

Commercial LEO Destinations

Announcement 80JSC021CLD

**FINAL
Amendment 3**

(August 5, 2021)

**Proposals Due:
August 26, 2021**

**Commercial LEO Development Program Office
Lyndon B. Johnson Space Center
Human Exploration & Operations Mission Directorate
National Aeronautics and Space Administration**

For Questions Regarding This Announcement Visit:

<https://procurement.jsc.nasa.gov/CLD/>

AMENDMENTS AND HISTORY PAGE

Amend No.	DESCRIPTION	DATE
-	Announcement Release	7/12/21
1	Corrects typos	7/14/21
2	Revised section 4.2.3 B3.C and SAA Article 27 A.	7/23/21
3	Revised proposal submittal instructions in section 4.1. In section 4.2.3, B3.C, clarified that major partners shall be identified. In section 4.2.6, allows major partner and supplier data to be included in Appendix 2.	8/5/21

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1. BACKGROUND

The National Aeronautics and Space Administration (NASA) has established the Commercial Low Earth Orbit (LEO) Development Program at the Johnson Space Center as part of the Human Exploration and Operations Mission Directorate. The objectives of the Program are to:

- Develop a robust commercial space economy in LEO, including supporting the development of commercially owned and operated LEO destinations from which various customers, including private entities, public institutions, NASA, and foreign governments, can purchase services; and
- Stimulate the growth of commercial activities in LEO.

To achieve the Commercial LEO Development Program's overall goals, NASA developed and is implementing a five-point plan. Entitled [NASA's Plan for Commercial LEO Development](#), it addresses how NASA participates with industry to develop commercial LEO destinations, stimulates demand for new and emerging markets in LEO, and takes near-term steps to achieve a robust economy in LEO. The third point in this plan is to initiate the process for commercial development of LEO destinations.

In order to cost-effectively meet U.S. long-term research and technology development needs in low-Earth orbit (LEO), a robust commercial human spaceflight economy must be established including commercial destinations and new markets to allow various customers access to a broad portfolio of commercial products and services. Development and operation of a commercial destination to provide those services will require significant private investment over many years and significant non-NASA demand to ensure long-term financial viability.

This announcement solicits proposals for Phase 1 of the two-phased Commercial LEO Destinations (CLD) project. As a result of this competition, NASA anticipates entering into multiple agreements with private industry to support development of the vehicles, systems, and operations needed to deploy and operate free-flying LEO destinations to meet the potential future needs of various customers including the US Government.

2. PROJECT STRUCTURE

2.1 Approach

In this announcement, CLD refers to an independent, free-flying facility operating in an orbit selected by the participant. CLD is envisioned to be executed in two phases:

- Phase 1 – A period of formulation and design by private industry, in coordination with NASA, of CLD capabilities determined to be most suitable for potential Government and private sector customer needs. Under Phase 1, NASA will support participants via Funded Space Act Agreements. Agreement under 51 U.S.C. 20113. Participants are expected to achieve at least a Preliminary Design Review (PDR) level of maturity.
- Phase 2 – A potential competitive procurement under the Federal Acquisition Regulation (FAR) of services in LEO, which would include certification by NASA of the transportation and accommodations of NASA crew and payloads on CLD. Under Phase 2, NASA would seek to purchase an end-to-end CLD service including:
 - Transportation of NASA crew to and accommodation on CLD and return to Earth;
 - Transportation of NASA payloads to and accommodation on CLD;
 - Transportation of samples, materials, and crew equipment to CLD and return to Earth; and
 - Disposal of waste and payloads no longer required by NASA.

NASA's Phase 2 service needs will also mature in parallel with Phase 1. Preliminary service goals are described in the next section. Additionally, proposers may refer to a NASA demand forecast available in the CLD Technical Library at <https://procurement.jsc.nasa.gov/CLD/>. Post award, NASA will provide draft service requirements.

The activities associated with the implementation of Phase 1 will be governed by this Announcement and any resulting Space Act Agreements (SAAs). All information, instructions, and periods of performance provided herein refer to Phase 1 unless otherwise specified. NASA intends to enter into at least two funded agreements resulting from this Announcement.

2.2 Goals

2.2.1 Overall CLD Project Goals

- Development of safe, reliable and cost-effective LEO destinations
- Capability to accommodate crew and payloads for multiple customers.
- Continuous human presence. (Participants may propose ramping up capabilities in response to projected markets, but concepts which have continuous human presence or culminate in continuous human presence will be of higher value.)
- By the end of the term of the Funded SAA, reach at least a PDR level of design maturity (this is approximate, based on NASA's definition of PDR found in [NPR 7123.1C](#)).

- Encourage development of LEO economy
 - Non-government customers
 - Profitable operations
 - Significant non-NASA investment
 - Competition
- CLD operational status (able to provide on-orbit services) as early as possible)
- Able to provide “turnkey” operations to customers
 - Including crew, cargo and payload transportation, utilities, etc.
 - Requiring minimal government-furnished equipment or services
- Early demonstrations of hardware, subsystems, and key technologies.

2.2.2 Crew Service Goals

Service goals for accommodation of customer crew:

- Accommodations on CLD of at least two crew.
- Continuous crew presence on CLD (this can be an evolutionary capability).
- Flexible frequency of crew rotation, including occasional crew stays of six months, one year, or longer.
- Crew supplies and support (food, hygiene, medical, exercise, etc.).

2.2.3 Payload and Facility Service Goals

- Able to accommodate internal pressurized payloads and facilities
 - Able to accommodate Middeck Locker Equivalents (MLE) to accommodate heritage payloads. New payloads can be built to participant’s interface requirements.
 - Able to accommodate payloads and facilities that are larger than MLEs.
- Able to accommodate approximately six external unpressurized payloads, oriented as one ram, one wake, two nadir, and two zenith.

2.2.4 “Stretch” Service Goals

In addition to evaluating the overall CLD goals listed above, NASA will also evaluate proposed CLD concepts for their ability to provide the following ancillary service capabilities listed here. Implementation of these goals should not impact the CLD’s primary goal to provide the services described in the sections above in a safe, reliable, and cost-effective manner. Optional or evolutionary approaches to support these stretch goals can be proposed along with approximate development costs.

2.2.4.1 Exploration Analog Services

Capability to perform exploration analog missions on the CLD to simulate deep space transportation conditions with environmental and acoustic isolation of a crew from other CLD activity and dedicated use of customer-furnished exploration test beds. Key components for consideration include:

- Up to 4 crew members
- Crew volume of approximately 100 cubic meters
- Isolation, both in terms of environmental and sensory, from any other CLD activities
- In-situ sample processing & analysis of blood, urine, saliva, omics, chemistry, cytometry
- Mission duration of 30 days to one year or more
- Potential test beds:
 - ECLSS
 - Food system with cold stowage
 - Exercise equipment
 - Medical equipment

2.2.4.2 Artificial/Partial Gravity Services

Capability to perform up to human-scale artificial gravity research such as to simulate Moon and/or Mars surface gravity for experiments or as a countermeasure to the effects of microgravity on crew health and performance.

2.2.5 Background Information to Aid in Proposal Development

NASA provides the following information as context to aid participants in their proposal development. This is based on approximate historical measurements from NASA's International Space Station (ISS) experience. This information does not represent NASA's current or future requirements, nor an estimation of what NASA expects in a participant's proposed concept.

Crew supplies consists of food and beverages, clothing, housekeeping supplies, office supplies, water, oxygen, and toilet consumables. ISS has a Regenerative ECLSS that recovers the majority of water used for crew consumption. Note that NASA calculates crew water consumption at approximately 2.8 L per person per day, plus an additional approximate 1.0 L of water per person per day for generating oxygen with the ISS oxygen generator. With Regenerative ELCSS, ISS requires approximately 6 kilograms per person/per day of resupply. Note that this does not include the contingency reserve that ISS maintains.

Payload accommodations on ISS include a minimum of 175 cubic feet of reconfigurable payload lockers, a minimum of 30 cubic feet of cold stowage for samples, a combustion facility, a glovebox facility, a microscope facility and a furnace facility. This level of utilization is supported by currently 4 crew providing 68.5 hours of payload support per week.

2.3 Phases and Milestones

The scope of the Funded SAAs which result from this Announcement covers the early design of CLD. It is NASA's intent to structure Phase 1 into two periods:

1. Base Period – resulting in at least a Preliminary Design Review or commercial equivalent level of maturity.
2. Optional Period – resulting in at least a Critical Design Review or commercial equivalent level of maturity.

The SAAs shall have milestones with objective success criteria, the meeting of which will result in a fixed payment from NASA. NASA will use data provided by the participant to determine whether the participant has successfully met the stated criteria. As a general guideline, there should be approximately one milestone per quarter. Milestones generally should show value in the level of content, provide detailed objective success criteria, and be reasonable and realistic.

Milestones should include:

- Typical project lifecycle gates and reviews
 - Provide verifiable confidence of safe design and operations
 - Provide detailed entrance and exit criteria consistent with the milestone type including proposed data drops to NASA and disposition of milestone findings
 - Establish the proposed level of Government insight including data access and availability
- Technical achievements that demonstrate the readiness of major systems, and/or performance of integrated functions pertinent to the above stated goals.
 - Achieve significant risk reduction through testing
- Business progress, such as financing and marketing achievements
 - Reflect Participant's funding schedule and sources

The following milestones are recommended. These milestones are defined in "NASA Systems Engineering Processes and Requirements," [NPR 7123.1C](#), including recommended entrance and success criteria. Participant-proposed commercial tailoring is permitted.

- System Requirements Review
- System Definition Review
- Preliminary Design Review

As part of its proposal, the participant will propose milestones in the milestone table of the SAA. This may include an initial project kickoff review milestone. NASA will evaluate the participant's proposed milestones and may negotiate changes to proposed payments, milestone content, and dates.

The participant is expected to maximize external funding sources to achieve its milestones under the Funded SAA. Accordingly, NASA's milestone payment will not cover the total cost of achieving each milestone. In determining its milestone payment amount, NASA will consider the overall proposed progress of the CLD design process. Once documented in the executed SAA, NASA's funding contribution for each milestone will be a fixed amount and will not be increased.

2.4 Project Schedule

NASA will commence its support activities with the participant upon execution of the SAA, which is targeted for early fiscal year (FY) 2022 and will end those activities in late FY 2025. For purposes of the proposal, participants shall assume Phase II service contract award at the beginning of FY 2026 and transition of NASA utilization from ISS to CLD over the FY 2029-30 period. As described in section 2.3, the participant is requested to propose an Optional Period with additional milestones to achieve a CDR-level of maturity.

The schedule for the competition is posted at <https://procurement.jsc.nasa.gov/CLD/>. Participants are encouraged to refer regularly to this site for updates to the schedule and other current news and information.

3. INFORMATION FOR PARTICIPANTS

3.1 General Information

Agency: National Aeronautics and Space Administration

Program Office: Commercial LEO Development Program Office
Johnson Space Center, Mail Code UA
Houston, TX 77058-3696

Blackout: A blackout notice will be issued to NASA personnel upon publication of this Announcement, restricting all communications with potential proposers regarding this competition.

Proposal Due Date: August 26, 2021, 2:00 pm CDT

Point of Contact: All questions shall be directed to the cognizant NASA official as specified below:

Agreements Officer: Lawrence Miller
Telephone: 832.985.2928
Email: JSC-CLD-Competition@nasa.gov

Additional Information: The Announcement, related documents, and CLD Technical Library, as well as current news and other information, may be obtained and downloaded over the Internet at: <https://procurement.jsc.nasa.gov/CLD/>

3.2 Eligibility Requirements

Subject to Section 3.2.2, Compliance with U.S. Laws, Regulations and Policies, the following entities are eligible to be awarded a Funded SAA under this Announcement:

An entity organized under the laws of the United States or of a State, which is:

- A. More than 50 percent owned by United States nationals; or
- B. A subsidiary of a foreign company and the Secretary of Transportation finds that –
 - (i) Such subsidiary has in the past evidenced a substantial commitment to the United States market through –
 - a. Investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and
 - b. Significant contributions to employment in the United States; and
 - (ii) The country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph A comparable to that afforded to such foreign company's subsidiary in the United States, as evidenced by –
 - a. Providing comparable opportunities for companies described in subparagraph A. to participate in Government sponsored research and development similar to that authorized under Title 51 U.S.C. Chapter 501 (Space Commerce);
 - b. Providing no barriers, to companies described in subparagraph A. with respect to local investment opportunities, that are not provided to foreign companies in the United States; and
 - c. Providing adequate and effective protection for the intellectual property rights of companies described in subparagraph A.

Foreign research participation: NASA's policy is to conduct research with foreign entities on a cooperative, no-exchange-of funds basis. Although foreign individuals employed by a U.S. award recipient in support of the Funded SAA may receive NASA funds, NASA funding may not support research efforts by non-U.S. organizations, collaborators or subcontracts at any level, including travel by foreign investigators. The direct purchase of supplies and/or services, which do not constitute research, from non-U.S. sources by U.S. award recipients is permitted.

3.2.1 Duplicative Funding

NASA will not fund participant CLD efforts to the extent such funding duplicates payments made by the U.S. Government to the participant, pursuant to another U.S. Government contract or agreement, for the same purpose.

3.2.2 Compliance with U.S. Laws, Regulations and Policies

Participants must comply with all applicable U.S. laws, regulations and policies, including but not limited to safety, security, export control, environmental, suspension and debarment laws and regulations, and establishing an Interconnection Security Agreement when applicable.

With respect to export control, any entity awarded a Funded SAA shall be required to comply with all U.S. export control laws including Export Administration Regulations (EAR) and International Traffic in Arms Regulations (ITAR). Awardees shall be responsible for ensuring that all persons who will perform work under the Funded SAA are eligible under export control laws, EAR, and ITAR.

Additionally, pursuant to The Department of Defense and Full-Year Appropriation Act, Public Law 112-10, Section 1340(a); The Consolidated and Further Continuing Appropriation Act of 2012, Public Law 112-55, Section 539; and future-year appropriations (hereinafter, "the Acts"), NASA is restricted from using appropriated funds to enter into or fund any agreement of any kind to participate, collaborate, or coordinate bilaterally with China or any Chinese-owned company, at the prime recipient level and at all subrecipient levels, whether the bilateral involvement is funded or performed under a no-exchange of funds arrangement. Accordingly, proposals involving bilateral participation, collaboration, or coordination in any way with China or any Chinese-owned company, whether funded or performed under a no-exchange-of-funds arrangement, will be ineligible for award. Accordingly, Participant must certify that it is not China or a Chinese-owned company, and that the Participant will not participate, collaborate, or coordinate bilaterally with China or any Chinese-owned company, at the prime recipient level or at any subrecipient level, whether the bilateral involvement is funded or performed under a no-exchange of funds arrangement. "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. This restriction does not apply to the purchase from Chinese-owned entities of commercial items of supply needed to perform the agreement.

Section 889 of the National Defense Authorization Act of 2019, "Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment," prohibits, inter alia, the Federal Government, Federal Government contractors, and grant and loan recipients from procuring or using any equipment, system, or service that uses "covered telecommunications equipment or services" (as defined in Section 889(f)(3)) as a substantial or essential component of any system, or as critical technology as part of any system. Due to the nature of the work to be executed under this Agreement, in performing this Agreement, Participant agrees to not acquire or use, in any manner whatsoever or at any tier, "covered telecommunications equipment or services" (as defined in Section 889(f)(3)) as a substantial or essential component of any system, or as critical technology as part of any system."

Further, the Iran, North Korea, and Syria Nonproliferation Act (P.L. 106-178, amended by P.L. 107-228, P.L. 109-112, P.L. 109-353, P.L. 110-329, P.L. 112-273, P.L. 116-94; 50 U.S.C. 1701 note) (INKSNA) prohibits payments to organizations or entities that are now or were in the past under the jurisdiction or control of Roscosmos (the Russian Federal Space Agency), or to any other organization, entity, or element of the Government of Russia for goods or services directly

related to human spaceflight, other than for work on the ISS. INKSNA currently prohibits NASA from making payments in cash or in kind after December 31, 2025 for work on the ISS to the foregoing listed entities imposes reporting and assessment requirements. NASA has applied the restrictions in this Act to include NASA funding of Russian entities via U.S. entities.

Participants' attentions are further directed to the following non-exhaustive list of potentially applicable U.S. laws, regulations, and policies:

- U.S. Space Transportation Policy, January 2005
- U.S. National Space Policy, December 2020
- Commercial Space Act of 1998 (P.L. 105-303; 51 U.S.C. 50101 et seq.)
- Commercial Space Launch Act (51 USC Chapter 509)

3.3 Intellectual Property

Under CLD, participants will retain maximum intellectual property rights consistent with Federal law and regulations. Specifically:

1. NASA will not obtain rights in a participant's background intellectual property (data developed and inventions made at private expense that existed or were made prior to, or outside of, the CLD agreement).
2. A participant's proprietary data, both existing proprietary data and data arising from work conducted under the CLD Agreement that a participant considers proprietary, will be appropriately marked by the participant and protected by NASA if appropriately marked.
3. If a participant gives NASA proprietary data (engineering drawings, software, etc.) first produced by the participant or its related entities under the CLD agreement, the marked data will be disclosed and used under protective conditions. NASA retains the right to: (1) maintain a copy of such Data for archival purposes; (2) use or disclose such archived data within the Government for continued validating and updating of the objectives of CLD; and (3) use or disclose such archived Data by or on behalf of NASA for Government purposes in the event NASA determines that "march-in" conditions exist or if NASA terminates the CLD agreement for the participant's failure to perform.
4. For any inventions made by participants in the performance of work under a CLD agreement, NASA is required by law – the National Aeronautics and Space Act (51 U.S.C. 20135) – to take title to such inventions. However, upon petition by a participant, NASA will grant an advanced waiver of title to such inventions to the participant. NASA will retain only a government purpose license to use such inventions, but will refrain from NASA-use for a period specified in the participant's CLD agreement upon successful completion of the Agreement's milestones (see Appendix A, Article 10).

3.4 Title and Rights in Property

A principal goal of the CLD project is to facilitate the commercialization of space, a stated purpose of NASA under the National Aeronautics and Space Act of 1958, as amended. In order to foster such commercialization, NASA has determined that title to all property acquired by the participant for the CLD activity will remain with the participant(s). However, in the event of termination of the Funded SAA, NASA will have the right to purchase property developed or acquired by the participant for the CLD activity pursuant to the terms of the Funded SAA (see Appendix A, Article 26).

3.5 Legal Liability

The Funded SAA(s) will contain a cross-waiver of liability in the interest of encouraging participation in the exploration, exploitation, and use of outer space. The cross-waiver of liability is intended to be broadly construed to achieve this objective. Under the cross-waiver, each party to the Funded SAA agrees to waive all claims against certain entities or persons identified in the cross-waiver based on certain types of damages identified in the cross-waiver arising out of “Protected Space Operations”, which term includes all launch vehicle or transfer vehicle activities and payload activities (as those terms are defined in the cross-waiver) on Earth, in outer space, or in transit between Earth and outer space in implementation of an agreement for launch services.

To the extent that activities under the Funded SAA are not within the definition of “Protected Space Operations”, a unilateral waiver of claims will apply to activities under the Funded SAAs. Under the unilateral waiver, the participant waives claims against NASA for damage to the participant’s property or injury to its personnel, regardless of which party may be at fault. Should a participant provide property to NASA under the Funded SAA to enable NASA to support participant’s activity, a unilateral waiver of claims by NASA against the participant and its related entities will apply for any injury to employees of NASA or its related entities or damage or loss of property of NASA or its related entities related to the use of participant provided property under the Agreement. No waiver applies in circumstances involving criminal or willful misconduct. To give full effect to these waivers, “flow down” provisions are included. These provisions require the parties’ legally “related entities” (contractors, subcontractors, users, customers, and their contractors and subcontractors) to agree to the same waiver.

It is not expected that participants will undertake any flight demonstrations under the CLD SAA. However, participant(s) will need to apply to the Federal Aviation Administration (FAA) for any necessary licenses or experimental permits under 51 USC Subtitle V, Chapter 509 if they conduct any flights. The liability provisions of the licenses or permits will govern liabilities related to any activities within the scope of the license/permit.

NASA is not authorized to, and will not, indemnify a CLD participant for any claims or damages of any kind. Thus, CLD participants should consider obtaining appropriate insurance coverage, in addition to any applicable FAA insurance requirements. Such insurance coverage could include coverage for damage caused by anyone to the participant’s property (such as its launcher

and any other flight hardware), and for third-party damages not otherwise addressed by FAA requirements.

3.6 Anticipated Funding

NASA anticipates a total of up to \$400 million spread over fiscal years 2022 through 2025 to be available for funding the CLD SAAs. This amount is expected to fund two to four SAAs. The amount of funding allocated to a participant which is awarded an SAA will be solely at NASA's discretion.

Payments will be made upon the successful completion of performance milestones negotiated with NASA and documented in the Funded SAA. Participants bear all risk of cost overruns due to any cause.

Each participant is responsible for securing the funding that is necessary to complete its work, inclusive of funding from NASA and other financial sources. The participant is expected to maximize external funding sources to achieve its milestones under the Agreement. Accordingly, NASA's milestone payment will not cover the total cost of achieving each milestone.

The Government's obligation to enter into agreements is contingent upon the availability of appropriated funds. NASA's contribution will be a fixed amount for agreed-upon milestones which shall not change.

3.7 Ombudsman

An Ombudsman has been appointed to hear and facilitate the resolution of concerns from interested parties concerning the selection process for this Announcement. Interested parties include the participants, potential participants, and agreement signatories. The existence of the Ombudsman is not to diminish the authority of the NASA Agreements Officer, the Participant Evaluation Panel, the Selection Authority, or any formal adjudication of a matter related to this Announcement. Interested parties are not to contact the Ombudsman to request copies of the Announcement, verify proposal due date, or clarify provisions of the Announcement. Such inquiries shall be directed to the NASA Agreements Officer as specified in Section 3.1 of this document. Before consulting with the Ombudsman, interested parties must first address their concerns, issues, disagreements, or recommendations to the NASA Agreements Officer for resolution.

If resolution cannot be made by the NASA Agreements Officer, interested parties may contact the Ombudsman. At her discretion, the Ombudsman may request that an interested party submit any concerns, issues, disagreements, or recommendations in writing. Submissions or inquiries made to either the NASA Agreements Officer or the Ombudsman will neither suspend the selection process, the award or performance of the resulting agreement. The Ombudsman may be contacted at:

Donna M. Shafer

JSC Associate Director
Phone: 281-483-4258
Email: donna.m.shafer@nasa.gov
Lyndon B. Johnson Space Center
2101 NASA Parkway, Mail Code AA
Houston, TX 77058-3696

4 INSTRUCTIONS FOR PROPOSALS

4.1 Proposal Submittal

- 4.1.1 NASA will not issue paper copies of this Announcement. NASA reserves the right to select for negotiations all, some, or none of the proposals in response to this Announcement. NASA provides no funding for direct reimbursement of proposal development costs. Proposals submitted in response to this Announcement will not be returned. It is the policy of NASA to treat all proposals as sensitive competitive information and to disclose the contents only for the purposes of evaluation.
- 4.1.2 NASA will accept no more than one proposal per company. A company may be a team member or sub-participant on other proposals.

The proposals shall consist of three sections and two appendices. Section I is the Executive Summary, Section II is the Business Plan, and Section III is the Technical Approach. The total page count for Section I is 5 pages. Sections II and III combined shall not exceed 40 pages. Appendix 1 is the proposed Space Act Agreement. Appendix 2 provides Supplemental Business Data. A page count limit is not imposed on the appendices.

A page is defined as one side of a sheet, 8½" x 11", with at least one-inch margins on all sides, using not smaller than 12-point type, with the exception of tables and figures, which may use 8-point type (anything larger than this will be considered two pages (i.e. foldouts)). Title pages, Section and Appendix Cover pages, tables of contents, list of figures, list of tables, and acronym listings are excluded from the specified page counts.

- 4.1.3 The participant shall submit its proposal via NASA's Enterprise File Sharing and Sync Box (EFSS Box), a FedRAMP Moderate certified platform. Electronic submissions shall not contain hidden formulas or 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). The participant shall 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.
- 4.1.4 Prior to the submission of proposal files, participants interested in submitting a proposal in response to this solicitation should notify Lawrence Miller of their intent to submit a proposal at least 48 hours prior to the intended submission date, at the following email address: lawrence.l.miller@nasa.gov with a copy to jsc-cld-competition@mail.nasa.gov. Participants, especially those that have not previously submitted a proposal utilizing NASA's EFSS Box, are encouraged to coordinate the submission of a test file with Lawrence Miller several days in advance of the date and time specified for proposal submission in order to allow time to work through any submission issues.
- 4.1.5 The participant shall submit all proposal files to: <https://nasagov.app.box.com/f/5426f8e3ec4c47cfac256753d8195bda> . The Participant

shall follow instructions regarding proposal submission found at <https://www.hq.nasa.gov/office/procurement/other/EFSS-Box-Offeror-Proposal-Submission-Instructions.pdf>.

- 4.1.6 Participants are encouraged to include all individual proposal files within a single .zip file. Electronic file names shall be limited to letters, numbers, 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 participant shall not use special characters “/” or “\” in file names. The participant shall sequentially number each file and clearly label the contents of the file and include the name of the of participant in the individual file name. Examples of acceptable individual file names are as follows (not specific to this solicitation):

For Proposal Submissions:

1. Participant name - solicitation number- Executive Summary.pdf
2. Participant name - solicitation number - Business Plan.xlsx
3. Participant name - solicitation number -Technical Approach.pdf

Individual files cannot exceed 150GB per file. Submitted files shall not include password protection. Unless specifically authorized by the solicitation instructions, alternate proposal submissions shall not be submitted.

- 4.1.7 Immediately after all files have been uploaded and the proposal has been submitted in its entirety, the participant shall notify Lawrence Miller at the following email address: lawrence.l.miller@nasa.gov with a copy to jsc-cld-competition@mail.nasa.gov with a listing of all documents by filename that were submitted via EFSS Box. If any problems are experienced with the EFSS Box system (e.g., login, file transfer), please contact Lawrence Miller with a copy to the CLD inbox via e-mail as soon as possible.
- 4.1.8 The participant 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 submitted using electronic means, including the missing of any submission requirements and established deadlines. Please note that uploading documents via EFSS Box and the transmission of the files from the participant to the Government may not be instantaneous. To ensure timely delivery, the participant 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.

4.2 Proposal Content

4.2.1 Structure

All proposals shall be structured as follows:

Section I	Executive Summary
Section II	Business Plan
	B1 – Company Information
	B2 – Financing Plan
	B3 – Development Plan
	B4 – Compliance
Section III	Technical Approach
	T1 – System Concept and Summary of Performance
	T2 – Crew and Payload Accommodations and Services
	T3 – Development
	T4 – Technical Risks
	T5 – Other Considerations
Appendix 1	Proposed Space Act Agreement
Appendix 2	Supplemental Business Data

4.2.2 Section I: Executive Summary

Proposals shall include an executive summary describing the prominent and distinguishing features of the business plan and technical approach for the CLD product. The executive summary should summarize how the proposal satisfies the following fundamental criteria: propose an independent, free-flying Commercial LEO Destination, demonstrate significant concept definition and design maturation, and culminate in an approximate Preliminary Design Review level of maturity. The executive summary shall stand alone and not directly reference the other sections of the proposal.

4.2.3 Section II: Business Plan

This section shall describe the participant's plan for operating a sustained, profitable entity that may supply the market with space destination services to multiple customers. To address this market, the participant will determine whether to provide a business plan for the entire corporation or for a division within the corporation. It is expected that larger companies will provide a division business plan focused specifically on the space services market. The subsections of the business plan section are as follows:

B1. Company Information

A. Business Strategy

The participant shall describe the core aspects of its business strategy that will enable it to be successful in this market. The participant shall summarize the products and services it plans to sell and the target markets. The participant shall provide a pro-forma financial summary of expenses and revenue showing break-even point and profitability through initial years of CLD operations.

B. Management Team

The participant shall identify its top-level management team and key personnel for this effort, including a description of their CLD Phase 1 roles and responsibilities, the reporting structure, biographical information, history of their relevant experience, and professional references for each.

B2. Financial Plan

Provide a summary table with phasing showing how cash from operations, financing, and NASA covers total CLD development expenses. NASA funds shall include the proposed NASA payments in the milestone table of the SAA plus estimated Phase 2 NASA payments assuming the participant wins a CLD Phase 2 certification and services contract.

A. Cash from Operations

If the participant plans to use cash from operations/revenue to fund any of its work under the CLD SAA, it shall specify the amount, the basis for estimation of revenue/profit projections, product/services to be sold, and target markets.

B. Cash from Financing

If the participant plans to use cash from financing to fund any of its work under the CLD SAA, the participant shall provide a financing plan. The plan shall describe future financing events required to achieve positive cash flow including the timing, amount, structure and sources. The participant shall also describe any other material information that will impact future financing events, including but not limited to litigation, convertible debt provisions, sale-lease back covenants, and preferred stock terms. Participant shall discuss risks to financing and how they may be mitigated.

B3. Development Plan

A. Plan and Schedule

The participant shall provide an overall plan and schedule for developing, launching, and operating the CLD. The plan shall include identification of the largest risks to its

CLD enterprise (including programmatic, financial, marketing, supplier, and other risks, and top technical risk identified in T4) and strategies to mitigate.

B. Resources

The participant shall describe key resources such as personnel, facilities, intellectual property, and other assets required, specifying whether each is currently owned, will be provided by team members, or is yet to be obtained via another manner.

C. Teaming Arrangements and Major Suppliers

The participant shall describe teaming arrangements including respective roles and contributions to the project. The participant shall identify major suppliers, scope of planned purchases, and the basis of estimate of the cost. The participant shall identify major partners and scope of planned contributions. A list of all major partners and major suppliers shall include name, address, country of incorporation, and contact name and phone number. Provide a brief description of any previous experiences working with these participants and suppliers. If foreign participation is included in the proposal, the participant shall describe the critical elements of the foreign content.

NASA will consider requests from participants for NASA to provide Government-furnished resources such as spaceflight expertise, lessons learned, technical data, facilities, and equipment. For low-level requests, such as for a document, telecon, or Technical Interchange Meeting (TIM) of one day or less duration, requests can be made during performance of the CLD SAA. These do not need to be identified in the proposal, and do not require reimbursement from Partner.

For more significant support by NASA, participants are also permitted to seek fully-reimbursable services from NASA Centers as part of executing their project to achieve the goals of this AFP. Such agreements, in the form of Fully-Reimbursable Space Act Agreements (RSAA), will be separate from the Funded SAAs resulting from this AFP. Cost and schedule risk associated with design and development activities that are dependent upon NASA Center support resides with the participants. Participants shall identify in their proposal what, if any, significant NASA support they intend to seek, including a brief description of scope and impacts and workarounds if the support is not available. For more information regarding NASA Center capabilities and services, Center Partnership Office points of contact are listed here: <https://www.nasa.gov/partnerships/contact.html>

B4. Compliance

A. The participant shall describe compliance with eligibility requirements and applicable federal laws, regulations, and policies specified in Section 3.2.

B. Participants that intend to rely on Russian suppliers for their CLD system shall explain how their approach complies with INKSNA during the CLD base period and

optional milestones. The Participant shall explain how its Russian supplier is not a prohibited entity under INKSNA, or how the Participant will conduct its development effort without providing NASA funds or NASA technical assistance to the prohibited entity during the term of the Agreement.

C. Regarding NASA's duplicative funding prohibition, if the participant is or expects to be under any contract or other instrument through which it receives funds from the US Government for any work related to CLD design and/or development, the participant shall identify said instrument and its scope and describe any areas of effort that may overlap with any portion of its proposed effort under the Funded SAA.

D. Regarding NASA's China funding restriction requirements, the participant shall certify that it is not China or a Chinese-owned company, and that it will not participate, collaborate, or coordinate bilaterally with China or any Chinese-owned company, at the prime recipient level or at any subrecipient level, whether the bilateral involvement is funded or performed under a no-exchange of funds arrangement. Furthermore, participant shall disclose if it anticipates making any award, including those for the procurement of commercial items, to China or a Chinese-owned entity.

E. Participant shall also disclose any current or pending professional and/or educational affiliations or commitments to China or a Chinese-owned company, including Chinese universities, for any individual who will be participating in this NASA-funded activity. Examples of affiliations that shall be disclosed include but are not limited to: current or pending employment with China or a Chinese-owned entity, including titled academic, professional, or institutional appointments, whether or not remuneration is received, and whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary); participation in or applications to programs sponsored by the Chinese government, its instrumentalities, or other entities owned, funded or otherwise controlled by the Chinese government or other Chinese-owned entities, to include Chinese government-sponsored talent recruitment programs; and any other professional or educational activities, such as joint research or publication being conducted with China or Chinese-owned entities. Not all such affiliations will necessarily be disqualifying in all cases.

F. Participant shall describe its organization's internal conflict of interest disclosure policies, including policies for reporting foreign affiliations.

G. Regarding Section 889 of the NDAA, in its proposal, the participant shall identify any "covered telecommunications equipment or services" (as defined in Section 889(f)(3) of the National Defense Authorization Act of 2019) that it plans to use as a substantial or essential component of any system, or as critical technology as part of any system in performing the CLD funded SAA OR affirmatively state that it will not use "covered telecommunications equipment or services" in the performance of the CLD SAA at any tier.

4.2.4 Section III: Technical Approach

This section shall describe the participant's proposed technical approach for its CLD system, including the following sections. Innovations and efficiencies should be discussed where appropriate.

T1. System Concept and Summary of Performance

The participant shall describe the CLD system/subsystem architecture, system & subsystem performance, and concept of operations and maintenance. Describe potential evolutionary paths for the system to expand. Describe safety systems, redundancies, and/or contingency capabilities.

T2. Crew and Payload Accommodations and Services

The participant shall describe the initial CLD crew and payload accommodations and services, such as power, data, fluids, and other utilities; upmass/downmass; and on-orbit volume. Describe any on-orbit research facilities (specific research equipment to be provided by the participant) that are available for customer use. Describe how the potential evolutionary paths identified in the previous section would expand accommodations and services.

T3. Development

The participant shall describe the elements of the system that are either already operational or commercially available and elements that are under development or to be developed, including an indication of the Technology Readiness Level (TRL) for each of those elements. For existing elements, describe what modifications and/or new qualifications are needed.

For development elements, describe work completed to date including modeling results, prototypes, sub-component tests or any other relevant work pertaining to the proposed system. Also describe the technical approach for bringing the concept in its current state to readiness for launch and operation.

Describe the approach for system engineering and how the participant will evaluate its CLD design. Describe the approach for use of standards.

T4. Technical Risks

Describe the technical risks associated with the effort and include the risk level (low, medium, or high) along with a strategy to mitigate each risk.

T5. Other Considerations

Manufacturing -- The participant shall describe the approach for manufacturing all elements of the CLD system.

Test and Verification -- The participant shall describe the approach for testing and verifying the performance of all elements of the CLD system before initial operational capability. Describe the approach to system-level qualification.

Launch and Assembly -- Describe the launch and on-orbit assembly sequence and plan, including planned launch vehicle(s).

Safety and Mission Assurance (S&MA) -- The participant shall describe the approach for safety (range, ground, flight, etc.), reliability, maintainability, supportability, quality, software assurance, and risk management. The discussion may include S&MA organization including subcontractors, processes, tasks and products. Discuss the participant's approach to ensure crew safety on CLD.

Visiting Vehicle Integration -- The participant shall describe its approach to integrating CLD with crew and cargo transportation vehicles including the planned berthing/docking interface(s).

4.2.5 Appendix 1: Proposed Space Act Agreement

The participant shall provide a Funded SAA using the Funded SAA included in Appendix 1 of this Announcement. Any participant-proposed changes to the SAA must be highlighted with an accompanying rationale explaining why the proposed change is necessary. Otherwise, NASA seeks to use standard clauses/approaches for all participants and will seek to adopt the Funded SAA, as drafted in this Announcement. Any proposed changes to standard terms will be evaluated for acceptability and presented to the Selection Authority. Unacceptable changes to standard terms can impact a participant's selection. Additionally, please also note that the Government does not anticipate that post-selection negotiations will include revisions to terms of the Funded SAA. Proposals cannot be contingent on NASA accepting proposed changes to the Funded SAA.

If a participant is selected for due diligence, NASA reserves the right to negotiate specific payment amounts for the proposed milestones. Funding allocated to a participant is solely at NASA's discretion.

In compliance with Section 841 of the NASA Transition Authorization Act (NTAA) of 2017, the CLD Funded SAAs will be publicly posted without redaction. Thus, participants shall not include any information in the Funded SAA not intended for public release, while NASA also recognizes its transparency obligations, and will evaluate the Funded SAA information accordingly.

4.2.6 Appendix 2: Supplemental Business Data

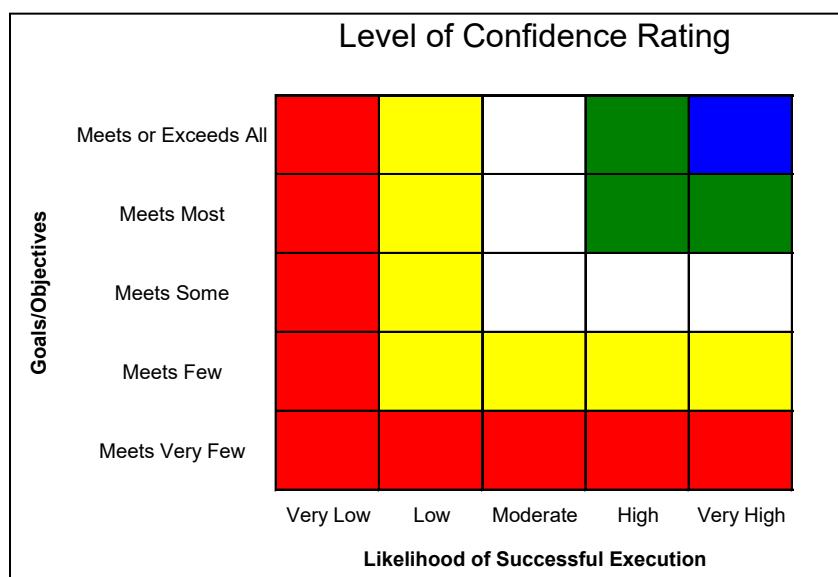
Participants may submit in Appendix 2 supplemental business data to substantiate its business plan, limited to resumes, historical financials, pro-forma financials, CLD development and

operations cost breakdowns, major partner and supplier information (e.g., names, addresses, contact information, scope of planned contributions or purchases, and the basis of estimate of the cost), commitment letters, and signed term sheets or similar agreements.

5 EVALUATION

5.1 Process

- 5.1.1 The evaluation process NASA intends to use for the selection of Funded SAA(s) has been especially tailored for this Announcement. Participants are reminded that this process does not involve the procedures set forth in the Federal Acquisition Regulation (FAR) nor the NASA FAR Supplement since this Announcement will not result in the award of a contract.
- 5.1.2 The first step of this process will be a review to determine that proposals comply with the requirements of this Announcement, and that they meet the fundamental criteria defined in section 4.2.2, Executive Summary of this Announcement. If, after reading the Executive Summary, it is determined that the proposal fails to meet the fundamental criteria, it shall be considered an unacceptable proposal. Proposals that receive an initial unacceptable proposal rating shall be eliminated from further evaluation.
- 5.1.3 The second step of the process will be an evaluation of proposals that are compliant with this Announcement to assess the level of planned achievement of the goals described in this Announcement and the level of confidence in the approach to achieve those goals. Proposals will be evaluated to the degree by which they effectively meet NASA's various goals for the CLD activity, as described in section 2. Participants do not need to achieve all of the goals, however participants which effectively achieve more of these goals, all other things being equal, will receive higher rated proposal evaluations than otherwise. NASA reserves the right to ask questions via teleconference to obtain clarification of information provided in the proposals. The Business Plan and Technical Approach will each be assigned a color rating as defined in the illustration below. Those proposals most favorably evaluated will be selected for further due diligence.



- 5.1.4 NASA will conduct virtual and/or on-site due diligence meetings with participants whose proposals were most favorably evaluated. Participants will be notified at least one week in advance of on-site meetings. As part of the notification, NASA will provide the participants with findings resulting from the initial evaluation. During the diligence meetings, participants will have the opportunity to present their overall business plan and technical approach, and respond to the findings provided by NASA. In addition, NASA will work with the participants to resolve any issues associated with the proposed SAA. NASA reserves the right to ask questions during the diligence meetings to obtain clarification of information provided in the proposals or presentation materials.
- 5.1.5 After completing due diligence, NASA will present the results of the proposal evaluation to the Selection Authority (SA). The SA will compare the proposals against the criteria of the Announcement and select a portfolio of approaches that best meets the objectives of the CLD program. Considerations regarding the selection of the portfolio will include goals coverage, risk spread, and stimulation of the LEO destination market. The Government will also consider the total anticipated funding in determining the number of awards that best meet the goals of the Announcement. The Government may select proposals other than the most highly rated for the portfolio selection in order to achieve the CLD goals. The SA will determine the amount of investment to be offered to the participant(s) selected for the portfolio.
- 5.1.6 Following selection, NASA will complete negotiations on the SAA with the selected participant(s). The purpose of the negotiations is to finalize the NASA milestone payments and any other open items with the proposed SAA. The competitive process will conclude with execution of an SAA(s) between NASA and the selected participant(s).

5.2 Personnel

The Government may use contractor support personnel to assist in providing technical, business and investment expertise regarding proposals. Any support contractor involvement in the evaluation process shall be free of conflicts of interest, will be bound by appropriate non-disclosure agreements to protect proprietary and competition sensitive information, and must have accepted limitations on future contracting.

By submitting a proposal under this Announcement, the participant is deemed to have consented to release of data in its proposal to NASA contractors supporting evaluation of proposals.

APPENDIX A: DRAFT FUNDED SPACE ACT AGREEMENT (SAA)

The following is a draft SAA for the CLD project. This draft will be the subject of final negotiations between NASA and a participant and establishes the basic parameters of the agreement between the parties. Questions or comments on the draft SAA may be submitted to the CLD Agreements Officer. As per the instructions in Section 4.2.5 of this Announcement, the participants are asked to complete the milestone table and other participant-unique sections of this draft SAA and submit the entire SAA with proposed modifications and rationale for such modifications with their proposal.

FUNDED SPACE ACT AGREEMENT
BETWEEN
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND
[XYZ CORPORATION]
FOR
COMMERCIAL LOW EARTH ORBIT DESTINATIONS PHASE 1

BACKGROUND

A. The National Aeronautics and Space Administration (NASA) has established the Commercial Low Earth Orbit (LEO) Development Program at the Johnson Space Center as part of the Human Exploration and Operations Mission Directorate. The objectives of the Program are to:

- Develop a robust commercial space economy in LEO, including supporting the development of commercially owned and operated LEO destinations from which various customers, including private entities, public institutions, NASA, and foreign governments, can purchase services; and
- Stimulate the growth of commercial activities in LEO.

B. To achieve the Commercial LEO Development Program's overall goals, NASA developed and is implementing a five-point plan. The plan, entitled NASA's Plan for Commercial LEO Development, addresses how NASA participates with industry to develop commercial LEO destinations, stimulates demand for new and emerging markets in LEO, and takes near-term steps to achieve a robust economy in LEO. The third point in this plan is to initiate the process for commercial development of LEO destinations. In order to cost-effectively meet U.S. long-term research and technology development needs in low-Earth orbit (LEO), a robust commercial human spaceflight economy must be established including commercial destinations and new markets such that NASA can be one of many customers of a broad portfolio of commercial products and services. Development and operation of a commercial destination to provide those services will require significant private investment over many years and significant non-NASA demand to ensure long-term financial viability.

C. This SAA represents [XYZ]'s and NASA's commitment to the [XYZ]'s concept maturation and initial development phase of a project to develop the vehicles, systems, and operations needed to deploy and operate free-flying LEO destinations that meet potential future needs of various customers including the U.S. Government.

ARTICLE 1. AUTHORITY AND PARTIES

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)), this Agreement is entered into by the National Aeronautics and Space Administration, located at 4th and E Streets, SW, Washington, D.C. (hereinafter referred to as "NASA" or Government), and <XYZ full name>, located at <XYZ street address> (hereinafter referred to as "<XYZ acronym/name>" or "Participant"). NASA and Participant may be individually referred to as a "Party" and collectively referred to as the "Parties." This agreement will be implemented by NASA at the Lyndon B. Johnson Space Center in Houston, Texas.

ARTICLE 2. PURPOSE

The purpose of this Agreement is to facilitate the Participant's concept maturation and initial development phase (Phase 1) of its Commercial LEO Destinations (CLD) capabilities.

For purposes of this Agreement, CLD refers to an independent, free-flying facility operating in an orbit selected by the Participant. The Participant's CLD System is described in Appendix 1. As part of the work in this Agreement, the Parties may work in collaboration in some areas as may be mutually agreed during implementation of this Agreement and documented in a Technical Implementation Plan (TIP). The Parties anticipate that this may be an evolvable architecture that could include the following general types of capabilities:

a) {Participant to complete this section with their capabilities}

ARTICLE 3. RESPONSIBILITIES

A. NASA shall use reasonable efforts to:

1. Provide a point of contact for Participant within the Commercial LEO Development Program within thirty (30) days after the effective date of this Agreement.
2. Participate in quarterly status reviews.
3. Appoint a NASA representative to participate in each review board described in Appendix 2.
4. Review data provided by Participant.
5. Attend and observe Participant milestones, at NASA's discretion and after coordination with Participant.

6. Provide milestone payments to Participant upon successful completion of each milestone, subject to limitations noted below;
7. If requested by Participant, and within 30 days of each quarterly meeting, provide Participant a written acknowledgement of milestone completion if NASA ascertains that the milestones of the previous quarter have been accomplished. Nothing in the acknowledgement of milestone completion shall be construed to imply that NASA endorses or sponsors any Participant product or service resulting from activities conducted under this Agreement. NASA's acknowledgement shall not be construed to imply approval or endorsement of the safety, reliability or appropriateness of any Participant design, system, architecture or testing methodology.
8. Provide equipment and/or services as identified and described in a Technical Implementation Plan (TIP) to be developed by the Parties as needed.
9. Provide access to requested NASA technical data, lessons learned, and expertise support, services, facilities, and NASA-developed technologies, on a non-interference basis as resources permit. NASA furnished services, facilities, and technologies that may be provided are identified in the TIP.

B. [XYZ] shall use reasonable efforts to:

1. Conduct concept maturation and initial development of [XYZ]'s CLD System according to the milestones identified in Appendix 2 (Participant Milestones) and provide NASA with data to demonstrate that Milestone entrance and success criteria have been successfully completed.
2. Conduct quarterly status reviews.
3. Designate at least one seat for a NASA representative on each review board for major milestones identified in Appendix 2.
4. Provide equipment as identified and described in the TIP. All equipment provided by Participant to NASA shall include documentation stating build, revision, and traceability information.
5. Fulfill its obligations in the TIP.

ARTICLE 4. SCHEDULE AND MILESTONES

The planned major milestones for the activities defined in the "Responsibilities" Article are as follows:

The scheduled milestones, acceptance criteria, and payments for each milestone in furtherance of CLD Phase 1 activities are identified in Appendix 2 to this Agreement.

ARTICLE 5. FINANCIAL OBLIGATIONS

A. Obligation

1. The Government's liability to make payments to Participant is limited to only those funds obligated annually under this Agreement or by amendment to the Agreement. NASA may obligate funds to the Agreement incrementally.

B. Acceptance and Payment for Milestones

1. Participant shall notify the NASA Points of Contact, listed in Article 18, at least 30 calendar days prior to the completion of any milestone to arrange for the NASA Technical Contact or designee to witness the event or accept delivery of documents. NASA shall have 30 calendar days to determine whether the milestone event meets its corresponding acceptance criteria as described in Appendix 2 of this Agreement and shall notify Participant of NASA's acceptance or non-acceptance. NASA shall have 5 calendar days to determine whether Milestone 1 meets its corresponding acceptance criteria as described in Appendix 2 of this Agreement and shall notify Participant of NASA's acceptance or non-acceptance. Any disagreement between NASA and Participant about the successful accomplishment of a milestone shall be deemed a Dispute and resolved in accordance with Article 19 of this Agreement.

2. Participant shall submit a written invoice requesting payment from NASA upon notification of acceptance by NASA of each milestone, as identified and described in Appendix 2 of this Agreement. Participant shall submit all invoices utilizing Treasury's Invoice Processing Platform (IPP). For instructions on submitting invoices through IPP reference: <https://www.nssc.nasa.gov/vendorpayment>. After receipt and review of the invoice, the NASA Administrative Contact will prepare a written determination of milestone completion and authorize payment.

3. The following information shall be included on each Participant invoice to NASA:

- (a). Agreement Number;
- (b). Invoice Number;
- (c). A description of milestone event;
- (d). Terms of Payment;
- (e). Payment Office; and
- (f). Amount of the fixed contribution claimed

4. Financial Records and Reports: Except as otherwise provided in this Agreement, Participant's relevant financial records associated with this Agreement shall not be subject to examination or audit by NASA.

5. Comptroller General Access to Records: The Comptroller General, at its discretion and pursuant to applicable regulations and policies, shall have access to and the right to examine records of any Party to the Agreement or any entity that participates in the performance of this Agreement that directly pertain to and involve transactions relating to the Agreement for a period of three (3) years after the Government makes the final milestone payment under this Agreement. This paragraph only applies to any record that is created or maintained in the

ordinary course of business or pursuant to a provision of law. The terms of this paragraph shall be included in any subcontracts or other arrangements valued in excess of \$5,000,000.00 that Participant has or may enter into related to the execution of the milestone events in this Agreement.

6. Notwithstanding any other provision of this Agreement, all activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

ARTICLE 6. PRIORITY OF USE

Any schedule or milestone in this Agreement is estimated based upon the Parties' current understanding of the projected availability of NASA goods, services, facilities, or equipment. In the event that NASA's projected availability changes, Participant shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Agreement. Should a conflict arise, NASA in its sole discretion shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA participants, NASA, in its sole discretion, shall determine the priority as between those participants. This Agreement does not obligate NASA to seek alternative government property or services under the jurisdiction of NASA at other locations.

ARTICLE 7. NONEXCLUSIVITY

This Agreement is not exclusive; accordingly, NASA may enter into similar agreements for the same or similar purpose with other U.S. private or public entities.

ARTICLE 8. LIABILITY AND RISK OF LOSS

- A. The objective of this Article is to establish a cross-waiver of liability in the interest of encouraging participation in the exploration, exploitation, and use of outer space. The Parties intend that the cross-waiver of liability be broadly construed to achieve this objective.
- B. For purposes of this Article:
 - 1. The term "Damage" means:
 - a. Bodily injury to, or other impairment of health of, or death of, any person;
 - b. Damage to, loss of, or loss of use of any property;
 - c. Loss of revenue or profits; or
 - d. Other direct, indirect, or consequential Damage.

2. The term “Launch Vehicle” means an object, or any part thereof, intended for launch, launched from Earth, or returning to Earth which carries Payloads, persons, or both.
3. The term “Payload” means all property to be flown or used on or in a Launch Vehicle.
4. The term “Protected Space Operations” means all Launch Vehicle or Transfer Vehicle activities and Payload activities on Earth, in outer space, or in transit between Earth and outer space in implementation of an agreement for launch services. Protected Space Operations begins at the signature of this Agreement and ends when all activities done in implementation of this Agreement are completed. It includes, but is not limited to:
 - a. Research, design, development, test, manufacture, assembly, integration, operation, or use of Launch Vehicles or Transfer Vehicles, Payloads, or instruments, as well as related support equipment and facilities and services; and
 - b. 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 that are conducted on return from space to develop further a Payload’s product or process for use other than for the activities within the scope of an agreement for launch services.

5. The term “Related Entity” means:
 - a. A contractor or subcontractor of a Party at any tier;
 - b. A user or customer of a Party at any tier; or
 - c. A contractor or subcontractor of a user or customer of a Party at any tier.

The terms “contractor” and “subcontractor” include suppliers of any kind.

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.5.a. through B.5.c. of this Article, or otherwise engaged in the implementation of Protected Space Operations as defined in paragraph B.4. above.

6. The term “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.

C. Cross-waiver of liability:

1. Each Party agrees to a cross-waiver of liability pursuant to which each Party waives all claims against any of the entities or persons listed in paragraphs C.1.a. through C.1.d. of this Article based on Damage arising out of Protected Space Operations. This cross-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 by virtue of its involvement in Protected Space Operations. The cross-waiver shall apply to any claims for Damage, whatever the legal basis for such claims, against:

- a. The other Party;

- b. A party to another NASA agreement that includes flight on the same Launch Vehicle;
 - c. A Related Entity of any entity identified in paragraphs C.1.a. or C.1.b. of this Article; or
 - d. The employees of any of the entities identified in paragraphs C.1.a. through C.1.c. of this Article.
2. In addition, each Party shall extend the cross-waiver of liability, as set forth in paragraph C.1. of this Article, to its own Related Entities by requiring them, by contract or otherwise, to:
- a. Waive all claims against the entities or persons identified in paragraphs C.1.a. through C.1.d. of this Article; and
 - b. Require that their Related Entities waive all claims against the entities or persons identified in paragraphs C.1.a. through C.1.d. of this Article.
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, which entered into force on September 1, 1972, where the person, entity, or property causing the Damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations.
4. Notwithstanding the other provisions of this Article, this cross-waiver of liability shall not be applicable to:
- a. Claims between a Party and its own Related Entity or between its own Related Entities;
 - b. Claims made by a natural person, his/her estate, survivors, or subrogees (except when a subrogee is a Party to this Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury to, or other impairment of health of, or death of, such person;
 - c. Claims for Damage caused by willful misconduct;
 - d. Intellectual property claims;
 - e. Claims for Damage resulting from a failure of a Party to extend the cross-waiver of liability to its Related Entities, pursuant to paragraph C.2. of this Article; or
 - f. Claims by a Party arising out of or relating to another Party's failure to perform its obligations under this Agreement.
5. Nothing in this Article shall be construed to create the basis for a claim or suit where none would otherwise exist.

D. To the extent that activities under this Agreement are not within the definition of "Protected Space Operations," defined above, the following unilateral waiver of claims applies to activities under this Agreement.

1. Participant hereby waives any claims against NASA, its employees, its related entities, (including, but not limited to, contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors and subcontractors, at any tier) and employees of NASA's related entities for any injury to, or death of, Participant employees or the employees of Participant's related entities, or for damage to, or loss of, Participant's property or the property of its related entities arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.

2. Participant further agrees to extend this unilateral waiver to its related entities by requiring them, by contract or otherwise, to waive all claims against NASA, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement.

E. Participant Provided Property

For all property provided by Participant to NASA under this Agreement, the following provisions apply:

(1) NASA hereby waives any claims against Participant, its officers, its directors, its employees, its related entities, and its contractors, and subcontractors, and third parties using Participant property, and their employees for any injury to, or death of, NASA employees or the employees of NASA's related entities or contractors generally, or for damage to, or loss of, NASA property or the property of its related entities or contractors or subcontractors arising from or related to the use of any property provided by Participant under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.

(2) NASA further agrees to extend this unilateral waiver to its related entities or contractors or subcontractors or third parties using Participant property provided under this Agreement by requiring them, by contract or otherwise, to waive all claims against Participant, its employees, its related entities, and contractors and subcontractors, and their employees for injury, death, damage, or loss arising from or related to the use of any property provided by Participant under this Agreement.

ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. General

1. "Related Entity" as used in this Data Rights Article, means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Participant that is assigned, tasked, or contracted with to perform activities under this Agreement.

2. "Data" means recorded information, regardless of form, the media on which it is recorded, or the method of recording.

3. “Proprietary Data” means Data embodying trade secrets developed at private expense or commercial or financial information that is privileged or confidential, and that includes a restrictive notice, unless the Data is:

- a. known or available from other sources without restriction;
- b. known, possessed, or developed independently, and without reference to the Proprietary Data;
- c. made available by the owners to others without restriction; or
- d. required by law or court order to be disclosed.

4. “Practical Application,” as used in this Data Rights in Data Article, means to:

- a. manufacture, in the case of a composition or product;
- b. practice, in the case of a process or method; or
- c. operate, in case of a machine or system;

and, in each case, under conditions establishing the invention, hardware, software, or service is being used, and its benefits are publicly available on reasonable terms, as permitted by law.

5. Data exchanged between NASA and Participant under this Agreement will be exchanged without restriction except as otherwise provided herein.

6. Notwithstanding any restrictions provided in this Article, the Parties are not restricted in the use, disclosure, or reproduction of Data provided under this Agreement that meets one of the exceptions in 3., above. If a Party believes that any exceptions apply, it shall notify the other Party before any unrestricted use, disclosure, or reproduction of the Data.

7. The Parties will not exchange preexisting Proprietary Data under this Agreement unless authorized herein or in writing by the owner.

8. If the Parties exchange Data having a notice that the Receiving Party deems is ambiguous or unauthorized, the Receiving Party shall tell the Providing Party. If the notice indicates a restriction, the Receiving Party shall protect the Data under this Article unless otherwise directed in writing by the Providing Party.

9. The Data rights herein apply to the employees and Related Entities of Participant. Participant shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article.

10. Disclaimer of Liability: NASA is not restricted in, nor liable for, the use, disclosure, or reproduction of Data without a restrictive notice, or for Data Participant gives, or is required to give, the U.S. Government without restriction.

11. Participant may use the following or a similar restrictive notice:

Proprietary Data Notice

The data herein include Proprietary Data and are restricted under the Data Rights provisions of Space Act Agreement [provide applicable identifying information].

Participant should also mark each page containing Proprietary Data with the following or a similar legend: "Proprietary Data – Use And Disclose Only Under the Notice on the Title or Cover Page."

B. Data First Produced by Participant under this Agreement

- (1) Data first produced by Participant in carrying out Participant's responsibilities under this Agreement, including but not limited to technical data related to inventions made under this Agreement, will be furnished to NASA upon request and such Data will be disclosed and used by NASA and any Related Entity of NASA (under suitable protective conditions) during the term of this Agreement only for evaluating Participant's performance of its milestones and validating the objectives of CLD under this Agreement. If Participant considers any such Data to be Proprietary Data, and such Data is identified with a suitable restrictive notice, NASA will use reasonable efforts to maintain the Data in confidence.
- (2) Upon a successful completion by Participant of all milestones under this Agreement, NASA shall not assert rights in such Data or use such Data for any purpose except that NASA shall retain the right to: (1) maintain a copy of such Data for archival purposes; (2) use or disclose such archived data within the Government for continued validating and updating of the objectives of CLD; and (3) use or disclose such archived Data by or on behalf of NASA for Government purposes in the event the NASA determines that:
 - (a) Such action is necessary because Participant, its assignee, or other successor has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of inventions, hardware, software, or service related to such Data;
 - (b) Such action is necessary because Participant, its assignee, or other successor, having achieved practical application of inventions, hardware, software, or service related to such Data, has failed to maintain practical application;
 - (c) Such action is necessary because Participant, its assignee, or other successor has discontinued making the benefits of inventions, hardware, software, or service related to such Data available to the public or to the Federal Government;
 - (d) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by Participant, its assignee, or other successor; or
 - (e) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by Participant, its assignee, or successor.

In the event NASA determines that one of the circumstances listed in subparagraphs (a)-(e) above exists, NASA shall provide written notification to the Participant's Administrative Point of Contact. Upon mailing of such

determination, Participant shall have thirty (30) days to respond by providing its objection to the determination as a dispute under the Article entitled "Dispute Resolution" of this Agreement. In the event that Participant does not respond in writing to NASA's determination, then such determination shall serve as a final agency decision for all purposes including judicial review.

- (3) In the event NASA terminates this Agreement in accordance with Article 16.B, Termination for Failure to Perform, NASA shall have the right to use, reproduce, prepare derivative works, distribute to the public, perform publicly, display publicly, or disclose Data first produced by Participant in carrying out Participant's responsibilities under this Agreement by or on behalf of NASA for Government purposes. The parties will negotiate rights in Data in the event of termination for any other reason.

C. Data First Produced by NASA under this Agreement

- (1) As to Data first produced by NASA in carrying out NASA responsibilities under this Agreement that would be Proprietary Data if it had been obtained from Participant, such Data will be appropriately marked with a restrictive notice and maintained in confidence for the duration of this Agreement, with the express understanding that during the aforesaid restricted period such marked Data may be disclosed and used by NASA and any Related Entity of NASA (under suitable protective conditions) only for carrying out NASA's responsibilities under this Agreement.
- (2) Upon a successful completion by Participant of all milestones under this Agreement, NASA shall not assert rights in such Data or use such Data for any purpose except that NASA shall retain the right to: (1) maintain a copy of such Data for archival purposes; (2) use or disclose such archived data within the Government for continued validating and updating of the objectives of CLD; and (3) use or disclose such archived Data by or on behalf of NASA for Government purposes in the event the NASA determines that:
 - (a) Such action is necessary because Participant, its assignee, or other successor has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of inventions, hardware, software, or service related to such Data;
 - (b) Such action is necessary because Participant, its assignee, or other successor, having achieved practical application of inventions, hardware, software, or service related to such Data, has failed to maintain practical application;
 - (c) Such action is necessary because Participant, its assignee, or other successor has discontinued making the benefits of inventions, hardware, software, or service related to such Data available to the public or to the Federal Government;

- (d) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by Participant, its assignee, or other successor; or
- (e) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by Participant, its assignee, or successor.

In the event NASA determines that one of the circumstances listed in subparagraphs (a)-(e) above exists, NASA shall provide written notification to the Participant's Administrative Point of Contact. Upon mailing of such determination, Participant shall have thirty (30) days to respond by providing its objection to the determination as a dispute under the Article entitled "Dispute Resolution" of this Agreement. In the event that Participant does not respond in writing to NASA's determination, then such determination shall serve as a final agency decision for all purposes including judicial review.

- (3) In the event NASA terminates this Agreement in accordance with Article 16.B, Termination for Failure to Perform, NASA shall have the right to use, reproduce, prepare derivative works, distribute to the public, perform publicly, display publicly, or disclose Data first produced by Participant in carrying out Participant's responsibilities under this Agreement by or on behalf of NASA for Government purposes. The parties will negotiate rights in Data in the event of termination for any other reason.

D. Publication of Results

The National Aeronautics and Space Act (51 U.S.C. § 20112) requires NASA to provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof. As such, NASA may publish unclassified and non-Proprietary Data resulting from work performed under this Agreement. The Parties will coordinate publication of results allowing a reasonable time to review and comment.

E. Data Disclosing an Invention

If the Parties exchange Data disclosing an invention for which patent protection is being considered, and the furnishing Party identifies the Data as such when providing it to the Receiving Party, the Receiving Party shall withhold it from public disclosure for a reasonable time (one (1) year unless otherwise agreed or the Data is restricted for a longer period herein).

F. Copyright

Data exchanged with a copyright notice and with no restrictive notice is presumed to be published. The following royalty-free licenses apply.

- 1. If indicated on the Data that it was produced outside of this Agreement, it may be reproduced, distributed, and used to prepare derivative works only for carrying out the Receiving Party's responsibilities under this Agreement.

2. Data without the indication of F.1. is presumed to be first produced under this Agreement. Except as otherwise provided in paragraph E. of this Article, and in the Invention and Patent Rights Article of this Agreement for protection of reported inventions, the Data may be reproduced, distributed, and used to prepare derivative works for any purpose.

G. Data Subject to Export Control

Whether or not marked, technical data subject to the export laws and regulations of the United States provided to Participant under this Agreement must not be given to foreign persons or transmitted outside the United States without proper U.S. Government authorization.

H. Handling of Background, Third Party Proprietary, and Controlled Government Data

1. NASA or Participant (as Disclosing Party) may provide the other Party or its Related Entities (as Receiving Party):

- a. Proprietary Data developed at Disclosing Party's expense outside of this Agreement (referred to as Background Data);
- b. Proprietary Data of third parties that Disclosing Party has agreed to protect or is required to protect under the Trade Secrets Act (18 U.S.C. § 1905) (referred to as Third Party Proprietary Data); and
- c. U.S. Government Data, including software and related Data, Disclosing Party intends to control (referred to as Controlled Government Data).

2. All Background, Third Party Proprietary and Controlled Government Data provided by Disclosing Party to Receiving Party shall be marked by Disclosing Party with a restrictive notice and protected by Receiving Party in accordance with this Article.

3. Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data.

a. Background Data:

The Disclosing Party's Background Data, if any, will be identified in a separate document.

b. Third Party Proprietary Data:

The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate document.

c. Controlled Government Data:

The Disclosing Party's Controlled Government Data, if any, will be identified in a separate document.

d. Notwithstanding H.4., NASA software and related Data will be provided to Participant under a separate Software Usage Agreement (SUA). Participant shall use and protect the related

Data in accordance with this Article. Unless the SUA authorizes retention, or Participant enters into a license under 37 C.F.R. Part 404, the related Data shall be disposed of as NASA directs:

[Insert name and NASA Case # of the software; if none, insert "None."]

4. For such Data identified with a restrictive notice pursuant to H.2., Receiving Party shall:
 - a. Use, disclose, or reproduce such Data only as necessary under this Agreement;
 - b. Safeguard such Data from unauthorized use and disclosure;
 - c. Allow access to such Data only to its employees and any Related Entity requiring access under this Agreement;
 - d. Except as otherwise indicated in 4.c., preclude disclosure outside Receiving Party's organization;
 - e. Notify its employees with access about their obligations under this Article and ensure their compliance, and notify any Related Entity with access about their obligations under this Article; and
 - f. Dispose of such Data as Disclosing Party directs.

I. Oral and visual information

If Participant discloses Proprietary Data orally or visually, NASA will have no duty to restrict, or liability for disclosure or use, unless Participant:

1. Orally informs NASA before initial disclosure that the Data is Proprietary Data, and
2. Reduces the Data to tangible form with a restrictive and gives it to NASA within ten (10) calendar days after disclosure.

ARTICLE 10. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

A. Definitions

1. "Administrator," means the Administrator of the National Aeronautics and Space Administration (NASA) or duly authorized representative.

2. "Patent Representative" means the NASA Johnson Space Center Patent Counsel. Correspondence with the Patent Representative under this clause will be sent to:

Patent Counsel
NASA Johnson Space Center
Mail Code AL
2101 NASA Parkway
Houston, TX 77058
E-mail: JSCLegal@nasa.gov

3. "Invention," means any invention or discovery that is or may be patentable or otherwise protectable under title 35 of the U.S.C.

4. “Made,” in relation to any invention, means the conception or first actual reduction to practice.

5. “Practical Application,” means to:

- a. manufacture, in the case of a composition or product;
- b. practice, in the case of a process or method; or
- c. operate, in case of a machine or system;

and, in each case, under conditions establishing the invention is being used, and its benefits are publicly available on reasonable terms, as permitted by law.

6. “Related Entity” as used in this Invention and Patent Rights Article, means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Participant assigned, tasked, or contracted with to perform activities under this Agreement.

7. “Manufactured substantially in the United States” means over fifty percent (50%) of a product’s components are manufactured in the United States. This requirement is met if the cost to Participant of the components mined, produced, or manufactured in the United States exceeds fifty percent (50%) percent of the cost of all components (considering only the product and its components). This includes transportation costs to the place of incorporation into the product and any applicable duty (whether or not a duty-free entry certificate is issued). Components of foreign origin of the same class or kind for which determinations under Federal Acquisition Regulation 25.103(a) and (b) exist, are treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

B. Allocation of principal rights

1. *Presumption of NASA title in Participant inventions*

- a. Participant inventions under this Agreement are presumed made as specified in subparagraphs (A) or (B) of 51 U.S.C. § 20135(b)(1). The above presumption is conclusive unless Participant’s invention disclosure to the Patent Representative includes a written statement with supporting details, demonstrating that the invention was not made as specified above.
- b. Regardless of whether title to such an invention is subject to an advance waiver or a petition for individual waiver, Participant may still file the statement in B.1.a.. The Administrator (or Administrator’s designee) will review the information from Participant and any other related information and will notify Participant of his or her determination.

2. *NASA Property rights in Participant inventions* Inventions made under this Agreement where the presumption of paragraph B.1.a. of this Article is conclusive or when a determination exists that it was made under subparagraphs (A) or (B) of 51 U.S.C. § 20135(b)(1) are the exclusive property of the United States as represented by NASA. The Administrator may waive all or any part of the United States’ rights to Participant, as provided in paragraph B.3. of this Article.

3. *Waiver of property rights by NASA*

a. NASA Patent Waiver Regulations, 14 C.F.R. Part 1245, Subpart 1, use Presidential Memorandum on Government Patent Policy of February 18, 1983 as guidance in processing petitions for waiver of rights under 51 U.S.C. § 20135(g) for any invention or class of inventions made or that may be made under subparagraphs (A) or (B) of 51 U.S.C. § 20135(b)(1).

b. NASA has determined that to stimulate and support the capability of a United States Commercial LEO Destination services to the public and the Federal Government, the interest of the United States would be served by waiving to Participant, in accordance with 51 U.S.C. § 20135(g) and the provisions of 14 C.F.R. Part 1245, Subpart 1, rights to any inventions or class of inventions made by Participant in the performance of work under this Agreement. Therefore, as provided in 14 C.F.R. Part 1245, Subpart 1, Participant may petition, prior to execution of the Agreement or within thirty (30) days after execution, for advance waiver of any inventions Participant may make under this Agreement. If no petition is submitted, or if petition is denied, Participant (or an employee inventor of Participant) may still petition for waiver of rights to an identified subject invention within eight (8) months after disclosure under paragraph E.2. of this Article, or within such longer period if authorized under 14 C.F.R. § 1245.105. See paragraph J. of this Article for procedures.

4. *NASA inventions*

a. No invention or patent rights in NASA or its Related Entity's inventions are exchanged or granted under this Agreement except as provided herein.

b. Upon request, NASA will use reasonable efforts to grant Participant a negotiated license, under 37 C.F.R. Part 404, to any NASA invention made under this Agreement.

c. Upon request, NASA will use reasonable efforts to grant Participant 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.

C. Minimum rights reserved by the Government

1. For Participant inventions subject to a NASA waiver of rights under 14 C.F.R. Part 1245, Subpart 1, the Government reserves:

a. an irrevocable, royalty-free license to practice the invention throughout the world by the United States or any foreign government under any treaty or agreement with the United States; and

b. other rights as stated in 14 C.F.R. § 1245.107.

2. Nothing in this paragraph grants to the Government any rights in inventions not made under this Agreement.

3. Upon a successful completion by Participant of all milestones under this Agreement, NASA will refrain from exercising its Government Purpose License reserved in paragraph C.1.a. above for a period of five years following the expiration of this Agreement.

4. Nothing contained in this paragraph shall be considered to grant to the Government any rights with respect to any invention other than an invention made under this Agreement.

D. Minimum rights to Participant

1. Participant is granted a revocable, nonexclusive, royalty-free license in each patent application or patent in any country on an invention made by Participant under this Agreement where the Government has title, unless Participant fails to disclose the invention within the time limits in paragraph E.2. of this Article. Participant's license extends to its domestic subsidiaries and affiliates within its corporate structure. It includes the right to grant sublicenses of the same scope if Participant was legally obligated to do so at the time of this Agreement. The license is transferable only with approval of the Administrator except to a successor of that part of Participant's business to which the invention pertains.

2. Participant's domestic license may be revoked or modified by the Administrator but only if necessary to achieve expeditious practical application of the invention where a third party applies for an exclusive license under 37 C.F.R. Part 404. The license will not be revoked in any field of use or geographic area where Participant has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. A license in any foreign country may be revoked or modified at the discretion of the Administrator if Participant, its licensees, or its domestic subsidiaries or affiliates fail to achieve practical application in that country.

3. Before revocation or modification, Participant will receive written notice of the Administrator's intentions. Participant has thirty (30) days (or such other time as authorized by the Administrator) to show cause why the license should not be revoked or modified. Participant may appeal under 14 C.F.R. § 1245.112.

E. Invention disclosures and reports

1. Participant shall establish procedures assuring that inventions made under this Agreement are internally reported within six (6) months of conception or first actual reduction to practice, whichever occurs first. These procedures shall include the maintenance of laboratory notebooks or equivalent records, other records reasonably necessary to document the conception or the first actual reduction to practice of inventions, and records showing that the procedures were followed. Upon request, Participant shall give the Patent Representative a description of such procedures for evaluation.

2. Participant shall disclose an invention to the Patent Representative within two (2) months after the inventor discloses it in writing internally or, if earlier, within six (6) months after Participant becomes aware of the invention. In any event, disclosure must be before any sale, or public use, or publication known to Participant. Participant shall use the NASA New Technology Reporting system at <http://ntr.ndc.nasa.gov/>. Invention disclosures shall identify this Agreement and be sufficiently complete in technical detail to convey a clear understanding of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention. The disclosure shall also identify any publication, or sale, or public use of the invention, and whether a manuscript describing the invention was submitted or accepted for publication. After disclosure, Participant shall promptly notify

NASA of the acceptance for publication of any manuscript describing an invention, or of any sale or public use planned by Participant.

3. Participant shall give NASA Patent Representative:

- a. Interim reports every twelve (12) months (or longer period if specified by Patent Representative) from the date of this Agreement, listing inventions made under this Agreement during that period, and certifying that all inventions were disclosed (or there were no such inventions) and that the procedures of paragraph E.1. of this Article were followed.
- b. A final report, within three (3) months after completion of this Agreement, listing all inventions made or certifying there were none, and listing all subcontracts or other agreements with a Related Entity containing a Patent and Invention Rights Article (as required under paragraph G of this Article) or certifying there were none.
- c. Interim and final reports shall be submitted at <http://ntr.ndc.nasa.gov/>.

4. Participant shall provide available additional technical and other information to the NASA Patent Representative for the preparation and prosecution of a patent application on any invention made under this Agreement where the Government retains title. Participant shall execute all papers necessary to file patent applications and establish the Government's rights.

5. Protection of reported inventions. NASA will withhold disclosures under this Article from public access for a reasonable time (1 year unless otherwise agreed or unless restricted longer herein) to facilitate establishment of patent rights.

6. The contact information for the NASA Patent Representatives is provided at http://prod.nais.nasa.gov/portals/pl/new_tech_pocs.html.

F. Examination of records relating to inventions

1. The Patent Representative or designee may examine any books (including laboratory notebooks), records, and documents of Participant relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this Agreement to determine whether:

- a. Any inventions were made under this Agreement;
- b. Participant established the procedures in paragraph E.1. of this Article; and
- c. Participant and its inventors complied with the procedures.

2. If the Patent Representative learns of an unreported Participant invention he or she believes was made under this Agreement, he or she may require disclosure to determine ownership rights.

3. Examinations under this paragraph are subject to appropriate conditions to protect the confidentiality of information.

G. Subcontracts or Other Agreements

1. a. Unless otherwise directed by Patent Representative, Participant shall include this Invention and Patent Rights Article (modified to identify the parties) in any subcontract or other agreement with a Related Entity (regardless of tier) for the performance of experimental, developmental, or research work.
 - b. For subcontracts or other agreements at any tier, NASA, the Related Entity, and Participant agree that the mutual obligations created herein constitute privity of contract between the Related Entity and NASA with respect to matters covered by this Article.
2. If a prospective Related Entity refuses to accept the Article, Participant:
 - a. shall promptly notify Patent Representative in writing of the prospective Related Entity's reasons for refusal and other information supporting disposition of the matter; and
 - b. shall not proceed without Patent Representative's written authorization.
3. Participant shall promptly notify Patent Representative in writing of any subcontract or other agreement with a Related Entity (at any tier) containing an Invention and Patent Rights Article. The notice shall identify:
 - a. the Related Entity;
 - b. the applicable Invention and Patent Rights Article;
 - c. the work to be performed; and
 - d. the dates of award and estimated completion.

Upon request, Participant shall give a copy of the subcontract or other agreement to Patent Representative.

4. In any subcontract or other agreement with Participant, a Related Entity retains the same rights provided Participant in this Article. Participant shall not require any Related Entity to assign its rights in inventions made under this Agreement to Participant as consideration for awarding a subcontract or other agreement.
5. Notwithstanding paragraph G.4., in recognition of Participant's substantial contribution of funds, facilities or equipment under this Agreement, Participant may, subject to the NASA's rights in this Article:
 - a. acquire by negotiation rights to inventions made under this Agreement by a Related Entity that Participant deems necessary to obtaining and maintaining private support; and
 - b. if unable to reach agreement under paragraph G.5.a. of this Article, request from Patent Representative that NASA provide Participant such rights as an additional reservation in any waiver NASA grants the Related Entity under NASA Patent Waiver Regulations, 14 C.F.R. Part 1245, Subpart 1. Participant should advise the Related Entity that unless it requests a waiver, NASA acquires title to all inventions made under this Agreement. If a waiver is not requested, or is not granted, Participant may then request a license from NASA under 37 C.F.R. Part 404. A Related Entity requesting waiver must follow the procedures in paragraph J. of this Article.

H. Preference for United States manufacture

Products embodying inventions made under this Agreement or produced using the inventions shall be manufactured substantially in the United States. Patent Representative may waive this requirement if domestic manufacture is not commercially feasible.

I. March-in rights

For inventions made under this Agreement where Participant has acquired title, NASA has the right under 37 C.F.R. § 401.6, to require Participant, or an assignee or exclusive licensee of the invention, to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to responsible applicant(s), upon reasonable terms. If Participant, assignee or exclusive licensee refuses, NASA may grant the license itself, if necessary:

1. because Participant, assignee, or exclusive licensee has not, or is not expected within a reasonable time, to achieve practical application in the field of use;
2. to alleviate health or safety needs not being reasonably satisfied by Participant, assignee, or exclusive licensee;
3. to meet requirements for public use specified by Federal regulations being not reasonably satisfied by Participant, assignee, or exclusive licensee; or
4. because the requirement in paragraph H of this Article was not waived, and Participant, assignee, or exclusive licensee of the invention in the United States is in breach of the requirement.

J. Requests for Waiver of Rights

1. Under NASA Patent Waiver Regulations, 14 C.F.R. Part 1245, Subpart 1, an advance waiver may be requested prior to execution of this Agreement, or within thirty (30) days afterwards. Waiver of an identified invention made and reported under this Agreement may still be requested, even if a request for an advance waiver was not made or was not granted.
2. Each request for waiver is by petition to the Administrator and shall include:
 - a. an identification of the petitioner, its place of business and address;
 - b. if petitioner is represented by counsel, the name, address, and telephone number of counsel;
 - c. the signature of the petitioner or authorized representative; and
 - d. the date of signature.
3. No specific form is required, but the petition should also contain:
 - a. a statement that waiver of rights is requested under the NASA Patent Waiver Regulations;
 - b. a clear indication of whether the petition is an advance waiver or a waiver of an individual identified invention;
 - c. whether foreign rights are also requested and for which countries;

- d. a citation of the specific section(s) of the regulations under which are requested;
- e. whether the petitioner is an entity of or under the control of a foreign government; and
- f. the name, address, and telephone number of the petitioner's point-of-contact.

4. Submit petitions for waiver to the Patent Representative for forwarding to the Inventions and Contributions Board. If the Board makes findings to support the waiver, it recommends to the Administrator that waiver be granted. The Board also informs Patent Representative if there is insufficient time or information to process a petition for an advance waiver without unduly delaying the execution of the Agreement. Patent Representative will notify petitioner of this information. Once a petition is acted on, the Board notifies petitioner. If waiver is granted, any conditions, reservations, and obligations are included in the Instrument of Waiver. Petitioner may request reconsideration of Board recommendations adverse to its request.

ARTICLE 11. USE OF NASA NAME AND EMBLEMS

A. NASA Name and Initials

Participant shall not use "National Aeronautics and Space Administration" or "NASA" in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. Except for releases under the "Release of General Information to the Public and Media" Article, Participant must submit any proposed public use of the NASA name or initials (including press releases and all promotional and advertising use) to the NASA Associate Administrator for the Office of Communications or designee ("NASA Communications") for review and approval. Approval by NASA Office of Communications shall be based on applicable law and policy governing the use of the NASA name and initials.

B. NASA Emblems

Use of NASA emblems (i.e., NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. Participant must submit any proposed use of the emblems to NASA Communications for review and approval.

ARTICLE 12. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or Participant may, consistent with Federal law and this Agreement, release general information regarding its own participation in this Agreement as desired.

Pursuant to Section 841(d) of the NASA Transition Authorization Act of 2017, Public Law 115-10 (the "NTAA"), NASA is obligated to publicly disclose copies of all agreements conducted pursuant to NASA's 51 U.S.C. §20113(e) authority in a searchable format on the NASA website within 60 days after the agreement is signed by the Parties. The Parties acknowledge that a copy of this Agreement will be disclosed, without redactions, in accordance with the NTAA.

ARTICLE 13. DISCLAIMERS

A. Disclaimer of Warranty

Goods, services, facilities, or equipment provided by NASA under this Agreement are provided “as is.” NASA makes no express or implied warranty as to the condition of any such goods, services, facilities, or equipment, or as to the condition of any research or information generated under this Agreement, or as to any products made or developed under or as a result of this Agreement including as a result of the use of information generated hereunder, or as to the merchantability or fitness for a particular purpose of such research, information, or resulting product, or that the goods, services, facilities or equipment provided will accomplish the intended results or are safe for any purpose including the intended purpose, or that any of the above will not interfere with privately-owned rights of others. Neither the government nor its contractors shall be liable for special, consequential or incidental damages attributed to such equipment, facilities, technical information, or services provided under this Agreement or such research, information, or resulting products made or developed under or as a result of this Agreement.

B. Disclaimer of Endorsement

NASA does not endorse or sponsor any commercial product, service, or activity. NASA’s participation in this Agreement or provision of goods, services, facilities or equipment under this Agreement does not constitute endorsement by NASA. Participant agrees that nothing in this Agreement will be construed to imply that NASA authorizes, supports, endorses, or sponsors any product or service of Participant resulting from activities conducted under this Agreement, regardless of the fact that such product or service may employ NASA-developed technology.

ARTICLE 14. COMPLIANCE WITH LAWS AND REGULATIONS

A. The Parties shall comply with all applicable laws and regulations including, but not limited to, safety; security; export control; environmental; suspension and debarment laws and regulations; and establishing an Interconnection Security Agreement when applicable. Access by a Participant to NASA facilities or property, or to a NASA Information Technology (IT) system or application, is contingent upon compliance with NASA security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system/application access.

B. With respect to any export control requirements:

1. The Parties will comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120 through 130, and the Export Administration Regulations (EAR), 15 C.F.R. Parts 730 through 799, in performing work under this Agreement. In the absence of available license exemptions

or exceptions, the Participant shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data and software, or for the provision of technical assistance.

2. The Participant shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of work under this Agreement, including instances where the work is to be performed on-site at NASA and where the foreign person will have access to export-controlled technical data or software.

3. The Participant will be responsible for all regulatory record-keeping requirements associated with the use of licenses and license exemptions or exceptions.

4. The Participant will be responsible for ensuring that the provisions of this Article apply to its Related Entities.

C. With respect to suspension and debarment requirements:

1. The Participant hereby certifies, to the best of its knowledge and belief, that it has complied, and shall comply, with 2 C.F.R. Part 180, Subpart C, as supplemented by 2 C.F.R. Part 1880, Subpart C.

2. The Participant shall include language and requirements equivalent to those set forth in subparagraph C.1., above, in any lower-tier covered transaction entered into under this Agreement.

D. Participant shall annually certify the following to the NASA Administrative Contact to this Agreement:

1. Neither Participant nor any of its subcontractors nor partners are presently debarred, suspended, proposed for debarment, or otherwise declared ineligible for award of funding by any Federal agency;

2. Neither Participant nor any of its subcontractors nor partners have been convicted or had a civil judgment rendered against them within the last three (3) years for fraud in obtaining, attempting to obtain, or performing a Government contract;

3. Participant and any of its subcontractors or partners receiving \$100,000 or more in NASA funding for work performed under this Agreement have not used any appropriated funds for lobbying purposes prohibited by 31 U.S.C. § 1352; and

4. Participant is an eligible participant as defined as follows:

An entity organized under the laws of the United States or of a State, which is:

A. More than 50 percent owned by United States nationals; or

B. A subsidiary of a foreign company and the Secretary of Transportation finds that –

(i) Such subsidiary has in the past evidenced a substantial commitment to the United States market through –

- a. Investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and
- b. Significant contributions to employment in the United States; and

(ii) The country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph A comparable to that afforded to such foreign company's subsidiary in the United States, as evidenced by –

- a. Providing comparable opportunities for companies described in subparagraph A. to participate in Government sponsored research and development similar to that authorized under Title 51 U.S.C. Chapter 501 (Space Commerce);
- b. Providing no barriers, to companies described in subparagraph A. with respect to local investment opportunities, that are not provided to foreign companies in the United States; and
- c. Providing adequate and effective protection for the intellectual property rights of companies described in subparagraph A.

E. Pursuant to The Department of Defense and Full-Year Appropriation Act, Public Law 112-10, Section 1340(a); The Consolidated and Further Continuing Appropriation Act of 2012, Public Law 112-55, Section 539; and future-year appropriations (hereinafter, "the Acts"), NASA is restricted from using funds appropriated in the Acts to enter into or fund any agreement of any kind to participate, collaborate, or coordinate bilaterally with China or any Chinese-owned company, at the prime recipient level or at any subrecipient level, whether the bilateral involvement is funded or performed under a no-exchange of funds arrangement. Participant hereby certifies that it is not China or a Chinese-owned company, and that the Participant will not participate, collaborate, or coordinate bilaterally with China or any Chinese-owned company, at the prime recipient level or at any subrecipient level, whether the bilateral involvement is funded or performed under a no-exchange of funds arrangement.

(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) The restrictions in the Acts do not apply to commercial items of supply needed to perform this agreement. However, participant shall disclose to NASA if it anticipates making any award, including those for the procurement of commercial items, to China or a Chinese-owned entity.

(c) Subawards – The Participant shall include the substance of this provision in all subawards made hereunder.

In addition to the above certification, Participant shall immediately disclose to the NASA Administrative Contact, for any individual involved in this NASA-funded activity, any current or pending professional and educational affiliations or commitments to China or a Chinese-owned company, including Chinese universities.

F. Regarding INKSNA requirements, Participant shall disclose to NASA if it intends to rely upon Russian entities for development of its CLD system. Participant shall not subcontract to Russian entities without first receiving written approval from NASA.

(a) Definitions: In this provision:

(1) The term “Russian entities” means:

(A) Russian persons, or

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

(i) The Russian Federal Space Agency (Roscosmos),

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

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

(2) The term “extraordinary payments” means payments in cash or in kind made or to be made by the United States Government prior to December 31, 2025, for work to be performed or services to be rendered prior to that date necessary to meet United States obligations under the Agreement Concerning Cooperation on the Civil International Space Station, with annex, signed at Washington January 29, 1998, and entered into force March 27, 2001, or any protocol, agreement, memorandum of understanding, or contract related thereto.

(b) This clause implements the reporting requirement in section 6(i) of the Iran, North Korea, and Syria Nonproliferation Act. The provisions of this clause are without prejudice to the question of whether the Participant or its subcontractor(s) are making extraordinary payments under section 6(a) or fall within the exceptions in section 7(1)(B) of the Act. NASA has applied the restrictions in the Act to include funding of Russian entities via U.S. Contractors (Awardees).

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

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

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

BIS's Listing of Entities of Concern (see <http://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/entity-list>)

BIS's List of Denied Parties (see <http://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/denied-persons-list>)

OFAC's List of Specially Designated Nationals (see <http://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/default.aspx>)

List of Unverified Persons in Foreign Countries (see <http://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/unverified-list>)

State Department's List of Parties Statutorily Debarred for Arms Export Control Act Convictions (see http://pmddtc.state.gov/compliance/debar_intro.html)

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

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

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

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

(4) The date of the payment

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

(f) Notwithstanding FAR 52.216-7, “Allowable Cost and Payments,” on or after December 31, 2025, the Participant shall be responsible to make payments to entities defined in paragraph (a) of this provision. Any subcontract with entities defined in paragraph (a), therefore, shall be completed in sufficient time to permit the U.S. Government to make extraordinary payments on subcontracts with Russian entities on or before December 31, 2025.

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

G. During Agreement performance, Participant shall identify any “covered telecommunications equipment or services” as defined in Section 889(f)(3) of the National Defense Authorization Act of 2019, used as a substantial or essential component of any system, or as critical technology as part of any system, or if Participant is notified of such by a subcontractor at any tier or by any other source, the Participant shall report this in writing to the NASA Administrative Contact in the Agreement, within one business day from the date of such identification or notification.

ARTICLE 15. TERM OF AGREEMENT

This Agreement becomes effective upon the date of the last signature below (“Effective Date”) and shall remain in effect for four years from the Effective Date.

ARTICLE 16. RIGHT TO TERMINATE

A. Termination by Mutual Consent

This Agreement may be terminated at any time upon mutual written consent of both Parties.

B. Termination for Failure to Perform

(1) At its discretion, NASA may terminate this Agreement 30 days after issuance of a written notification that Participant has failed to perform under this Agreement by failing to meet a scheduled milestone, as identified and described in Appendix 2. Before making such a

notification, NASA shall consult with Participant to ascertain the cause of the failure and determine whether additional efforts are in the best interest of the Parties. Upon such a notification and determination, NASA will take all rights identified in Articles 9 and 10 of this Agreement.

(2) Participant shall not be entitled to any additional payments from the Government due to a termination for failure to meet a milestone. NASA and Participant will negotiate in good faith any other outstanding issues between the Parties. Failure of the Parties to agree will be resolved pursuant to Article 19, Dispute Resolution. Participant shall retain without liability or obligation of repayment all NASA payments made and received as of the date of termination.

C. Unilateral Termination by NASA

(1) NASA may unilaterally terminate this Agreement upon written notice in the following circumstances: (a) upon a declaration of war by the Congress of the United States; or (b) upon a declaration of a national emergency by the President of the United States; or (c) upon a NASA determination, in writing, that NASA is required to terminate for reasons beyond its control. For purposes of this Article, reasons beyond NASA's control include, but are not limited to, acts of God or of the public enemy, acts of the U.S. Government other than NASA, in either its sovereign or contractual capacity (to include failure of Congress to appropriate sufficient funding), fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or unusually severe weather.

(2) Upon receipt of written notification that the Government is unilaterally terminating this Agreement, Participant shall immediately stop work under this Agreement and shall immediately cause any and all of its partners and suppliers to cease work, except to the extent that Participant wishes to pursue this development, or similar projects, exclusively using its own funding. Upon such a termination, NASA and Participant agree to negotiate in good faith a final settlement payment to be made by NASA. However, in no instance shall NASA's liability for termination exceed the total amount due under the next milestone of this Agreement and is subject to the provisions of Article 5. Participant shall retain without liability or obligation of repayment all NASA payments made and received as of the date of termination. Failure of the parties to agree will be resolved pursuant to Article 19, Dispute Resolution.

D. Limitation on Damages

In the event of any termination by NASA, neither NASA nor Participant shall be liable for any loss of profits, revenue, or any indirect or consequential damages incurred by the other Party, its contractors, subcontractors, or customers as a result of any termination of this Agreement. A Party's liability for any damages under this Agreement is limited solely to direct damages, incurred by the other Party, as a result of any termination of this Agreement subject to mitigation of such damages by the complaining party. However, in no instance shall NASA's liability for termination exceed the total amount due under the next milestone under this Agreement.

E. Rights in Property

Participant will have title to property acquired or developed by Participant and its contractors/partners with government funding, in whole or in part to conduct the work specified

under this Agreement. In the event of termination of this Agreement for Failure to Perform, NASA may purchase such property as provided in Article 26 below.

ARTICLE 17. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this Agreement, e.g., “Liability and Risk of Loss”, “Intellectual Property Rights” related clauses, and “Financial Obligations” shall survive such expiration or termination of this Agreement.

ARTICLE 18. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Agreement.

Administrative Points of Contact:

NASA

Name

Title

Email

Telephone

Cell

Fax

Address

Participant

Name

Title

Email

Telephone

Cell

Fax

Address

Technical Points of Contact:

NASA

Name

Title

Email

Telephone

Cell

Fax

Address

Participant

Name

Title

Email

Telephone

Cell

Fax

Address

ARTICLE 19. DISPUTE RESOLUTION

Except as otherwise provided in the Article entitled “Intellectual Property Rights – Invention and Patent Rights” (for those activities governed by 37 C.F.R. Part 404), and those situations where a pre-existing statutory or regulatory system exists (e.g., under the Freedom of Information Act, 5 U.S.C. § 552), all disputes concerning questions of fact or law arising under this Agreement shall be referred by the claimant in writing to the appropriate person identified in this Agreement as the “Points of Contact.” The persons identified as the “Points of Contact” for NASA and the Participant will consult and attempt to resolve all issues arising from the implementation of this Agreement. If they are unable to come to agreement on any issue, the dispute will be referred to the signatories to this Agreement, or their designees, for joint resolution. If the Parties remain unable to resolve the dispute, then the NASA signatory or that person’s designee, as applicable, will issue a written decision that will be the final agency decision for the purpose of judicial review. Nothing in this Article limits or prevents either Party from pursuing any other right or remedy available by law upon the issuance of the final agency decision.

ARTICLE 20. INVESTIGATIONS OF MISHAPS AND CLOSE CALLS

In the case of a close call, mishap or mission failure under this Agreement, the Parties agree to provide assistance to each other in the conduct of any investigation. For all NASA mishaps or close calls, Participant agrees to comply with NPR 8621.1, “NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping” and JPR 8621.1, “Johnson Space Center Mishap Response Plan.”

ARTICLE 21. MODIFICATIONS

Any modification to this Agreement shall be executed, in writing, and signed by an authorized representative of NASA and the Participant.

ARTICLE 22. ASSIGNMENT

Neither this Agreement nor any interest arising under it will be assigned by either Party without the express written consent of the officials executing, or successors, or higher-level officials possessing original or delegated authority to execute this Agreement.

ARTICLE 23. APPLICABLE LAW

U.S. Federal law governs this Agreement for all purposes, including, but not limited to, determining the validity of this Agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

ARTICLE 24. INDEPENDENT RELATIONSHIP

This Agreement is not intended to constitute, create, give effect to or otherwise recognize a joint venture, partnership, or formal business organization, or agency agreement of any kind, and the rights and obligations of the Parties shall be only those expressly set forth herein.

ARTICLE 25. LOAN OF GOVERNMENT PROPERTY

The parties shall enter into a NASA Form 893, *Loan of NASA Equipment*, for NASA equipment loaned to Participant.

ARTICLE 26. TITLE AND RIGHTS IN REAL AND PERSONAL PROPERTY

Participant will have title to property acquired or developed by Participant under this Agreement, including acquired or developed by Participant for the CLD effort. In the event of Termination for Failure to Perform under Article 16.B, NASA will have the right to purchase any such property. The Parties will negotiate in good faith purchase prices for specific items of property. The negotiated prices will be based on Participant's actual costs for purchase or development of the specific item(s), or fair market value, whichever is less. This price will then be discounted by a percentage that reflects the ratio of government funding provided under the Agreement versus the amount of Participant funding used to develop the specific item(s) of property. However, NASA shall have no rights in property acquired or purchased by Participant that does not directly derive from NASA funding under this Agreement.

ARTICLE 27. NASA FURNISHED INFORMATION AND SERVICES

A. NASA may, at its sole discretion and on terms to be negotiated between the Parties, provide Participant additional NASA services, technical expertise, or Government Property. Low-level requests, such as for a document, telecon, or Technical Interchange Meeting (TIM) of one day or less duration, may be fulfilled during performance of the SAA. Additional NASA services, technical expertise, or Government Property may be provided on a fully reimbursable basis. Specific services and property will be identified in modifications to this Agreement. Unless NASA specifically requires Participant to use NASA furnished services, technical expertise or Government Property to fulfill its obligations under this Agreement, any decision by Participant to use NASA furnished services, technical expertise or Government Property shall be at Participant's option and sole discretion. Participant shall remain solely responsible for completion of its milestones under this Agreement regardless of the availability or use of such optional NASA services, technical expertise, or Government Property.

B. There is no Government Furnished Property or Services furnished under this Agreement except for those that may be provided in Article 27.A. However, Participant has the ability to enter into separate Space Act agreements with NASA Centers to use NASA resources in performance of this Agreement. The terms and conditions of other Space Act agreements will govern the use of NASA resources not being provided under this Agreement. With each of its

subcontractors or partners, including NASA Centers, Participant will be responsible for ensuring timely, accurate work, and replacing such subcontractors or partners, where necessary and appropriate and at the discretion of Participant, in order to meet milestones.

ARTICLE 28. OPTIONS TO EXERCISE ADDITIONAL MATURATION EFFORT

Appendix 2, Milestones and Success Criteria, includes optional milestones regarding XYZ's further maturing of its CLD System towards CDR level of maturity. These milestones are included only as a priced Option to this Agreement and create no obligation for either Party to perform unless NASA decides to extend an offer to exercise the Option and the Parties mutually agree. Should NASA decide to extend such offer, it will provide to XYZ written notification of such an intention from the Associate Administrator of Human Exploration and Operations Mission Directorate (HEOMD) or his/her designee no later than 60 days prior to the end of this Agreement.

ARTICLE 29. SIGNATORY AUTHORITY

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION

XYZ

BY: _____
Kathryn Lueders
Associate Administrator
Human Exploration and Operations

BY: _____
[NAME]
[TITLE]

DATE: _____

DATE: _____

APPENDIX 1:
Participant Executive Summary

{Participant will provide publicly releasable Executive Summary of its CLD concept here.}

**APPENDIX 2:
Participant Milestones**

{Participant to propose Milestones in their proposal which shall be negotiated by the parties, and can include:

1. Programmatic achievements (e.g. kickoff meeting, major regulatory approvals, Participant Program reviews). Participant's Programmatic Milestones will be guided by NPR-7123.1 and tailored as Participant might propose and NASA may accept.
2. Financial or Business Case achievements (e.g. completion of major financing rounds)
3. Major technical achievements (e.g. demonstration of critical subsystems)

Each Milestone shall have Entrance and Success Criteria. For Programmatic Reviews the Entrance and Success Criteria can be further defined in Appendix 3.

The following are examples.}

Baseline Milestones

<p>Milestone 1: Project Management Plan Review</p> <p>Subsequent to Space Act Agreement execution and initiation of the CLD program, XYZ shall host a kickoff meeting to describe the plan for the Participant's program implementation, which includes management planning for Architecture maturation, planned approach to Design, Development, Testing, & Evaluation (DDT&E), top level integrated schedule, financing, supplier engagement, risks and anticipated mitigations.</p> <p>XYZ shall provide a briefing of the program implementation plan, along with a hard copy of the presentation materials, and responses to any questions that the NASA Team might have concerning XYZ's plan.</p> <p>Entrance Criteria: Participant readiness to present to NASA. Anticipated to be within 30 days of Agreement being signed by both Parties.</p> <p>Success Criteria: Successful completion of the project management plan review as described above.</p>	<p>Amount: \$xx Date: xx</p>
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<p>Milestone x: Preliminary Design Review</p> <p>XYZ shall conduct a Preliminary Design Review (PDR) in accordance with the PDR definition in Appendix 3.</p> <p>Entrance Criteria</p> <ul style="list-style-type: none"> - Entrance criteria satisfied that show readiness to conduct PDR per Appendix 3 - All PDR data made available to NASA to review - Review Board established with NASA representative <p>Success Criteria:</p> <ul style="list-style-type: none"> - Successful completion of the PDR per Appendix 3 - All NASA-originated review items have been successfully dispositioned by the Review Board 	<p>Amount: \$xx Date: xx</p>
<p>Milestone x: Financing</p> <p>A \$xxM equity financing round is completed.</p> <p>Entrance:</p> <ul style="list-style-type: none"> - Not applicable <p>Success Criteria:</p> <ul style="list-style-type: none"> - All necessary documentation is completed and the funds are deposited as evidenced by bank statement or are otherwise available under a credit line. 	<p>Amount: \$xx Date: xx</p>
<p>Milestone x: Technical Accomplishment</p> <p>XYZ shall conduct a [describe major technical accomplishment].</p> <p>Entrance Criteria:</p> <ul style="list-style-type: none"> - [simple and clear description of readiness criteria. E.g. widget system has passed a test readiness review and is ready for some specific testing] <p>Success Criteria:</p> <ul style="list-style-type: none"> - [simple and clear description of success criteria. E.g. widget system has successfully completed the planned testing] 	<p>Amount: \$xx Date: xx</p>

Optional Milestones

<p>Milestone x: TBD</p> <p>XYZ shall [describe major accomplishment].</p> <p>Entrance Criteria:</p> <ul style="list-style-type: none">- [simple and clear description of readiness criteria] <p>Success Criteria:</p> <ul style="list-style-type: none">- [simple and clear description of success criteria]	<p>Amount: \$xx</p> <p>Date: xx</p>
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Appendix 3:
Entrance and Success Criteria for Participant's CLD Program Reviews

The Participant may propose Programmatic Reviews as Milestones in Appendix 2. The entrance and success criteria of Participant's Programmatic Milestones will be guided by NPR-7123.1 and tailored as Participant might propose and NASA may accept, and be defined in this Appendix or Appendix 2.

[Note: this Appendix is optional. Definition of milestones and entrance and success criteria as needed may also be documented in the Appendix 2 milestone table.]