration, environments, and performance capabilities identified.

Entrance Criteria:

1. Reconfirm the targeted increment dates and estimated crew and cargo mission launch/return windows.
2. Provide an integrated mission schedule and ops concepts that accomplishes all NASA objectives throughout all phases of the Increment.
3. Identify all activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
4. Identification of changes to the certified CLD architecture, operational constraints, or existing CLD certification products (VCNs, hazard controls, exceptions, waivers, and non-compliances) resulting from the planned increment and current real time operations
5. Identification of closure plans for open and recurring requirements and hazard control verifications necessary to support planned increment.

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6. Identify updates for Destination operational products, personnel certification, facilities changes, and provide any scope and/or schedule changes for crew and ground personnel training.
7. Provide a plan and schedule to address any open, updated, and/or delta certification activities. This includes safety, design, development, test and evaluation (DDT&E) and verification and validation (V&V) activities.
8. Any previous IFA and/or production non-conformance that affects the baseline has been identified, discussed, and effects to the mission baseline risk posture are identified.
9. Present the status or results of any mission-unique or special study task assessments requested by NASA.
10. Identify any first-time processes, associated risks and mitigation plans.
11. Identify any new vendors or sub -contractors for supplied hardware and services.
12. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
13. Present a status on Government Task Agreements (GTAs) and Reimbursable Space Act Agreements (RSAAs) in which the Contractor must fulfill Contractor's responsibilities.
14. Top safety, technical, programmatic risks associated with the planned increment have been identified
15. Identification of any licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned increment.

Success Criteria:

1. Destination objectives for the Increment are baselined.
2. Crew training timeline (Destination and Transportation) is defined and meets planned launch date.
3. Cargo Allocations are defined.
4. Targeted Mission Dates are defined, including:
 - a. Crew Docking and Undocking date targets.
 - b. Cargo Docking and Undocking targets.
 - c. Identify if crew handover is direct or indirect.
 - d. Identify Destination Commander handover plans.
5. All periods where the Destination will be uncrewed immediately prior, during, or immediately after the Increment are identified

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6. NASA comments to Technical and Programmatic contractual deliverables have been dispositioned and closure plans have been agreed to by NASA.
7. Design, configuration, and operations changes have been identified and the schedule shows all work required to accomplish the design changes and close non-standard requirement and hazard control verifications prior to the MCR
8. Any previous IFA and/or production non-conformance that affects the baseline has been identified and discussed; discussed, and changes and effects to the mission baseline risk posture are identified
9. Any first-time processes and associated risks have been identified and mitigation plans show the risks are mitigated to acceptable levels prior to MCR.
10. New vendors or sub-contractors for supplied hardware and services have been identified.
11. Status on GTAs and RSAAs have been presented.
12. The top safety, technical, programmatic risks, associated with the planned increment are identified, assessed, mitigation plans identified and clearly documented.
13. Contractor's requirements are traceable to NASA's requirements, baselined and under configuration control management.
14. Contractor's plan and schedule to address any open, updated, or delta certification has been approved by NASA.

Milestone CLIN 2-OFI: Mission Integration Review (MIR)

Purpose:

The MIR is a Contractor-led milestone with NASA that provides a mission integration status for the Destination and CVV to support the start of an Increment. The MIR also provides CaVV and CVV hardware allocations, planning, preparation, and traffic plans for cargo deliveries during the Increment. The MIR typically occurs at L-12m and is conducted for the launch of an Element or CVV to an on-orbit Destination. The MIR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The intent of the MIR is to review and baseline the Increment and Utilization requirements, conditions, and inputs for mission-specific analytical assessments. The MIR provides plans for CLD operations and production activities in support of the targeted launch date and confirms the 90-day launch date window for the start of the Increment as agreed to by NASA and the Contractor and defined at ATP. A status of all open action items and closure plans identified at previous reviews are presented.

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Entrance Criteria:

1. Review the mission objectives, to include crew and cargo complement, and associated baseline Destination configuration, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have definite configuration, environments and performance capabilities identified.
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
3. Reconfirm the targeted increment dates as well as provide estimated crew and cargo mission launch/return windows.
4. Provide an integrated schedule that accomplishes all NASA objectives throughout all mission phases.
5. Provide manifest analysis and plans for launch, on-orbit, return, and disposal (if applicable).
6. Present draft destination topology options
7. Provide an integrated timeline and ops concepts that accomplishes the mission objectives throughout all phases of the Increment:
 - a. On-orbit configurations (including topology) throughout the flight plan,
 - b. Consumable inventories, predictions, and margins throughout the entire flight plan,
 - c. On-orbit resource allocations and plans,
 - d. Altitude strategy and maintenance plans,
 - e. Increment and flight-specific requirements,
 - f. Utilization Plans, and
 - g. Integrated Operations plans and products.
 - h. Crew medical operations
8. Present progress of mission specific integrated safety or utilization hazard assessments and a schedule for completing the reviews prior to ORR identifying any risks.
9. Present mission-specific analysis, designs and supporting analyses that implement Increment requirements
10. Present plans identifying the total crew complement with crew assignments, crew and ground personnel training, mission-specific medical testing plans, and facilities and crew plans (including crew time for NASA and non-USG crew, landing and recovery plans, etc.).
11. Present progress towards incorporation of operations changes.
12. Present progress and updated schedule of CLD certification activities (e.g. DDT&E, V&V, Safety Reviews, etc.).

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13. Present progress for updates to operational products, personnel certification, facilities changes, and provide any scope or schedule changes for crew and ground personnel training.
14. Discuss current Health and Status (H&S) of the on-orbit vehicle, previous IFAs, production non-conformances and their dispositions; how they have been resolved and how they affect the mission baseline risk posture, including system performance, reliability, and safety.
15. Present the status or results of any mission-unique or special study task assessments requested by NASA.
16. Identify any first-time processes, associated risks, and mitigation plans.
17. Identify any new vendors or sub -contractors for supplied hardware.
18. Present a status on GTAs and RSAAs.
19. Present integrated hardware and software test plans for all planned CLDS configurations during the increment. Discuss how simulations, ground training, and prototyping results for CLDS do not present any potential mission risks.
20. Payload hardware and software interfaces are defined
21. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
22. Provide updated top safety, technical, programmatic risks associated with the planned increment activities.
23. Provide updates on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned mission

Success Criteria:

1. Plans are in place and/or being implemented to satisfy the mission objectives within the mission timeline identified.
2. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA
3. Prime and Backup crew are identified and meet the selection criteria.
4. Destination Commander is identified and meets the selection criteria.
5. Crew medical and behavioral health certification is complete
6. Targeted Mission Dates are defined, including:
 - a. Crew launch and return date targets,
 - b. Cargo launch and return date targets,

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- c. Status of transportation procurement and designation of crew, cargo, and LV types for each transportation mission during the Increment,
 - d. Identify any CLDS first flight items (i.e., capsule, booster, new system) requiring first-flight certification and a feasible schedule that supports the targeted mission dates,
 - e. Identify if crew handover is direct or indirect,
 - f. Identify Destination Commander handovers, and
 - g. Identify all periods where the Destination will be unmanned immediately prior, during, or immediately after the Increment.
- 7. CLDS Design, configuration, and operations changes have a viable plan for completion of the changes prior to the MCR and all associated certification activities will be complete prior to first use.
 - 8. Any previous IFA and/or production non-conformance that affects the baseline has been identified and discussed; discussed changes and effects to the mission baseline risk posture.
 - 9. Any first-time processes and associated risks have been identified and mitigation plans show the risks are mitigated to acceptable levels prior to MCR.
 - 10. Risks and mitigations to manufacturing, accomplishing remaining milestones, and closure of Recurring requirement verification are provided.
 - 11. Status information regarding CLD Payload Facilities, availability, and projected throughput as it relates to accomplishing NASA's objectives.
 - 12. The status or results of any mission-unique or special study task assessments requested by NASA was provided.
 - 13. New vendors or sub-contractors for supplied hardware have been identified.
 - 14. Test plans for payload facility to destination interface and environmental testing
 - 15. Status on GTAs and RSAAs have been presented.

Milestone CLIN 2-OFI: Utilization Integration Review (UIR)

Purpose:

The UIR is a Contractor and NASA co-chaired milestone that provides a current utilization integration status across the entire increment (inclusive of planned payloads for the increment, whether they arrive on a CVV or CaVV) and confirms the Contractor has correctly incorporated all NASA Cargo packing and handling constraints across all CVVs or CaVVs during the increment. The UIR typically occurs at L-6m relative to the launch of a CVV to a Destination to start an increment.

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The intent of the UIR is to review the utilization mission objectives, manifest, payload constraints, individual utilization integration schedule and readiness relative to the target launch vehicle, payload testing plans, and facility throughput models. A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Updates to CLD mission objectives and Utilization complement are understood across the entire increment.
2. Updated cargo manifests for launch, on-orbit, return, and disposal transportation missions have been presented
3. Present topology for the destination and CVV as applicable
4. New or modified mission planning constraints and considerations are identified.
5. Status of progress, updates, payload readiness and remaining open work associated with utilization integration schedule (ex: payload transport safety certification, payload transport interface verifications, payload on-orbit interface verifications) are captured, along with insight into remaining need dates, decision points, critical path for key driving schedule components, and the amount of available schedule reserve. This includes both individual payload statuses and the status of implementing the NASA payload complement.
6. A status of all planned utilization activities (including non-USG), hardware needs, ground processing plans, certification status, training requirements, planned tasks, risk levels, and any other support needs including use of USG crew/USG hardware has been presented.
7. Test plans for ground commanding and telemetry (for remote operators/FCT)
8. Status of any open work and Estimated Completion Dates (ECDs) associated with the implementation of operations concepts and strategies to satisfy mission objectives, as well as any changes identified since the payload kickoff.
9. Required operational product development, including personnel certification, facilities, crew training, and remote operator training are understood.
10. Obtain and demonstrate the trackability of research planning data, including manifest information, science objectives, requirements for launch and return, constraints data, facilities and auxiliary hardware or software needed, crew time data, and any slack in facility use schedule
11. The planned launch, docking, undocking, and landing dates are defined and support the Utilization Mission Objectives
12. Updates for work-to dates for payload late load, mission launch, docking, undocking, and landing are known.

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Success Criteria:

1. The mission objectives, crew, cargo, and utilization complement have been presented at the UIR, and any updates have been documented.
2. Updated cargo manifest for launch, on-orbit, return, and disposal has been presented.
3. Topology for the destination and CVV have been presented as applicable.
4. All changes to planning constraints and/or considerations that may affect mission flexibility or duration have been identified and presented.
5. A Destination mission integration schedule (including utilization) with key driving components and critical path schedule has been provided, with a status of completed items or changes since the payload kickoff, has been provided to NASA for insight and presented at the UIR.
6. A status of all planned utilization activities (including non-USG), hardware needs, ground processing plans, certification status, training requirements, planned tasks, risk levels, and any other support needs including use of USG crew/USG hardware has been presented.
7. Test plans for ground commanding and telemetry (for remote operators/FCT) has been presented.
8. A status of open work associated with the implementation of operations concepts and strategies to satisfy mission objectives and ECD closure dates has been presented at the Integration Review.
9. A status of operational product development, personnel certification, facilities, and crew training has been presented at the Integration Review.
10. Obtain and demonstrate the trackability of research planning data, including manifest information, science objectives, requirements for launch and return, constraints data, facilities and auxiliary hardware or software needed, crew time data, and any slack in facility use schedule.
11. Identify any updates to the commercial activities the CLD Contractor is planning for the Increment.
12. The planned launch, docking, undocking, and landing dates have been presented and support the Utilization Mission Objectives.
13. Updates for work-to dates for payload late load, mission launch, docking, undocking, and landing have been presented.
14. Status of progress, updates, payload readiness and remaining open work associated with utilization integration and schedule relative to critical aspects associated with transport (ex: payload safety certification, payload transport interface verifications, payload on-orbit interface verifications) are captured, along with insight into remaining need dates, decision points, critical path for key driving schedule components, and the amount of available schedule reserve.

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15. Planning for cargo and utilization handover and return to NASA including plans for maintaining utilization constraints, such as temperature.

Milestone CLIN 2-OFI: Flight Ops Review (FOR)

Purpose:

The FOR is a Contractor and NASA co-chaired milestone that provides the operations status. The FOR occurs at L-4m relative to the launch of a CVV to a Destination to start an increment.

The intent of the FOR is to baseline the integrated mission operations execution plan to ensure the Contractor and NASA's mission requirements are effectively and safely implemented into the Contractor's plans and products. The milestone will review the updated mission objectives, manifest, cargo constraints, integration schedules, testing plans, new and/or updated Flights Rules and procedures. A status of all open action items and closure plans identified at previous reviews are presented.

All operations products are considered baselined at the conclusion of the FOR.

Entrance Criteria:

1. Review progress, updated integration risk levels, integration schedules, including testing and interface verifications, safety, operations products, and training, with intent to finalize complement (including proposals for removing, or removing/replacing utilization items with others that are lower risk for certification/operations on the target Increment).
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions
3. Review and baseline flight products (i.e., procedures, flight rules, LCCs etc.) planned for use in flight-specific training, simulations, and mission execution.
4. Ensure Operations products and processes meet Operations Standards and supports mission objectives.
5. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
6. The planned launch, docking, undocking, and landing dates are defined and support the mission objectives
7. Updates for work-to dates for cargo on-dock, loading, mission launch, docking, undocking, and landing are known.

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Success Criteria:

1. Progress has been reviewed, risk statuses provided, with open work listed and plans for closure.
2. Flight products are baselined (or have a plan for baseline that is acceptable).
3. Operations products are baselined and under configuration management control.
4. The planned launch, docking, undocking, and return dates have been presented and support the mission objectives.
5. Updates for work-to dates for cargo on-dock, loading, mission launch, docking, undocking, and return have been presented.

Milestone CLIN 2-OFI: Mission Certification Review (MCR)

Purpose:

The MCR is a Contractor-led milestone that assesses the Contractor's certification and mission specific readiness to proceed to the ORR. The MCR typically occurs at L-3m and is conducted for the launch of CVV to an on-orbit destination to start an increment. The MCR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The MCR should occur prior to the start of significant maintenance and refurbishment of the primary LV and/or spacecraft assigned to the mission

The intent of the MCR is to confirm closure of all certification and mission specific requirements, all infrastructure, facilities, personnel, and services are ready for the mission, all operations and utilization plans are in place and satisfy the mission objectives, and all design qualification and acceptance testing is complete.

The MCR reviews the updated utilization mission objectives, manifest, payload constraints, individual utilization integration schedules and status, updated payload testing plans (including ground testing, remote commanding/telemetry receipt), payload safety status, and facility throughput models. This milestone is intended to be the final opportunity to identify any utilization manifest modifications with enough time to analytically and physically implement the change.

Additionally, the MCR evaluates the CVV re-use, maintenance and refurbishment plans, dependencies, and any associated risks prior to the start of the maintenance or refurbishment activities.

The MCR baselines the serial numbers of the primary and backup LV stages (including engines), spacecraft, and re-used flight hardware (if applicable).

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The MCR establishes a 30-day launch date window for the start of the Increment as agreed to by NASA and the Contractor.

A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the launch window.
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
3. Verification and validation products to NASA's requirements (i.e., Certification and Mission specific) have been provided to NASA and are ready for review:
 - a. Verification Closure Notices (VCNs).
 - b. Exceptions and Waivers.
 - c. Validation and test Reports
 - d. Present closure plans for any open requirement and hazard control verifications to be closed prior to launch.
 - e. Identification of any open verification and validation testing nonconformances.
4. Present evidence of verification closures for all recurring requirement verifications.
5. Present status of all anomalies and associated corrective actions showing low-risk closure plans in place to completion prior to ORR/FRR.
6. All NASA approved safety controls are verified implemented for the mission
7. Present evidence that all open items in both the MBR and CLD MIR have been closed or present plans showing low risk to completion prior to the ORR.
8. Provide final data and parameters for mission success determination.
9. Present evidence that all operational products, plans, processes, and training are complete or present plans showing low risk to completion prior to ORR.
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
11. Final Destination topology maps identifying locations of USG hardware are published
12. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned increment.

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Success Criteria:

1. Mission-unique design qualification and acceptance testing has been completed.
2. NASA approval of all VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.
3. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
4. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
5. Analytical assessments show compatibility of crew and cargo vehicles with the destination systems
6. Anomalies and associated corrective actions have low-risk closure plans in place before FRR.
7. All safety assessments and hazard reports have been approved by NASA.
8. All standard and non-standard open items have been closed or have plans in place showing low risk of non-completion prior to the AFRR.
9. Agreement on NASA-identified LCC constraints has been reached.
10. Final data and parameters for mission success determination are provided.
11. Destination topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met

Milestone CLIN 2-OFI: Operations Readiness Review (ORR)

Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m and is conducted for the launch of an Element or CVV to an existing on-orbit Destination to start an increment. The ORR may also include a status of CaVV integration for cargo missions occurring during the increment. The ORR may also include an assessment of the readiness for an existing on-orbit crew and CTS to return.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

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The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented

Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Update on CLD certification closure activities, including
 - a. Verification closure notices.
 - b. Open waivers and exceptions to NASA requirements and standards.
 - c. Open work resulting from validation testing or integrated testing.
3. Verification and validation products to NASA's requirements planned to be closed at ORR have been provided to NASA and are ready for review.
4. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
5. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
6. Operations documentation (e.g., handbook, procedures, operations products) has been written, verified, and approved.
7. Users/operators have been trained on the correct operation of the System.
8. Operational contingency planning has been completed, and operations personnel have been trained on their use.
9. Successful completion of a Joint Medical Operations Readiness Review including identification of any open work and closure plans
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware

Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in an operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. NASA approval of VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.

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4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.
5. Operations plans and schedules are consistent with mission objectives.
6. Increment risks have been identified, planned mitigations are adequate, and residual risks are accepted.
7. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
8. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
9. Licenses, permits and clearances that may be required by state, federal and foreign government in support of the increment have been obtained or schedule to obtain supports the planned need.
10. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
11. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution
12. The program/project cost and schedule estimates are credible and within program/project constraints.

Milestone CLIN 2-OFI: Agency Flight Readiness Review (AFRR)

Purpose:

The AFRR is a NASA-led milestone with the Contractor that assesses the Contractor's readiness to proceed into the launch count for the mission. Prior to the AFRR, NASA may conduct an internal FRR. The AFRR typically occurs at L-1 week and is conducted for a CVV launching to a Destination to start an Increment.

The AFRR examines the system's readiness for a safe and successful launch and mission operations. The AFRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were identified at the ORR are presented. Any remaining open actions coming out of AFRR or new issues that are identified after AFRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

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Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch “GO” decision based on the established GO/no-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, Federal Aviation Administration (FAA), and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
11. The CLDS has been certified to meet NASA’s requirements.

Success Criteria:

1. The flight vehicle/system, mission systems, and ground systems are ready for flight/mission operations.
2. The hardware is deemed acceptably safe for flight/mission operations.
3. Certification that flight operations can safely proceed with acceptable risk has been achieved.
4. Flight and ground software elements are ready to support launch and flight operations.
5. Interfaces have been checked and demonstrated to be functional.
6. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
7. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.
8. The flight environmental factors are within constraints.

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Milestone CLIN 2-OFI: Crewed On-Orbit Demonstration

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: System Certification Review (SCR)

Purpose:

The purpose of the System Certification Review (SCR) is to validate that the CLDS has met all requirements through end-to-end testing and on-orbit demonstrations, address any residual risk to crew safety and mission assurance, and establish the certification baseline. An SCR is conducted after launch and successful on-orbit activation, checkout, assembly, and demonstration of the CLDS. NASA expects an interim SCR to be conducted prior to a crewed mission that would occur during the on-orbit activation, checkout, and demonstration phase. An SCR may be combined with mission integration milestones. Reference CLDP-PLN-2110, CLDP Mission Integration Plan for details on mission integration milestones. For an incremental CLDS design, the Contractor may propose additional SCRs.

Entrance Criteria:

1. Successful completion of planned on-orbit CLD activation, checkout and demonstration objectives.
2. Verification and validation products to close open CLDS requirements are developed and submitted to NASA for review (e.g. updated VCNs).
3. Updated Safety Data packages, Hazard Reports and supporting documentation, to address changes in operations or configuration based on on-orbit demonstrations and lessons learned, are approved by NASA.

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4. Lessons learned and associated corrective action plans are established.
5. Anomalies and failures incurred during the CLD operation and on-orbit activation, checkouts and demonstrations are dispositioned and closure plans are established.
6. Assessment of the predicted vs actual CLD performance in the on-orbit environment.
7. Results of reliability, maintainability, logistics, and supportability analysis performed to date have been incorporated to the CLDS design.
8. Operations and training products and processes reflect updates based on actual operation of the CLDS or plans in place to update prior to the next mission.
9. Technical and Programmatic deliverables have been provided to NASA for review consistent with contract requirements.
10. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of development and operations of the CLDS.

Success Criteria:

1. All NASA's requirements are closed or have NASA approved variances in place.
2. Document safety, technical, and programmatic risks with defined mitigation plans.
3. Updates to mission, operations, and utilization processes and products based on data collected during the on-orbit activation, checkout and demonstration are complete or plans to implement are in place.
4. Updates to models and tools based on data collected during the on-orbit demonstration are complete or plans to implement are in place.
5. Design changes to the baseline CLDS design or operational constraints because of data collected during the on-orbit demonstration are documented and plans in place to implement.
6. Any open waivers, deviations and exceptions to NASA requirements and standards are closed.
7. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.

Milestone CLIN 2-OFI: Post Increment Review

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Purpose:

The CLD PIR is a Contractor-led milestone that provides NASA a comprehensive summary of the Increment. The CLD PIR typically occurs at Crew Return + 1 month.

The intent of the CLD PIR is to assess the overall increment performance, confirm completion of all NASA Mission Objectives, identify incomplete Mission Objectives with plans for recovery, and provide a basis for a Contracting Officer's mission success determination.

Entrance Criteria:

1. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
2. The Contractor has compiled a comparison of the as-planned and as-executed mission objectives,
3. Land the CVV and handover Crew and cargo to NASA,
4. Complete environments assessment, including explanations of significant differences between as-measured environments and predictions,
5. Note mission anomalies with initial recommendations for corrective actions, and
6. Document rationale for mission success criteria for the Increment.

Success Criteria:

1. All utilization hardware returned or payload-relevant data (mission data and research data) has been handed over to the appropriate NASA POC or Payload Representative within payload required handover timeframe or agreed to data delivery timeframe.
2. Destination flight data compared to predictions to assess vehicle system, subsystem, and component performance has been delivered,
3. Flight data compared to predicted environments along with an explanation of significant differences has been delivered,
4. Mishap and anomaly documentation available to date has been provided, and
5. Mission success criteria were shown to be met.

CTS CREWED DEMONSTRATION TRANSPORTATION MILESTONES

(This workplan content is repeated for each additional crewed demonstration as needed)

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Milestone CLIN 2-OF1: Vehicle Baseline Review (VBR)

Purpose:

The VBR is a Contractor-led milestone that together establish the CLDS configuration (Destination, VVs, LV, and GSs) for an Increment. The MBR and VBR typically occur at L-18 months and are conducted for a CVV launching to a Destination to start an Increment.

The intent of the MBR/VBR is to establish the baseline Destination and CVV configuration for the mission, mission objectives, and identify any planned changes to the certified CLD architecture or operation changes from the previous mission and the corresponding plans to execute and verify these changes. A MBR/VBR covers all events planned during the USG crew increment, including launch of crew, new elements, or cargo vehicles.

Entrance Criteria:

1. Baseline the transportation mission objectives, to include crew and cargo complement, and associated baseline configuration, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have definite configuration, environments, and performance capabilities identified.
2. Identify any design and operation changes to the CVV and LVs from the previous mission baseline
3. Identification of closure plans for open and recurring requirements and hazard control verifications
4. Discuss previous CVV IFA and production non-conformances and their dispositions; discuss how they affect the mission baseline risk posture.

Success Criteria:

1. Crew training timeline (Destination and Transportation) is defined and meets planned launch date.
2. Targeted Mission Dates are defined, including:
 - a. Crew launch and return date targets.
 - b. CTS Cargo Allocations are defined.
 - d. Status of transportation procurement and designation of crew, cargo, and LV types for each transportation mission during the Increment.
 - f. All CTS first flight items requiring first-flight certification and a feasible schedule that supports the targeted mission dates are identified

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- g. Design, configuration, and operations changes have been identified and the schedule shows all work required to accomplish the design changes and close non-standard requirement verifications prior to the MCR.

Milestone CLIN 2-OFI: Mission Integration Review (MIR)

Purpose:

The MIR is a Contractor-led milestone with NASA that provides a mission integration status for the Destination and CVV to support the start of an Increment. The MIR also provides CaVV and CVV hardware allocations, planning, preparation, and traffic plans for cargo deliveries during the Increment. The MIR typically occurs at L-12m and is conducted for the launch of an Element or CVV to an on-orbit Destination. The MIR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The intent of the MIR is to review and baseline the Increment and Utilization requirements, conditions, and inputs for mission-specific analytical assessments. The MIR provides plans for CLD operations and production activities in support of the targeted launch date and confirms the 90-day launch date window for the start of the Increment as agreed to by NASA and the Contactor and defined at ATP. A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the CVV launch window.
2. Present designs and their supporting analyses that implement mission unique requirements.
3. Present progress in manufacturing and lay out remaining milestones and risks to accomplishing them.
4. Present progress towards closure of transportation requirements
5. Present milestones schedule and risks to on-time completion of the milestones
6. Present progress toward integration with the destination and integrated safety hazard analysis identifying any remaining hazards and proposed resolution
7. Present progress of changes identified at MBR for:
 - a. The overall system architecture including ground accommodation specific interfaces and service agreements.
 - b. Mission-unique and unproven processes, risks and mitigation plans.

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- c. Operational products, including personnel certification, facilities and crew and ground personnel training.
- 8. Discuss how technical problems and anomalies have been resolved and effects of design changes on system performance, reliability and safety
- 9. Discuss how simulations and prototyping results for the CVV and CaVV do not present any potential mission risks.
- 10. Present defined test plans for the CVV and CaVV
- 11. Status any new crew- and/or cargo-related content or processes as proposed by the Contractor in the Mission Integration Operations Management Plan (MIOMP).
- 12. Provide updates on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned mission

Success Criteria:

- 1. Risks and mitigations to manufacturing, accomplishing remaining milestones, and closure of requirements are provided.
- 2. Progress for changes identified at VBR has been provided.
- 3. Previous flight technical problems and anomalies have been resolved, and the effects of design changes on system performance, reliability and safety have been shown.
- 4. Integrated safety analysis identifying any remaining hazards and proposed resolution has been provided.
- 5. CVV test plans have been presented.
- 6. Open items have been statused, and closure plans presented
- 7. CVV crew are defined.
- 8. Crew medical and behavioral health certification is complete

Milestone CLIN 2-OFI: Mission Certification Review (MCR)

Purpose:

The MCR is a Contractor-led milestone that assesses the Contractor's certification and mission specific readiness to proceed to the ORR. The MCR typically occurs at L-3m and is conducted for the launch of CVV to an on-orbit destination to start an increment. The MCR may also include a status of CaVV integration for cargo missions occurring during the Increment.

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The MCR should occur prior to the start of significant maintenance and refurbishment of the primary LV and/or spacecraft assigned to the mission

The intent of the MCR is to confirm closure of all certification and mission specific requirements, all infrastructure, facilities, personnel, and services are ready for the mission, all operations and utilization plans are in place and satisfy the mission objectives, and all design qualification and acceptance testing is complete.

The MCR reviews the updated utilization mission objectives, manifest, payload constraints, individual utilization integration schedules and status, updated payload testing plans (including ground testing, remote commanding/telemetry receipt), payload safety status, and facility throughput models. This milestone is intended to be the final opportunity to identify any utilization manifest modifications with enough time to analytically and physically implement the change.

Additionally, the MCR evaluates the CVV re-use, maintenance and refurbishment plans, dependencies, and any associated risks prior to the start of the maintenance or refurbishment activities.

The MCR baselines the serial numbers of the primary and backup LV stages (including engines), spacecraft, and re-used flight hardware (if applicable).

The MCR establishes a 30-day launch date window for the start of the Increment as agreed to by NASA and the Contractor.

A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the launch window.
2. Provide all analytical assessments that show the compatibility of crew and cargo mass, when applicable, with the launch and spacecraft, such as integrated loads, Launch to Activation thermal assessments, Electromagnetic Interference (EMI), propellant resources, and power.
3. Confirm the CVV Manifest
4. Final CVV topology maps identifying locations of USG hardware are published
5. Present status of all anomalies and associated corrective actions showing low-risk closure plans in place to completion prior to ORR/FRR.
6. Reach agreement on NASA-identified LCC constraints concerning crew, cargo, and elements (if applicable).
7. Present status of acceptance testing (LV and spacecraft if applicable).
8. Define Vehicle-specific maintenance plans including sequential order of the maintenance activities

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9. All NASA approved safety controls are verified implemented for the mission
10. Present evidence that all open items in both the VBR and CTS MIR have been closed or present plans showing low risk to completion prior to the ORR.
11. CVV topology maps identifying locations of USG hardware are published

Success Criteria:

1. Analytical assessments show compatibility of crew and cargo with the transportation resources (mass, thermal, loads, EMI, propellant, power).
2. Anomalies and associated corrective actions have low-risk closure plans in place before FRR.
3. CVV Manifest is confirmed
4. CVV topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met
5. All safety assessments and hazard reports have been approved by NASA.
6. All open items for VBR and MIR have been closed or have plans in place showing low risk of non-completion prior to the AFRR.
7. Agreement on NASA-identified LCC constraints has been reached.
8. Operational products, plans, processes and training have been completed or there are plans showing low risk of non-completion before FRR.
9. Confirm the serial numbers of the primary and backup LV stages, including critical LV re-flight hardware (including engines).
10. Confirm the serial numbers of spacecraft including critical spacecraft re-flight hardware.
11. Confirm the current revision of spacecraft maintenance requirements.
12. Confirm the LV and spacecraft refurbishment schedules.
13. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
14. Confirm any known restricted use hardware for the primary and backup LVs, and new (uncertified) spacecraft re-use components.
15. Concurrence with the Transportation Provider's proposed primary and backup LVs and transportation vehicles.
16. CVV topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met

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Milestone CLIN 2-OFI: Operations Readiness Review (ORR)

Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m and is conducted for the launch of an Element or CVV to an existing on-orbit Destination to start an increment. The ORR may also include a status of CaVV integration for cargo missions occurring during the increment. The ORR may also include an assessment of the readiness for an existing on-orbit crew and CTS to return.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented

Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Test failures and anomalies from verification and validation testing have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
3. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
4. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
5. Operations documentation (e.g., handbook, procedures) has been written, verified, and approved.
6. Users/operators have been trained on the correct operation of the System.
7. Operational contingency planning has been completed, and operations personnel have been trained on their use.
8. Successful completion of preliminary Joint Medical Operations Readiness Review including identification of any open work and closure plans.

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Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in a operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. All waivers and anomalies have been resolved.
4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.
5. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
6. The CVV Manifest is confirmed, including any final utilization swaps or manifest changes
7. Operations plans and schedules are consistent with mission objectives.
8. Mission risks have been identified, planned mitigations are adequate, and residual risks are accepted by the Program/Project Manager.
9. Testing is consistent with the expected operational environment.
 - a. The program/project cost and schedule estimates are credible and within program/project constraints.
10. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
11. All software is tested, validated, and loaded
12. All necessary spectrum certification(s) and authorization(s) have been obtained.
13. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution

Milestone CLIN 2-OFI: Agency Flight Readiness Review (AFRR)

Purpose:

The AFRR is a NASA-led milestone with the Contractor that assesses the Contractor's readiness to proceed into the launch count for the mission. Prior to the AFRR, NASA may conduct an internal FRR. The AFRR typically occurs at L-1 week and is conducted for a CVV or Element launching to a Destination to start an Increment.

The AFRR examines the system's readiness for a safe and successful launch and mission operations. The AFRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were

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identified at the ORR are presented. Any remaining open actions coming out of AFRR or new issues that are identified after AFRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch “GO” decision based on the established GO/NO-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, FAA, and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.

Success Criteria:

1. The flight vehicle/system and GS are ready for flight/mission operations.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The hardware is deemed acceptably safe for flight/mission operations.
4. Certification that flight operations can safely proceed with acceptable risk has been achieved.
5. Flight and ground software elements are ready to support launch and flight operations.
6. Interfaces have been checked and demonstrated to be functional.
7. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
8. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.

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9. The flight environmental factors are within constraints.
10. All open safety and mission risk items have been addressed, and the residual risk is deemed acceptable.
11. Supporting organizations are ready to support flight/mission operations.
12. All software is tested, validated, and loaded.
13. All necessary spectrum (radio frequency) authorizations have been obtained.
14. All licenses and permits have been obtained.
15. The AFRR conducted a successful GO-poll to proceed to the LRR.

Milestone CLIN 2-OFI: Launch Readiness Review (LRR)

Purpose:

The LRR is a Contractor-led Review with the Launch Provider and NASA insight that examines the launch pad and LV readiness, and reconfirms the readiness determination from the AFRR. The LRR typically occurs at L-2d for a CTS or Element launching to a Destination to start an Increment.

The intent of the review is to confirm launch readiness to execute a safe and successful launch.

Entrance Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The CTS/CLD AFRR conducted a successful GO-poll to proceed to the LRR.

Success Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The LRR conducted a successful GO-poll to proceed into the launch count.

Milestone CLIN 2-OFI: Post-Docking Review (if proposed)

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Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 2-OFI: Post Flight Review

Purpose:

The CTS PFR is a Contractor-led milestone that provides NASA a comprehensive postflight summary of the CTS performance. A quick look assessment of the ascent performance is conducted after the successful docking to the Destination to ensure a safe and fully functional emergency crew return capability. The final CTS PFR typically occurs at crew Return + 1m.

The intent of the CTS PFR is to assess the performance of the CVV during all phases of flight and identify any issues or anomalies that must be resolved prior to the next CVV mission.

Entrance Criteria:

1. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
2. Land the CVV and handover crew and cargo to NASA.
3. Deliver updated CVV flight data to NASA.
4. Complete initial evaluation of as-flown performance versus predictions from pre-launch through landing.
5. Complete environments assessment, including explanations of significant differences between as-measured environments and predictions.
6. Note mission anomalies with initial recommendations for corrective actions.
7. Document rationale for mission success criteria for the entire mission.

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Success Criteria:

1. All utilization returned has been handed over to the appropriate NASA POC or Payload Representative within payload required handover timeframe.
2. Flight reconstructions have been provided.
3. Flight data compared to predictions to assess vehicle system, subsystem, and component performance has been delivered.
4. Flight data compared to predicted environments, along with an explanation of significant differences has been delivered.
5. Mishap and anomaly documentation available to date has been provided.
6. Mission success criteria were shown to be met.

ATTACHMENT J-12 MISSION SERVICE WORK PLAN TEMPLATE

*[Instructions to be deleted upon Model Contract submission
[In accordance with section L.17.3.2, the offeror shall use the format provided below and may propose tailoring and submit the Mission Service Work Plan Template as Attachment J-12. The proposed tailoring may adjust timing, content, entrance and success criteria, or combine and consolidate milestones]*

The Work Plan Template defines the milestones and associated timeframe, completion criteria, and percentage of total payment that will be used as a baseplate for each mission unique Task Order as proposed by the Contractor. The Contractor's milestones should be based on CLD-PLN-2110, *CLDP Mission Integration Plan* and the Contractor's DRD CLDC DRD-201, *Mission Integration and Operations Management Plan*.

Work Plan Template includes items 1, 2, and 3 described below.

1. Launch date and launch window templates associated with a nominal mission
2. Template Milestone information as proposed by the Contractor in Table 2 Increment Milestone Template.
3. Template entrance criteria and success criteria as proposed by the contractor for each milestone. Examples of entrance and success criteria are provided in CLD-PLN-2110 Mission Implementation Plan and may be tailored by the Contractor.

Additionally, prior to conducting each milestone, a Joint Implementation Plan (JIP) will be developed to document the details and deliverables associated with each entrance and exit criteria between the Contractor and NASA.

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TABLE 1 LAUNCH WINDOW TEMPLATE

Date	Increment #	Launch Date
MM/DD/YYYY	##	(mm/dd/yyyy)
Window Duration	Launch Window	NASA approval date
90-day window	(mm/dd/yyyy – mm/dd/yyyy)	ATP
30-day window	(mm/dd/yyyy – mm/dd/yyyy)	NLT Mission Concept Review (MCR)
7-day window	(mm/dd/yyyy – mm/dd/yyyy)	NLT Operations Readiness Review (ORR)

Instructions to populate Table 1 Launch Window Template:

Date: Date of RFTOP response.

Increment #: Increment number corresponding to the mission unique Task Order.

Launch Date: Contractor’s proposed launch date.

Window Duration: Duration of launch window appropriate for the NASA approval date.

Launch Window: Dates of the Contractor’s proposed launch window for the mission unique Task Order.

NASA Approval Date: Designation for when NASA will approve the Contractor’s launch window.

TABLE 2 SERVICE MISSION WORKPLAN TEMPLATE

CLDS SERVICE MISSION DESTINATION WORKPLAN MILESTONES					
Milestone Payment Number	Milestone	Due Date (Launch/Increment +/- time)	Contractual Due Date (mm/yyyy) TBD ³	Percent of Destination Portion of Mission Price	Payment Amount
CLIN 3-TBD	Authority To Proceed (ATP) ⁵	L-OFI mo.	TBD	N/A	N/A
CLIN 3-TBD	Mission Baseline Review (MBR)	L-OFI mo.	TBD	OFI% (NLT 10%)	TBD
CLIN 3-TBD	Mission Integration Review (MIR) ¹	L-OFI mo.	TBD	10%	TBD
CLIN 3-TBD	Utilization Integration Review (UIR)	L-OFI mo.	TBD	OFI% (NLT 15%)	TBD
CLIN 3-TBD	Flight Ops Review (FOR)	L-OFI mo.	TBD	OFI% (NLT 10%)	TBD

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CLIN 3-TBD	Mission Certification Review (MCR) ¹	L-OFI mo.	TBD	10%	TBD
CLIN 3-TBD	Operations Readiness Review (ORR)	L-OFI mo.	TBD	10%	TBD
CLIN 3-TBD	Agency Flight Readiness Review (AFRR) ²	L-OFI week	TBD	N/A	N/A
CLIN 3-TBD	Post Increment Review (PIR) ¹	Increment + 60 days	TBD	20%	TBD
Destination Portion of Mission				OFI% 30-40%	TBD
CTS WORKPLAN MILESTONES <i>(N/A if Government Furnished Transportation Services are used)</i>					
Milestone Payment Number	Milestone	Due Date (Launch/Increment +/- time)	Contractual Due Date (mm/yyyy) TBD ³	Percent of CTS Portion of Mission Price	Payment Amount
CLIN 3-TBD	Authority To Proceed (ATP) ⁵	L-OFI mo.	TBD	N/A	N/A
CLIN 3-TBD	OFI (If proposed)	L-OFI mo.	TBD	OFI% (NTE 15%)	TBD
CLIN 3-TBD	Vehicle Baseline Review (VBR)	L-OFI mo.	TBD	OFI% (NLT 15%)	TBD
CLIN 3-TBD	Mission Integration Review (MIR) ¹	L-OFI mo.	TBD	OFI% (NLT 15%)	TBD
CLIN 3-TBD	Mission Certification Review (MCR) ¹	L-OFI mo.	TBD	OFI% (NLT 15%)	TBD
CLIN 3-TBD	Operations Readiness Review (ORR)	L-OFI mo.	TBD	5%	TBD
CLIN 3-TBD	Agency Flight Readiness Review (AFRR) ²	L-OFI week	TBD	N/A	N/A
CLIN 3-TBD	Launch Readiness Review (LRR)	L-OFI days	TBD	N/A	N/A
CLIN 3-TBD	Post-Docking Review <i>(if proposed)</i>	Docking+OFI days	TBD	5%	TBD
CLIN 3-TBD	CVV Post Flight Review ¹	Increment + 60 days	TBD	20%	TBD
CTS Portion of Mission				OFI% (20-40%)	TBD
CaVV WORKPLAN MILESTONES <i>(N/A if Government Furnished Transportation Services are used)</i>					

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Milestone Payment Number	Milestone	Due Date (Launch/Increment +/- time)	Contractual Due Date (mm/yyyy) TBD ³	Percent of CaVV Portion of Mission Price	Payment Amount
CLIN 3-TBD	Authority To Proceed (ATP) ⁵	L-OFI mo.	TBD	N/A	N/A
CLIN 3-TBD	OFI (<i>If proposed</i>)	L-OFI mo.	TBD	OFI% (NTE 15%)	TBD
CLIN 3-TBD	Cargo Integration Review (CIR)	L-OFI months	TBD	OFI% (NLT 40%)	TBD
CLIN 3-TBD	CaVV Operations Readiness Review (CaVV ORR)	L-OFI months	TBD	5%	TBD
CLIN 3-TBD	Post-Docking Review (<i>if proposed</i>)	Docking+OFI days	TBD	5%	TBD
CLIN 3-TBD	CaVV Post Flight Review (PFR) ¹	Return+OFI mo.	TBD	20%	TBD
CaVV Portion of Mission				OFI% (20-40%)	TBD
TOTAL				100%	TBD

Notes:

1. Milestones are defined as delivery milestones per the clause, 52.232-32, *Performance-Based Payments*. All other milestones will be considered as Interim milestones.
2. Destination and CTS Agency Flight Readiness Review may be combined into one Agency FRR.
3. TBD: Values will be defined by the Government once Service Mission Task Order is issued
4. Mission Service pricing proposed in this Attachment for each RFTOP shall be in accordance with, and not to exceed, pricing described in Section B.
5. ATP: Mission Services ATP will be at NASA's sole discretion. NASA will establish the initial launch window for each mission at ATP.

CLDS SERVICE MISSION DESTINATION WORKPLAN MILESTONES

Milestone CLIN 3-TBD: Mission Baseline Review (MBR)

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Purpose:

The MBR is a Contractor-led milestone that together establishes the CLDS configuration (Destination, VVs, LV, and GSs) for an Increment. The MBR typically occurs at L-18 months and is conducted for a CVV launching to a Destination to start an Increment.

The intent of the MBR is to establish the baseline Destination and CVV configuration for the mission, mission objectives, and identify any planned changes to the certified CLD architecture or operation changes from the previous mission and the corresponding plans to execute and verify these changes. A MBR covers all events planned during the USG crew increment, including launch of crew, new elements, or cargo vehicles.

Entrance Criteria:

1. Baseline the Increment objectives, to include crew vehicle and cargo vehicle complement, and associated baseline CLD configuration while docked, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have a defined configuration, environments, and performance capabilities identified.
2. Reconfirm the targeted increment dates and estimated crew and cargo mission launch/return windows.
3. Provide an integrated mission schedule and ops concepts that accomplishes all NASA objectives throughout all phases of the Increment.
4. Identify all activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
5. Identification of changes to the certified CLD architecture, operational constraints, or existing CLD certification products (VCNs, hazard controls, exceptions, waivers, and non-compliances) resulting from the planned increment and current real time operations
6. Identification of closure plans for open and recurring requirements and hazard control verifications necessary to support planned increment.
7. Identify updates for Destination operational products, personnel certification, facilities changes, and provide any scope and/or schedule changes for crew and ground personnel training.
8. Provide a plan and schedule to address any open, updated, and/or delta certification activities. This includes safety, design, development, test and evaluation (DDT&E) and verification and validation (V&V) activities.
9. Any previous IFA and/or production non-conformance that affects the baseline has been identified, discussed, and effects to the mission baseline risk posture are identified.
10. Present the status or results of any mission-unique or special study task assessments requested by NASA.

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11. Identify any first-time processes, associated risks and mitigation plans.
12. Identify any new vendors or subcontractors for supplied hardware and services.
13. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
14. Present a status on Government Task Agreements (GTAs) and Reimbursable Space Act Agreements (RSAAs) in which the Contractor must fulfill Contractor's responsibilities.
15. Top safety, technical, programmatic risks associated with the planned increment have been identified
16. Identification of any licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned increment.

Success Criteria:

1. Destination objectives for the Increment are baselined.
2. Crew training timeline (Destination and Transportation) is defined and meets planned launch date.
3. Cargo Allocations are defined.
4. Targeted Mission Dates are defined, including:
5. Crew Docking and Undocking date targets.
6. Cargo Docking and Undocking targets.
7. Identify if crew handover is direct or indirect.
8. Identify Destination Commander handover plans.
9. All periods where the Destination will be uncrewed immediately prior, during, or immediately after the Increment are identified
10. NASA comments to Technical and Programmatic contractual deliverables have been dispositioned and closure plans have been agreed to by NASA.
11. Design, configuration, and operations changes have been identified and the schedule shows all work required to accomplish the design changes and close non-standard requirement and hazard control verifications prior to the MCR
12. Any previous IFA and/or production non-conformance that affects the baseline has been identified and discussed; discussed, and changes and effects to the mission baseline risk posture are identified
13. Any first-time processes and associated risks have been identified and mitigation plans show the risks are mitigated to acceptable levels prior to MCR.

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14. New vendors or sub-contractors for supplied hardware and services have been identified.
15. Status on GTAs and RSAAs have been presented.
16. The top safety, technical, programmatic risks, associated with the planned increment are identified, assessed, mitigation plans identified and clearly documented.
17. Contractor's requirements are traceable to NASA's requirements, baselined and under configuration control management.
18. Contractor's plan and schedule to address any open, updated, or delta certification has been approved by NASA.

Milestone CLIN 3-TBD: Mission Integration Review (MIR)

Purpose:

The MIR is a Contractor-led milestone with NASA that provides a mission integration status for the Destination and CVV to support the start of an Increment. The MIR also provides CaVV and CVV hardware allocations, planning, preparation, and traffic plans for cargo deliveries during the Increment. The MIR typically occurs at L-12m and is conducted for the launch of an Element or CVV to an on-orbit Destination. The MIR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The intent of the MIR is to review and baseline the Increment and Utilization requirements, conditions, and inputs for mission-specific analytical assessments. The MIR provides plans for CLD operations and production activities in support of the targeted launch date and confirms the 90-day launch date window for the start of the Increment as agreed to by NASA and the Contractor and defined at ATP. A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Review the mission objectives, to include crew and cargo complement, and associated baseline Destination configuration, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have definite configuration, environments and performance capabilities identified.
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
3. Reconfirm the targeted increment dates as well as provide estimated crew and cargo mission launch/return windows.

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4. Provide an integrated schedule that accomplishes all NASA objectives throughout all mission phases.
5. Provide manifest analysis and plans for launch, on-orbit, return, and disposal (if applicable).
6. Present draft destination topology options
7. Provide an integrated timeline and ops concepts that accomplishes the mission objectives throughout all phases of the Increment:
 - a. On-orbit configurations (including topology) throughout the flight plan,
 - b. Consumable inventories, predictions, and margins throughout the entire flight plan,
 - c. On-orbit resource allocations and plans,
 - d. Altitude strategy and maintenance plans,
 - e. Increment and flight-specific requirements,
 - f. Utilization Plans, and
 - g. Integrated Operations plans and products.
 - h. Crew medical operations
8. Present progress of mission specific integrated safety or utilization hazard assessments and a schedule for completing the reviews prior to ORR identifying any risks.
9. Present mission-specific analysis, designs and supporting analyses that implement Increment requirements
10. Present plans identifying the total crew complement with crew assignments, crew and ground personnel training, mission-specific medical testing plans, and facilities and crew plans (including crew time for NASA and non-USG crew, landing and recovery plans, etc.).
11. Present progress towards incorporation of operations changes.
12. Present progress and updated schedule of CLD certification activities (e.g. DDT&E, V&V, Safety Reviews, etc.).
13. Present progress for updates to operational products, personnel certification, facilities changes, and provide any scope or schedule changes for crew and ground personnel training.
14. Discuss current Health and Status (H&S) of the on-orbit vehicle, previous IFAs, production non-conformances and their dispositions; how they have been resolved and how they affect the mission baseline risk posture, including system performance, reliability, and safety.
15. Present the status or results of any mission-unique or special study task assessments requested by NASA.
16. Identify any first-time processes, associated risks, and mitigation plans.
17. Identify any new vendors or sub-contractors for supplied hardware.

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18. Present a status on GTAs and RSAAs.
19. Present integrated hardware and software test plans for all planned CLDS configurations during the increment. Discuss how simulations, ground training, and prototyping results for CLDS do not present any potential mission risks.
20. Payload hardware and software interfaces are defined
21. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
22. Provide updated top safety, technical, programmatic risks associated with the planned increment activities.
23. Provide updates on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned mission

Success Criteria:

1. Risks and mitigations to manufacturing, accomplishing remaining milestones, and closure of requirements are provided.
2. Progress for changes identified at VBR has been provided.
3. Previous flight technical problems and anomalies have been resolved, and the effects of design changes on system performance, reliability and safety have been shown.
4. Integrated safety analysis identifying any remaining hazards and proposed resolution has been provided.
5. CVV test plans have been presented.
6. Open items have been statuses, and closure plans presented
7. CVV crew are defined.
8. Crew medical and behavioral health certification is complete

Milestone CLIN 3-TBD: Utilization Integration Review (UIR)

Purpose:

The UIR is a Contractor and NASA co-chaired milestone that provides a current utilization integration status across the entire increment (inclusive of planned payloads for the increment, whether they arrive on a CVV or CaVV) and confirms the Contractor has correctly incorporated all NASA Cargo packing and handling constraints across all CVVs or CaVVs during the

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increment. The UIR typically occurs at L-6m relative to the launch of a CVV to a Destination to start an increment.

The intent of the UIR is to review the utilization mission objectives, manifest, payload constraints, individual utilization integration schedule and readiness relative to the target launch vehicle, payload testing plans, and facility throughput models. A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Updates to CLD mission objectives and Utilization complement are understood across the entire increment.
2. Updated cargo manifests for launch, on-orbit, return, and disposal transportation missions have been presented
3. Present topology for the destination and CVV as applicable
4. New or modified mission planning constraints and considerations are identified.
5. Status of progress, updates, payload readiness and remaining open work associated with utilization integration schedule (ex: payload transport safety certification, payload transport interface verifications, payload on-orbit interface verifications) are captured, along with insight into remaining need dates, decision points, critical path for key driving schedule components, and the amount of available schedule reserve. This includes both individual payload statuses and the status of implementing the NASA payload complement.
6. A status of all planned utilization activities (including non-USG), hardware needs, ground processing plans, certification status, training requirements, planned tasks, risk levels, and any other support needs including use of USG crew/USG hardware has been presented.
7. Test plans for ground commanding and telemetry (for remote operators/FCT)
8. Status of any open work and Estimated Completion Dates (ECDs) associated with the implementation of operations concepts and strategies to satisfy mission objectives, as well as any changes identified since the payload kickoff.
9. Required operational product development, including personnel certification, facilities, crew training, and remote operator training are understood.
10. Obtain and demonstrate the trackability of research planning data, including manifest information, science objectives, requirements for launch and return, constraints data, facilities and auxiliary hardware or software needed, crew time data, and any slack in facility use schedule
11. The planned launch, docking, undocking, and landing dates are defined and support the Utilization Mission Objectives

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12. Updates for work-to dates for payload late load, mission launch, docking, undocking, and landing are known.

Success Criteria:

1. The mission objectives, crew, cargo, and utilization complement have been presented at the UIR, and any updates have been documented.
2. Updated cargo manifest for launch, on-orbit, return, and disposal has been presented.
3. Topology for the destination and CVV have been presented as applicable.
4. All changes to planning constraints and/or considerations that may affect mission flexibility or duration have been identified and presented.
5. A Destination mission integration schedule (including utilization) with key driving components and critical path schedule has been provided, with a status of completed items or changes since the payload kickoff, has been provided to NASA for insight and presented at the UIR.
6. A status of all planned utilization activities (including non-USG), hardware needs, ground processing plans, certification status, training requirements, planned tasks, risk levels, and any other support needs including use of USG crew/USG hardware has been presented.
7. Test plans for ground commanding and telemetry (for remote operators/FCT) has been presented.
8. A status of open work associated with the implementation of operations concepts and strategies to satisfy mission objectives and ECD closure dates has been presented at the Integration Review.
9. A status of operational product development, personnel certification, facilities, and crew training has been presented at the Integration Review.
10. Obtain and demonstrate the trackability of research planning data, including manifest information, science objectives, requirements for launch and return, constraints data, facilities and auxiliary hardware or software needed, crew time data, and any slack in facility use schedule.
11. Identify any updates to the commercial activities the CLD Contractor is planning for the Increment.
12. The planned launch, docking, undocking, and landing dates have been presented and support the Utilization Mission Objectives.
13. Updates for work-to dates for payload late load, mission launch, docking, undocking, and landing have been presented.
14. Status of progress, updates, payload readiness and remaining open work associated with utilization integration and schedule relative to critical aspects associated with transport (ex:

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payload safety certification, payload transport interface verifications, payload on-orbit interface verifications) are captured, along with insight into remaining need dates, decision points, critical path for key driving schedule components, and the amount of available schedule reserve.

15. Planning for cargo and utilization handover and return to NASA including plans for maintaining utilization constraints, such as temperature.

Milestone CLIN 3-TBD: Flight Ops Review (FOR)

Purpose:

The FOR is a Contractor and NASA co-chaired milestone that provides the operations status. The FOR occurs at L-4m relative to the launch of a CVV to a Destination to start an increment.

The intent of the FOR is to baseline the integrated mission operations execution plan to ensure the Contractor and NASA's mission requirements are effectively and safely implemented into the Contractor's plans and products. The milestone will review the updated mission objectives, manifest, cargo constraints, integration schedules, testing plans, new and/or updated Flights Rules and procedures. A status of all open action items and closure plans identified at previous reviews are presented.

All operations products are considered baselined at the conclusion of the FOR.

Entrance Criteria:

1. Review progress, updated integration risk levels, integration schedules, including testing and interface verifications, safety, operations products, and training, with intent to finalize complement (including proposals for removing, or removing/replacing utilization items with others that are lower risk for certification/operations on the target Increment).
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions
3. Review and baseline flight products (i.e., procedures, flight rules, LCCs etc.) planned for use in flight-specific training, simulations, and mission execution.
4. Ensure Operations products and processes meet Operations Standards and supports mission objectives.
5. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
6. The planned launch, docking, undocking, and landing dates are defined and support the mission objectives

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7. Updates for work-to dates for cargo on-dock, loading, mission launch, docking, undocking, and landing are known.

Success Criteria:

1. Progress has been reviewed, risk statuses provided, with open work listed and plans for closure.
2. Flight products are baselined (or have a plan for baseline that is acceptable).
3. Operations products are baselined and under configuration management control.
4. The planned launch, docking, undocking, and return dates have been presented and support the mission objectives.
5. Updates for work-to dates for cargo on-dock, loading, mission launch, docking, undocking, and return have been presented.

Milestone CLIN 3-TBD: Mission Certification Review (MCR)

Purpose:

The MCR is a Contractor-led milestone that assesses the Contractor's certification and mission specific readiness to proceed to the ORR. The MCR typically occurs at L-3m and is conducted for the launch of CVV to an on-orbit destination to start an increment. The MCR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The MCR should occur prior to the start of significant maintenance and refurbishment of the primary LV and/or spacecraft assigned to the mission

The intent of the MCR is to confirm closure of all certification and mission specific requirements, all infrastructure, facilities, personnel, and services are ready for the mission, all operations and utilization plans are in place and satisfy the mission objectives, and all design qualification and acceptance testing is complete.

The MCR reviews the updated utilization mission objectives, manifest, payload constraints, individual utilization integration schedules and status, updated payload testing plans (including ground testing, remote commanding/telemetry receipt), payload safety status, and facility throughput models. This milestone is intended to be the final opportunity to identify any utilization manifest modifications with enough time to analytically and physically implement the change.

Additionally, the MCR evaluates the CVV re-use, maintenance and refurbishment plans, dependencies, and any associated risks prior to the start of the maintenance or refurbishment activities.

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The MCR baselines the serial numbers of the primary and backup LV stages (including engines), spacecraft, and re-used flight hardware (if applicable).

The MCR establishes a 30-day launch date window for the start of the Increment as agreed to by NASA and the Contractor.

A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the launch window.
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
3. Verification and validation products to NASA's requirements (i.e., Certification and Mission specific) have been provided to NASA and are ready for review:
4. Verification Closure Notices (VCNs).
5. Exceptions and Waivers.
6. Validation and test Reports
7. Present closure plans for any open requirement and hazard control verifications to be closed prior to launch.
8. Identification of any open verification and validation testing nonconformances.
9. Present evidence of verification closures for all recurring requirement verifications.
10. Present status of all anomalies and associated corrective actions showing low-risk closure plans in place to completion prior to ORR/FRR.
11. All NASA approved safety controls are verified implemented for the mission
12. Present evidence that all open items in both the MBR and CLD MIR have been closed or present plans showing low risk to completion prior to the ORR.
13. Provide final data and parameters for mission success determination.
14. Present evidence that all operational products, plans, processes, and training are complete or present plans showing low risk to completion prior to ORR.
15. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG Crew/USG hardware
16. Final Destination topology maps identifying locations of USG hardware are published
17. Update on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned increment.

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Success Criteria:

1. Mission-unique design qualification and acceptance testing has been completed.
2. NASA approval of all VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.
3. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
4. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
5. Analytical assessments show compatibility of crew and cargo vehicles with the destination systems
6. Anomalies and associated corrective actions have low-risk closure plans in place before FRR.
7. All safety assessments and hazard reports have been approved by NASA.
8. All standard and non-standard open items have been closed or have plans in place showing low risk of non-completion prior to the AFRR.
9. Agreement on NASA-identified LCC constraints has been reached.
10. Final data and parameters for mission success determination are provided.
11. Destination topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met

Milestone CLIN 3-TBD: Operations Readiness Review (ORR)

Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m and is conducted for the launch of an Element or CVV to an existing on-orbit Destination to start an increment. The ORR may also include a status of CaVV integration for cargo missions occurring during the increment. The ORR may also include an assessment of the readiness for an existing on-orbit crew and CTS to return.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

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The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented

Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Update on CLD certification closure activities, including
 - a. Verification closure notices.
 - b. Open waivers and exceptions to NASA requirements and standards.
 - c. Open work resulting from validation testing or integrated testing.
3. Verification and validation products to NASA's requirements planned to be closed at ORR have been provided to NASA and are ready for review.
4. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
5. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
6. Operations documentation (e.g., handbook, procedures, operations products) has been written, verified, and approved.
7. Users/operators have been trained on the correct operation of the System.
8. Operational contingency planning has been completed, and operations personnel have been trained on their use.
9. Successful completion of a Joint Medical Operations Readiness Review including identification of any open work and closure plans
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware

Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in an operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. NASA approval of VCNs, or closure plans for open VCNs established to be completed by launch or in support of planned increment.
4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.

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5. Operations plans and schedules are consistent with mission objectives.
6. Increment risks have been identified, planned mitigations are adequate, and residual risks are accepted.
7. NASA approval of any open waivers and exceptions to NASA requirements and standards to be closed by launch or in support of planned increment.
8. Any open work resulting from validation testing or integrated testing has a closure plan to be completed by launch or in support of planned increment.
9. Licenses, permits and clearances that may be required by state, federal and foreign government in support of the increment have been obtained or schedule to obtain supports the planned need.
10. NASA comments to programmatic and technical products and plans have been dispositioned and closure plans have been agreed to by NASA.
11. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution
12. The program/project cost and schedule estimates are credible and within program/project constraints.

Milestone CLIN 3-TBD: Agency Flight Readiness Review (AFRR)

Purpose:

The AFRR is a NASA-led milestone with the Contractor that assesses the Contractor's readiness to proceed into the launch count for the mission. Prior to the AFRR, NASA may conduct an internal FRR. The AFRR typically occurs at L-1 week and is conducted for a CVV or Element launching to a Destination to start an Increment.

The AFRR examines the system's readiness for a safe and successful launch and mission operations. The AFRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were identified at the ORR are presented. Any remaining open actions coming out of AFRR or new issues that are identified after AFRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

To support the AFRR, NASA will provide an integrated AFRR chart package, including a recommendation to proceed.

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Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch “GO” decision based on the established GO/no-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, Federal Aviation Administration (FAA), and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.
10. Identify any updates to the activities the CLD Contractor is planning for the Increment, including use of USG crew/USG hardware
11. The CLDS has been certified to meet NASA’s requirements.

Success Criteria:

1. The flight vehicle/system, mission systems, and ground systems are ready for flight/mission operations.
2. The hardware is deemed acceptably safe for flight/mission operations.
3. Certification that flight operations can safely proceed with acceptable risk has been achieved.
4. Flight and ground software elements are ready to support launch and flight operations.
5. Interfaces have been checked and demonstrated to be functional.
6. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
7. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.
8. The flight environmental factors are within constraints.

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9. All open safety and mission risk items have been addressed, and the residual risk is deemed acceptable.
10. Supporting organizations are ready to support flight/mission operations.
11. All software is tested, validated, and loaded.
12. All necessary spectrum (radio frequency) authorizations have been obtained.
13. Licenses, permits and clearances required for launch have been approved, or plans in place to ensure closure prior to launch.
14. Plans are in place to gain approval for any licenses, permits and clearances not required for launch, but required for the Increment, are in place and support planned operations. This includes operational restrictions until approvals granted.
15. Successful completion of a Joint Medical Operations Readiness Review
16. The AFRR conducted a successful GO-poll to proceed to the LRR.

Milestone CLIN 3-TBD: Post Increment Review (PIR)

Purpose:

The CLD PIR is a Contractor-led milestone that provides NASA a comprehensive summary of the Increment. The CLD PIR typically occurs at Crew Return + 1 month.

The intent of the CLD PIR is to assess the overall increment performance, confirm completion of all NASA Mission Objectives, identify incomplete Mission Objectives with plans for recovery, and provide a basis for a Contracting Officer's mission success determination.

Entrance Criteria:

1. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions,
2. The Contractor has compiled a comparison of the as-planned and as-executed mission objectives,
3. Land the CVV and handover Crew and cargo to NASA,
4. Complete environments assessment, including explanations of significant differences between as-measured environments and predictions,
5. Note mission anomalies with initial recommendations for corrective actions, and
6. Document rationale for mission success criteria for the Increment.

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Success Criteria:

1. All utilization hardware returned or payload-relevant data (mission data and research data) has been handed over to the appropriate NASA POC or Payload Representative within payload required handover timeframe or agreed to data delivery timeframe.
2. Destination flight data compared to predictions to assess vehicle system, subsystem, and component performance has been delivered,
3. Flight data compared to predicted environments along with an explanation of significant differences has been delivered,
4. Mishap and anomaly documentation available to date has been provided, and
5. Mission success criteria were shown to be met.

CTS WORKPLAN MILESTONES

(N/A if Government Furnished Transportation Services are used)

Milestone CLIN 3-TBD: OFI *(If proposed)*

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 3-TBD: Vehicle Baseline Review (VBR)

Purpose:

The VBR is a Contractor-led milestone that together establish the CLDS configuration (Destination, VVs, LV, and GSs) for an Increment. The MBR and VBR typically occur at L-18 months and are conducted for a CVV launching to a Destination to start an Increment.

The intent of the MBR/VBR is to establish the baseline Destination and CVV configuration for the mission, mission objectives, and identify any planned changes to the certified CLD architecture or operation changes from the previous mission and the corresponding plans to

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execute and verify these changes. An MBR/VBR covers all events planned during the USG crew increment, including launch of crew, new elements, or cargo vehicles.

Entrance Criteria:

1. Baseline the transportation mission objectives, to include crew and cargo complement, and associated baseline configuration, including Ground accommodation-specific interfaces and service agreements, so that mission integration efforts have definite configuration, environments, and performance capabilities identified.
2. Identify any design and operation changes to the CVV and LVs from the previous mission baseline
3. Identify of closure plans for open and recurring requirements and hazard control verifications
4. Discuss previous CVV IFA and production non-conformances and their dispositions; discuss how they affect the mission baseline risk posture.

Success Criteria:

1. Crew training timeline (Destination and Transportation) is defined and meets planned launch date.
2. Targeted Mission Dates are defined, including:
 - a. Crew launch and return date targets.
 - b. CTS Cargo Allocations are defined.
 - d. Status of transportation procurement and designation of crew, cargo, and LV types for each transportation mission during the Increment.
 - f. All CTS first flight items requiring first-flight certification and a feasible schedule that supports the targeted mission dates are identified
 - g. Design, configuration, and operations changes have been identified and the schedule shows all work required to accomplish the design changes and close non-standard requirement verifications prior to the MCR.

Milestone CLIN 3-TBD: Mission Integration Review (MIR)

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Purpose:

The MIR is a Contractor-led milestone with NASA that provides a mission integration status for the Destination and CVV to support the start of an Increment. The MIR also provides CaVV and CVV hardware allocations, planning, preparation, and traffic plans for cargo deliveries during the Increment. The MIR typically occurs at L-12m and is conducted for the launch of an Element or CVV to an on-orbit Destination. The MIR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The intent of the MIR is to review and baseline the Increment and Utilization requirements, conditions, and inputs for mission-specific analytical assessments. The MIR provides plans for CLD operations and production activities in support of the targeted launch date and confirms the 90-day launch date window for the start of the Increment as agreed to by NASA and the Contractor and defined at ATP. A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the CVV launch window.
2. Present designs and their supporting analyses that implement mission unique requirements.
3. Present progress in manufacturing and lay out remaining milestones and risks to accomplishing them.
4. Present progress towards closure of transportation requirements
5. Present milestones schedule and risks to on-time completion of the milestones
6. Present progress toward integration with the destination and integrated safety hazard analysis identifying any remaining hazards and proposed resolution
7. Present progress of changes identified at MBR for:
 - d. The overall system architecture including ground accommodation specific interfaces and service agreements.
 - e. Mission-unique and unproven processes, risks and mitigation plans.
 - f. Operational products, including personnel certification, facilities and crew and ground personnel training.
8. Discuss how technical problems and anomalies have been resolved and effects of design changes on system performance, reliability and safety
9. Discuss how simulations and prototyping results for the CVV and CaVV do not present any potential mission risks.
10. Present defined test plans for the CVV and CaVV

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11. Status any new crew- and/or cargo-related content or processes as proposed by the Contractor in the Mission Integration Operations Management Plan (MIOMP).
12. Provide updates on licenses, permits and clearances that may be required by state, federal and foreign government in support of the planned mission

Success Criteria:

1. Risks and mitigations to manufacturing, accomplishing remaining milestones, and closure of requirements are provided.
2. Progress for changes identified at VBR has been provided.
3. Previous flight technical problems and anomalies have been resolved, and the effects of design changes on system performance, reliability and safety have been shown.
4. Integrated safety analysis identifying any remaining hazards and proposed resolution has been provided.
5. CVV test plans have been presented.
6. Open items have been statused, and closure plans presented
7. CVV crew are defined.
8. Crew medical and behavioral health certification is complete

Milestone CLIN 3-TBD: Mission Certification Review (MCR)

Purpose:

The MCR is a Contractor-led milestone that assesses the Contractor's certification and mission specific readiness to proceed to the ORR. The MCR typically occurs at L-3m and is conducted for the launch of CVV to an on-orbit destination to start an increment. The MCR may also include a status of CaVV integration for cargo missions occurring during the Increment.

The MCR should occur prior to the start of significant maintenance and refurbishment of the primary LV and/or spacecraft assigned to the mission

The intent of the MCR is to confirm closure of all certification and mission specific requirements, all infrastructure, facilities, personnel, and services are ready for the mission, all operations and utilization plans are in place and satisfy the mission objectives, and all design qualification and acceptance testing is complete.

The MCR reviews the updated utilization mission objectives, manifest, payload constraints, individual utilization integration schedules and status, updated payload testing plans (including ground testing, remote commanding/telemetry receipt), payload safety status, and facility

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throughput models. This milestone is intended to be the final opportunity to identify any utilization manifest modifications with enough time to analytically and physically implement the change.

Additionally, the MCR evaluates the CVV re-use, maintenance and refurbishment plans, dependencies, and any associated risks prior to the start of the maintenance or refurbishment activities.

The MCR baselines the serial numbers of the primary and backup LV stages (including engines), spacecraft, and re-used flight hardware (if applicable).

The MCR establishes a 30-day launch date window for the start of the Increment as agreed to by NASA and the Contractor.

A status of all open action items and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. Reconfirm the launch window.
2. Provide all analytical assessments that show the compatibility of crew and cargo mass, when applicable, with the launch and spacecraft, such as integrated loads, Launch to Activation thermal assessments, Electromagnetic Interference (EMI), propellant resources, and power.
3. Confirm the CVV Manifest
4. Final CVV topology maps identifying locations of USG hardware are published
5. Present status of all anomalies and associated corrective actions showing low-risk closure plans in place to completion prior to ORR/FRR.
6. Reach agreement on NASA-identified LCC constraints concerning crew, cargo, and elements (if applicable).
7. Present status of acceptance testing (LV and spacecraft if applicable).
8. Define Vehicle-specific maintenance plans including sequential order of the maintenance activities
9. All NASA approved safety controls are verified implemented for the mission
10. Present evidence that all open items in both the VBR and CTS MIR have been closed or present plans showing low risk to completion prior to the ORR.
11. CVV topology maps identifying locations of USG hardware are published

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Success Criteria:

1. Analytical assessments show compatibility of crew and cargo with the transportation resources (mass, thermal, loads, EMI, propellant, power).
2. Anomalies and associated corrective actions have low-risk closure plans in place before FRR.
3. CVV Manifest is confirmed.
4. CVV topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met
5. All safety assessments and hazard reports have been approved by NASA.
6. All open items for VBR and MIR have been closed or have plans in place showing low risk of non-completion prior to the AFRR.
7. Agreement on NASA-identified LCC constraints has been reached.
8. Operational products, plans, processes and training have been completed or there are plans showing low risk of non-completion before FRR.
9. Confirm the serial numbers of the primary and backup LV stages, including critical LV re-flight hardware (including engines).
10. Confirm the serial numbers of spacecraft including critical spacecraft re-flight hardware.
11. Confirm the current revision of spacecraft maintenance requirements.
12. Confirm the LV and spacecraft refurbishment schedules.
13. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
14. Confirm any known restricted use hardware for the primary and backup LVs, and new (uncertified) spacecraft re-use components.
15. Concurrence with the Transportation Contractor's proposed primary and backup LVs and transportation vehicles.
16. CVV topology maps identifying locations of USG hardware are published and confirmed all unique USG hardware handling constraints are met

Milestone CLIN 3-TBD: Operations Readiness Review (ORR)

Purpose:

The ORR is a Contractor-led milestone that ensures the Destination is ready to support the increment. The ORR typically occurs at L-1m and is conducted for the launch of an Element or

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CVV to an existing on-orbit Destination to start an increment. The ORR may also include a status of CaVV integration for cargo missions occurring during the increment. The ORR may also include an assessment of the readiness for an existing on-orbit crew and CTS to return.

The intent of the ORR is to assess the readiness of hardware, software, personnel, operations products, procedures, documentation, capabilities, facilities, and ground facilities. The ORR will confirm that applicable certification, mission integration, and utilization integration requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks.

The ORR establishes a 7-day launch date window as agreed to by NASA and the Contractor. A status of all open action items (if any) and closure plans identified at previous reviews are presented.

Entrance Criteria:

1. All mission unique ground-based testing has been completed.
2. Test failures and anomalies from verification and validation testing have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
3. All operational supporting and enabling products (e.g., facilities, equipment, documents, software tools, databases) that are necessary for nominal and contingency operations have been tested and delivered/installed at the site(s) necessary to support operations.
4. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
5. Operations documentation (e.g., handbook, procedures) has been written, verified, and approved.
6. Users/operators have been trained on the correct operation of the System.
7. Operational contingency planning has been completed, and operations personnel have been trained on their use.
8. Successful completion of preliminary Joint Medical Operations Readiness Review including identification of any open work and closure plans.

Success Criteria:

1. The system, including all enabling products, is determined to be ready to be placed in a operational status.
2. All applicable lessons learned have been addressed and forward work identified.
3. All waivers and anomalies have been resolved.

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4. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations.
5. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
6. The CVV Manifest is confirmed, including any final utilization swaps or manifest changes
7. Operations plans and schedules are consistent with mission objectives.
8. Mission risks have been identified, planned mitigations are adequate, and residual risks are accepted by the Program/Project Manager.
9. Testing is consistent with the expected operational environment.
 - a. The program/project cost and schedule estimates are credible and within program/project constraints.
10. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
11. All software is tested, validated, and loaded
12. All necessary spectrum certification(s) and authorization(s) have been obtained.
13. All medical operations activities and coordination required for mission execution have been completed or have identified closure plans. Medical operations personnel and facilities are ready to support mission execution

Milestone CLIN 3-TBD: Agency Flight Readiness Review (AFRR)

Purpose:

The AFRR is a NASA-led milestone with the Contractor that assesses the Contractor's readiness to proceed into the launch count for the mission. Prior to the AFRR, NASA may conduct an internal FRR. The AFRR typically occurs at L-1 week and is conducted for a CVV or Element launching to a Destination to start an Increment.

The AFRR examines the system's readiness for a safe and successful launch and mission operations. The AFRR ensures all flight and ground hardware, software, personnel, and procedures are ready for operations. A status of all open action items and closure plans that were identified at the ORR are presented. Any remaining open actions coming out of AFRR or new issues that are identified after AFRR are tracked by the Contractor with reporting to NASA on the closure and issue resolution prior to launch.

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Entrance Criteria:

1. The system, support elements, and element interfaces are ready and have been properly configured to support all phases of flight/mission operations.
2. The system state supports a launch “GO” decision based on the established GO/NO-GO criteria.
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Failures and anomalies from previously completed flights, tests, and reviews have been resolved, and the results/mitigations/workarounds have been incorporated into supporting and enabling operational products.
5. All previously held Contractor Readiness Review actions have been closed or resolved.
6. Launch Site, Range, FAA, and recovery support organizations have committed to launch.
7. Tracking and data support resources have committed to launch.
8. Any open work or constraints to launch are identified, and closeout plans and schedules are in place and supportable.
9. Successful completion of Final joint medical operations readiness review.

Success Criteria:

1. The flight vehicle/system and GS are ready for flight/mission operations.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The hardware is deemed acceptably safe for flight/mission operations.
4. Certification that flight operations can safely proceed with acceptable risk has been achieved.
5. Flight and ground software elements are ready to support launch and flight operations.
6. Interfaces have been checked and demonstrated to be functional.
7. The program/project has demonstrated compliance with applicable NASA requirements, standards, processes, and procedures.
8. Open items and waivers have been examined and residual risk from these is deemed to be acceptable.
9. The flight environmental factors are within constraints.
10. All open safety and mission risk items have been addressed, and the residual risk is deemed acceptable.

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11. Supporting organizations are ready to support flight/mission operations.
12. All software is tested, validated, and loaded.
13. All necessary spectrum (radio frequency) authorizations have been obtained.
14. All licenses and permits have been obtained.
15. The AFRR conducted a successful GO-poll to proceed to the LRR.

Milestone CLIN 3-TBD: Launch Readiness Review (LRR)

Purpose:

The LRR is a Contractor-led Review with the Launch Provider and NASA insight that examines the launch pad and LV readiness, and reconfirms the readiness determination from the AFRR. The LRR typically occurs at L-2d for a CTS or Element launching to a Destination to start an Increment.

The intent of the review is to confirm launch readiness to execute a safe and successful launch.

Entrance Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The CTS/CLD AFRR conducted a successful GO-poll to proceed to the LRR.

Success Criteria:

1. All anomalies are identified, understood, and mitigations are in place to reduce the overall risk of launching to acceptable levels.
2. Any open Launch Vehicle integration issues are identified and presented with credible burndown plans established
3. The LRR conducted a successful GO-poll to proceed into the launch count.

Milestone CLIN 3-TBD: Post-Docking Review *(if proposed)*

Purpose:

OPI

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Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 3-TBD: CVV Post Flight Review

Purpose:

The CTS PFR is a Contractor-led milestone that provides NASA a comprehensive postflight summary of the CTS performance. A quick look assessment of the ascent performance is conducted after the successful docking to the Destination to ensure a safe and fully functional emergency crew return capability. The final CTS PFR typically occurs at crew Return + 1m.

The intent of the CTS PFR is to assess the performance of the CVV during all phases of flight and identify any issues or anomalies that must be resolved prior to the next CVV mission.

Entrance Criteria:

1. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
2. Land the CVV and handover crew and cargo to NASA.
3. Deliver updated CVV flight data to NASA.
4. Complete initial evaluation of as-flown performance versus predictions from pre-launch through landing.
5. Complete environments assessment, including explanations of significant differences between as-measured environments and predictions.
6. Note mission anomalies with initial recommendations for corrective actions.
7. Document rationale for mission success criteria for the entire mission.

Success Criteria:

1. All utilization returned has been handed over to the appropriate NASA POC or Payload Representative within payload required handover timeframe.

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2. Flight reconstructions have been provided.
3. Flight data compared to predictions to assess vehicle system, subsystem, and component performance has been delivered.
4. Flight data compared to predicted environments, along with an explanation of significant differences has been delivered.
5. Mishap and anomaly documentation available to date has been provided.
6. Mission success criteria were shown to be met.

CaVV WORKPLAN MILESTONES

(N/A if Government Furnished Transportation Services are used)

Milestone CLIN 3-TBD: OFI *(If proposed)*

Purpose:

OFI

Entrance Criteria:

OFI

Success Criteria:

OFI

Milestone CLIN 3-TBD: Cargo Integration Review

Purpose:

The CaVV CIR is a co-chaired milestone that confirms the Contractor has correctly incorporated all NASA Cargo packing and handling constraints for a CaVV mission. The CIR typically occurs at L- 3m prior to the launch of a CaVV to a Destination.

The intent of the review is to confirm all necessary cargo plans and accommodations are in place and the Provider is ready for cargo turnover. The CIR will baseline the integrated mission operations execution plan and utilization products to ensure the Provider and NASA's mission requirements are effectively and safely implemented into the Provider's plans and products.

The intent of the review is to confirm all necessary cargo plans and accommodations are in place and the Contractor is ready for cargo turnover. The CIR will baseline the integrated mission operations execution plan and utilization products to ensure the Contractor and NASA's mission requirements are effectively and safely implemented into the Contractor's plans and products.

The milestone will review the updated utilization mission objectives, manifest, payload constraints, individual utilization integration schedules, payload testing plans, and facility

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throughput models, new and/or updated joint Flights Rules and procedures. A status of all open action items and closure plans identified at previous reviews are presented.

This milestone is intended to be the final opportunity for the team of NASA/Contractor to agree to any utilization swaps or manifest modifications for the CaVV, based on the information above and latest utilization complement risk assessment, with enough integration time to successfully perform the replacement/modification.

Entrance Criteria:

1. Documentation has been provided for NASA cargo safety assessments,
2. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions
3. Open items have a low-risk path to on-time closure,
4. Complete mission-specific analyses in all disciplines and show compatibility of NASA cargo with all environments, and
5. Provide the CaVV Manifest
6. CaVV topology maps identifying locations of USG hardware are published and confirmed all unique UGS hardware handling constraints are met
7. NASA cargo instrumentation plan (if any) is provided.
8. The planned launch window, docking, undocking, and landing dates are defined and support the Utilization Mission Objectives.
9. Documentation has been provided for NASA cargo safety assessments,
10. Review progress, updated utilization integration risk levels, and open work with individual utilization integration schedules, including testing and interface verifications, safety, topology, operations products, training, with intent to finalize complement (including proposals for removing, or removing/replacing utilization items with others that are lower risk for certification/operations on the target Increment).
11. Updates to the work-to dates for payload late load are known, and payload ground processing
12. plans are in place.

Success Criteria:

1. The CaVV Manifest is confirmed, including any final utilization swaps or manifest changes

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2. CaVV topology maps identifying locations of USG hardware are published and confirmed all unique UGS hardware handling constraints are met have been presented
3. Cargo turnover and loading schedule is defined
4. Cargo Vehicle ballasting schedule defined
5. Cargo bag packing plans are defined
6. Cargo vehicle layouts delivered to NASA or made available for review in the Contractor's System and reflects where all NASA manifested cargo is located along with any hardware launch orientation constraints
7. Powered Payload and Payload Facility integrated testing is complete
8. Powered and Unpowered Payload and Payload Facility ground processing, turnover plans, procedures, and schedules are defined
9. Confirmation that all manifested NASA cargo time-critical, handling, and ground processing requirements are incorporated into the Contractor's plans
10. Sample refresh and scrub turnaround plans are defined
11. Progress, updated integration risk levels and mitigation plans, and open work with individual utilization integration schedules, including testing and payload interface verifications (including transport), payload safety (including transport), topology, operations products, training, with intent to finalize manifest (including proposals for removing, or removing/replacing utilization items with others that are lower risk for certification/operations on the target Increment) has been presented

Milestone CLIN 3-TBD: CaVV Operations Readiness Review (CaVV ORR)

Purpose:

The CaTS ORR is a Contractor-led milestone that ensures the Destination, CaVV, LVs, and GSs and facilities are ready to support the CaVV mission. The CaTS ORR typically occurs at L-1m for a CaVV launching to a Destination.

The intent of the ORR is to assess the readiness of hardware, software, personnel, procedures, documentation, capabilities, and ground facilities. The ORR will confirm that applicable certification and mission integration and utilization requirements are satisfied, confirm all variances are resolved, and disposition all relevant technical and programmatic risks. A status of all open action items (if any) and closure plans identified at previous reviews are presented

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Entrance Criteria:

1. All manifested NASA cargo time-critical and handling constraints are incorporated into the Contractor's plans.
2. Any late manifest changes if any
3. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
4. Planned launch windows and available back-up opportunities; planned mission profile and activities, including any special operations.
5. Summary of all open work and closure plan.

Success Criteria:

1. All waivers and anomalies have been resolved,
2. Systems hardware, software, personnel, tools, supporting infrastructure, and procedures are in place to support operations,
3. The CaVV Manifest is confirmed, including any final utilization swaps or manifest changes
4. Operations plans and schedules are consistent with mission objectives,
5. Mission risks have been identified, planned mitigations are adequate, and residual risks are accepted by the Program/Project Manager,
6. All software is tested, validated, and loaded, and
7. All necessary spectrum certification(s) and authorization(s) have been obtained.

Milestone CLIN 3-TBD: Post-Docking Review *(if proposed)*

Purpose:

The CaTS PDR is a Contractor-led milestone that provides NASA a comprehensive postflight summary of the visiting vehicle performance. A quick look assessment of the ascent performance is conducted after the successful docking to the Destination. The CaTS PDR typically occurs at Return + 1 month.

The intent of the CaTS PDR is to assess the performance of the CaTS during all phases of flight and identify any issues or anomalies that must be resolved prior to the next CaTS mission.

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Entrance Criteria:

1. Technical and Programmatic contractual deliverables have been provided to NASA for review and are at the maturity levels stated in the deliverable definitions.
2. Land the CaVV and handover cargo to NASA.
3. Deliver updated CaVV flight data to NASA.
4. Complete initial evaluation of as-flown performance versus predictions from pre-launch through landing.
5. Complete environments assessment, including explanations of significant differences between as-measured environments and predictions.
6. Note mission anomalies with initial recommendations for corrective actions.
7. Document rationale for mission success criteria for the entire mission.

Success Criteria:

1. All utilization returned has been handed over to the appropriate NASA POC or Payload Representative.
2. Flight reconstructions have been provided.
3. Flight data compared to predictions to assess vehicle system, subsystem, and component performance has been delivered.
4. Flight data compared to predicted environments, along with an explanation of significant differences has been delivered.
5. Mishap and anomaly documentation available to date has been provided.
6. Mission success criteria were shown to be met.

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ATTACHMENT J-13 GOVERNMENT FURNISHED PROPERTY, DATA AND INFORMATION

The Government Furnished Property requested by the CLDC Contractor for use in the performance of this Contract.

Due to the commercial approach for this contract, the Government does not intend to provide NASA IT assets (laptops/desktops, mobile devices, printers) during contract performance.

Table J-13-1: GOVERNMENT FURNISHED PROPERTY, EQUIPMENT AND MATERIAL*

Item No.	Item Description	Part No.	Model No.	Serial No.	Quantity/Unit of Measure	Unit Acquisition Cost	Total Acquisition Cost	Acquisition Date	Return Date	Document Tracking Number (e.g., 1149)

Table J-13-2: GOVERNMENT FURNISHED DATA AND INFORMATION*

Item No.	Description	Detailed Design Data (Y/N)	Need Date	Applicability (CLIN #)	Rationale	Notes

**These tables are left intentionally blank.*

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ATTACHMENT J-14 GOVERNMENT TASK AGREEMENTS (GTAs)

[Government to Insert Table to Track GTAs]

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**ATTACHMENT J-15 GOVERNMENT FURNISHED TRANSPORTATION AND
SUPPORT SERVICES (GFTSS)**

The Government may decide to provide Government Furnished Transportation and Support Services (GFTSS) to the Contractor. The Contractor must assume Government Furnished Transportation will not be provided as the baseline for their proposal but may request use of Government Furnished Transportation as an alternative proposal.

Government Furnished Transportation Traffic Model

The CLDC Contractor shall complete Table J-15-1 Government Furnished Transportation Traffic Model if proposing to utilize NASA Government Furnished Transportation with their proposed traffic model. The final use of Government Furnished Transportation will be negotiated at Contract award and updated as needed via update to J-15-1.

In addition to service missions, the Contractor can propose NASA provide cargo transportation missions for outfitting flights, if those outfitting flights include NASA needs. If NASA chooses to provide transportation, NASA may choose to fulfill this obligation by on-ramping new certified vehicles and/or utilizing International Partner provided vehicles for transportation missions.

NASA is not offering transportation for Private Astronaut Missions or Destination assembly missions.

Table J-15-1 Government Furnished Transportation Traffic Model

Table J-15- 1.1 CLDP MISSIONS (E.G. FLIGHTS) PER FISCAL YEAR (CY 28-35)								
Program	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Crew (NASA Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Crew (Contractor Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Cargo (NASA Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Cargo (Contractor Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI	OFI

Table J-15-1.2 CLDP MISSIONS (E.G. FLIGHTS) PER FISCAL YEAR (CY 36-42)							
Program	FY36	FY37	FY38	FY39	FY40	FY41	FY42
Crew (NASA Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Crew (Contractor Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Cargo (NASA Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI
Cargo (Contractor Provided)	OFI	OFI	OFI	OFI	OFI	OFI	OFI

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Government Furnished Transportation Support Services

The following Services shall be provided as GFTSS by NASA for all missions with USG Crew:

- Transportation back to Houston for NASA Crew: Nominally and from DMCF as required
- Baseline Data Collection (BDC) for NASA Crew (NASA conducts BDC while Contractor coordinates Facility availability)
- USG Crew Personal Effects and Psychological Support
- USG Crew Crew-worn active radiation dosimeters
- USG Crew Hearing Protection for NASA Crew
- USG Crew Optical Coherence Tomography (OCT): Crew specific H/W for SANS (flight unit matches ground unit)

The following Services shall be provided as GFTSS by NASA (or NASA authorized contractor) when NASA is providing Crew GFF.

- Emergency Response at Pad: Pad rescue, Triage sites, Medivac, DMCF Readiness
- Transportation to Launch Site for NASA Crew and Family & NASA HSP Personnel
- Crew Rescue for all flight phases: Aborts-Pad, Staging, Ascent, World Wide Free Flight & Landing
- Transportation out of Blast Danger Area (BDA)
- Landing & Recovery Team (LRT): NASA representatives will be included
- Crew Rescue and Return Team (CRRT): NASA representatives will be included
- Day of Launch Security
- Landing Site Security: Water and land landing. NASA will provide USCG coordination
- Landing site weather and other analysis undocking and crew return.
- MMOD assessments based on available destination data

The following Services shall be provided by the CLDC Contractor for all Transportation Flights. CLDC Contractor may choose to partner with Transportation Provider

- Health Stabilization Plan (HSP) implementation
- Quarantine Capabilities and Suit Room (option to request as GTA)
- Quarantine Security (option to request as GTA)
- Transportation Vehicle Generic Medical Kit
- Crew-Specific Medical Kit for VV and Docked Operations
- Visiting Vehicle Manifest Integration (option to request as GTA)
- Cargo Bag Packing (option to request as GTA)
- Cargo Safety Assessment and Integrated Bag Level Hazard Analysis (IBLHA) - (option to request as GTA)

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- Cold Stowage Integration: Testing, Packing, Transport to/from VV and facility - (option to request as GTA)
- Utilization Ground Processing: Final launch preparation/closeout, support for sample/payload preparation & time critical post landing and recovery operations - (option to request as GTA)

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ATTACHMENT J-16 GOVERNMENT PROPERTY MANAGEMENT PLAN

(As proposed by Offeror)

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ATTACHMENT J-17 INTEGRATED CLDS ARCHITECTURE

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ATTACHMENT J-18 CONTRACT SECURITY CLASSIFICATION SPECIFICATION
(DD254)

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ATTACHMENT J-19 CREW ACCOMODATIONS

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ATTACHMENT J-20 LETTERS OF COMMITMENT

(As proposed by Offeror)

(End of Section)

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PART IV - REPRESENTATIONS AND INSTRUCTIONS

**SECTION K – REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS
OF OFFERORS.**

K.1 CLAUSES INCORPORATED BY REFERENCE

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

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

FAR Clause(s) Included by Reference:		
CLAUSE NUMBER	DATE	TITLE
52.203-11	SEP 2024	CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS.
52.203-18	JAN 2017	PROHIBITION ON CONTRACTING WITH ENTITIES THAT REQUIRE CERTAIN INTERNAL CONFIDENTIALITY AGREEMENTS OR STATEMENTS - REPRESENTATION.
52.204-5	OCT 2014	WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS). FILL-IN: ☐ woman-owned business concern
52.209-2	JAN 2026 (PCD 26-03)	PROHIBITION ON CONTRACTING WITH INVERTED DOMESTIC CORPORATIONS - REPRESENTATION.
52.209-7	JAN 2026 (PCD 26-03)	INFORMATION REGARDING RESPONSIBILITY MATTERS.
52.209-11	JAN 2026 (PCD 26-03)	REPRESENTATION BY CORPORATIONS REGARDING DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER ANY FEDERAL LAW.
52.209-13	JAN 2026 (PCD 26-03)	VIOLATION OF ARMS CONTROL TREATIES OR AGREEMENTS – CERTIFICATION.
52.222-18	FEB 2021	CERTIFICATION REGARDING KNOWLEDGE OF CHILD LABOR FOR LISTED END PRODUCTS.
52.225-18	AUG 2018	PLACE OF MANUFACTURE.
52.240-90	MAR 2026 (PCD 26-03, FAC 2026-01)	SECURITY PROHIBITIONS AND EXCLUSIONS REPRESENTATIONS AND CERTIFICATIONS.

(End of by reference clauses)

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K.2 FAR 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION. (APR 1985)

(a) The offeror certifies that -

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2)(i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above

[insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish

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with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of provision)

K.3 FAR 52.209-5 CERTIFICATION REGARDING RESPONSIBILITY MATTERS.
JAN 2026 (PCD 26-03)

(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 the threshold at 9.104-5(a)(2) for which the liability remains unsatisfied.

(1) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if a pending administrative or judicial challenge remains. 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.

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(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 Government will consider the certification 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) This provision does not require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a). 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 the Government later determines 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 52.215-6 PLACE OF PERFORMANCE. JAN 2026 (PCD 26-03)

(a) The offeror or respondent, in the performance of any contract resulting from this request for proposals, ☐ intends, ☐ does not intend [check applicable block] to use one or more plants or facilities located at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks "intends" in paragraph (a) of this provision, it must insert in the following spaces the required information:

Place of Performance (Street Address, City, State, County, ZIP Code)	Name and Address of Owner and Operator of the Plant or Facility if Other than Offeror or Respondent
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OFI	OFI
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(End of provision)

**K.5 FAR 52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS JAN 2026
(PCD 26-03)**

(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, and the concern is certified by SBA or an approved third-party certifier in accordance with 13 CFR 127.300. It automatically qualifies as a women-owned small business concern eligible under the WOSB Program.

HUBZone small business concern means a small business concern that meets the requirements described in [13 CFR 126.200](#), is certified by the Small Business Administration (SBA) and designated by SBA as a HUBZone small business concern in the Small Business Search (SBS) ([13 CFR 126.103](#)).

Service-disabled veteran-owned small business (SDVOSB) concern eligible under the SDVOSB Program means an SDVOSB concern that is designated in the System for Award Management (SAM) as certified by the Small Business Administration (SBA) in accordance with 13 CFR 128.300.

Small business concern—

(i) Means a concern, including its affiliates, that is independently owned and operated, not dominant in its field of operation, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (b) of this provision.

(ii) *Affiliates*, as used in this definition, means business concerns, one of whom directly or indirectly controls or has the power to control the others, or a third party or parties control or have the power to control the others. In determining whether affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationships. SBA determines affiliation based on the factors set forth at 13 CFR 121.103.

Small disadvantaged business concern means a small business concern that-

(i) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by one or more socially disadvantaged (as defined at 13 CFR 124.103) and

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economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States, and

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

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, and the concern is certified by SBA or an approved third-party certifier in accordance with 13 CFR 127.300.

(b)(1) The North American Industry Classification System (NAICS) code for this acquisition is 336414.

(2) The small business size standard is 1,300 employees.

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce (*i.e.*, nonmanufacturer), is 500 employees, or 150 employees for information technology value-added resellers under NAICS code 541519, if the acquisition—

(i) Is set aside for small business and has a value above the simplified acquisition threshold;

(ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or

(iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(c) *Representations.* (1) The offeror represents as part of its offer that—

(i) it ☐ is, ☐ is not a small business concern; or

(ii) It ☐ is, ☐ is not a small business joint venture that complies with the requirements of 13 CFR 121.103(h) and 13 CFR 125.8(a) and (b). [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: ____.*]

(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 women-owned small

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disadvantage business concern.

(3) *Women-owned small business (WOSB) joint venture eligible under the WOSB Program.* The offeror represents as part of its offer that it ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: __.*]

(4) *Economically disadvantaged women-owned small business (EDWOSB) joint venture.* The offeror represents as part of its offer that it ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: __.*]

(5) *SDVOSB joint venture eligible under the SDVOSB Program.* [*Complete only if the offeror is certified as a SDVOSB concern.*] The offeror represents as part of its offer that it ☐ is, ☐ is not a SDVOSB joint venture eligible under the SDVOSB Program that complies with the requirements of 13 CFR 128.402. [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: __.*]

(6) *HUBZone joint venture eligible under the HUBZone Program.* [*Complete only if the offeror is a HUBZone small business concern.*] The offeror represents, as part of its offer, that it ☐ is, ☐ is not a HUBZone joint venture that complies with the requirements of 13 CFR 126.616(a) through (c). [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: __.*] Each HUBZone small business concern participating in the HUBZone joint venture must be certified as a HUBZone concern.

(d) *Notice.* 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, will be—

- (1) Punished by imposition of fine, imprisonment, or both;
- (2) Subject to administrative remedies, including suspension and debarment; and
- (3) Ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

K.6 NFS 1852.225-72 RESTRICTION ON FUNDING ACTIVITY WITH CHINA – REPRESENTATION (DEC 2025)(DEVIATION)

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(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 excepted 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)

K.7 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 (Deviation)*). 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:

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Technical Data or Computer Software to be Furnished with Restrictions	Basis for Representation	Represented Rights Category	Name of Person Representing Restrictions
[Offeror Fill-in]	[Offeror Fill-in]	[Offeror Fill-in]	[Offeror Fill-in]
Add rows as needed.			

(c) In the event the offeror represents data proposed for fulfilling data delivery requirements qualify as limited rights data or restricted computer software and a resultant contract is awarded to the offeror, such representation is hereby clarified whereby the offeror further represents it has accurately identified, through recorded information, the stages of development and the source of funds at a lowest segregable level. Furthermore, the offeror represents it has verified such recorded information, and hereby certifies that the data identified below qualify as limited rights data or restricted computer software in accordance with their respective definitions in FAR 52.227-14(a):

As identified in the Offerors proposal in the “Section K” submission of the Model Contract (Volume V).

(d) In the event a resultant contract is awarded to the offeror, the representations asserted by the offeror in paragraph (b) of this clause are material representations of fact upon which reliance is placed when making award and in all subsequent payment decisions made by the Government in accordance with the resultant contract. If it is later determined that the offeror knowingly (including deliberate ignorance or reckless disregard) rendered an erroneous representation, in addition to other remedies available to the Government, the Contracting Officer may terminate the resultant contract for default. The offeror shall maintain all recorded information sufficient to justify the validity of limited rights data or restricted computer software that are subsequently delivered to NASA in performance of the resultant contract.

(e) If requested by the Contracting Officer, the offeror shall provide or make available for inspection sufficient recorded information to the Contracting Officer to justify the validity of limited rights data or restricted computer software identified pursuant to this clause.

(f) Based on the offeror’s actions or deliberate inaction, an omission regarding failing to identify data or a failure by the offeror to identify, analyze, or verify data as described in this clause may be deemed as an act in deliberate ignorance or reckless disregard of the truth or falsity of the information. The offeror may not rely on past or commensurate actions or inaction by the Government regarding data not previously identified to the Government as limited rights data or restricted computer software yet delivered to the Government with restrictive or limiting markings and actually or constructively accepted by the Government.

(g) 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.

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(h) Any Pre-Award identification and Post-Award Identification of this provision will be incorporated into Volume V (Model Contract) as Attachment J-04, *Authorized Limited Rights and Restricted Rights Data*

(End of provision)

(End of Section)

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L – INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR RESPONDENTS

L.1 PROVISIONS INCORPORATED BY REFERENCE

Provision(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Provisions incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the provision to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire provision. The full text of the provision is available at the addresses contained in clause 52.252-1, *Solicitation Provisions Incorporated by Reference*, of this contract.

FAR Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.204-7	JAN 2026 (PCD 26-03)	SYSTEM FOR AWARD MANAGEMENT
52.211-14	APR 2008	NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE, EMERGENCY PREPAREDNESS, AND ENERGY PROGRAM USE FILL-IN: ☒ DO rated order
52.214-34	APR 1991	SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE
52.214-35	APR 1991	SUBMISSION OF OFFERS IN U.S. CURRENCY
52.215-1	JAN 2026 (PCD 26-03)	INSTRUCTIONS TO OFFERORS—COMPETITIVE ACQUISITION.
52.216-1	JAN 2026 (PCD 26-03)	TYPE OF CONTRACT; FILL-IN: <i>FIRM-FIXED PRICE</i>
52.216-27	OCT 1995	SINGLE OR MULTIPLE AWARDS
52.233-2	JAN 2026 (PCD 26-03)	SERVICE OF PROTEST
NASA FAR Supplement Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
1852.233-70	SEPT 2025	PROTEST TO NASA (DEVIATION)
1852.227-71	JAN 2026	REQUEST FOR WAIVER OF RIGHTS TO INVENTIONS (DEVIATION)

(End of provision) L.2 FAR 52.216-1 TYPE OF CONTRACT. (APR 1984)

The Government contemplates award of a Multiple-Award Indefinite-Delivery, Indefinite-Quantity (IDIQ) contract with Firm Fixed Price (FFP) task orders.

(End of provision)

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L.3 FAR 52.215-20 REQUIREMENTS FOR CERTIFIED COST OR PRICING DATA AND DATA OTHER THAN CERTIFIED COST OR PRICING DATA. ALTERNATE III JAN 2026 (PCD 26-03). ALTERNATE IV JAN 2026 (PCD 26-03)

- (a) Submission of certified cost or pricing data is not required.
- (b) Provide data described below: *Data Other than Certified Cost or Pricing Data* is required to permit an adequate evaluation of the proposed price in accordance with FAR part 15.403 and per provision L.15, *Instructions to Offerors*.
- (c) Submit the cost portion of the proposal via the following electronic media: electronic spreadsheet (Excel), and electronic letter (i.e., pdf) as indicated by the Contracting Officer.

(End of provision)

L.4 NFS 1852.215-77 PREPROPOSAL/PRE-BID CONFERENCE. (APR 2015)

- (a) A preproposal conference will be held as indicated below:

Date: July 9, 2026
Time: 10:00 p.m. CST
Location: TBD (Virtual Conference Only)

- (b) Virtual attendance at the preproposal conference is recommended; however, virtual attendance is neither required nor a prerequisite for proposal submission and will not be considered in the evaluation.
- (c) Offerors, individuals, or interested parties who plan to attend the pre-proposal/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.
- (d) The Government will respond to questions regarding this procurement provided such questions have been received at least 1 working day 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.

(End of provision)

L.5 JSC 52.215-113 PROPOSAL FORMATTING INSTRUCTIONS (NOV 2023)

- (a)

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(1) **The following requirements apply to all sections of the proposal:** The proposal text must be submitted on 8 ½ x 11-inch electronic paper. The metric standard format most closely approximating the described standard 8 ½ x 11-inch size may also be used. 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.

(2) **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 Times New Roman font with single-spaced 12-point text 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 be no smaller than 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.

(3) 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.

(4) Title pages, table of contents, cross-reference matrices, glossaries, acronym lists, page tabs, and section dividers 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.

(5) Large tables, charts, graphs, plans, figures, diagrams, and schematics (not text) may be inserted in 11 x 17-inch pages. These 11 x 17-inch pages shall be counted as two pages against the page limitations and shall have one-inch margin on all sides.

(6) 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 offeror(s) 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.

(b)

(1) **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 type or size, page 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,

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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. Headers, footers, and corporate logos are not subject to the font type and size limitations.

(2) The electronic proposal shall be prepared and submitted in Microsoft Office applications (Word and Excel). 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.

(3) Each volume of the proposal should be submitted as a separate electronic file. 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.

(4) An electronic cover sheet should be contained as the first page of each file 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 3.104-4, Disclosure, Protection, and Marking of Contractor Bid or Proposal Information and Source Selection Information.

(5) 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.

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

(End of provision)

L.6 JSC 52.215-123 AVAILABILITY OF SPECIFICATIONS (DEC 2019)

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

(b) All non-copyrighted technical documentation which is incorporated directly by reference in this solicitation may be obtained online from the Governmentwide point of entry (GPE) CLDC Attachments/Links section. The CLDC acquisition website at: <https://www.nasa.gov/johnson/jsc-procurement/cldc/> includes a link to the post at the GPE.

(c) All copy-righted technical documentation which is incorporated directly by reference in this solicitation cannot be placed on the CLDC Technical Reference Library. 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.

(d) Upon request, the Contracting Officer will furnish to the Offeror NASA technical documents not incorporated by reference

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(End of provision)

L.7 JSC 52.215-124 COMMUNICATIONS REGARDING THIS SOLICITATION (MAR 2023)

(a) Any communications in reference to this solicitation must cite the solicitation number and be directed to the Contracting Officer:

Name: Ashley Chaves

Email: ashley.h.chaves@nasa.gov and jsc-cldc@mail.nasa.gov

(b) QUESTIONS REGARDING THIS SOLICITATION MUST BE PRESENTED IN WRITING and must be submitted electronically to the above e-mail address by **00:00 P.M. (Central) on XX, 2026** in order that answers may be obtained and disseminated in a timely manner, since it is not expected that the proposal submission date will be extended. Oral communications are not acceptable in response to this solicitation. Questions must not be directed to the technical activity personnel.

(End of Provision)

L.8 JSC 52.215-125 OFFEROR ACCEPTANCE PERIOD (MAY 2023)

Proposals submitted in response to this solicitation will remain firm for 365 calendar days after the date specified for receipt by the Government and must contain a statement to this effect. Offerors must insert “365” into Block 12 of Standard Form 33, Solicitation, Acceptance, and Award.

(End of Provision)

L.9 JSC 52.215-126 PERIOD COVERED BY PROCUREMENT (AUG 2018)

This solicitation does not include a Phase-in period. It includes an 8-year period of performance, three 2-year optional extensions and a final one 1-year optional extension period.

For contracting purposes:

Anticipated Dates Duration Contractual Coverage (TBD)

Base Ordering Period – April 1, 2027 (TBD), through March 31, 2035 (TBD)

Option Period 1 – April 1, 2035 (TBD), through March 31, 2037 (TBD)

Option Period 2 – April 1, 2037 (TBD), through March 31, 2039 (TBD)

Option Period 3 – April 1, 2039 (TBD), through March 31, 2041 (TBD)

Option Period 4 – April 1, 2041 (TBD), through March 31, 2042 (TBD)

(End of Provision)

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**L.10 FAR 52.232-28 INVITATION TO PROPOSE PERFORMANCE-BASED
PAYMENTS. (MAR 2000) ALTERNATE I (MAR 2000)**

(a) The Government invites the offeror to propose terms under which the Government will make performance-based contract financing payments during contract performance. The Government will consider performance-based payment financing terms proposed by the offeror in the evaluation of the offeror's proposal. The Contracting Officer will incorporate the financing terms of the successful offeror and the FAR clause, Performance-Based Payments, at FAR 52.232-32, in any resulting contract.

(b) In the event of any conflict between the terms proposed by the offeror and the terms in the clause at FAR 52.232-32, *Performance-Based Payments*, the terms of the clause at FAR 52.232-32 shall govern.

(c) The Contracting Officer will not accept the offeror's proposed performance-based payment financing if the financing does not conform to the following limitations:

(1) The Government will make delivery payments only for supplies delivered and accepted, or services rendered and accepted in accordance with the payment terms of this contract.

(2) The terms and conditions of the performance-based payments must-

(i) Comply with FAR 32.1004;

(ii) Be reasonable and consistent with all other technical and cost information included in the Offeror's proposal; and

(iii) Their total shall not exceed 90 percent of the contract price if on a whole contract basis, or 90 percent of the delivery item price if on a delivery item basis.

(3) The terms and conditions of the performance-based financing must be in the best interests of the Government.

(b) The offeror's proposal of performance-based payment financing shall include the following:

(1) The proposed contractual language describing the performance-based payments (see FAR 32.1004 for appropriate criteria for establishing performance bases and performance-based finance payment amounts).

(2) A listing of-

(i) The projected performance-based payment dates and the projected payment amounts; and

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(ii) The projected delivery date and the projected payment amount.

(3) Information addressing the Contractor's investment in the contract.

(c) Evaluation of the offeror's proposed prices and financing terms will include whether the offeror's proposed performance-based payment events and payment amounts are reasonable and consistent with all other terms and conditions of the offeror's proposal.

(d) The Government will adjust each proposed price to reflect the cost of providing the proposed performance-based payments to determine the total cost to the Government of that particular combination of price and performance-based financing. The Government will make the adjustment using the procedure described in FAR 32.205(c).

(End of Provision)

**L.11 NFS 1852.245-80 GOVERNMENT PROPERTY MANAGEMENT INFORMATION
(DEC 2025) (DEVIATION). ALTERNATE I (DEC 2025) (DEVIATION)**

(a) The offeror must 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 must 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 must 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 must 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 must 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, and the contact information for the responsible Government Contracting Officer. The offeror must provide proof that such use was authorized by the responsible Contracting Officer.

(e) The offeror must 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.

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- (f) The offeror must identify, in list form, any equipment that it intends to acquire and directly charge to the Government under this contract. The list must 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 must 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 change the costs of materials directly to the contract. The disclosure must identify the end item or system and must 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:

No existing Government property is available for review at this time – if any government property is available in performance of the contract, it will be listed in Attachment J-13, *Government Furnished Property and Data/Information*, as defined in NFS 1852.245-76, *List of Government Property Furnished Pursuant to FAR 52.245-1*

- (i) Existing available Government property listed in the provision at 1852.245-81 is provided “as-is.” NASA makes no warranty regarding its performance or condition. The offeror uses this property at its own risk and should make its own assessment of the property's suitability for use. The equitable adjustment provisions of the clause at 52.245-1, Government Property as included in this solicitation, are not applicable to this property. The offeror must obtain the Contracting Officer's written approval before acquiring replacement property when it intends to charge the cost directly to the contract.

(End of Provision)

L.12 NFS 1852.245-81 LIST OF AVAILABLE GOVERNMENT PROPERTY (DEC 2025)(DEVIATION)

- (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 must notify the Government, as part of its proposal, of its intention to use or not use the property. There is no Government Furnished Property currently available at the time of RFP release. The contractor may request GFP for use and fill-in Attachment J-13, *Government Furnished Property and Data/Information*.

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(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 must notify the Government of its intention to use or not use the property. There is no Installation Accountable Government Property available for use in this contract.

(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.13 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):

<https://www.acquisition.gov/far-overhaul/far-part-deviation-guide/far-overhaul-part-52>

<http://www.hq.nasa.gov/office/procurement/regs/NFS.pdf>

<https://www.hq.nasa.gov/office/procurement/regs/pcd.pdf>

(End of provision)

L.14 FAR 52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (NOV 2020)

(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 this solicitation or contract of any NASA FAR Supplement (48 CFR Chapter 18) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation

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(End of Provision)

L.15 ELECTRONIC SUBMISSION OF PROPOSALS – PROPOSAL MARKING AND DELIVERY THROUGH NASA’S EFSS BOX (MAY 2026)

(a) The offeror must submit its proposal via NASA’s Enterprise File Sharing and Sync Box (EFSS Box), a FedRAMP Moderate certified platform. Electronic submissions must not contain hidden formulas, tables, be locked, be password protected, or contain links to data not included in the electronic copy. All electronic submissions should be searchable and should not contain scanned documents, except those documents that must be provided in their native format (e.g., signature pages, prior award fee letters for past performance, DCAA/DCMA approval letters, as applicable). The offeror must ensure documents are free from viruses and malware, as documents determined by NASA to contain a virus or malware will not be opened or evaluated. Subcontractors may submit their required proposal information separately using the instructions in this provision. The offeror must ensure subcontractor submissions are made no later than the date and time specified for proposal submission and comply with all solicitation instructions.

(b) Prior to the submission of proposal files, offerors interested in submitting a proposal in response to this solicitation should notify Ashely Chaves of their intent to submit a proposal at least 48 hours prior to the intended submission date, at the following email address: ashley.h.chaves@nasa.gov. The offeror must courtesy copy (cc) Matthew Windemuth at matthew.r.windemuth@nasa.gov on this communication. Offerors, especially those that have not previously submitted a proposal utilizing NASA’s EFSS Box, should coordinate the submission of a test file with Ashely Chaves and Matthew Windemuth no less than 5 days in advance of the proposal due date specified in the solicitation to allow time to work through any submission issues.

(c) The offeror must submit all proposal files to: TBD. The Offeror must follow instructions regarding proposal submission found at <https://www.hq.nasa.gov/office/procurement/other/EFSS-Box-Offeror-Proposal-Submission-Instructions.pdf>.

(d) Offerors should electronically submit their proposals not later than noon (central time) one working day prior to the date specified for receipt of proposals, if offerors seek to coordinate with the contracting officer regarding the proposal’s receipt. NASA is not required to verify proposal receipt prior to the submission deadline.

(e) Offerors are encouraged to include all individual proposal files within a single .zip file. Electronic file names must be limited to letters, numbers, dashes, and single spaces, with the exception of the period that is required before the file extension (e.g., .zip, .pdf), in order to successfully upload and download files from the EFSS Box system. The offeror must not use special characters “/” or “\” in file names. The offeror must sequentially number each file and clearly label the contents of the file and include the name of the offeror and subcontractor

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name (if applicable) in the individual file name. Examples of acceptable individual file names are as follows:

- 1 - Offeror name - solicitation number – Price Factor Vol I.xlsx
- 2 - Offeror name - solicitation number – Mission Suitability Factor Vol II.docx
- 3 - Offeror name - solicitation number – Past Performance Factor Vol III.docx
- 4 - Offeror name - solicitation number – Responsibility Considerations Vol IV.pdf
- 5 - Offeror name - solicitation number – Model Contract Vol V.docx

Individual files cannot exceed 150GB per file. Submitted files must not include password protection. Unless specifically authorized by the solicitation instructions, alternate proposal submissions must not be submitted.

(f) Immediately after all files have been uploaded and the proposal has been submitted in its entirety, the offeror is requested to notify the Contracting Officer, Ashley Chaves, ashley.h.chaves@nasa.gov with a listing of all documents by filename that were submitted via EFSS Box. The offeror should courtesy copy (cc), Matthew Windemuth, at matthew.r.windemuth@nasa.gov on this communication. If any problems are experienced with the EFSS Box system (e.g., login, file transfer), please contact Ashley Chaves and provide a cc copy to Matthew Windemuth via e-mail as soon as possible.

(g) The offeror is responsible for ensuring its proposal reaches the Government office designated in the solicitation by the date and time specified in the solicitation. The Government is not responsible for any failure attributable to the transmission or receipt of documents. Please note that uploading documents via EFSS Box and the transmission of the files from the offeror to the Government may not be instantaneous. To ensure timely delivery, the offeror is encouraged to submit its proposal at least 24 hours prior to the due date specified in the solicitation. The electronic submission of the proposal shall contain all information required by the solicitation to be determined responsive.

(End of Text)

L.16 SECURITY REQUIREMENTS AND INSTRUCTIONS TO OFFERORS

In accordance with Attachment J-18, *Contract Security Classification Specification (DD 254)*, Offerors shall obtain and maintain National Security Facility Clearance Level (FCL) up to TOP SECRET and as identified by the Government, provide SECRET/TOP SECRET security clearances for personnel supporting functions identified by NASA as requiring this level of clearance as outlined in the Task Order. The Offeror shall provide personnel that can obtain and maintain a Top Secret//Sensitive Compartmented Information (SCI) clearance as outlined in the Task Order. NASA will sponsor SCI clearances. For proposals submitted as joint ventures, the joint venture itself or the individual partner(s) to the joint venture that will perform the necessary

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security work must have a facility security clearance and shall provide their CAGE code for verification of current security clearance status.

(End of Text)

L.17 INSTRUCTIONS TO OFFERORS

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

Table L.17-1: Section L.17 Index

Paragraph	Paragraph Title
L.17.1	Proposal Arrangement, Page Limitations, and Due Dates
L.17.2	Price Factor (Volume I)
L.17.3	Mission Suitability Factor (Volume II)
L.17.4	Past Performance Factor (Volume III)
L.17.5	Responsibility Considerations (Volume IV)
L.17.6	Model Contract and Additional Requirements (Volume V)

Table L.17-2: Cross Reference from Section L to Section M

Title – Section L	Section ID	Title – Section M	Section ID
Price Factor – Volume I	L.17.2	Price Factor – Volume I	M.3
Mission Suitability (MS) Factor – Volume II	L.17.3	MS Factor – Volume II	M.4
Technical Approach (TA) – MS Subfactor 1	L.17.3.1	TA – MS Subfactor 1	M.4.1
TA.1 System Architecture	L.17.3.1, TA.1	TA.1 System Architecture	M.4.1, TA.1
TA.2 Certification & Engineering	L.17.3.1, TA.2	TA.2 Certification & Engineering	M.4.1, TA.2
TA.3 Mission Services & Utilization Capabilities	L.17.3.1, TA.3	TA.3 Mission Services & Utilization Capabilities	M.4.1, TA.3
TA.4 Safety & Mission Assurance (S&MA) Approach	L.17.3.1, TA.4	TA.4 Safety & Mission Assurance	M.4.1, TA.4
Management Approach (MA) – MS Subfactor 2	L.17.3.2	MA – MS Subfactor 2	M.4.2
MA.1 Program Management Approach	L.17.3.2, MA.1	MA.1 Program Management Approach	M.4.2, MA.1
MA.2 Commercialization and Business Approach	L.17.3.2, MA.2	MA.2 Commercialization and Business Approach	M.4.2, MA.2
MA.3 Insight Implementation	L.17.3.2, MA.3	MA.3 Insight Implementation	M.4.2, MA.3

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MA.4 Work Plan	L.17.3.2, MA.4	MA.4 Work Plan	M.4.2, MA.4
Small Business Utilization (SBU) – MS Subfactor 3	L.17.3.3	SBU – MS Subfactor 3	M.4.3
SBU.1 Small Business Subcontracting	L.17.3.3, SBU.1	SBU.1 Small Business Subcontracting	M.4.3, SBU.1
SBU.2 Commitment to the Small Business Program	L.17.3.3, SBU.2	SBU.2 Commitment to the Small Business Program	M.4.3, SBU.2
Past Performance Factor – Volume III	L.17.4	Past Performance Factor – Volume III	M.5
Responsibility Considerations – Volume IV	L.17.5	Responsibility Considerations – Volume IV	M.6
Model Contract – Volume V	L.17.6	Model Contract – Volume V	M.7

L.17.1 PROPOSAL ARRANGEMENT, PAGE LIMITATIONS, AND DUE DATES

(a) The entire proposal is due by MM/DD/YYYY at 1:00 p.m. Central Time. Proposal Volume III, *Past Performance*, is the only volume requested two weeks early on MM/DD/YYYY, but it is not officially required until the proposal submittal date. The delivery of electronic submission is specified in L.14, *Electronic Submission of Proposals – Proposal Marking and Delivery Through NASA’s EFSS Box*.

(b) Offerors must arrange their proposals as set forth below in Table L.17.1-1: *Overview of Proposal Volumes, Page Limitations, and Format*.

(1) Proposal Sections excluded from the page limit must be placed at the end of each volume.

(2) All proposal volumes must be self-contained and not incorporate proposal information by reference, to include links to websites or other information available on the internet.

L.17.1-1: OVERVIEW OF PROPOSAL VOLUMES, PAGE LIMITATIONS, AND FORMAT

This table clarifies proposal structure, instructions and attachments required within each volume. The table is to be used as an overview to describe the general type of content requested in each volume and specifics on page count and electronic formats. This overview table is not inclusive of all content required within each volume, which is defined throughout section L.17, *Instructions to Offerors*. Unless otherwise specified, all submissions listed in the table below are included in the applicable page count.

Table L.17.1-1: Overview of Proposal Volumes, Page Limitations, And Format

Volume No.	Title	Page Limit	Format
I	Price Factor		

Draft Request for Proposal (RFP) - 80JSC026R0021
Commercial Low Earth Orbit (LEO) Destination Contract (CLDC)

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	Price Narrative	20	MS Word
	Attachment L-01, <i>Price Template</i>	None	MS Excel
II	Mission Suitability Factor	200	
	Technical Approach TA.1: System Architecture -Integrated Master Schedule -Integrated CLDS Architecture -Destination Launch and End of Life -Transportation Approach DRD CLDC-001, <i>Integrated Master Schedule</i>, submitted within Volume II (<i>not included in page count</i>). Attachment J-17, <i>Integrated CLDS Architecture, Section (2)(A)-(2)(E)</i>,. Submitted within Volume II and incorporated as Attachment J-17, <i>Integrated CLDS Architecture</i> in Volume V. TA.2: Certification & Engineering -System Engineering & Design Standards -Safety & Reliability Design -Manufacturing, Production & Integration -Visiting Vehicle Integration & Operations -Test Verification & Validation -Certification Strategy DRD CLDC-103, <i>NASA Standards and Specifications Compliance and Tailoring (Sections 1–5 only)</i>, submitted within Volume II TA.3: Services & Utilization Capabilities -Mission Integration & Operations -Transition to Operations -Transportation & Delivery -Recertification -Utilization Capabilities & Payload Integration -Integrated Operations, Planning & Multi-Users -Risk Management & Mitigations -Pre-Priced Additional Capabilities	Included in 200	MS Word

Draft Request for Proposal (RFP) - 80JSC026R0021
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	DRD CLDC-129, <i>Crew Code of Conduct</i>, submitted within Volume II. DRD CLDC-212, <i>Crew Accommodations (section 1 only)</i> submitted within Volume II (not included in page count), and incorporated as Attachment J-19, <i>Crew Accommodations</i> in Volume V. TA.4: Safety & Mission Assurance Approach -Narrative of S&MA Plans -Safety Assessment Approach DRD CLDC-115.1, <i>Safety & Mission Assurance Plan (S&MAP) (Sections 1-4 only)</i>. Submitted within Volume II (not included in page count), and incorporated as Attachment J-09, <i>S&MA Plan</i> in Volume V		
	Management Approach MA.1: Program Management Approach -Program Management Approach -Risk Management Plan -Letters of Commitment Attachment J-20 <i>Letters of Commitment</i> submitted within Volume II (not included in page count), and incorporated in Volume V. DRD CLDC-116, <i>Risk Management Plan</i> submitted within Volume II (not included in page count). MA.2: Commercialization and Business Approach -Commercialization Plan & Strategy -Market Strategy & Sustainment -Forecast & Contribution -Specific Technical Understanding & Resources Attachment L-07, <i>Corporate Contribution Worksheet</i> submitted in Volume II (not included in page count). Attachment L-08, <i>Business Plan Template</i> (not included in page count). DRD CLDC-002, <i>Commercialization Plan</i> submitted within Volume II (not included in page count). MA.3: Insight Implementation	Included in 200	MS Word

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	-Insight and Collaboration Implementation DRD CLDC-104, <i>Insight and Collaboration Implementation Plan</i>, submitted within Volume II and incorporated as Attachment J-10, <i>Insight and Collaboration Implementation Plan</i> in Volume V MA.4: Work Plan -Certification Work Plan -Mission Service Work Plan Template -Mandatory Milestones -Tailoring & Interim Milestones Attachment J-11, <i>Certification Work Plan</i> Submitted within Volume II (<i>not included in page count</i>), and incorporated as Attachment J-11, <i>Certification Work Plan</i> in Volume V Attachment J-12, <i>Mission Service Work Plan Template</i> Submitted within Volume II (<i>not included in page count</i>), and incorporated as Attachment J-12, <i>Mission Service Work Plan Template</i> in Volume V		
	Small Business Utilization SBU.1 Submit DRD CLDC-008, <i>Small Business Subcontracting Plan and Reports</i>, submitted within Volume II and incorporated as Attachment J-08, <i>Small Business Plan</i> in Volume V. SBU.2 Commitment to the Small Business program	Included in 200	MS Word
	Attachment L-05 <i>Government Task Agreements Form</i> (if applicable)	None	MS Word
III	Past Performance Factor		
	Past Performance Description	30 Pages	MS Word
	Past Performance Environmental, and Safety and Health Data, Insurance Information, Small Business Participation, and Organizational Chart	None	MS Word or Native Format
	Attachment L-02, <i>Past Performance Matrix</i>	None	MS Excel
	Attachment L-03, <i>Past Performance Consent Letter</i>	None	PDF

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IV	Responsibility Considerations		
	Attachment L-04, <i>Contractor Responsibility Matrix</i>	None	MS Excel
	DRD CLDC-003, <i>Organizational Conflicts of Interest (OCI) Plan and incorporated as Attachment J-07, OCI Plan in Volume V.</i>	None	MS Word
	Financial Capability Disclosure information	None	MS Word or Native Format
	Indemnification Under Public Law 85-804 Request	None	MS Word or PDF
V			
	Model Contract		
	All Offerors are required to submit the entire Model Contract for every Section A to J, inclusive of Contractor SOW in section C, and to provide all requested fill-ins. Offerors shall also submit Section K, <i>Representations, Certifications, and Other Statements of Offerors or Respondents</i> with all fill-ins completed. Sections L and M are not to be included as part of Model Contract.	None	MS Word

L.17.2 PRICE FACTOR – VOLUME I

Instructions for the preparation of the Price Proposal are organized as presented below.

(a) **Introduction.** Certified cost and pricing data is not required, and this contract is exempt from Cost Accounting Standards, pursuant to 48 Code of Federal Regulations § 9903.201-1(b)(15); however, data other than certified cost and pricing data is required and may be submitted in native format. To ensure that the Government is able to perform a fair assessment and determine the reasonableness of proposed price, each Offeror is required to submit a Price Proposal that is suitable for evaluation. A Price Proposal that is suitable for evaluation will:

(1) Include a narrative portion that explains all pricing and estimating techniques, including the basis for proposed price estimates and the following:

(i) Descriptions of what is being estimated;

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(ii) Account for all resources necessary to complete requirements of this solicitation;

(iii) Identify resources for team members, subcontractors and suppliers which Offerors anticipate having a total contract value of \$50 million or more of the work for the entire contract period;

(iv) Provide traceability to the technical/management proposal(s) in Volume II, Mission Suitability;

(v) The Offeror shall document any relevant assumptions that are major drivers of the price; however, Schedule B prices will not be subject to future equitable adjustment based on “ground rules” or assumptions documented in the proposal.

(2) Comply with applicable Federal Acquisition Regulation (FAR), NASA FAR Supplement (NFS), statutory requirements and include all templates required in this solicitation.

(3) The Offeror’s Price Proposal must be submitted in one volume.

(b) Price Proposal Price-Per-Unit versus Model Contract Price-Per-Unit. The Price Proposal Price- Per-Unit are used in the development of the Offeror’s Price Proposal and must match exactly the price-per-unit proposed in Section B of the Model Contract.

(c) Pricing Methodology:

For purposes of this solicitation, Offeror shall provide its price for each of the following Contract Line-Item Numbers (CLINs) and Sub-CLINs:

Table L.17.2: Contract Line-Item Numbers (CLINs) and Sub-CLINs

CLIN	Title
1	INITIAL DEVELOPMENT
2	CLDS DEVELOPMENT, DEMONSTRATION & CERTIFICATION
3	MISSION SERVICES
3A	SERVICE MISSION A
3B	SERVICE MISSION B
3C	STANDARD SERVICE MISSION
4	PRE-PRICED ADDITIONAL SERVICES
5	CLDS SPECIAL TASKS & STUDIES

(a) Offerors shall propose pricing for Section B, CLIN 3 Mission Services as both, End-to-End Service and CLD Only (Without Transportation) in accordance with SOW 3.3 for each mission service type offered. Pricing shall assume the maximum NASA allowable crew time for assembly, outfitting and maintenance tasks in accordance with SOW 2.19.4. Specific details may

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be negotiated on a per Task Order Mission basis.

(e) Offerors must include its price to provide the quantities in Section L, Attachment L-01, *Price Templates*, of the RFP for all CLINs and Sub-CLINs. The narrative must explain all pricing and estimating techniques, including the basis for proposed price estimates, used for these CLINs and Sub-CLINs. Prices must be included for each of the fields in the pricing template and the corresponding Schedule B pricing tables.

Total Evaluated Price (TEP):

(1) The CLIN TEP will be calculated via a summation of the following:

(i) CLIN 1 *Initial Development*: Total Price of CLIN 1.

(ii) CLIN 2 *CLDS Development, Demonstration & Certification*: Total Price of CLIN 2.

(iii) CLIN 3C *Standard Service Mission*: The total sum of the following; The average end-to-end 2 crew seat price for all years proposed + the average end-to-end 3 crew seat price for all years proposed + the average end-to-end 4 crew seat price for all years proposed, divided by 9 (*total available crew seats*) multiplied by 2 (*nominal seat buy*), multiplied by 6 (*number of missions*).

(iv) CLIN 4 *Pre-Priced Additional Services*: The total sum of the average prices for each Additional Service line item for all ordering years (2029-2042). Note: Optional Services for all ordering years (2029-2042) shall be evaluated as part of mission suitability but not included in the TEP.

(v) CLIN 5 *Special Studies*: The total sum of the following; each ordering year (2029-2042) Fully-Burdened Composite Labor Rate (FBCLR) multiplied by the provided annual hours shown below and including non-labor resources and the indirect rate burden applied to non-labor resources.

(A) Professional/Technical at 2,000 hours per year;

(B) Operations/Manufacturing at 2,000 hours per year.

(2) Cost of requested Government Furnished Equipment, Data or Information or Government Furnished Services provided for performance and execution this contract as described in Attachment J-13 *Government Furnished Property Data and Information* and Attachment J-15 *Government Furnished Transportation and Support Services*. (To be added to the Offeror's Total Evaluated Price for evaluation purposes). Any GFS, GFE, Data or Information that may be offered by the Government will include the cost per item, which shall be attributed to the TEP. Other GFS, GFE, Data or Information requested from the offeror in the proposal shall be accompanied with the value to be include in the TEP and will be verified by the Government.

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(3) Cost for work to be performed on-site at one or more NASA facilities using NASA resources to do so, pursuant to one or more GTAs (to be added to the Offeror's Total Evaluated Price for evaluation purposes) pursuant to paragraph (b)(1)(ii) of Clause, Use of Government Resources, must be completed as an offeror fill-in (OFI) under Attachment L-05 *Government Task Agreement* to be incorporated as Attachment J-14 *Government Task Agreements*.

(4) The TEP will be used to evaluate the reasonableness of the proposed prices in accordance with Section M.

(f) Excel Pricing Model (EPM) - [Company Name].

(1) Workbook File.

(i) Format. The EPM - [Company Name] includes one workbook/file. The workbook/file must be automated to the greatest extent possible. The workbook/file must be named "EPM- [Company Name]".

(ii) Formulas. All formulas used in the workbook must be clearly visible in the individual cells and verifiable. Whereas linking among the spreadsheets within the workbook may be necessary; the use of external links (source data not provided to NASA) of any kind is prohibited. The workbook must contain no macros or hidden cells.

(3) Locks. The EPM - [Company Name] and all its templates must not be locked/protected or secured by passwords.

(4) Electronic Price Proposal Organization. The Government intends to use a Government Workstation computer with Microsoft Excel to aid in the evaluation of the Price Proposal. This workstation will include all government required cyber security protections to adequately protect offeror data. The Offeror is required to submit its EPM - [Company Name] and any electronic cost data as part of its proposal submission, under Volume I, Price Factor.

(5) All electronic file/workbook names included in the Offeror's proposal must begin with the appropriate workbook acronym, hyphen, followed by the first three letters of the Offeror's company name. For example: Assume the Offeror's company name is ABC Company, and the Offeror has completed the EPM - [Company Name] workbook; the workbook/file name would be "EPM-[ABC].xlsx". The Price Proposal templates are designed to provide NASA with information necessary to perform a price analysis. The specific templates required can be found in Attachment L-01, *Price Templates*.

(g) Supplemental Price Data. The following supplemental cost data, where appropriate, must be addressed in the supporting narrative submitted with Volume I, Price Factor:

(1) 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

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31.205-10 in its Price Proposal. Offerors shall provide detailed and specific calculations and information if proposing FCCOM. 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” must be included in the Model Contract.

(h) Unbalanced Pricing. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more-line items is significantly over or understated as indicated by the application of cost or price analysis techniques. Offerors must provide documentation, including data, calculations and supporting rationale, for any apparent unbalanced pricing which will be used to determine if the proposed prices are balanced.

L.17.3 MISSION SUITABILITY (MS) FACTOR - VOLUME II

(a) The offeror's response to the requirements of this factor shall be submitted as a separate proposal volume.

(b) The volume must be specific, detailed, and complete to clearly and fully demonstrate the offeror’s understanding of the Mission Suitability subfactor requirements delineated in paragraph (d) below and the offeror’s approach to effectively and efficiently accomplish those requirements, including full explanations of the techniques and procedures to be employed and the resources necessary to perform as proposed. Stating the offeror understands and will comply with the requirements, or paraphrasing the requirements is not acceptable. In addition, statements such as “standard procedures will be employed,” or “well-known techniques will be used,” are not acceptable. Information may not be incorporated by reference.

(c) The offeror must provide, at the beginning of this volume using the table provided below, a detailed compliance matrix that cross-references the offeror’s numbering structure and corresponding volume page number with all requirements associated with each subfactor delineated in paragraph (d) below. The offeror may use its own unique numbering structure provided the compliance matrix provides clear traceability to each of the subfactor requirements described below.

Table L.17.3 Compliance Matrix

Solicitation Mission Suitability (MS) Volume Requirement	Solicitation Section L Numbering Nomenclature	Offeror MS Volume Numbering Nomenclature	Offeror MS Volume Page Number(s)
Subfactor 1 – Technical Approach			
Element 1 - System Architecture	TA.1		
Element 2 - Certification & Engineering	TA.2		
Element 3 - Mission Service & Utilization Capabilities	TA.3		
Element 4 - Safety & Mission Assurance Approach	TA.4		
Subfactor 2 – Management Approach			

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Element 1 - Program Management Approach	MA.1		
Element 2 - Commercialization & Business Approach	MA.2		
Element 3 - Insight Implementation	MA.3		
Element 4 - Work Plan	MA.3		
Subfactor 3 – Small Business			
Element 1 - Small Business Subcontracting	SBU.1		
Element 2 - Commitment to Small Business Program	SBU.2		

(d) The offeror must provide a detailed response to each of the subfactor requirements utilizing the structure and order as provided in sections L.17.3.1, MS Subfactor 1 – Technical Approach (TA), L.17.3.2, MS Subfactor 2 – Management Approach (MA), and L.17.3.3, MS Subfactor 3 – Small Business Utilization (SBU). Offerors shall propose a comprehensive approach and not require NASA to make any assumptions based on previous NASA agreements.

(e) Offerors must ensure the information submitted in this volume is consistent with information submitted in other volumes, as applicable.

(f) NASA has unique human spaceflight engineering and operations expertise, capabilities, and resources that it is making available to Offerors in accordance with contract Clause section(C)(1)(i), Use of Government Resources. The use of such resources described in that clause must be coordinated with the points of contact in Attachment L-06, *NASA Center Partnership Office Points of Contact*, and memorialized in a Government Task Agreement (GTA).

(1) Within the Technical Approach and Management Approach subfactors, the Offeror must describe its approach to employing work proposed under all applicable GTAs into the Offeror's CLD development, services, and overall management. The Offeror must submit all GTAs, using the form at Attachment L-05, *Government Task Agreement Form*, in accordance with instructions in the form and must include the returned agreement(s) as an Attachment J-14, *Government Task Agreements* to its proposal.

(2) The Government will evaluate the Offeror's GTAs as part of its evaluation of both the Technical Approach and Management Approach. Offerors are advised that proposing to use Government resources will not, in and of itself, provide a basis for NASA to positively or negatively evaluate a proposal, but may provide a basis for NASA negatively evaluating a proposal if the proposed use of resources does not demonstrate an otherwise well-thought-out, thoroughly explained approach to development or services that is likely to reduce the risk of unsuccessful contract performance.

(3) To be considered by the Government, GTA forms must be submitted to the applicable Center Partnership Office Point of Contact no later than 22 days after final solicitation release. NASA will disposition all requests and notify Offerors within seven days prior to proposal due date. NASA does not guarantee disposition of GTA requests received after the due date.

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(4) Terms and conditions of all GTAs will be finalized with the successful Offeror after contract award and incorporated in Attachment J-14, *Government Task Agreements*. Offerors shall not include proposed GTAs in the Model Contract (Volume V).

L.17.3.1 MS SUBFACTOR 1 – TECHNICAL APPROACH (TA)

The Offeror must provide the following in Volume II:

TA.1 System Architecture

(1) Integrated Master Schedule: The Offeror shall provide an Integrated Master Schedule Summary narrative which describes their critical path dependencies and critical resources. The offeror shall also include and submit DRD CLDC-001 *Integrated Master Schedule*.

(2) Integrated CLDS Architecture (Sections (2)(A) through (2)(E)) shall be incorporated as Contract Attachment J-17, *Integrated CLDS Architecture*: The Offeror shall describe their end-to-end CLDS architecture. To facilitate evaluation, the offeror shall provide a description organized to address the following areas:

(A) The Integrated CLDS Architecture and Design: The offeror shall describe the CLDS architecture and design encompassing all destination hardware, software, and on-orbit and ground facilities. This includes any key services, support, equipment, and infrastructure necessary to execute the CLDS architecture. Indicate whether these are currently owned or how/where they will be obtained.

(B) Transportation Architecture: The offeror shall describe the design, architecture, launch vehicle type and configuration for element launches.

(C) External & Internal Configuration; The offeror shall describe:

(i) External Destination Configuration, including ports and appendages and plan for accommodation of heritage visiting vehicles.

(ii) Internal Destination layout and topology

(iii) Habitation accommodations, including Crew and exercise equipment

(iv) Payload layout topology in accordance with the utilization capabilities (detailing total layout and NASA-dedicated layout as a subset).

(v) Descriptions of services and capabilities embedded in the Destination architecture beyond the Government minimum requirements for a Standard Service Mission in relation to the CLIN 4 - Optional Services.

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(D) Assembly Sequence: The Offeror shall describe its on-orbit assembly sequence, outfitting and relative timing to reach Standard Service capability. The Offeror shall specifically identify the stages in which services can be provided related to Mission Service type A, B, or Standard Services.

(E) Lifecycle Sustainment & Service Life: The Offeror shall describe the CLDS service life and long-term engineering approach to maintaining the CLDS on-orbit. This must include maintenance, sparing, and logistics including the approach to maintain critical and non-critical systems on orbit. The offeror shall detail the strategies for vehicle upgrades, in-space refurbishment, hardware re-integration, and common component replacement approaches necessary to achieve and safely extend the proposed CLD service life.

(F) Subsystems & Interfaces: The offeror shall provide subsystem design concepts, block diagrams, and figures detailing functions and internal/external interfaces, including:

(i) Vehicle docking or berthing mechanisms and standards.

(ii) Environmental Control and Life Support Systems (ECLSS), including gas supplies, vacuum resources, and exhaust provided to payloads.

(iii) Thermal control technologies for the Destination and payloads (including externals, if applicable).

(iv) Propulsion systems and reboost capabilities, including refueling if proposed.

(v) Space-to-ground communications and data handling architecture (including payload data downlink/command capability, MCC Houston/POIC Huntsville integration, if proposed, and remote payload operators).

(vi) Software architecture, displays, controls, and informatics.

(G) Key Technologies & Maturation: The offeror shall identify;

(i) Key technologies and their current Technology Readiness Level (TRL).

(ii) For each key technology, describe work completed to date (including design heritage, modeling results, prototypes, subcomponent tests) and the specific maturation plan required for the element to become operational.

(iii) The offeror shall describe any new or modified hardware/software (including the use of artificial intelligence) utilized in the design and provide a preliminary assessment of resulting risk and reliability impacts.

(I) The offeror shall identify any unresolved key design trades and the schedule/plan for resolution.

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(H) Reliability, Safety, & Maintainability: The offeror shall describe how the proposed system provides reliable performance on-orbit, specifically addressing:

(i) Survivability & Safety: Fault tolerance approach for the CLD System/subsystems, and mitigation of LEO environment hazards (e.g., Micrometeoroid and Orbital Debris [MMOD]).

(ii) Operability: Features that enhance the ability to safely and easily accomplish crewed and uncrewed tasks.

(3) Destination Launch, & End-of-Life: The Offeror shall describe the CLD launch configuration and approach, , CLD-unique interfaces, flight environments, inclination, and required performance necessary to successfully maintain orbit to execute Demonstration Missions and Mission Services. The Offeror shall also briefly describe the end-of-life decommissioning and safe disposal strategy.

(4) Transportation Approach: The Offeror shall define the transportation systems approach (Crew & Cargo) capable of successfully delivering and returning the required USG Crew and cargo to and from the Destination as a part of the service. The Offeror shall identify the proposed Transportation provider(s) or the strategy to procure these services to fulfill transportation requirements, including plans for use of existing NASA certified vehicles and any plans for development and certification of new vehicles.

DRD & Attachments: DRD CLDC-001 *Integrated Master Schedule* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in the Volume II page count. Attachment J-17 Integrated CLDS Architecture shall be submitted in the Mission Suitability proposal (Volume II) and is included in the Volume II page count. Attachment J-17 Integrated CLDS Architecture shall be incorporated into the Model Contract (Volume V).

TA.2 Certification & Engineering Approach

(1) Systems Engineering & Design Standards: The Offeror shall describe its overarching systems engineering approach to managing the CLDS lifecycle from design through decommissioning. This must include:

(A) Design & Construction Standards: The offeror shall describe the approach to incorporating NASA design and construction standards, commercial standards, and other specifications, demonstrated via the submission of DRD CLDC-103 *NASA Standards & Specifications Compliance and Tailoring (Data Items 1–5 only)*.

(2) Safety & Reliability Design: The offeror shall describe the methodology for integrating safety, reliability, and hazard analysis into the design process to prevent the loss and /or injury to crew and the loss of the mission or destination.

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(3) Manufacturing, Production, & Integration: The Offeror shall provide a comprehensive description of its manufacturing, production, or product procurement (make/buy) strategies. This must include:

(A) Facilities, tooling, and processes planned to build and integrate the CLDS.

(B) Supply Chain Risk Management (SCRM) approach to ensure the reliable procurement of critical components and mitigation of vendor obsolescence or bottlenecks.

(C) Configuration management and quality assurance processes utilized during assembly and integration.

(4) Visiting Vehicle Integration & Operations: The Offeror shall describe their approach for certification of visiting vehicles and operations. This must extend beyond physical docking mechanisms to include the overarching strategies for Rendezvous, Proximity Operations, and Docking (RPOD) and integrated operations with both crewed and uncrewed commercial or international vehicles.

(5) Test, Verification, & Validation (V&V) Program: The Offeror shall detail its strategy to prove the CLDS meets all requirements, including:

(A) Component & System Level Testing: The offeror shall describe the approach to system and subsystem-level testing (including hardware-in-the-loop and software-in-the-loop testing), and how these milestones actively retire technical and schedule risks.

(B) V&V Execution: The offeror shall describe the overall test and V&V program strategy. Describe how this proposed approach minimizes risks associated with design, development, test, and evaluation (DDT&E) as the system advances toward final certification.

(6) Certification Strategy: The Offeror shall describe the current design maturity of the CLDS and the approach to achieving certification. This narrative must be consistent with the DRD CLDC-001 *Integrated Master Schedule* and consistent with Certification Plan Component of DRD CLDC-102 *Verification, Validation, and Certification Plan (VVCP)*.

DRD & Attachments: DRD CLDC-103 *NASA Standards & Specifications Compliance and Tailoring (Data Items 1–5 only)* shall be submitted in the Mission Suitability proposal (Volume II) and is included in the Volume II page count.

TA.3 Service Mission & Utilization Capabilities Approach

(1) Mission Integration & Operations: The Offeror shall describe its overarching concept of operations to perform the Standard Service Mission requirements, including concept for Service Mission A and Service Mission B if applicable.

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(2) Transition to Operations: The offeror shall describe the evolutionary approach to transition from crew tended capabilities to a standard operational services phase following successful certification and demonstration, if proposed.

(3) Transportation & Delivery: The offeror shall describe the approach to providing an End-to-End Transportation model for successfully delivering and returning the required USG Crew and cargo, including the percentage or total amounts of crew and cargo upmass and downmass required, to and from the Destination as a turnkey delivery service and shall be aligned with their Integrated Master Schedule, including their demonstration and mission services proposal.

If the offeror is not proposing an End-to-End Transportation model, the offeror may submit a request for Government Furnished Transportation and Support Services (GFTSS) and fill-in and submit Attachment J-15 *Government Furnished Transportation and Support Services* to quantify the services requested.

(4) Recertification: The offeror shall describe the approach to hardware and software recertification during Mission maintenance, ensuring the maintenance of certification throughout the contract period.

(5) Utilization Capabilities & Payload Integration: The Offeror shall describe its capabilities and integration processes for CLD Service Mission requirements as described in Contractor SOW 1.5, 1.6 and 3.3 (CLIN 3) and CLDP-REQ-1130.

(A) Mission Service Utilization Capability (Mission A, B, & Standard): Provide a narrative describing how proposed Mission Service Utilization Capabilities meet NASA's Minimum Utilization Capability Needs (SOW 1.5) and Usage (SOW 1.6) and the phasing of when the capabilities are available.

(B) Payload Facilities & Projections: The offeror shall describe all on-orbit payload facilities, locker locations, and resource capabilities allocated to NASA for each Mission Service type, including when and how they meet or exceed NASAs minimum requirements, and projections for future capabilities beyond a Standard Service.

(6) Integrated Operations, Planning, & Multi-User Management: The Offeror shall describe its approach to managing ground and on-orbit operations.

(A) Strategic Planning & Prioritization: The offeror shall describe the approach to developing the strategic mission plan and incorporating NASA objectives.

(B) Multi-User Habitation and Mission Management: The offeror shall describe the approach to managing operations on a multi-user destination (Commercial, NASA, other Governmental entities) and to include the cargo resupply approach, with respect to food, crew accommodations, spares, etc. and identifying any service limitations. The Offeror shall describe their operational mission management structure, authority, and chain of command for real-time and near-real-time operations.

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(C) Ground & On-Orbit Support Operations: The offeror shall describe the operations approach, , reach-back to Subject Matter Expertise (SME), and strategies to minimize crew time required to prepare and maintain the CLD System.

(D) Training: The Offeror shall outline its CLDS capabilities to support crew training (including ground personnel), including training flows, timelines, maximum crew throughput and facilities.

(E) Health & Habitation: The offeror shall describe the approach to maintaining crewmembers' health, safety, and performance per CLDP-PLN-1111 *Crew Health Operations Concept*, including providing a food system meeting nutritional and food safety requirements.

(F) Crew Accommodations: The offeror shall describe the common use items and usage rates as described in section 1 of DRD CLDC-212 *Crew Accommodations*.

(G) Crew Selection & Code of Conduct: The offeror shall provide crew selection and mission evaluation per SOW 2.21 Crew Selection and Qualification for Flight, decision-making authority during all mission phases, and submission of DRD CLDC-129 *Crew Code of Conduct*.

(7) Risk Management & Mitigation: The Offeror shall describe the key technical, schedule, and safety-related risks associated with its approach to the CLD Demonstration and Standard Missions, and mitigation strategies.

(8) Pre-Priced Additional Capabilities: The Offeror shall describe its approach to implement and provide the Additional Capabilities in CLIN 4 Pre-Priced Additional Services. If the Offeror proposes unique capabilities not listed by NASA, they must describe their ability to provide them using the same format. The Offeror may indicate prices in Optional Services are Not Applicable (N/A) if they are not proposed. Additional rows may be added for additional offerings. If additional ground services are offered, the *Payload Ground Processing Requirements Reference Guide* is provided as part of the Technical Library to provide a guideline as to capabilities historically requested by NASA for pre- and post-flight ground processing of payloads

DRD & Attachments: DRD CLDC-129 *Crew Code of Conduct* shall be submitted in the Mission Suitability proposal (Volume II) and is included in the Volume II page count. If requested, Attachment J-15 *Government Furnished Transportation and Support Services* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in the Volume II page count. Attachment J-15 *Government Furnished Transportation and Support Services* shall be incorporated into the Model Contract (Volume V). DRD CLDC-212 section 1, *Crew Accommodations* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in the Volume II page count. DRD CLDC-212 section 1, *Crew Accommodations*

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section 1 shall be incorporated into the Model Contract (Volume V) as Attachment J-19, *Crew Accommodations*.

TA.4 Safety & Mission Assurance (S&MA) Approach

(1) The Offeror shall provide its approach to safety and mission assurance and additionally provide the submission of Attachment J-09 *Safety and Mission Assurance (SMA) Plan* which shall initially be comprised of DRD CLDC 115.1 *Destination SMAP, sections 1-4 only.*)

DRD & Attachments: Attachment J-09 *Safety and Mission Assurance (S&MA) Plan* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in the Volume II page count. Attachment J-09 shall be incorporated into the Model Contract (Volume V) as the initial Attachment J-09, *Safety and Mission Assurance Plan*.

L.17.3.2 MS SUBFACTOR 2 – MANAGEMENT APPROACH (MA)

The Offeror shall provide the following in Volume II:

MA.1 Program Management Approach

(1) Program Management: The Offeror shall provide its approach for managing the CLD Contract in accordance with *SOW 2.1 Program Management*. The Offeror shall include the approach to managing the contract scope, including management approach, management controls, schedule and margin management, performance management, teaming, communication, strategies, policies, processes for work planning, work prioritization, subcontractor management, supply chain management, facilities, operating locations, use of Government provided services, and any efficiencies planned. The approach shall also include:

(A) Identify personnel, products, key infrastructure facilities, and equipment required to build, integrate, launch, operate, maintain, and sustain a human presence and research capability in LEO, and methods and risks associated in obtaining these resources.

(B) Identify key business characteristics that demonstrate long-term sustainability of the proposed solution. Include approach to identifying, resolving, and prioritizing conflicts between CLDC contract performance and CLD Contractor's work in support of other Government and commercial customers.

(C) Provide a contract-specific organization chart, including subcontractors and teaming partner[s], as applicable, and rationale for the approach selected. Define the direct lines of control and accountability, responsibilities, functional relationships, and authority between the CLD project management and the CLD Contractor's other organizational elements, corporate management; and subcontractors/teaming partners. If there is a subcontracting or teaming arrangement, include specific details on how the subcontractor or teaming partner is managed, how their performance is incentivized, the business size of each company, the

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relative amount of work to be performed by each, and if there are discrete tasks to be performed by each or whether there is co-mingling of personnel and resources. Discuss how the organization and teaming arrangement will change over the life of the CLD contract. Discuss acquisition plans for any proprietary technologies.

(D) Describe the CLD Contractor's approach to provide a flexible logistics and supply chain management strategy that accommodates redundant suppliers and mitigates obsolescence.

(E) Describe the CLD Contractor's approach to key interfaces between the CLD Contractor and the Government; describe the CLD Contractor's plan to create an efficient and effective interface to the Government in the management, performance, communication, operations, and data transmission required to complete the contract requirements.

(F) Describe the CLD Contractor's approach to make decisions about the management, operations, and design of the CLD System that ensures NASA requirements are met. Describe the CLD Contractor's approach to handling dissenting opinions (operational and non-operational).

(G) Describe the CLD Contractor's Systems Engineering approach, processes and tools used to implement the contracted technical effort and document the overall technical approach, maintain integrity between NASA and Contractor requirements to the Contractor verification plans, and to transition the products through the lifecycle (for both Contractor and subcontractor efforts). Describe the CLD Contractor's approach to developing and managing requirements, system architecture definition and design, system technical baseline definition and maintenance, system maturation, design review process, engineering review process, change management, interface management, risk management, issue management, requirement verifications, capability validation, and performance margins. Address the CLD Contractor's approach for technical discipline expertise, independent assessment, engineering analysis, technical insight, technology assessment and development, overview of testing strategy and programmatic support, as required to deliver the highest degree of technical accuracy and quality.

(2) Risk Management Plan: The offeror shall submit DRD CLDC-116 *Risk Management Plan* for planning, management, control, and implementation of the Contractor's risk management program.

(3) The offeror shall include signed evidence of commitment, signed interface documentation showing Letters of Commitment (LOC) from the Crew and Cargo Transportation providers proposed to support Mission Services for the entire period of performance of this contract as Attachment J-20 *Letters of Commitment*. The LOC shall include the transportation cost, flight rate, schedule, and the vehicle capabilities separately for each Crew and Cargo Transportation negotiated. The pricing in the LOC shall align with the Attachment L-08 *Business Case Analysis Template*.

DRD & Attachments: DRD CLDC-116 *Risk Management Plan* shall be submitted in the Mission

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Suitability proposal (Volume II) and is not included in the Volume II page count. Attachment J-20 *Letters of Intent* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in the Volume II page count. Attachment J-20 *Letters of Intent* shall be incorporated into the Model Contract (Volume V)

MA.2 Commercialization and Business Approach

(1) Commercialization Plan & Strategy: The Offeror shall describe its commercialization approach, strategy and plan for leveraging the CLDS to enable commercial and other non-NASA uses of the CLDS capabilities or technologies while maintaining compatibility with NASA's objectives and facilitating sustainable and cost-effective recurring CLDS services for NASA by providing the submittal of DRD CLDC-002, *Commercialization Plan*.

(2) Market Strategy & Sustainment: The Offeror shall also provide a narrative that describes how its commercial approach will enable sustainable CLDS services for NASA. Specifically, the narrative in this section shall address:

(A) Market Strategy & Customer Capture: Describe the targeted non-NASA markets and the specific approach to capturing and retaining commercial, academic, or other government customers.

(B) Describe what percentage or amount, if any, was used in contingency planning in your base case scenario. If certain customer markets do not materialize as expected, what changes will be made to the strategy and what are the expectations to bridge the gap.

(3) Forecast & Contribution: The offeror shall clearly explain the relationship between the proposed NASA pricing submitted in Attachment L-01 *Price Template* and the forecasted commercial market revenue. The Offeror must detail how it plans to cover the delta costs necessary to close its overall business case, including private investment or corporate contributions in accordance with Attachment L-07 *Corporate Contribution Worksheet*. A corporate contribution is required, however there is no mandatory minimum contribution required

(4) Specific Technical Understanding & Resources: The Offeror shall demonstrate their understanding of the requirements, risks, and the specific resources needed to successfully perform the requirements of this Contract. The Offeror shall define the specific resources needed to successfully perform the requirements of this contract, in accordance with its proposed approach. The Offeror shall complete Attachment L-08 *Business Case Analysis Template* in accordance with its proposed approach.

The Offeror shall complete the BOE form provided in Attachment L-08 *Business Case Analysis Template* in accordance with its proposed approach. The Offeror is not limited to a specific number of pages per BOE. For each BOE the Offeror shall:

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- (1) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources and indirect cost for CLIN 1 proposed.
- (2) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources (including transportation, material and equipment) and indirect cost for CLIN 2 for all CLD elements proposed, and repeated as necessary.
- (3) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources (including transportation, material and equipment) and indirect cost for CLIN 2 by Crew Demo proposed.
- (4) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources and indirect cost for CLIN 3 Mission A. The contractor shall describe the breakdown of non-labor costs between Crew and Cargo Transportation, material and equipment. Explain the supporting detail to describe the cost breakdown between utilization, habitation and overhead costs for Service Mission A.
- (5) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources and indirect cost for CLIN 3 Mission B. The contractor shall describe the breakdown of non-labor costs between Crew and Cargo Transportation, material and equipment. Explain the supporting detail to describe the cost breakdown between utilization, habitation and overhead costs for Service Mission B.
- (6) Explain the BOE by providing supporting rationale for all labor cost, subcontractor, nonlabor resources (including crew and cargo transportation) and indirect cost for CLIN 3 Standard Service. The contractor shall describe the breakdown of non-labor costs between Crew and Cargo Transportation, material and equipment. Explain the supporting detail to describe the cost breakdown between utilization, habitation and overhead costs for Standard Service Mission.
- (7) Include a narrative 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."
- (8) Include sufficient narrative to convince the Government that the proposed resources are understood for the proposed technical and management approach and assembly sequence and offering in order to achieve a standard service, including explanations for any applicable efficiencies or cost savings. List all assumptions made to estimate costs/prices associated with this BOE such as transportation costs, operations costs, facility costs, return on investment, overhead, utilization costs and crew accommodations costs.

DRD & Attachments: DRD CLDC-002, *Commercialization Plan* shall be submitted in the Mission Suitability proposal (Volume II) and is not included in Volume II page count. Attachment L-07 *Corporate Contribution Worksheet* and Attachment L-08 *Business Case Analysis Template* shall be submitted in the Mission Suitability proposal (Volume II) and are not included in the Volume II page count.

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MA.3 Insight Implementation

The offeror shall describe the implementation and compliance with clause *Government Insight* and SOW paragraph 2.3, *Government Insight*, for the CLDS by providing the submittal of DRD CLDC-104, *Insight and Collaboration Implementation Plan*.

DRD & Attachments: DRD CLDC-104, *Insight and Collaboration Implementation Plan* shall be submitted in the Mission Suitability proposal (Volume II) and is included in the Volume II page count and shall be incorporated into the Model Contract (Volume V) as Attachment J-10 *Insight and Collaboration Implementation Plan*.

MA.4 Work Plan

(1) The offeror shall describe its overall Certification and Mission Service Work Plan methodology, including rationale for milestones values, sequencing, any tailoring, or any other pertinent aspect related to the proposed Work Plans. In addition, the offeror shall fill-in the contents of Attachment J-11 *Certification Work Plan* and Attachment J-12 *Mission Service Work Plan Template*:

(A) Certification Work Plan: The Offeror shall use the format provided in Attachment J-11, *Certification Work Plan*, to complete and propose certification milestones and entrance/success criteria. The attachment shall define the Offeror's proposed Work Plan approach for design and certification milestones under CLIN 1 and CLIN 2.

(i) The offeror shall complete and propose entry/success criteria and schedule, in accordance with CLDP-PLN-2000, *CLDP Certification Plan*, and SOW 3.1 and 3.2. The Offeror may tailor milestones to align with the Offeror's commercial services approach only if they also meet contractual requirements.

(ii) The Offeror should propose additional interim milestones. Milestones should feature highly measurable, objective, and quantifiable entrance and success criteria minimizing subjective interpretation. As a general guideline, payment milestones should provide objective evidence of development progress and primarily be technology maturation, system development and testing based rather than "paper" based and timed at a regular intervals. Suggested milestones, types, and their objectives are provided below:

- (a) Hardware Development Milestones - Development, human systems integration and analysis products, testing, manufacturing readiness reviews, qualification, hardware/software acceptance reviews, fit checks, etc.
- (b) Assembly, Integration, and Testing (AI&T) Milestones
 - The Offeror should suggest assembly, integration and test milestones that include system/subsystem testing and demonstrate that the design has sufficient margin. Examples of areas include:
 - Environmental testing

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- Joint integration testing with external systems (e.g., transportation systems, customer payload operations centers, Ground and Mission Systems, etc.)
- Joint integration testing with internal systems
- Module-to-module interface testing for on-orbit assembly
- Hardware-software integrated testing from subsystem to mission-level
- Integrated hardware system function testing in flight scenarios (e.g., cabin environment, propulsion systems)
- HITL testing
- Payload/Payload Facility (interface, functional, and environmental)

(iii) The Certification Work Plan shall define the Offeror's schedule and plans to execute all key design and certification review milestones to include all milestone entrance and success criteria.

(B) Mission Service Work Plan Template: The Offeror shall use the format provided in Attachment J-12, *Mission Service Work Plan Template* to complete and propose mission service milestones and entrance/success criteria. The attachment shall define and baseline the Offeror's proposed Work Plan approach for Mission Service Order Milestones under CLIN 3.

(i) The offeror shall complete and propose entry/success criteria and schedule, in accordance with CLDP-PLN-2110, *CLDP Mission Integration Plan*, and SOW 3.3.

(ii) The Offeror may propose additional interim milestones and/or tailor milestones to align with the Offeror's commercial services approach only if they also meet contractual requirements. Milestones should feature highly measurable, objective, and quantifiable entrance and success criteria minimizing subjective interpretation.

(iii) The Mission Service Work Plan Template shall define the Offeror's schedule and plans to execute all key Mission review milestones to include all milestone entrance and success criteria.

(iv) General completion instructions applicable to Attachment J-11, *Certification Work Plan*, and Attachment J-12, *Mission Service Work Plan Template*.

(Note: Once a contract is awarded, the Contracting Officer will provide Attachment J-12, *Mission Service Work Plan Template*, when issuing a Request for Task Order Proposal (RFTOP) for each Mission Service Order in accordance with the contract's task ordering procedures. Attachment J-12 will provide a baseline template for the Contractor to respond to the RFTOP.)

(2) The Government has initially drafted Attachment J-11 and J-12 to define delivery and interim milestones along with Not-to-Exceed (NTE) payment percentages. The Offeror shall use the format provided and complete all fields marked as Offeror Fill-in (OFI).

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- (3) All proposed milestones shall follow and meet the intent of CLDP-PLN-2000, *CLDP Certification Plan* and CLDP-PLN-2110, *CLDP Mission Integration Plan*.
- (4) Delivery Milestones are defined by superscript in each attachment while all other milestones are Interim Milestones.
- (5) The proposed milestone payment amounts shall be constrained by NTE payment percentages and the sum of interim-milestone financing payments for each delivery item shall not exceed 80% of that delivery item's price. See clauses 52.232-32, *Performance-Based Payments* and *Performance-Based Payments – Supplement*, for additional limitations and conditions of payment.
- (6) Mandatory Milestones. Unless otherwise noted by exception, all delivery and interim milestones identified in Attachment J-11 *Certification Work Plan* and Attachment J-12 *Mission Service Work Plan Template* are mandatory, which Offerors are required to include in each proposed work plan.
- (7) Proposed Interim/Delivery Milestones. The Offeror shall use the format provided and may propose as many milestones as needed under the following ground rules:
- (A) Interim milestones support subsequent Delivery Milestones and shall provide evidence of achieving significant progress toward certification or mission execution.
 - (B) The Offeror may propose new Interim/Delivery Milestones and shall provide supporting rationale that represents completion of significant design and development activities, key testing and analysis, safety reviews, or demonstration of meeting high risk or key performance requirements.
 - (C) Proposed milestones shall clearly represent significant efforts required to show evidence of progression between applicable required milestones. The Offeror shall modify the Work Plan tables appropriately to add rows and fill-in all corresponding information to complete the table columns. The "Payment Percentage for Milestone" shall not exceed the cumulative percentage for the milestones already established in the Work Plans.
 - (D) Proposed milestones that support program events should address technical performance requirements including those requirements affecting Destination and Crew safety to ensure acceptable risk to the Destination and Crew. In addition, proposed milestones may coincide with completion of major analysis or verification cycles where integrated performance results are available.
- (8) Proposed Milestone Tailoring. The Offeror shall use the format provided and may propose tailoring under the following ground rules:
- (A) The proposed tailoring may adjust timing, content, entrance and success criteria, or

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combine and consolidate milestones.

(B) Offerors may tailor milestones but shall meet the intent of the NASA’s CLDP-PLN-2000, *CLDP Certification Plan* and CLDP-PLN-2110, *CLDP Mission Integration Plan*.

DRD & Attachments: Attachment J-11 *Certification Work Plan* and Attachment J-12 *Mission Service Work Plan Template* both shall be submitted in the Mission Suitability proposal (Volume II) and are not included in the Volume II page count. Attachment J-11 *Certification Work Plan* and Attachment J-12 *Mission Service Work Plan Template* shall be incorporated into the Model Contract (Volume V)

L.17.3.3 MS SUBFACTOR 3 – SMALL BUSINESS UTILIZATION (SBU)

(a) All Offerors, except small businesses, must complete the portion of the instructions under Small Business Subcontracting specific to the Small Business Subcontracting Plan, submitted as Attachment J-08 *Small Business Subcontracting Plan* in accordance with DRD CLDC-008, *Small Business Subcontracting Plan and Reports*.

(b) 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 performed by a small business either at the prime level or at the first-tier subcontract level.

DRD & Attachments: Attachment J-08 *Small Business Subcontracting Plan* shall be submitted in the Mission Suitability proposal (Volume II) and is included in the Volume II page count. Attachment J-08 *Small Business Subcontracting Plan* shall be incorporated into the Model Contract (Volume V)

SBU.1 Small Business Subcontracting

(a) This solicitation contains FAR Clause 52.219-9, “Small Business Subcontracting Plan with Alternate II.” The Plan described and required by the Clause, including the associated subcontracting percentage goals and subcontracting dollars, shall be submitted with the proposal via the Small Business Subcontracting Plan, DRD CLDC-008, *Small Business Subcontracting Plan and Reports*.

Offerors shall propose a phased approach to Small Business participation that aligns with the performance period of contract CLINs 1, 2, and 3. The phased goals should support incremental small business opportunities that align with the nature of the work defined for each CLIN as it progresses from development to mission operations.

Small Businesses (SB)*	TBP%
Small Disadvantaged Business Concerns (SDB) (Includes SDBs in represented and under-represented areas*	TBP%

Draft Request for Proposal (RFP) - 80JSC026R0021
Commercial Low Earth Orbit (LEO) Destination Contract (CLDC)

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Women Owned Small Business Concerns (WOSB)	TBP%
HUBZone Small Business Concerns (HBZ)	TBP%
Veteran Owned Small Business Concerns (VOSB)	TBP%
Service-Disabled Veteran-Owned Small Business Concerns (SDVOSB)	TBP%
Historically Black Colleges and Universities/Minority Serving Institutions (HBCU/MI)	TBP%

**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 SDBs status as a small business.*

(c) e. If it is anticipated that the proposed small business goals will not be met by the submission of the first Individual Subcontracting Report (ISR) after services under CLIN 3 are proposed by the Offeror to be ordered, the offeror must 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 CLDC contract. If the offeror proposes goals higher than the Contracting Officer's recommendation, the offeror must document the methodology behind determining those goals, and their approach to successfully managing the subcontractor and consistently meeting the higher proposed goals. 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 as Attachment J-08 *Small Business Subcontracting Plan*, of the resulting contract in accordance with (DRD CLDC-008, *Small Business Subcontracting Plan and Reports*). The requirements in the Plan must flow down to first tier large business subcontracts expected to exceed \$750,000 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 (b) above in terms of percent of TOTAL CONTRACT VALUE (basic 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

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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.

SBU.2 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 to small businesses 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 must describe any potential risks or impacts to seamless performance when subcontracting out such efforts.

(b) If the small business 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 its approach to performing the requirement.)

(c) All offerors shall provide information demonstrating the extent of commitment to utilize small business concerns and to support its 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 its approach to performing the requirement.)

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L.17.4 JSC 52.215-114 Past Performance Information. (NOV 2022) - VOLUME III

(a) Offerors must demonstrate previous experience in all areas of the performance work statement by submitting information that best demonstrates its ability to perform the CLDC work. Each Offeror shall provide a narrative summary of up to three (3) relevant contracts and/or agreements that are active or were completed in the last five (5) years. Also, each Offeror shall provide up to two (2) more additional narrative summaries for each qualifying major team members, subcontractors, and suppliers. For Past Performance only: Major team members, subcontractors and suppliers are defined as those which Offerors anticipate having a total contract value of \$100 million or more of the work for the entire contract period.

(b) References with Government contracts are preferred but not required. Offerors with no past performance experience must so state.

(c) Offerors must consider the recency and relevance, as they relate specifically to this solicitation. Only contract period of performances within five (5) years from the date of the original CLDC solicitation will be considered in the past performance evaluation. Relevant past performance is work that is similar in size, content and complexity to the requirements of this RFP. Relevant past performance may include work on contracts and/or agreements for Government or private sector customers. Emphasis should be placed on the past performance of the division of the company that will perform this contract.

(d) The following information must be provided:

(1) Contract number, cage code, NAICS code, and SAM Unique Identifier number (if other than the prime, provide the prime's contract number and the offeror's cage code and SAM Unique ID)

(2) Summary of the relevant technical requirements from its Statement of Work/Performance Work Statement/Statement of Objective. The Offeror shall include the magnitude of the relevant work directly accomplished in relation to the total contract or agreement scope.

(3) Contract value (If other than the prime, provide the overall contract value and the subcontract contract value)

(4) Number of full-time equivalent employees assigned to the contract (if other than the prime, provide the number of full-time equivalents provided by the applicable subcontractor/entity)

(5) Employing Agency/Company Name

(6) Point of Contact (including address, telephone, and e-mail addresses)

(7) If a Government Agency, include both the Contracting Officer and Contracting Officer's Representative points of contact

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(8) Contract Description

(9) Place of Performance

(10) Period of Performance

(11) Contract Type

(12) Status of Contract (current, terminated (if so, why), successfully completed (include completion date)

(13) Consent Letters executed by each subcontractor, teaming partner, 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-03, *Past Performance Consent Letter*.

(e) Submit information on contracts that you consider relevant in demonstrating your ability to perform the proposed effort. The submission must include rationale supporting your assertion of relevance. This submission must clearly detail what portions of the Performance Work Statement, 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 parent company, 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 for CLDC, to demonstrate that said parent company et al. will have meaningful involvement in performance of CLDC.

(f) Complete the Past Performance Matrix 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. This matrix is attached as Attachment L-02, *Past Performance Matrix*.

(g) 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 CLDC effort.

(h) Offerors must provide the following performance data with explanatory remarks on contracts performed in the last three (3) years. Offerors must identify the applicable North American Industrial Classification System (NAICS) Code for each contract and must include points of contact for each contract. If a joint venture or prime-subcontractor relationship is proposed, the same information must be provided for each company proposed. Explanatory statements must be included as appropriate. For all work performed on these contracts during the past three years, offerors must provide the following:

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(1) Environmental Data. Copies of any and all environmental non-compliance correspondence and citations from federal, state or local agencies or authorities with explanatory remarks.

(2) Safety and Health Data:

(i) Copies of any and all OSHA citations with explanatory remarks.

(ii) Records of the company's occupational injuries and illnesses. These records must include, as a minimum, injury log (you may redact employee names), number of occupational injuries and illness (broken down by Days Away, Restricted or Transfer, and Other OSHA Recordable), annual average number of employees at the worksite, total hours worked by all employees, and applicable NAICS code. Provide records for the past three complete calendar years with signature of a company executive. Provide explanatory remarks of adverse performance and methods being used to improve performance. Format may be a copy of each year's OSHA logs (Forms 300 and 300A) or equivalent occupational injury and illness data.

(iii) A letter from the insurance carrier providing workers compensation coverage (or equivalent) summarizing the Offeror's Experience Modification Rates for the past three complete calendar years including history of changes to the rate. If there are no Experience Modification Rates, provide loss run data (summary), liability and lawsuit history related to safety and health performance. 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.

(i) The prime offeror must provide a statement of small business participation (targets, record, and type of work subcontracted) over the last three (3) years on work that is relevant to this effort, with special emphasis on the division of the company which will perform the proposed contract.

(End of Provision)

L.17.5 RESPONSIBILITY CONSIDERATIONS – VOLUME IV

(a) Additional information is required to determine responsibility in accordance with FAR 9.104-1, *General Standards* as stated below.

(b) Responsibility Information due with initial proposal submission. Offerors shall initially provide Responsibility Determination information specific to paragraphs (a) and (g) in accordance with FAR 9.104, *Standards*. In addition, proposals shall include the following information:

(1) Notice of Potential Organizational Conflicts of Interest. The contracting officer has

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determined that this acquisition may give rise to an organizational conflict of interest (OCI). Accordingly, the attention of prospective offerors is invited to Federal Acquisition Regulation (FAR) Subpart 9.5, *Organizational Conflicts of Interest*. Offerors are required to submit an acceptable OCI Plan in accordance with the requirements of Data Requirements Description (DRD) CLDC-003, *Organizational Conflicts of Interest (OCI) Plan*, (which will be incorporated into any resultant contract as Attachment J-07, *Organizational Conflicts of Interest (OCI) Plan*).

(i) Paragraphs (i)(A) below contain brief descriptions of each type of potential OCI and the reason it creates a concern. The Government has identified specific actual or potential conflicts related to this contract in paragraph below:

(A) Unequal Access to Information: An OCI due to “unequal access to information” is created when a contractor has access to nonpublic information that may provide the firm an unfair competitive advantage to compete against other companies, likely in the context of a later competition for a future Government contract.

(iii) The nature of the potential OCI(s) is described in clause, NFS 1852.209-71 *Limitation of Future Contracting*.

(iv) In addition to those OCI issues identified by the offeror, the OCI plan shall specifically address the following potential OCI issues:

(A) Unequal Access to Information: Potential types of requirements which could lead to unequal access to information OCI issues may include (but are not limited to): N/A

(B) Biased Ground Rules: Potential types of tasks which could lead to Biased Ground Rules OCI issues may include (but are not limited to): N/A

(C) Impaired Objectivity: Potential types of tasks which could lead to Impaired Objectivity OCI issues may include (but are not limited to): N/A

(v) The proposed OCI Plan must be consistent with all other areas of the proposal. The proposed OCI Plan is not page limited and must be included as a separate proposal attachment.

(c) Prime/Subcontractor Identification and SOW Division of Work Listing

The offeror must provide a summary listing 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 must also include the subcontractors size classification (e.g., Large Business, Small Business (SB), Woman Owned Small Business (WOSB), etc.) and cage code/Unique Entity Identifier. Fill-in Attachment L-04, *Contractor Responsibility Matrix*, so all applicable SOW sections have a

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Prime and/or subcontractor associated with accomplishing that requirement.

(d) Domestic Source Certification. Offerors must submit a Domestic Source Certification for CLD services that meets all requirements in accordance with Clause, *United States Commercial Provider And Domestic Source Criteria*. Offerors must provide a notarized certification from a senior company official attesting to the validity and comprehensiveness of the data submitted and to include citizenship status of relevant individuals.

(e) Financial Capability Disclosure Information. For purposes of the Government making a responsibility determination, the Offeror must submit the following Financial Capability Disclosure information under Volume IV, in support of the Government's financial capability assessment and will supplement with the information received under DRD CLDC-002 *Commercialization Plan*.

(1) The Offeror must demonstrate adequate financial resources to perform the prospective contract or demonstrate an ability to obtain the adequate financial resources, as required by FAR 9.104- 1(a).

(2) The Offeror must submit financial statements for the three most recent and complete fiscal years and the most recent interim accounting period if applicable.

(3) The Offeror must provide the following statements for the Offeror, and the Offeror's parent corporation (if applicable):

(i) Annual Reports including audit opinions,

(ii) Balance Sheets, Income Statements,

(iii) Statements of Retained Earnings, and

(iv) Statements of Cash Flows.

(4) Offerors must clearly label all financial statements as audited or un-audited and the date, if applicable, of any certification of the financial statements by the responsible company official; and clearly disclose and explain all off-balance sheet arrangements and related party transactions. If the Offeror is newly established company without financial statements, it must provide historical tax returns and projected income statements, balance sheets and cash flows. If a teaming arrangement, joint venture, or other business combination is contemplated, the Offeror must provide a copy of the teaming arrangement and must disclose each participant's responsibility for financial management of the venture, funding requirements, limitation of liabilities, and any other information which describes the business arrangement. The Offeror must submit details of both internal and external funding mechanisms, including any proposed investments, letters of commitment from investors, and available lines of credit. The Offeror must provide all bank term sheets or loan covenants agreements. For Offerors with parent or holding companies, the Offeror must include the

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parent company's or holding company's guarantee of all necessary and required resources including financing to assure the Offeror's full, complete, and satisfactory performance of the contract. Finally, depending upon whether the Offeror is privately or publicly held, the Offeror's Financial Capability Disclosure must also include the following additional information to support the Government's financial responsibility determination:

(i) Privately Held:

- (A) Certificate or Articles of Incorporation and Bylaws, including all amendments.
- (B) Legal entity structure, function of all divisions, subsidiaries, or affiliated entities.
- (C) A management and organizational chart listing executives and officers.
- (D) List of all options, warrants and other rights to acquire equity securities.

(ii) Publicly or Privately Held:

- (A) Schedule of insurance policies in effect covering property of the Company and any other insurance policies in force.
- (B) Comparison of planned corporate fiscal year budget to actual (summary and detail) for last fiscal year and current fiscal year to date.
- (C) Capital budget. If the Offeror proposes as a joint venture or consortium, the Offeror must provide a Financial Capability Disclosure for all principal member companies or organizations.

(f) Indemnification Under Public Law 85-804 Request

If offerors are requesting Indemnification in accordance with Public Law 85 804, Indemnification requests shall provide the requested information outlined in FAR 50.104-3, Special procedures for unusually hazardous or nuclear risks and NFS 1850.104-3, Special procedures for unusually hazardous or nuclear risks.

- (g) Responsibility Information due after Competitive Range. Offerors shall provide the remaining Responsibility Determination information addressing the remaining elements under FAR 9.104, *Standards*, to demonstrate responsibility. Specifically, FAR part 9.104-1 paragraph's (b), (c), (d), (e) and (f) shall be addressed once the information is requested by the Contracting Officer. If no negotiations are necessary, the information will be requested from the apparent successful offeror pursuant to FAR 9.105-1. The following information will only be required for all Offerors who enter into Competitive Range or are the apparent successful Offeror. Offerors may provide any additional information, not already addressed under another proposal volume, that is necessary to demonstrate status as a responsible offeror under FAR 9.104, *Standards*.

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(End of Provision)

L.17.6 MODEL CONTRACT AND ADDITIONAL REQUIREMENTS - VOLUME V

(a) Instructions for Preparation of the Model Contract. Offerors shall submit with its proposal, in Volume V, the Model Contract in its entirety (basic and any amendments) per the instructions below.

Table L.17.7-1: Model Contract and Additional Requirements

Contract Section	Areas of Model Contract Offerors are Required to Complete
Section A	Complete blocks 12 through 18, provide an electronic signature, and date the Standard Form 33.
Section B	Fill-in pricing tables, ensuring consistency with pricing templates in L-01, <i>Price Templates</i>
Section F	Fill-in place(s) of performance
Section H	Identification And Representation of Data With Restrictive or Limited Markings NFS 1852.235-71 – Fill-in name of program manager and key facilities JSC 52.219-90 – Fill-in Small Business Contracting Goals (if applicable) IDIQ Minimum Guarantee Supplement & Conditions – Fill-in date
Section I	Clauses Incorporated by Reference – Include 52.215-17 if Facilities Capital Cost of Money is not proposed; otherwise, remove this clause. Include 1852.219-79 if participating in the NASA Mentor-Protégé Program; otherwise, remove this clause. FAR 52.227-14– Fill-in expiration date in Government Purpose Rights Notice
Section J	Offerors shall fill-in all OFIs and submit the required documents. The list of Attachments requiring either Offeror Fill-ins or proposal are as follows: Attachment J-03, <i>Data Requirements Descriptions</i> (DRDs) (as required by L.17.3) Attachment J-07, <i>Organizational Conflicts of Interest (OCI) Plan</i> (to be proposed) Attachment J-08, <i>Small Business Subcontracting Plan</i> (to be proposed, if applicable) Attachment J-09, <i>Safety and Mission Assurance Plan</i> (to be proposed) Attachment J-10, <i>Insight and Collaboration Implementation Plan</i> ,

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	(to be proposed) Attachment J-11 <i>Certification Work Plan</i> (to be proposed) Attachment J-12 <i>Mission Service Work Plan Template</i> (to be proposed) Attachment J-13, <i>Government Furnished Property and Data/Information</i> Attachment J-14, <i>Government Task Agreement</i> (to be proposed) Attachment J-15 <i>Government Furnished Transportation & Support Services</i> (if proposed) Attachment J-16 <i>Government Property Management Plan</i> Attachment J-17 <i>Integrated CLDS Architecture</i> Attachment J-18 <i>Contract Security Specification Classification</i> Attachment J-19 <i>Crew Accommodations</i> Attachment J-20 <i>Letters of Commitment</i>
Section K	All representations and certifications shall be completed electronically and submitted with this volume in accordance with provisions in Section K.

(End of Text)

LIST OF SECTION L ATTACHMENTS

Attachment	Title
L-01	Price Template
L-02	Past Performance Matrix
L-03	Sample Past Performance Consent Letter
L-04	Contractor Responsibility Matrix
L-05	Government Task Agreement Form
L-06	NASA Center Partnership Office Points of Contact
L-07	Corporate Contribution Worksheet
L-08	Business Case Analysis Template

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Attachment L-01: Price Templates

Offerors fill-in and submit “Attachment L-01 Price Templates.xls”, attached with this solicitation.

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Attachment L-02: Past Performance Matrix

Offerors fill-in and submit “Attachment L-02 Past Performance Matrix.xls”, attached with this solicitation.

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Attachment L-03: Sample 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, 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, 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]

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 [80JSC026R0021] for the Commercial Low Earth Orbit (LEO) Destination contract.

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 and Title of individual who has the authority to sign for and legally bind the company) Company Name:

Address:

(End of Attachment)

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Attachment L-04: Contractor Responsibility Matrix

Offerors fill-in and submit “Attachment L-04, Contractor Responsibility Matrix.xls”, attached with this solicitation.

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Attachment L-05: Government Task Agreement Instructions & Template

Introduction

While the majority of work to be completed under this contract is anticipated to be performed by the Contractor at Contractor or subcontractor facilities, the Offeror or Contractor may propose to use resources that are on-site at a NASA facility, as described in paragraph (b)(1)(i) of contract clause, “Use of Government Resources”. In the event of a conflict between that clause and these instructions, the contract clause shall govern.

Note that NASA is also making a variety of optional Government-furnished equipment, property, and information (collectively, “Government-Furnished Resources,” or GFR) available to Contractors.

The Contractor’s elective use of any of those items shall be effectuated through the nominal contract mechanism for identification and use/management of GFR.

In the event that the Offeror requests optional GFR and the Offeror also requires NASA support in modifying, augmenting, transforming, or providing any additional certifications related to the requested item(s), the Offeror must also execute and submit an accompanying Government Task Agreement (GTA) requesting such support in accordance with the procedures and instructions set forth herein. It is imperative that the contractor understand that a GTA is intended to define the agreement of labor/material resources to make any modification, augmentation, etc. and the GTA does not relieve the contractor from property management approvals required to modify government equipment as specified in applicable contract or FAR clauses (i.e., FAR 52.245-1).

Instructions

The purpose of this document for a Government Task Agreement (GTA), is to memorialize the Offeror’s or Contractor’s requested approach to utilization of NASA on-site resources that are described in paragraph (b)(1)(i) of contract clause, “Use of Government Resources”. The Offeror shall submit all Offeror/NASA signed GTAs as attachments to its proposal.

NASA reserves the right to refuse a requested GTA or to disposition a GTA request with a response other than an estimate. This may occur for example if insufficient information is provided by the Offeror for the creation of an estimate, if NASA does not have the requested resource, if the requested resource is reasonably available commercially or if the requested resource is otherwise unavailable. If a GTA request is dispositioned with an estimate and the requester and NASA are unable to reach an agreed-upon cost prior to the GTA response deadline, the GTA request may be dispositioned as ‘refused.’

GTAs submitted with a proposal shall have an agreed-upon cost provided to the Offeror with signatures by the NASA Performing Organization POC, CLDP Manager and Authorized Offeror Representative. The cost of all GTAs will be added to the Offeror’s cost/price for purposes of calculating a Total Evaluated Price for proposal evaluation purposes (refer to L.17.2 Cost and Price Factor – Volume I and M.3 Cost and Price Factor (Volume I)).

Offerors are advised that if awarded a contract for this effort, any GTA may be amended or revised during performance as agreed to by NASA and the Contractor. During contract performance, the Parties may also agree to execute additional GTAs if they mutually determine such agreements are necessary to respond to new or changed circumstances that arise during

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performance. The Contractor shall be responsible for the cost of any such GTA, and the Parties shall effectuate the addition of new GTAs, and corresponding contract cost/price adjustments, pursuant to FAR 52.243-1 – Changes – Fixed-Price (ALT V) (for CLINs 1 through 3) and as incorporated herein. To propose new GTAs during contract performance, the Contractor shall work with the Contracting Officer and their duly delegated representatives.

The provision of any GTA shall be subject to a determination by the Government that any potential organizational conflicts of interest (OCIs) can be effectively avoided, negated, and/or adequately mitigated. If an OCI exists or the Government determines one exists, a mitigation approach must be provided to the Contracting Officer for determination and acceptance prior to executing the terms of any GTA.

For proposals that include hardware delivered to and/or tested at NASA centers, Offerors shall submit appropriate Safety and Health plans prior to delivery or testing to address hazardous materials/activities, environmental, and facilities considerations commensurate with their hardware and in accordance with NASA policy and regulations. Required documentation is dependent upon the hardware, identified hazards, and nature of the tests and facilities being exercised.

The Contractor shall indicate herein whether, as part of this GTA's performance, the Contractor is requesting to have any Contractor-provided "IT resources," as that term is defined at NFS 1852.204- 76, interface with NASA IT resources. If so, the Contractor's IT resources shall comply with the requirements at NFS 1852.240-76 and FAR 52.204-21. In evaluating such GTA requests, NASA will perform an IT assessment and identify any additional requirements in the final GTA. The Contractor shall meet all of the indicated requirements before its IT resources interface with NASA IT resources.

If the Offeror proposes to operate commercially owned Ground Support Equipment (GSE) at NASA owned facilities, the Offeror shall design such GSE in accordance with the standards agreed upon between the applicable NASA facility representatives and the Offeror. Such agreement must be reached prior to any GSE installation or operation at a NASA facility. The Offeror shall describe its approach to attaining this agreement, consisting of necessary NASA standards to be followed, design milestones and schedule, below in the section, 'Portion of the Task to be Performed by the Contractor.' For reference, and as an example, NASA standards specifically applicable to GSE operated at flight facilities are located here:

NASA-STD-5005 Standard for the Design and Fabrication of Ground Support Equipment
KSC-DE-512-SM Facility Systems, Ground Support Systems, and Ground Support Equipment
General Design Requirements

The Offeror shall use one GTA for each requested use of a facility, asset, or service except when the use of multiple on-site resources as part of a single overall endeavor is contemplated; for example, if a certain type of testing requires the use of three different NASA on-site resources, the Offeror may use one GTA for "testing" that indicates the use of three different on-site resources. Additionally, each GTA shall only be applicable to one Contract Line Item (CLIN). NASA's intention to provide the requested support is non-binding, non-exclusive and is contingent on the Offeror's proposal being selected, relevant Task Order authorization, and the availability of the required resources and appropriated funds, if applicable.

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Offerors shall submit all complete final GTA request form via email to the CLDP Program Office Contracting Officer Representative, Christopher Zuber, (Christopher.Zuber@nasa.gov) no later than 22 calendar days after the Final solicitation release to allow the Government to submit a timely response. Please include the following information in the subject line of the email: Offeror Name – CLDS GTA Request. NASA will disposition all GTA requests received by the deadline no later than 7 calendar days prior to CLDC proposal (Volumes I, II, IV and V) due date.

To assist with internal tracking purposes, a list of all the submitted GTA request titles, and submission date shall be submitted to the LEO Program Office Contracting Officer Representative, Christopher Zuber (Christopher.Zuber@nasa.gov) (Christopher.Zuber@nasa.gov) within 22 calendar days of the issue of the initial RFP.

How to Inquire About NASA On-Site Resources

To inquire about relevant, unique on-site resources at NASA Centers that may be available, Offerors shall contact the CLD, LEO Program Office Contracting Officer Representative, Christopher Zuber. The CLD, LEO Program Office Contracting Officer Representative will coordinate all requests for GTAs with the corresponding NASA Centers.

The Offeror or Contractor shall only request NASA facilities, assets, services, or other specialized resources that are unique and not reasonably available commercially. The Government has the right to refuse any GTA request for any reason.

During any blackout period in which the Offeror is drafting a contract proposal, communications with any government representative (i.e., CLD; LEO Program Office Contracting Officer Representative and NASA Performing Organization representatives) must be limited to sharing information about the specific GTA requested. The Government POC communications with the Offerors will not include any assistance in preparing the Offeror's proposal, advice, or opinions on the Offeror's proposed design solution or approach for performing the work requested by the CLDC solicitation or any information regarding the CLDS competition or its technical requirements.

Data Rights

All technical data (TD), computer software (CS), and computer software documentation (CSD) developed by the Contractor pursuant to a GTA shall be delivered to NASA with government purpose rights, as defined in contract clause FAR 52.227-14 RIGHTS IN DATA – GENERAL (MAY 2014) (DEVIATION) (ALT I) (DEC 2007) (ALT II) (DEC 2007) (ALT III) (DEC 2007) (AS MODIFIED BY NFS 1852.227-14, RIGHTS IN DATA). Assertions provided by the Offeror on its Identification and Representation that propose to deliver TD/CS/CSD developed pursuant to a GTA with less than government purpose rights will be rejected by NASA and will not be incorporated into the contract at or after award.

NASA and/or its related entities may have rights in intellectual property first produced by NASA and/or its related entities under a GTA, or in pre-existing intellectual property provided as part of meeting NASA's responsibilities under a GTA, as further enumerated in clause *Use of*

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Government Resources. Offerors are advised to discuss intellectual property rights with the Center POC to ensure a full understanding of the rights of NASA and its related entities in any intellectual property provided or first produced under a GTA.

Data Delivery

At no additional cost to NASA, the contractor shall deliver, to a NASA Program authorized repository defined by the Contracting Officer, all technical data, computer software, and computer software documentation developed under work performed pursuant to a GTA no later than sixty (60) calendar days after performance of the GTA has concluded.

Cost Information

For GTA requests that are dispositioned with an estimate, The NASA Performing Organization POC is responsible for providing the GTA Total Cost value in this template and reporting detailed cost information to the LEO Program Manager (or delegate). The detailed cost information will delineate, per fiscal year: (1) FTE and (2) WYE annualized equivalent labor; (3) FTE and (4) WYE labor equivalent cost; (5) material costs; (6) other costs projected; and (7) total cost. The detailed cost table template will be provided by the LEO Program Manager directly to the NASA POC for reporting.

Contract Performance

Upon contract award, all GTAs are subject to formal review and approval by the LEO Program Office, Contracting Officer Representative and Contracting Officer. Once funding has been secured from the appropriate organization, the Safety and Occupational Health Plan has been approved, and the Offeror has met all other requirements (e.g., standards applicable to GSE has been finalized and documented), the approved GTA(s) will be incorporated into Attachment J-14, *Government Task Agreements* of the contract authorizing the Contractor to proceed with the GTA(s).

GTA Template

The required Government Task Agreement template that Offerors shall use for each GTA is provided below.

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Government Task Agreement

COMMERCIAL LEO DESTINATION CONTRACT

Contractor Name:

Task No.		Task title		Date	
WBS No.		WBS title		Rev	
CLIN No.		<i>Note: Each GTA shall only be applicable to one CLIN (i.e., CLIN 1, 2, 3, 4, 5)</i>			

Points of Contact

	Authorized Offeror/Contractor Rep.	NASA POC
Name		
Location		
Office		
Cell		
Email		

Facility/Resource Name	
Location	

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Overall Task Objective

Describe the GTA effort in (at least) 1 – 2 sentences.

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Portion of the Task to be Performed by the Government

Describe the roles and responsibilities proposed to be completed by the Government as part of the GTA effort. Describe any products to be delivered by the Government to the Contractor as part of the GTA effort (e.g., hardware produced, training, test data, reports, etc.).

Portion of the Task to be Performed by the Contractor

Describe the Contractor roles and responsibilities to complete the GTA effort. Describe the items, labor support, and any additional provisions necessary (e.g., test hardware provided, Contractor labor support, test plans, etc.). Please include information about when and how the required TD/CS/CSD will be delivered to the Government (see “Data Delivery” above for more information).

Agreed Upon Schedule for Use of the On-Site NASA Resources

Detail the agreed-to schedule for GTA execution. Include milestone, number of events/runs and expected duration per GFY and Government product delivery dates.

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Any Other Pertinent Information

Provide any additional information pertinent to this request. Additional information shall include but is not limited to: assumptions for the cost and schedule estimates; justification for utilization of Government resources (see Instructions, above); details on the property Contractor intends to bring on-site; approach to show commercial GSE compliance with NASA Center-specific design standards; approach to IT compliance, as applicable (see above); and any reference Safety and Health Plans, as applicable.

Contractor's Process for Coordinating Significant Changes/Updates to this Agreement
Content here specifically addresses: (a) change process for the cost and schedule estimates associated with either technical changes, and/or program driven changes; (b) approach to premature cancellation of the GTA in the event that the offeror has decided to pursue alternative approaches to meeting their requirement.

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By signing this Agreement, the Offeror/Contractor acknowledges that the on-site resources specified herein, if provided by NASA, is provided subject to the contract’s applicable clauses, including but not limited to:

- NFS 1852.245–82 Occupancy Management Requirement
- Contract clause, Use of Government Resources

In accordance with FAR 52.245-1(d)(2)(iii), any Government-furnished property, equipment, or information utilized by the Contractor while on-site at a NASA facility is provided in an “as-is” condition. The Contractor bears the risk of loss at any time the property or equipment is in the Contractor’s possession, or the possession of one of its subcontractors, suppliers, or agents.

GTA Approvals			
Approver Title	Approver Name	Date	Signature
Authorized Offeror/Contractor Representative			
NASA Performing Organization Point of Contact			
LEO Program Office Contracting Officer Representative			
CLDC Contracting Officer			

All pre-award GTAs submitted with an Offeror’s proposal must be signed by Authorized Offeror/Contractor Representative, NASA Performing Organization POC and LEO Program Office Contracting Officer Representative (or delegate) to be considered valid for evaluation purposes.

All post-award GTAs must be signed by Authorized Contractor Representative, NASA Performing Organization POC and LEO Program Office Contracting Officer Representative (or delegate) and the CLDC Contracting Officer.

(End of Attachment)

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Attachment L-06: NASA Partnership Points of Contact

Center	NASA Partnership Office Points of Contact			
		Name	Email	Phone Number
Ames Research Center	Primary	David Mauro	mailto:sally.a.cahill@nasa.gov id.mauro@nasa.gov	(650) 660-5279
	Secondary	Sharmila Bhattacharya	sharmila.bhattacharya@nasa.gov	(650) 269-5865
Armstrong Flight Research Center	Primary	Patricia Ortiz	patricia.ortiz@nasa.gov	(661) 276-3334
	Secondary	Laurie Grindle	laurie.a.grindle@nasa.gov	(661) 276-2988
Glenn Research Center	Primary	Robert Corban	robert.r.corban@nasa.gov	(216) 433-6642
	Secondary	Cody Farianacci	cody.w.farinacci@nasa.gov mailto:robert.j.bruckner@nasa.gov	(216) 551-0900
Goddard Space Flight Center	Primary	Mark Lupisella	mark.l.lupisella@nasa.gov	(301) 286-2918
	Secondary		mailto:kenneth.a.costello@nasa.gov	
Jet Propulsion Laboratory	Primary	David Eisenman	david.j.eisenman@jpl.nasa.gov	(818) 354-4430
	Secondary	None		
Johnson Space Center & White Sands Test Facility	Primary	Molly Bannon	molly.bannon@nasa.gov	(832) 205-0943
	Secondary	Montgomery Goforth	montgomery.b.goforth@nasa.gov	(281) 244-1117
Kennedy Space Center	Primary	Mark Lewis	mark.e.lewis@nasa.gov	(321) 861-7129
	Secondary	David Cook	david.j.cook@nasa.gov	(321) 867-0194
Langley Research Center	Primary	Chris Giersch	christopher.e.giersch@nasa.gov	(757) 864-6590
	Secondary	None		
Marshall Space Flight Center	Primary	Justin Jackson	justin.r.jackson@nasa.gov	(256) 701-7204
	Secondary	Quincy Bean	quincy.a.bean@nasa.gov	(256) 791-2613
Stennis Space Center	Primary	Adam Murrah	adam.w.murrah@nasa.gov	(228) 688-1619
	Secondary	C. Duane Armstrong	curtis.d.armstrong@nasa.gov	(228) 688-2180
	Primary	Ben Ashman	benjamin.w.ashman@nasa.gov	(937) 219-4707

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SCaN			mailto:James.c.armitage@nasa.gov	
	Secondary	Emily Johnson	emily.e.johnson@nasa.gov	(216) 598-9966
Katherin Johnson IV&V Facility	Primary	Jarrold Petersavage	jarrod.m.petersavage@nasa.gov	(304) 367-8274
	Secondary	Ken Costello	kenneth.a.costello@nasa.gov	(304) 784-9421

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Attachment L-07 Corporate Contribution Worksheet

Offerors fill-in and submit “Attachment L-07 Corporate Contribution Templates.xls”, attached with this solicitation.

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Attachment L-08 Business Case Analysis Template

Offerors fill-in and submit “Attachment L-08 Business Case Analysis.xls”, attached with this solicitation.

(End of Section)

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PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION M EVALUATION FACTORS FOR AWARD

SECTION M - EVALUATION FACTORS FOR AWARD

M.1 CLAUSES INCORPORATED BY REFERENCE

Clause(s) at the beginning of this Section are incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause FAR 52.252-2, *Clauses Incorporated by Reference*, of this contract.

FAR Clause(s) Included by Reference:		
Clause No.	DATE	DESCRIPTION & FILL-IN (If applicable)
52.217-5	SEPT 2025	EVALUATION OF OPTIONS

(End of by reference clauses)

M.2 SOURCE EVALUATION BOARD 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.

Acceptable 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. Subfactors are evaluated in accordance with NFS 1815.305(a)(3)(A). 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 or multiple contracts resulting from this solicitation to the responsible Offeror or Offerors whose proposal(s) represents the best value to the Government. This procurement shall be conducted utilizing a combination of price, mission suitability, and past performance evaluation factors. The lowest price proposals may not necessarily receive an award; likewise, the highest technically rated proposals may not necessarily receive an award.

Mission Suitability and Past Performance, when combined, are approximately equal to the Price factor. As individual factors, Mission Suitability factor is significantly more important than Past Performance factor.

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.

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION M EVALUATION FACTORS FOR AWARD

The Government reserves the right to select for award multiple, one, or none of the proposals received in response to this solicitation. The Government reserves the right to award the Initial Task Order to the awardee(s), if any, of the CLDC Contract.

As provided for in FAR 52.215-1(f)(4), “Instructions to Offerors – Competitive Acquisitions”, the Government intends to evaluate proposals and award a contract without negotiations with Offerors (and may conduct clarifications as described in FAR 15.202(a)(2)). Therefore, the Offeror’s initial proposal should contain the Offeror’s best terms from a cost or price and mission suitability standpoint. The Government reserves the right to conduct negotiations if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines negotiations to be necessary, negotiations will be conducted in accordance with FAR 15.204-2 paragraph b. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated Proposals.

(End of Text)

M.3 PRICE FACTOR (VOLUME I)

The Government will perform a price analysis of the Total Evaluated Price (TEP) of all proposals received in response to this solicitation and found to be acceptable under NASA FAR Supplement (NFS) 1815.108-71, *Identification of Unacceptable Proposals*. It is anticipated that the reasonableness of the proposed price will be determined based on competition. The Government will perform these analyses in accordance with FAR 15.202 - *Evaluating competitive proposals*, FAR 15.404-1 - *Price analysis*. Offerors should refer to FAR 15.404-1 for a discussion of price analysis techniques

In the event the proposed prices in Section B of the model contract differ from the proposed prices provided in Volume I, Price Factor, the Government will use the Section B prices to monetize the cost impact as part of the cost realism analysis per FAR 15.404-3 discussed below. Offerors are reminded and cautioned that Section B pricing must match the Excel pricing identified in Tab "Total Evaluated Price".

The TEP will be used to evaluate the reasonableness of the proposed prices for the subject CLINs identified in section L.17.2 (not including CLIN 4, Optional Services, which will be evaluated as part of mission suitability and not included in the TEP) using price analysis techniques from FAR 15.404-1. The TEP will be calculated pursuant to the instructions in Section L.17.2, *Price Factor – Volume I*. The TEP is for evaluation purposes only, does not commit the Government to a contract value determination, and is not required to align with the NTE amount for this contract.

The Government will perform a cost realism analysis per FAR 15.404-3 *Cost realism analysis*, paragraph (c) *Competitive fixed-price-type contracts*, and the results will be

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presented to the Source Selection Official. In accordance with the FAR, offerors' firm-fixed-prices will not be adjusted as a result of the analysis.

The proposed TEP and the results of the Government's analysis will be presented to the Source Selection Authority (SSA) for consideration in making a source selection decision.

Unbalanced Pricing. The Offerors' proposals will be evaluated for unbalanced pricing utilizing cost or price analysis techniques. In accordance with FAR 15.404-6(b)(2), a proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(End of Text)

M.4 MISSION SUITABILITY FACTOR (VOLUME II) MAR 2026)

(a) In accordance with FAR Subpart 15.2, the Government will evaluate the offeror's demonstrated understanding of the Mission Suitability subfactor requirements and approach for accomplishing those requirements, the appropriateness of the offeror's proposed resources, and associated programmatic risk. The Government will validate the consistency between all proposal volumes and any inconsistencies identified may indicate a lack of understanding and adversely impact the offeror's adjectival rating(s) and score. Only that information provided within the proposal will be evaluated; any reference to previously submitted information, if any, will be considered only to the extent the information is resubmitted as part of the proposal. Information incorporated by reference will not be considered or evaluated.

(b) Subfactors will be numerically weighted and scored in accordance with the 1,000-point scale provided below. 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 the 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. Subfactors will be numerically weighted and scored in accordance with the 1,000-point scale provided below.

Subfactor	Points
<i>Technical Approach</i>	550
<i>Management Approach</i>	400
<i>Small Business Utilization</i>	50
Total	1,000

(c) In accordance with FAR 15.001, weaknesses, significant weaknesses, and deficiencies will be assessed based on the following definitions:

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Weakness means a flaw in the proposal that increases the risk of unsuccessful contract performance.

Significant weakness in the proposal is a flaw that appreciably increases the risk of unsuccessful contract performance.

Deficiency is any part of an offer that does not conform to a material requirement of a RFP. A material requirement is one that affects price, quantity, quality, or delivery, or that the RFP requires to be met at the time of proposal submission.

Additionally, strengths and significant strengths will be assessed based on the following definitions:

Strength is an aspect of the proposal that will have some positive impact on the successful performance of the contract.

Significant strength is some aspect of the proposal that greatly enhances the potential for successful contract performance.

(d) The Government will assign adjectival ratings and numerical scores for each subfactor using the adjectival ratings, definitions, and percentile ranges set forth below:

ADJECTIVAL RATING	DEFINITIONS	PERCENTILE RANGE
Excellent	A comprehensive and thorough proposal of exceptional merit with one or more significant strengths. No deficiency or significant weakness exists.	91-100
Very Good	A proposal having no deficiency, and which demonstrates over-all competence. One or more significant strengths have been found, and strengths outbalance any weaknesses that exist.	71-90
Good	A proposal having no deficiency, and which shows a reasonably sound response. There may be strengths or weaknesses, or both. As a whole, weaknesses not off-set by strengths do not significantly detract from the offeror's response.	51-70
Fair	A proposal having no deficiency and which has one or more weaknesses. Weaknesses outbalance any strengths.	31-50
Poor	A proposal that has one or more deficiencies or significant weaknesses that demonstrate a lack of	0-30

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	overall competence or would require a major proposal revision to correct.	
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(e) The Government will establish a total Mission Suitability factor numerical score by adding all of the subfactor points assessed. A summary adjectival rating will not be assigned for this factor.

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 its Mission Suitability score. The elements (TA1, TA2, MA1, MA2, etc.) described under each subfactor are listed in no particular order of importance and are not assigned pre-determined weights or points.(End of text)

M.4.1 TECHNICAL APPROACH - MISSION SUITABILITY SUBFACTOR 1

The Offeror's Overall Technical Approach, including the use of applicable GTAs (with supporting rationale) for fulfilling the contract requirements, will be evaluated using the subfactor elements as described below. NASA will evaluate the impact and ensuing risk to the Government as it relates to the demonstrated understanding, completeness, reasonableness, safety and feasibility of each proposed Technical Approach. NASA will evaluate the impact and ensuing risk to the Government as it relates to the demonstrated understanding, completeness, reasonableness and feasibility of each proposed Technical Approach, TA.1 through TA.4.

TA.1 System Architecture

The Offeror's System Architecture will be evaluated.

Approaches that demonstrate an IMS, architecture and assembly plan with a highly credible and resilient path to providing the Standard Mission capability, while explicitly defining and maintaining realistic schedule and risk margins may be evaluated more favorably if it is determined to be advantageous to the government.

Approaches that demonstrate a reduction in technical and schedule risks through the strategic use of high Technology Readiness Level (TRL) systems and highly credible technology maturation plans for lower TRL solutions may be evaluated more favorably if it is determined to be advantageous to the government.(End of Text)

TA.2 Certification & Engineering

The Offeror's Certification and Engineering approach will be evaluated.

Approaches that provide Certification and Verification and Validation (V&V) strategies that maximize hardware-in-the-loop and software-in-the-loop testing in realistic environments to

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proactively burn down technical risk prior to final certification may be evaluated more favorably if it is determined to be advantageous to the government.

(End of Text)

TA.3 Services Mission & Utilization Capabilities

The Offeror's Service Mission strategy and Utilization Capabilities approach will be evaluated.

(End of Text)

TA.4 Safety and Mission Assurance (S&MA) Approach

The Offeror's Safety & Mission Assurance approach and DRD CLDC-115.1 *Safety and Mission Assurance Plan* will be evaluated.

(End of Text)

M.4.2 MANAGEMENT APPROACH (MA) - MISSION SUITABILITY SUBFACTOR 2

The Offeror's Overall Management Approach including applicable GTAs (with supporting rationale) for fulfilling the contract requirements, will be evaluated using the subfactor elements as described below. NASA will evaluate the overall impact and risk to the Government as it relates to the demonstrated understanding, completeness, reasonableness and feasibility of each proposed Management Approach, MA.1 through MA.4.

MA.1 Program Management Approach

The Offeror's Program Management will be evaluated.

Approaches that demonstrate the ability to assemble, maintain, and adapt an integrated workforce with the appropriate sizing and expertise to successfully accomplish the Demonstration Mission and transition to Standard Missions may be evaluated more favorably if it is determined to be advantageous to the Government.

Approaches that provide an organizational structure that demonstrates clear lines of authority, effective subcontractor and teaming partner integration, and robust logistics and supply chain management may be evaluated more favorably if it is determined to be advantageous to the Government.

(End of Text)

MA.2 Commercialization and Business Approach

The Offeror's Commercialization and Business Approach and DRD CLDC-002

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Commercialization Plan, Attachment L-07 *Corporate Contribution Worksheet* and L-08 *Business Case Analysis Template* will be evaluated.

Approaches that provide business models that demonstrate viable, profitable, and free-cash-flow positive during the life of the station, backed by a strong, quantifiable non-NASA financial commitment (private capital), may be evaluated more favorably if it is determined to be advantageous to the government. Attachment L-07 *Corporate Contribution Worksheet* and L-08 *Business Case Analysis Template* will be used in conjunction with DRD CLDC-002 *Commercialization Plan* to evaluate the Offeror's business plan and commercialization strategy.

(End of Text)

MA.3 Insight Implementation

The Offeror's Insight Implementation approach included in Attachment J-10 *Insight and Collaboration Implementation Plan* will be evaluated.

Solutions that maximize NASA Insight through near real-time, frictionless digital access to development, testing, and operational data, fostering a highly effective working relationship, may be evaluated more favorably if it is determined to be advantageous to the government.

Approaches that identify areas for industry/NASA collaborations that align with NASA core competencies to reduce crew and vehicle safety risks and development schedule may be evaluated more favorably if it is determined to be advantageous to the Government.

(End of Text)

MA.4 Work Plan

The Offeror's Attachment J-11 *Certification Work Plan* and Attachment J-12 *Mission Service Work Plan Template* will be evaluated.

(End of Text)

**M.4.3 SMALL BUSINESS UTILIZATION (SBU) - MISSION SUITABILITY
SUBFACTOR 3**

(Small Business Offerors will not be evaluated in this section, but will receive full allocation of Small Business Mission Suitability points under subfactor of Small Business Utilization.)

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. NASA will evaluate the proposed Small Business

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Subcontracting and Commitment to the Small Business Program as it relates to the 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 and other of the SBU Approach requested below.

The Government will assign adjectival ratings and numerical scores for the Small Business Utilization subfactor using the adjectival ratings, definitions, and percentile ranges set forth below:

ADJECTIVAL RATING	DEFINITIONS	PERCENTILE RANGE
Excellent	Proposal demonstrates substantial and meaningful small business participation relative to total SB subcontract value and/or total contract value. Workshare is clearly defined, mission-relevant, and includes technically significant or critical path functions. Named small business partners with documented commitment (e.g., LOIs or teaming agreements). No deficiency or significant weakness exists.	91-100
Very Good	Proposal demonstrates meaningful small business participation relative to total SB subcontract value and/or total contract value with defined roles and measurable workshare. Small businesses perform important but not necessarily critical path functions. Named or clearly identifiable partners. The plan has no deficiency and demonstrates overall competence. One or more significant strengths have been found, and strengths outbalance any weaknesses that exist.	71-90
Good	Proposal includes small business participation with generally defined workshare, but scope or technical significance is limited. Roles may be support-oriented rather than core requirements. The proposal has no deficiency and shows a reasonably sound response. There may be strengths or weaknesses, or both. As a whole, weaknesses not offset by strengths do not significantly detract from the offeror's response	51-70

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Fair	Proposal includes minimal or nominal small business participation. Workshare lacks technical depth, value clarity, or defined deliverables. The proposal lacks documented commitments, defined work allocation, or measurable participation controls necessary to support execution. The proposal has no deficiency and has one or more weaknesses. Weaknesses outbalance any strengths.	31-50
Poor	Proposal fails to demonstrate meaningful small business participation. Workshare undefined, nominal, or not credibly integrated into performance. Significant weaknesses or deficiencies in participation approach. High likelihood of non-achievement. No evidence of SBU. Major proposal revision required to become acceptable. The proposal has one or more deficiencies or significant weaknesses that demonstrate a lack of overall competence or could require a major proposal revision to correct.	0-30

SBU.1 Small Business Subcontracting

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 Attachment J-08 *Small Business Subcontracting Plan and Reports* Attachment C, Small Business Subcontracting Tables submission 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 its first-tier subcontractors.

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SBU.2 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 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 its 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 Text)

M.5 JSC 52.215-115 PAST PERFORMANCE FACTOR (VOLUME III) (JUL 2022)

(a) Past Performance indicates how well an offeror performed on earlier work and can be a significant indicator of how well it can be expected to perform the work at hand. The evaluation team will evaluate the past performance of the offeror and team members, as defined in L.17.4, Past Performance Factor – Volume III.

(b) The Government will use past performance information from proposal data required by provisions of Section L, *Instructions, Conditions, and Notices to Offerors or Respondents*, information obtained by the evaluation team based on communications with listed references, as well as data independently obtained from other Government and commercial sources, such as the Contractor Performance Assessment Reporting 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 15.202(c)(1), an offeror without a record of relevant past performance or for whom information on past performance is not available, will be assigned a rating of neutral.

(c) Three aspects are taken into consideration by the evaluation team when determining each offeror’s past performance confidence rating. These aspects are recency, relevance, and performance. The past performance of a prime or team member will be compared to the work

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proposed to be performed by that prime or team member and weighted accordingly in assigning the overall past performance confidence rating to the offeror. The past performance of an existing joint venture will be weighted more heavily than work performed by its joint venture partners separately. In determining relevance, 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 CLDC effort and the specific resources (workforce, management, facilities, or other resources) to be employed and relied upon, to demonstrate that the corporate parent, affiliate, or other organizational entity will have meaningful involvement in performance of CLDC. Offerors with past performance as part of a joint venture will be evaluated on the entirety of the work performed by the joint venture.

(d) A description of each aspect is provided below.

(1) Recency: Only contract period of performances within five (5) years from the date of the CLDC original solicitation will be considered in the past performance evaluation. Within this five (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 performance on any contract that has no documented performance history.

(2) 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. The term “content” considers the contract’s scope of services, work, requirements, or supplies, in comparison to the requirements of this solicitation.

Contracts that exhibit all specific trades/type of work required under the solicitation SOW will be considered more relevant than contracts limited to specific trades only. The term complexity considers items such as: contract type, duration of period of performance, performance related to spaceflight system development, and interface requirements involving multiple entities. For purposes of this procurement, relevance will be assessed using the following definitions:

Very Relevant	Present/past performance effort involved essentially the same content, complexity, and size of effort this solicitation requires.
Relevant	Present/past performance effort involved much of the content, complexity, and size of effort this solicitation requires.
Somewhat Relevant	Present/past performance contractual effort involved some of the content, complexity, and size of effort this solicitation requires.
Not Relevant	Present/past performance effort involved little or none of the content, complexity, and size of effort this solicitation requires.

(4) 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

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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 performance. For existing and newly formed joint ventures, the performance of each joint venture partner will be evaluated separately. Also, for existing joint ventures, the past performance of the joint venture will be evaluated. This assessment will lead the Government to determine the quality of performance as either Excellent, Very Good, Satisfactory, Marginal, or Poor/Unsatisfactory

(e) 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." Past Performance Confidence 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

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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 15.202(c)(1)].

(End of Provision)

M.6 RESPONSIBILITY CONSIDERATIONS (VOLUME IV)

(a) The procedures for determining whether prospective contractors and subcontractors are responsible are set forth in Federal Acquisition Regulation (FAR) Subpart 9.1 and NASA FAR Subpart 1809.1. Failure by the offeror to affirmatively demonstrate adequate compliance with the general standards of prospective contractor responsibility at FAR 9.104-1, will result in a determination of non-responsibility. As with all aspects of prospective contractor responsibility, a finding of non-responsibility can be made at any time prior to contract award. Per FAR 9.103(b), if the prospective contractor is a small business concern, responsibility will be determined in accordance with Subpart 19.204, *Certificate of Competency*. If the prospective contractor is a Section 8(a) participant, see Subpart 19.108.

(b) Additional requirements for eligibility have been established for this acquisition. The Government may communicate with offerors about the eligibility requirement(s) identified below outside of the evaluation process. This communication does not constitute competitive negotiations as defined in FAR 15.204-2. If the following eligibility requirements cannot be made acceptable to the Government, the offeror will be considered ineligible for award:

(1) Organizational Conflict of Interest (OCI) Plan in accordance with the Notice of Potential Organizational Conflicts of Interest in Section L and FAR 9.504. The proposed OCI plan must be consistent with all other areas of the proposal. Material inconsistencies between the plan and other proposal areas may render the proposal invalid, resulting in an unacceptable proposal that is ineligible for award. 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 will 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 whether the issue can be mitigated.

(2) Domestic Source Certification. The Offerors' Domestic Source Certification will be assessed to assure that all requirements in accordance with Clause, *United States Commercial*

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Provider and Domestic Source Criteria, have been met.

(3) Financial Capability Disclosure Information. The Government will perform an analysis utilizing information described under Section L.17.5, *Responsibility Considerations – Volume IV*, to ensure the Offeror’s financial ability to accomplish contract functions while adhering to fixed pricing proposed in Section B.

(4) Indemnification Under Public Law 85-804 Request. The Government will perform an analysis utilizing information described under Section L.29, *Responsibility Considerations – Volume IV*, to ensure the Offeror’s request is compliant with Public Law 85-804.

(End of Provision)

M.7 MODEL CONTRACT (VOLUME V)

(a) The model contract will not be evaluated for selection purposes. It will, however, be reviewed 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 in its entirety, and that it accurately captures the content as set forth in the Offeror’s proposal. Errors, omissions, or inconsistencies in the Model Contract may result in an offeror being removed from consideration for award.

(b) The Government reserves the right to incorporate the offeror’s documentation (e.g., plans) submitted in response to Data Requirements Descriptions in the RFP and/or information in a clause fill-in 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 (e.g., insert the contract number, insert the value of obligated funding at contract award), prior to executing the contract. The Contractor agrees that such changes shall be construed as administrative and that they will not be construed as a counteroffer.

(c) Model Contract deletions or revisions differing from the requirements set forth by the Government will not be considered and may result in an offeror's proposal being unacceptable in accordance with NFS 1815.305-70, *Identification of unacceptable proposals*.

(End of Provision)

(End of Section)

(End of RFP)