National Aeronautics and Space Administration

Lunar Volatiles Science Partnership (LVSP)

Announcement for Partnership Proposals
NASA-LVSP
Solicitation NNH25ZDA010L

Release Date: February 3, 2025

Step 1 Proposals Due: March 3, 2025, 4pm Eastern Standard Time
Step 1 Results: March 10, 2025 (estimated)
Step 2 (Limited) Proposals Due: no earlier than May 2, 2025 (estimated), 4pm Eastern Daylight Time

Exploration Science Strategy Integration Office
Science Mission Directorate
NASA Aeronautics and Space Administration

For Questions Regarding This Announcement:

Contact HQ-volatilespartnership@mail.nasa.gov

AMENDMENTS AND HISTORY PAGE

Amend No.	DESCRIPTION	DATE
-	Announcement for Partnership Proposals	2/3/2025

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1. INTRODUCTION

1.1 Background

This Announcement for Partnership Proposals (AFPP) invites proposals from parties interested in partnering with NASA to obtain science data with NASA's Volatiles Investigating Polar Explorer Rover (VIPER) rover by delivering it to the Moon, operating it and sharing with NASA the science results.

On July 17, NASA announced its intent to discontinue the VIPER mission due to overall Science Mission Directorate funding constraints, future budget risks, and lander delays. At that time, NASA requested expressions of interest from potential partners interested in conducting VIPER mission concepts that maximize value to the Agency through innovative mission ideas and arrangements. NASA issued a public request for information (RFI), as several parties asked for additional information about VIPER and about how to share their interest with NASA. NASA determined that there are potentially feasible mission concepts offered by potentially viable partners to complete the VIPER mission within the parameters specified, based on the RFI responses and other NASA market research.

This AFPP envisions a novel partnership under which NASA will substantially achieve VIPER's envisioned science return while growing the lunar economy and demonstrating partner technical capabilities for lunar landing and resource prospecting. A successful partnership will demonstrate commercial capabilities in lunar science and exploring the resource potential of the moon. NASA's partner will gain unique experience delivering a 500kg payload to the lunar surface, which aligns with a key interest of NASA's Explorations Systems Development Mission Directorate's recent lunar cargo surface study. This mass range may be extensible to future major NASA science missions as well as commercial enterprises. The partnership will leverage NASA's substantial investment in lunar science and further promote a commercial lunar economy in alignment with NASA's Strategic Plan.

VIPER is a robotic lunar rover designed to explore the Moon in search of water ice and other potential volatile resources. The suite of instruments was selected to address high priority science questions by providing information about the origin and distribution of water on the Moon and across the solar system. The data the rover collects could be used to indicate where the Moon's water ice is most likely to be found and easiest to access. The original science objectives of the VIPER mission were to:

- Characterize the distribution and physical state of lunar polar water and other volatiles in lunar cold traps and regolith to understand their origin.
- Provide the data necessary for NASA to evaluate the potential return of In-Situ Resource Utilization (ISRU) from the lunar polar regions.

To accomplish these objectives, VIPER was intended to explore four polar "Ice Stability Regions" (ISRs), based on the predicted thermal stability of ice with depth and defined as follows:

- “Surface” - Ice potentially stable on the surface in Permanently Shadowed Regions (PSRs).
- “Shallow” - Ice stable within 20cm from the surface.
- “Deep” - Ice stable between 20-85cm from the surface.
- “Dry” - Ice not likely stable below 85cm from the surface.

VIPER would then characterize the thermal environments and geologic settings of Permanently Shadowed Regions (PSRs), Transiently Shadowed Regions (TSRs), micro cold traps, and peaks of near-eternal light. VIPER is a remotely commanded, ~500kg, golf-cart sized rover of approximate dimensions 1.5m x 1.5m x 2.0m. Appropriate battery energy storage and thermal management, in part through traverse planning, enable the rover to survive multiple lunar day-night cycles. Due to the mission operations needed, the rover must be operated by mission control staff on Earth and communicated with using near-real time direct to Earth (DTE) communications. The rover was designed to operate for approximately 100 Earth-days to cover three cycles of lunar day/night near the western edge of Nobile Crater in the lunar South Pole region.

The VIPER rover was designed to explore Mons Mouton near Nobile Crater and to venture into some of the semi-permanent regions (i.e. TSRs) and permanently shadowed regions (PSRs) of the Lunar South Pole to survey different ice-stability regions, to detect and to assess volatile distribution and concentration. The rover carries four instruments including a one-meter drill. Collectively, the instrument set is designed to detect and analyze various lunar soil environments at a range of different depths and temperatures:

- The VIPER drill, The Regolith and Ice Drill for Exploring New Terrain (TRIDENT), excavates using an auger/percussion approach, which utilizes a hammering action in conjunction with a rotary motion, to penetrate to a depth of 1-meter and deliver lunar regolith in small (10 centimeter) segments for vertical profiling.
- The Neutron Spectrometer System (NSS) instrument is designed to prospect for and map the distribution of hydrogen-rich materials while roving. NSS is located on the front of the rover to have an unobstructed view of the lunar surface.
- The Near InfraRed Volatiles Spectrometer System (NIRVSS) instrument operates during roving or while drilling. The instrument looks for near real-time changes in the properties of the materials exposed. Using different wavelengths of light to illuminate the surface, NIRVSS provides an additional means of surveying the surface and immediate excavation site for water and other volatiles, providing surface and regolith mineral context.
- The Mass Spectrometer observing lunar operations (MSolo) instrument operates during roving or while drilling. MSolo identifies low-molecular weight volatiles on the surface or from subsurface excavations. Working in concert with the NIRVSS instrument, the instruments analyze volatiles from the materials delivered by the drill bit from a depth of up to one meter.

The below document will lay out two steps for this AFPP evaluation, with a second (limited) Step 2 process involving a more detailed proposal. For the selected Step 2 proposers, there will be a targeted Q&A session focused on lower-level details of the VIPER rover. NASA will review the VIPER mission as developed and will status ground system development and rover completion including the vibration, acoustic, and thermal test campaigns that it completed in 2024 as well as the state of analyzing the resulting data. Such presentations will reflect NASA's current understanding of the system, which may have errors. Based on the current state of VIPER development, the proposer may elect to conduct additional testing or analysis, at proposer's expense, to increase the odds of mission success. There will be an overview of capabilities of the VIPER instruments as well as the mission operations and operational capabilities of VIPER. Proposers are reminded that goods, services, facilities, or equipment provided 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 provided under this Agreement.

On the Volatiles Partnership website (https://science.nasa.gov/lunar-science/volatiles-partnership/), within a few days of AFPP release, NASA will make available a reference document which will include a summary of technical and interface requirements of the current 'project of record' for VIPER. The VIPER rover vibration and acoustic qualification tests were successfully completed, per requirements established for the Astrobotic Griffin Mission-1 lander, which VIPER was previously manifested on prior to VIPER's cancellation. A different VIPER lunar delivery system may require new analysis and additional testing. Additionally, the VIPER rover had been designed for mechanical, electrical, and structural interfaces with the Griffin Mission 1 lander. The proposer will have to accommodate the existing VIPER side of the interface, which is described in the reference document within a few days of AFPP release. NASA views any potential design changes or hardware modifications to the VIPER rover as potentially introducing risk, and mitigating such potential changes is part of an evaluation criterion. At a future Q&A session, NASA will also provide information on expected export control issues that might emerge when handling and operating VIPER systems.

The following items identify a known but not an exhaustive list of potentially significant factors a proposer may want to consider in preparing a response to this AFPP.

- The VIPER rover and its instrument suite are designed to receive commanding from Earth via direct-to-Earth communications. The VIPER rover moves autonomously though 4-6m position commands from the ground, avoiding obstacles along the way. The communication system is designed to use an X-band transceiver utilizing NASA Deep Space Network (DSN) for DTE bi-directional transmission. Use of NASA's DSN shall be on a fully reimbursable basis as part of this agreement, if requested. Because DSN is a limited and highly sought after NASA resource, early coordination with NASA Space Communications and Navigation (SCaN) office (coordinated through SMD/ESSIO) will be required for scheduling of services from integration/system testing through mission deployment. Traverse commands are waypoints created from rover path planning based on near real-time imaging feedback and full system telemetry. A ground mission-ops, science, and traverse planning team, including rover engineers and instrument scientists, will be necessary to safely operate the vehicle and its instrument suite. The proposer may request, on a fully reimbursable basis, that NASA provide this existing expertise and/or

ground mission-ops capabilities, for this uniquely designed rover system. Information and the process for ascertaining NASA cost estimates is identified below.

- Prior to launch, the VIPER rover system requires periodic monitoring and maintenance to minimize capacity degradation over a long period of ground storage. The VIPER team developed a plan for maintaining the rover while in storage, awaiting mission integration with a lunar delivery proposer. NASA will explain this plan at the Proposer Q&A and VIPER briefing day. Each proposer should indicate their preferred approach for VIPER storage after partnership initiation and prior to hardware integration; if continued use of NASA storage facilities are desired, then this service can be made available on a fully reimbursable basis, that includes periodic health monitoring. Transportation and storage requirements and capabilities should be defined in the proposal to enable proposal evaluators to identify any risks to the rover.
- Knowledge transfer may be an important consideration for proposers. NASA has captured some significant technical information in the above noted reference document, "VIPER– Program of Record Technical Information to Inform Partnership Proposal Formulation," reflecting program plans and requirements for VIPER's initially planned development approach. This reference document currently exists but has export-controlled information tied to International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR), and proposers must comply with ITAR/EAR restrictions. A cleared non-export controlled version of the document will be released within a few days of AFPP release at the Volatiles Partnership website noted above, and at the same time NASA will provide information at the Volatiles Partnership website noted above about how qualified US companies may obtain the full document. This information goes beyond what was provided in the RFI. As with any engineering development, there is significant tacit knowledge about how the VIPER rover, its instruments, and its initially envisioned mission operations concept and communications architecture would function that is hard to explicitly convey in a reference document. NASA will provide more information to selected Step 2 proposers about VIPER technical details and interfaces, some of which may have ITAR/EAR restrictions. This knowledge transfer challenge may well motivate a potential partner to propose the use of government resources on a reimbursable basis as described in Section 2.6. VIPER project has also previously released relevant data at this website, which may be updated over the course of this APPP:
    - https://science.nasa.gov/mission/viper/rfi/
- The selected Partner will be responsible for all aspects of VIPER integration with the offeror's lunar delivery system, and subsequent lunar delivery. Additional testing and analysis of the VIPER rover, which will be provided on an "as-is" basis, may be desired by the Partner, and will be subject to NASA approval. Any subsequent design and operational changes asked to be performed by NASA staff shall be implemented on a fully reimbursable basis. Any changes to the VIPER rover hardware and software must receive written permission from NASA given that NASA will retain ownership of the rover.
- Sharing of scientific data (defined in Model Agreement) with NASA per NASA's open data policies is part of the proposal content directions and evaluation criteria. Earlier sharing of scientific data is viewed more favorably.

- To protect the ability to successfully complete mission objectives, the mission should employ cybersecurity safeguards. NASA has captured recent cyber security best practices in a series of requirements that are briefly outlined below. Approaches to cyber security will be assessed and reviewed as part of the technical evaluation criteria. Proposers should adopt best practices equivalent to the NASA and NIST requirements noted below.
    - Project Protection (Spacecraft) NASA-STD-1006A Space System Protection Standard[1].
        - Command Stack Protection and Backup
        - Positioning, Navigation and Timing (PNT) resilience from full or temporary loss
        - Interference Training and Reporting
    - Cybersecurity
        - Inventory: Accurately document, track, and report all components to System Security Plans
        - Operating System (OS) Management: Architect to allow seamless OS and Software upgrades
        - Security Plan Management: Align to NIST 800-53 with Authorization to Operate (ATO)/ and ongoing in Phase E
        - Vulnerability Management: Architect to allow frequent and continuous security patches
        - Protection: implement Zero Trust
    - Operational Security (OPSEC)
        - Acknowledge adversarial threats to mission exists
        - Limit the exposure of data that benefit adversaries
        - Identify, control, and protect information associated with planning and execution of mission

1.2 Purpose and Partnership Strategy

NASA is seeking a partner to conduct a Lunar Volatiles Science Partnership using NASA's Volatiles Investigating Polar Exploration Rover (VIPER) rover on the Moon that addresses some or all of NASA's science objectives for VIPER, and could accomplish other NASA exploration objectives, as well as any partner objectives. NASA would contribute the existing VIPER rover as-is. The partner would start with the existing VIPER rover and be expected to complete any additional desired systems level testing, arrange for the integration with the partner's lander and partner-provided launch vehicle, and successfully land on the Moon, conduct a science/exploration campaign, and disseminate VIPER-generated science data. Partner would also be expected to provide all other resources required to complete the mission from the hardware's current state and to fully reimburse NASA for use of any desired NASA capabilities (including but not limited to any additional testing and anomaly resolution activities, payload preparation and processing support, science/instrument/operations teams support, or use of DSN) needed to successfully complete the mission. Partners may propose that NASA provide services

[1] Access to NASA standards can be obtained at standards.nasa.gov.

that are not reimbursed, which would result in their proposal being evaluated less favorably. The mission partner remains responsible for mission success. Any desired NASA support is provided on a best-effort basis. All NASA-provided goods, services, facilities, or equipment shall be provided on a best-effort basis, and therefore the Partner's decision to utilize NASA-provided goods, services, facilities, or equipment will be at the Partner's risk. Partners may not disassemble and use instruments/parts of VIPER separately from a VIPER mission.

A selected partnership proposal would culminate in a Cooperative Research and Development Agreement (CRADA) for a Lunar Volatiles Science Partnership (LVSP). Use of a CRADA will allow for the incorporation of reimbursable and non-reimbursable aspects of a partnership into a single agreement. NASA will not be providing funding to the Partner under this agreement; further, use of a CRADA does not allow for NASA to provide funds directly to the Partner.

The purpose of this contemplated agreement is to enable important scientific research using the existing NASA VIPER rover asset and to make the resulting scientific data available to the science community and the public. These outcomes would help to enable NASA's broader scientific goals, indirectly informing planning for future Artemis missions, and help provide commercial sector insight tied to resource prospecting.

This Announcement seeks proposals to deliver the VIPER rover to the lunar surface and to perform science operations with it, including the collection and dissemination of VIPER-generated science data that derive from VIPER instruments. Proposers (those responding to this Announcement) will propose how to accomplish these goals, providing sufficient detail in their proposal such that a subsequent Technical Implementation Plan can be developed that captures the proposed scope of work. Proposals for subsystems and individual technologies (e.g. instruments, components) are not sought by this Announcement. Proposers may propose to use capabilities that align with other U.S. Government efforts the proposer may have under separate contract or agreement, such as a proposed lander asset that may separately be used to deliver the VIPER rover. Proposer may not request reimbursable services from NASA that are related to other non-LVSP activities, including existing contracts, agreements or grants.

1.3 Approach

NASA seeks proposals for an expeditious landing and operation of the VIPER rover, which will inform NASA's evaluation and partner selection as outlined below. NASA will provision the VIPER rover hardware to the partner as-is. Partner will be responsible for integrated testing with their lander and analysis, integration, launch, lunar transit, landing, rover roll-off/offload/disembarkment, and surface operations and dissemination of VIPER-generated science data in accordance with the terms of the resulting CRADA agreement. The period of performance in no event shall exceed five years. Proposers may propose a shorter period of performance and are encouraged to have early but reliable proposed lunar landing plans.

This Announcement and subsequent agreements with a Partner (as eligible as defined by Section 2.1) are referred to as Lunar Volatiles Science Partnership (LVSP). NASA will commence its LVSP activity with Partner upon execution of the CRADA, which is targeted for mid-2025.

This will be a two-step solicitation process, with a first abridged proposal made in Step 1, followed by a larger proposal in Step 2. The detailed proposal content for these areas is described in Section 3. The overall schedule for these events is listed below. Additional information and communication will be shared on NASA's Volatiles Partnership website, which is available at:

- https://science.nasa.gov/lunar-science/volatiles-partnership/

NASA may periodically update NASA's Volatiles Partnership website, including announcing meetings with log-on details for interested parties. It is the responsibility of interested parties and proposers to stay up to date with that website and ensure that they have the latest information available. The results of any Q&A discussions or other future briefings will be posted at the same Volatiles Partnership website and not necessarily updated on sam.gov.

The target schedule is as follows:

- AFPP release on February 3, 2025
- Receiving questions and input from potential partners will initially be solicited and discussed at two separate meetings, both of which will be announced at the volatiles partnership website:
    - AFPP Kickoff Meeting will be held to discuss AFPP framing and content.
    - A technical Q&A session will be held to overview additional information about VIPER interfaces, testing and analysis status.

- Step 1 proposals due March 3, 2025, 4pm Eastern Time. Proposers are recommended to send the HQ-volatilespartnership@mail.nasa.gov email a notice of intent to submit 72 hours prior to submission. After submitting, notify that email of the submission along with the file name submitted.
- NASA hopes to announce its Step 1 proposal results by March 10, 2025, asking a limited set of favorably evaluated proposers to submit Step 2 proposals as described by the AFPP.
- Receiving questions and providing input to Step 2 proposers:
    - Additional information will be provided about a technical interchange discussion that would be available to selected (limited) Step 2 proposers. This is expected to include a briefing on ground system development status at VIPER and additional operational guidance for instruments and the operations center.
    - Step 2 proposers may request more fine-grained NASA cost estimates about the potential costs of NASA services to inform their proposal. Requests about potential costs of NASA services shall be submitted to the below POC no later than ten days after the request to submit Step 2 proposals. This will enable NASA to have sufficient time to respond. NASA will aim to respond in a timely fashion.

- Step 2 proposals are due no earlier than May 2, 2025, 4pm Eastern Time (date to be reviewed based on timing of Step 1 selections), giving a ~40-day Step 2 response period. Proposers are recommended to send the HQ-volatilespartnership@mail.nasa.gov email a notice of intent to submit 72 hours prior to submission. After submitting, notify that email of the submission along with the file names submitted.
- NASA hopes to complete its evaluation and selection within 30 calendar days. However, this period may include due diligence discussions with the proposers. NASA reserves the right to ask additional clarifications of the proposers as needed.
- Depending upon changes to the Model Agreement proposed by the partner and the readiness of the proposal to be turned into a Technical Implementation Plan (see below guidance on Appendix 4) that codifies planned work by the partner, partnership could become active within an additional 30 days, although more time may be needed.

1.4 Milestones

The LVSP CRADA (Article 4) shall include the Partner's proposed milestones and associated objective success criteria against which the Partner's overall progress will be measured. The purpose of the milestones is to give NASA a guide for ensuring that the Partner remains on track to deliver and operate the VIPER rover under the CRADA, while maintaining an acceptable level of risk to accomplish primary science objectives. NASA will use data provided by the Partner at milestones to assess the continued viability of the mission.

The proposal instructions and criteria for Step 2 proposals require the proposers their own suggested milestones in Appendix 1 (Article 4) that would provide the insight provided above. Each proposed milestone shall include a descriptive title, objective success criteria, and planned achievement dates (month and year). Milestones should represent significant technical and business progress in the Partner's program. Milestones should show measurable progress and be reasonable and realistic. The evaluation criteria below make clear that proposals that provide more insight and ability for NASA to participate in key decisions will be evaluated more favorably. Milestones should include:

- Significant development, analysis, testing, and evaluation events
- Lander's major fight system components delivery dates to the Partner, lander assembly, lander integration testing and encapsulation into the launch vehicle
- Evaluations (based on Coupled Loads Analysis or other relevant milestones) that no hardware changes will be required on the VIPER rover to accommodate additional testing criteria.
- Payload integration readiness and assessment moments
- Business progress such as financing and marketing achievement.
- Major design reviews and other life cycle reviews, which help provide an integrated technical and programmatic understanding of LVSP approach. The following are notional NASA examples that might be considered:
    - Preliminary Design Review
    - Rover and Lander Interfaces Review

- Critical Design Review
- VIPER rover Integration Readiness Review
- Pre-Environmental Review
- Integrated Mission Flight Readiness Review
- Flight and Science Operations Readiness Review
- Launch Readiness Review
- End of Primary Mission Review/Science Mission Completion Review

The proposer's milestone schedule shall assume that all Base Insight Support and specific support of government resources (defined below in Section 2.6) which it identified in Appendix 2 of its proposal are provided; however, the Partner must accept that NASA responses and participation are on a 'best effort' basis.

2. INFORMATION FOR PROPOSERS

2.1 General Information

Agency:	National Aeronautics and Space Administration
Responsible Office:	Lunar Discovery and Exploration Program Exploration Science Strategy Integration Office Science Mission Directorate
Step 1 Proposal Due Date:	March 3, 2025, 4pm Eastern Time
Estimated Step 2 Proposal Due Date:	No earlier than May 2, 2025, 4pm Eastern Time
Point of Contact:	All questions shall be directed to the following NASA official as specified below: Zachary Pirtle, Ph.D., Program Executive, Exploration Science Strategy Integration Office, Science Mission Directorate Sumera Ali, Agreement Officer/Manager LVSP agreement email inbox: hq-volatilespartnership@mail.nasa.gov

Additional Information: The Announcement is being distributed by sam.gov to all interested proposers. Additional information and follow-on steps may be shared to limited Step 2 proposers via other means.

2.2 Eligibility Requirements

To be eligible for award under this announcement, an entity must be organized under the laws of the United States or of a State and be more than 50 percent owned by United States nationals.

It is required that this entity, as the lead proposing Partner, will perform a substantial portion of Partner's efforts for the LVSP partnership, providing at minimum some of the key technical subsystems needed as well as serving as the overall integrator and manager of the effort. NASA has found that contracts and partnerships wherein most of the technical work is being performed by secondary team members or subcontractors can create challenges for NASA's insight capabilities.

Partner may propose to Team with a US domestic company to provide the launch vehicle and/or rover. In accordance with National Space Transportation Policy, the proposed launch vehicle must be manufactured in the United States. With the exception of the launch vehicle and rover, Partner may propose teaming relationships with international entities for other aspects of the LVSP partnership, including science teams. However, all teaming arrangements are subject to the restrictions contained in Section 2.3 below.

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

Proposers 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 establishment of an Interconnection Security Agreement when applicable. Further, awardees and team members must not be restricted by any government sanctions.

With respect to export control, the entity awarded a LVSP CRADA 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 LVSP CRADA 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. By submitting a proposal, Proposer is certifying that it is not China or a Chinese-owned company, and that the Proposer 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 of China. 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, Proposer 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."

Entities that intend to rely on Russian suppliers shall comply with the Iran, North Korea, and Syria Nonproliferation Act (P.L. 106-178, amended by P.L. 107-228, P.L. 109-112, P.L. 109353, P.L. 110-329, P.L. 112-273, P.L. 116-94; 50 U.S.C. 1701 note) (INKSNA) and any other applicable sanctions law (including, but not limited to, the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991, 22 U.S.C. 5601 et seq.; Countering America's Adversaries Through Sanctions Act, P.L. 115-44 (Aug. 2, 2017); and the International Emergency Economic Powers Act, 50 U.S.C. 1701 et seq.) during the agreement performance. 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 and imposes reporting and assessment requirements. NASA has applied the restrictions in this Act to include NASA funding of Russian entities via U.S. entities.

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

- U.S. Space Transportation Policy, November 2013
- U.S. National Space Policy, December 2020
- 51 U.S.C. Chapter 501 – Space Commerce

• 51 U.S.C Chapter 509 – Commercial Space Launch Activities

2.4 Title and Rights in Personal Property

Title to all personal property acquired or developed by a Partner for the LVSP activity will remain with the Partner. All personal property acquired or developed by the government will remain U.S. Government property.

2.5 Anticipated Funding

NASA will not provide any funding to Partners through awards made under this Announcement. Partners are expected to secure all the funding necessary to perform their obligations under the LVSP agreement from sources other than this agreement. The proposal content outlined below requires partners to discuss their financial plan and capability to execute the partnership. The evaluation criteria incentivize against the partner requesting non-reimbursed cost expenditures from NASA.
The Government's obligation to enter into and continue performance of these agreements is contingent upon the availability of appropriated funds. If NASA is requested to and agrees to provide resources on a reimbursable or non-reimbursable basis, then NASA reserves the right to prioritize that work against other competing priorities based upon changing appropriations, and will discuss such potential changes with the partner if needed.

2.6 Use of Government Resources

Following award under this announcement, NASA seeks to expend no funds in support of the VIPER rover, including partnership activities, beyond the non-reimbursable support activities outlined below and in the model agreement. These insight activities are described as Base Insight Support below.

However, proposals to this AFPP may request that NASA services be performed to support the partnership, either on a fully reimbursable, partially reimbursable, or non-reimbursable basis. This could potentially include the support categories noted below, including traverse operations and science support. NASA's evaluation criteria in this proposal will then assess the associated cost impact to NASA accordingly. In responding to this Announcement, NASA encourages Proposers requesting NASA services to be as specific as possible in their proposals about the type of Government resources, the amount of each type, projected NASA workforce and time needed to support the service (if known) and the anticipated schedule that they are proposing. All NASA-provided goods, services, facilities, or equipment shall be provided on a best-effort basis, and therefore the Partner's decision to utilize NASA-provided goods, services, facilities, or equipment will be at the Partner's risk. Plans to reimburse (fully or partially) should be identified.

There could be a risk that requested reimbursable NASA support ends up becoming more expensive than initially estimated, exceeding the level of funding that NASA has available. Such a cost increase could be due to unanticipated complexities, delay in accomplishing planned activities between NASA and/or the Partner, or other causes. In such cases, the Partner would need to fully reimburse NASA for any additional support if NASA is to continue to provide the reimbursable service.

In order to assess NASA pricing for potential non-reimbursable support, Step 2 proposers may contact the AFPP contact email listed above in order to inquire about potential pricing. NASA will store information about the potential capability and cost that it may provide in a format that would be made available to all Step 2 proposers. If included in a Step 2 proposal, these non-reimbursed costs would factor into the cost evaluation criteria.

To facilitate initial estimation of costs of NASA activities, NASA will make available an initial estimate for lunar landing costs and activities for the original November 2025 landing timeframe. This helps to provide context for what NASA's activities might occur.

Government resource types will be in two categories:

1. Base Insight Support. This will generally be the same for all LVSP Proposers and may consist of:
    - NASA partnership point of contact
    - NASA attendance at regularly scheduled reviews of progress under the partnership
    - Provisioning of the NASA VIPER rover for partners' accomplishment of the goals in Section 1.2 above.
    - NASA observation of Partner milestones
    - NASA review of Partner-provided data, plans, and risk philosophy
    - NASA processing, calibration, validation, and analysis of VIPER-generated science data during and after mission operations, along with the delivery of all science data to the Planetary Data System.

Base Insight Support will be provided at no cost to the Partner, as resources permit, as part of NASA's non-reimbursable obligations in the LVSP CRADA. NASA intends to self-fund the Base Insight Support, therefore funding for Base Insight Support will not count against the cost evaluation criterion.

2. Potential Support Categories (Reimbursable or Non-Reimbursable). The degree and type of NASA support requested by a Proposer should be identified in the proposal, along with whether it is planned to be reimbursed or not. It may consist of the following (non-exclusive) categories of support, which the Proposer could request:
    - The following activities are the types of VIPER-relevant activities that NASA might be able to provide support to on a fully reimbursable basis.

        - VIPER rover traverse planning and operations
        - VIPER science instrument team support for pre-mission planning for instrument operations and for future generation of VIPER science data
        - Ames Research Center (ARC) mission operations center for assistance in operations/support
    - NASA assessments, analyses, testing, and/or other NASA unique services
    - Use of NASA equipment and/or facilities, beyond the provided GSE
    - Assistance in obtaining Software Usage Agreements (SUA), Data Usage Agreements (DUA), License Agreements, and/or Loan Agreements.

NASA expects that any potential use of NASA communications assets such as the Deep Space Network support (if requested) would be provided (if requested) on a fully reimbursable basis.

Specific support requested should be described by the Proposer in Proposal Appendix 2. Request of support by NASA on a fully reimbursable basis would not count as a cost to NASA against the evaluation criterion. That is, full partner reimbursement of NASA expenses is treated as if there is no effective cost to NASA as part of the evaluation. If partnership proposes non-reimbursed NASA activities, the cost of those activities would count against the evaluation criterion. If partnership is selected and NASA was requested to provide these resources, then NASA would provide them, as resources permit, as part of NASA's obligations in the LVSP CRADA.

The use of a CRADA to accomplish this partnership will allow the Partner to modify or adapt this CRADA as the basis for future reimbursable support from NASA (such as for obtaining Deep Space Network support, when paid for by the Partner). NASA does not intend to add additional non-reimbursable support after partnership award is awarded. Any future service needs from NASA that are not included in the proposal and defined in the initial CRADA agreement must be fully reimbursed by the Partner.

Some Partner uses of NASA data may require a separate Data Usage Agreement. Partner uses of some NASA software may require a separate Software Usage Agreement. Partner's uses of NASA technology may require a separate License Agreement. The Partner use of loaned NASA equipment may require a separate Loan Agreement.

Resource requests shall be in the scope of the LVSP approach as defined by the Executive Summary, a public version of which shall be incorporated into the CRADA as Appendix 1.

During the term of the CRADA, NASA and the Partner may determine that the CRADA will need to be amended to reflect certain support requests, revise the Partner's Milestones, and/or the responsibilities of NASA and/or the Partner as may arise during performance of the agreement.

Any Specific Support provided by NASA under this Agreement will be documented by the Parties in CRADA Appendix 2, NASA Furnished Services, Facilities, and Technologies. As part of the work in this Agreement, the Parties may work in collaboration in some areas and that support will be agreed upon and documented in a Technical Implementation Plan(s)(TIP) in

advance of such support being provided. The TIP is managed and concurred by the Management Points of Contact stated in the CRADA.

If a proposer would like to include the services of NASA's Jet Propulsion Laboratory (JPL), NASA's FFRDC, as a team member, please note that use of JPL is subject to limitations, including that any JPL participation must be nonexclusive to any single offeror (will be available to all offerors), will be on a non-interference basis with NASA's requirements, may require a determination that the requested services are not otherwise available from the private sector, and that JPL's services must be coordinated with Caltech/JPL prior to submitting the proposal. Submissions including an FFRDC must include a statement from the FFRDC representing (1) that their participation in the competition is consistent with federal law and policy as well as their governing contract(s) (2) the rationale under which they are able participate in the competition given restrictions on FFRDCs competing with the private sector.

2.7 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 proposer, potential proposers, and agreement signatories. The existence of the Ombudsman is not to diminish the authority of the NASA Agreements Officer, the Proposal 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 2.1 of this Announcement. 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 their 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 not suspend the selection process, the award(s), or the performance of the resulting agreement(s). The Ombudsman may be contacted at:

- Allison Wolff; Mission Support Directorate Industry Engagement Manager. allison.n.wolff@nasa.gov.

2.8 Government Proposal Review Personnel

The Government may use contractor support personnel to assist in providing technical and business expertise in the evaluation of executive summaries and proposals. Any support contractor involvement in the evaluation process shall be free of conflicts of interest, will be bound by appropriate conflicts of interest provisions and 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 Proposer is deemed to have consented to release of data in its proposal to NASA contractors supporting evaluation of proposals under suitable protective conditions.

3. INSTRUCTIONS FOR PROPOSALS

3.1 Proposal Submittal

3.1.1 NASA will not issue paper copies of this Announcement. NASA reserves the right to select for negotiations one 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.

3.1.2 NASA will accept one proposal per company, per Step. Proposals shall be submitted in two steps. Step 1 will determine which proposers are invited to Step 2. Graphics are allowable. Both Step 1 and Step 2 responses must uploaded to the NASA Box system via the URL:

- https://nasagov.app.box.com/f/fe91c8fdd3a64bef9bb24d9fd89eb274

Note that the NASA Box system is a basic file exchange system without version control. Uploaded files cannot be "withdrawn" because they will not be visible to the submitter following submission.

Step 1: Step 1 responses are limited to a maximum 15 pages in length using 12-point times new roman font, single space pages with one-inch margins. NASA plans to inform the proposers of the status of Step 1 March 10, 2025 (estimated), via email. All Step 1 responses must be submitted as a single, unlocked, PDF-formatted file.

Step 2: The Step 2 proposals shall consist of multiple sections and four appendices as described in Announcement section 3.2. Section I, Executive Summary, shall be limited to two pages. The remaining sections shall not exceed 70 pages, using 12-point times new roman font, single space pages with one-inch margins. There is no page limit on the appendices. Any information included in an appendix which is out of scope of that appendix as defined herein shall not be considered.

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, new roman font, with the exception of tables and figures, which may use 8-point type (anything larger than this will be considered two pages, e.g. 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.

3.1.3 For both Step 1 and Step 2, the selected Step 2 proposer shall submit its proposal via NASA Box (also known as NASA's Enterprise File Sharing and Sync 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. It will use the same link as above, and proposer will be able to submit files into a dedicated folder. All electronic proposal 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 proposer 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.

3.1.4 For both Step 1 and Step 2, prior to the submission of proposal files, proposers interested in submitting a proposal in response to this solicitation should notify hq-volatilespartnership@mail.nasa.gov of their intent to submit a proposal at least 72 hours prior to the intended submission date. Proposers, especially those that have not previously submitted a proposal utilizing NASA Box, are encouraged to coordinate the submission of a test file several days in advance of the date and time specified for proposal submission in order to allow time to work through any submission issues. Proposers are encouraged to use the naming conventions listed in 3.1.6.

3.1.5 For Step 2 proposals, the Proposer shall submit all proposal files to the NASA Box submission. The proposer will be given a dedicated NASA Box input folder accessible only to the proposer and to NASA. Selected 2 proposers will receive more information on this via communication with the partnership email noted above.

3.1.6 Proposers are encouraged to use the following naming conventions: 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 NASA Box system. The proposer shall not use special characters "/" or "\" or "<" or ">" in file names. The proposer shall clearly label the contents of the file and include the name of the of proposer in the individual file name. Examples of acceptable individual file names are as follows:

Company Name - LVSP - Proposal.pdf

Company Name - LVSP – Appendix 1.pdf

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

3.1.7 Immediately after all Step 2 files have been uploaded and the proposal has been submitted in its entirety, the proposer shall notify hq-volatilespartnerships@mail.nasa.gov with a listing of all documents by filename that were submitted via NASA Box. If any problems are experienced with the NASA Box system (e.g., login, file transfer), please contact via e-mail as soon as possible.

3.1.8 The proposer is responsible for ensuring its proposal reaches the NASA Box system designated in the solicitation by the date and time specified in the solicitation. 4pm eastern time deadlines are being used to ensure that NASA staff can be available to discuss potential submission issues. 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 NASA Box and the transmission of the files from the proposer to the Government may not be instantaneous. The electronic submission of the proposal shall contain all information required by the solicitation to be determined responsive.

3.2 Proposal Content

Proposals shall be submitted in two steps. Step 1 will determine which proposers progress to Step 2.

3.2.1 Step 1 Proposal Content Outline

Step 1: Proposals shall be submitted using the following Content Item outline:

1. Science and technical approach:

a) A statement outlining the mission objectives of the Proposer(s) that motivate their desire to use the VIPER rover system, and how they complement NASA's objectives.
b) A statement explaining the degree to which some or all of NASA's VIPER science objectives and any other NASA exploration objectives will be achieved under the Proposer's plan, as well as other opportunistic value to NASA. The extent to which visits to separate ice stability regions (ISR; see Section 1.1 for definitions) on the Moon are planned and credible (at least two are desired, one of which being in a PSR). Discuss the VIPER-generated science data that will be delivered, any Partner-generated complementary data that will be delivered, and why they believe this data is adequate for NASA to achieve some of its VIPER science objectives. Describe the end-to-end concept for carrying out a VIPER mission with necessary details linking to the rover capabilities, science instruments, conops, and ground systems. Describe the Proposer's experience with design, implementation, and execution of similarly complex development, Integration and Test, Verification, launch, landing, and operations missions. Describe end-to-end mission success risk, including discussion of single-point failures and primary technical performance margins.

c) Describe the suggested plan to deliver the intact VIPER rover onto the lunar surface to achieve the objectives described in Content Item 1A above.

2. Implementation Plan:

a) Describe the management approach to the partnership. Discuss partnering team expertise, capabilities, and experience to complete Content Items above. Please note if proposal complies with the eligibility criteria in Section 2.2, and specifically identify whether the teaming arrangement includes non-US team members, including the country in which each team member is incorporated or otherwise resides. Describe the Proposer's relevant experience in launch, transit and planetary space operations. Discuss the planned landing date, scope of surface operations, and expected critical paths.
b) Provide an overview of the total cost of the project. Discuss the funding capability of the Proposer that would enable them to perform the partnership.
c) Describe the schedule to launch and completion of the primary mission, with identification of the critical path, substantiating schedule credibility and basis of estimate. Describe the Proposer's past experience successfully using tools during execution to manage schedule performance against plan.

3. Expected Cost to NASA

~~a)~~ Describe what NASA resources may be needed, and whether they are to be reimbursed by proposer.

3.2.2 Step 2 Proposal Content Outline

Step 2: Proposals shall be submitted using the following outline:

Section I	Executive Summary
Section II	Technical and Science Approach
	T1. LVSP Concept for delivery of VIPER rover, operations, and accomplishment of science goals
	T2. Development Plan and Heritage
	T3. Approach to preventing technical changes to the VIPER rover
	T4. Technical and Programmatic Risks
	T5. Science Operations and Risks
Section III	Schedule
Section IV	Implementation Approach (Management, Funding, and Insight)
	B1. Business Overview
	B2. Management, Schedule, and Development Plan
	B3. Compliance
	B4. Budget and Financing Plan
	B5. Financial and Business Risks
	B6. Insight Approach
Section V	Approach to Cost Reimbursement for additional NASA Services
Appendix 1	Proposed Cooperative Research and Development Agreement (CRADA), including proposed mods to Articles 3, 4, 5, 9, if any.

Appendix 2 Proposed Government Resources
Appendix 3 Supplemental Business Data
Appendix 4 Proposed Technical Implementation Plan

3.2.3 Step 2 Proposal Section I: Executive Summary

Step 2 proposals shall include an Executive Summary of up to 2 pages describing the prominent and distinguishing features of the business and technical approach for the LVSP effort. The Executive Summary should summarize the following:

- Planned technical approach to delivering, operating and achieving science goals of the VIPER rover as stated in Announcement section 1.1 and 1.2.
- Summary of Proposer experience and ability to develop an LVSP capability, to fund it, and to see it through to delivery.
- Summary of proposed approach to providing insight necessary to ensure continued NASA confidence in LVSP.
- Summary of desired assistance to be provided by NASA beyond its contribution of the VIPER rover and four science instruments
- Proposed delivery date and length of VIPER science operations by phase and/or milestone.

The Executive Summary shall confirm whether:

- The Proposer meets the eligibility requirements of Announcement section 2.2.
- The Proposer complies with the requirements of Announcement section 2.3.
- The proposal is contingent upon acceptance by NASA of any changes to the terms and conditions of the CRADA contained in this Announcement.

The Executive Summary shall stand alone and not directly reference the other sections of the proposal.

3.2.4 Step 2 Proposal Section II: Technical and Science Approach

This section shall describe the Proposer's proposed technical approach for developing its capability. Proposers shall provide sufficient information to establish confidence in its plan.

T1. LVSP Concept for delivery of VIPER rover, operations, and accomplishment of science goals.
The Proposer shall describe the LVSP approach's key features, top-level requirements, system design concept, and concept of operations across the full life cycle of LVSP activities (from rover storage, transport, integration to lunar lander, launch, transit to the Moon, lunar landing, rover egress, and VIPER rover science operations). Proposer shall ensure that the approach for operation of the VIPER rover, including its science instruments, is executable and low risk. Proposer will identify sufficient responsibilities for the CRADA agreement to capture needed technical activities. The proposer should write a level of detail in their proposal Appendix IV that can inform writing of a separate, subsequent Technical Implementation Plan (TIP) that would contain the technical details and requirements relevant to performance of the agreement. Proposer shall identify any additional testing or design changes to the VIPER rover, providing NASA with sufficient technical and risk rationale for the work, along with a summary of relevant risk mitigation efforts. Proposer shall describe

the plan, timeline, and content for delivery of VIPER-generated science data and any partner-generated data to NASA. Proposer should outline the approach to cybersecurity, with Section 1.1 having relevant information.

T2. Development Plan and Heritage

This shall summarize the technical aspects of the plan to develop, produce, and field the proposed LVSP approach to land and operate the VIPER rover and to attain its science data. The Proposer shall describe the elements of the LVSP approach that are either already operational or commercially available and elements that are under development or to be developed. For elements that require development, the Proposer shall describe work completed to date. The Proposer shall describe the technical approach for completing development and production of the capability and for conducting any planned tests or flight demonstrations. The Proposer shall describe how their experience in developing, operating and performing planetary science operations may reduce risk against a successful delivery.

T3. Approach to preventing technical changes to the VIPER rover.

NASA is providing a reference document with interface specifications within a few days of AFPP release, at the Volatiles Partnership website. Partner shall present how they will accommodate these interfaces. Proposer shall present a timeline for conducting coupled loads analysis, with an initial credible assessment to be made in the first year of the partnership. Proposer shall propose sufficient integration milestones with VIPER rover as necessary to ensure there are no surprise changes needed at the interface.

T4. Technical and Programmatic (Cost and Schedule) Risks

The Proposer shall describe the technical risks associated with the effort and its plans to mitigate them. Proposer's discussion of risks should help to demonstrate a high likelihood of lunar landing success. Risk information should include the cost and schedule impacts of risk consequences (including likelihood and consequence) and cost of mitigation approaches; this will help NASA understand the risk posture of the posture. Ensure that risks across all phases of the LVSP life cycle are discussed. Even though the Proposer is expected to cover costs for their contribution to the partnership, NASA's understanding of their internal schedule risk profile is required in assessing the partnership viability. This discussion of risks is separate from financing and broader business concerns noted in B5.

T5. Science operations and return

The proposer shall describe the VIPER-generated science data that will be delivered to NASA, the plan and timeline for collecting and delivering the data, any partner-generated auxiliary and complimentary data that will be delivered to NASA (with or without use restrictions), and why they believe this data is adequate for NASA to achieve some of its VIPER science objectives. Proposer shall describe the proposed landing site, rationale for it, and expected ability to explore ice stability regions (ISRs), including at least one permanently shadowed region. If landing site is initially uncertain, Proposer shall describe their process for obtaining NASA concurrence on the final landing site.

Science risk to operations shall be presented, showing an understanding of the technical complexity of making real-time operational decisions of the VIPER rover. VIPER team has discussed their philosophy on decision-making in the 'speed made good' section of the VIPER interfaces reference document that will be released soon after the AFPP release as a reference document on the Volatiles Partnership website.

3.2.5 Step 2 Proposal Section III: Schedule

A plan and schedule for integrating, testing, and delivering the VIPER rover to the Moon as well as operating it. This shall include an assessment of the realism of the LVSP partnership schedule (including historical analogies for comparable development times, projected supply chain times, etc.). The proposer shall propose how to share on a quarterly basis with NASA a logically linked schedule (with key schedule milestones and ideally schedule best practices such as those documented in the NASA Schedule Handbook) that tracks proposer activities, along with a summary of cost, schedule and technical risks. Discuss the driving critical paths and the primary risks facing those paths, along with expected risk mitigation approaches. An initial draft of this schedule shall be transmitted as part of the Step 2 proposal as an Appendix 4.

3.2.6 Step 2 Proposal Section IV: Implementation Approach (Management, Funding, Insight)

This section shall describe the Proposer's approach for developing and implementing a LVSP approach that can enable the VIPER landing, operations and science goals. Proposers shall provide sufficient information to justify NASA's confidence in partnering and maintaining its VIPER rover for provision for landing and operations on the Moon.

B1. Business Overview

This section shall provide an overview of the Proposer's business as it relates to the proposed LVSP approach and shall include the following:

- Business strategy and how LVSP approach fits into the plans and interests of the proposer. Understanding why the proposer wants to fund LVSP activities and how it fits into their broader strategy and overall financial viability are important.

B2. Management

The Proposer shall summarize the management and programmatic aspects of its LVSP approach. This plan shall include the following:

- Identification of key proposer resources such as personnel, facilities, intellectual property, and other assets required. State which of these do not yet exist and indicate how the proposer plans to acquire those. Identify management team (resumes of key personnel may be included in Appendix 3). Please provide a summary of how proposal complies with the eligibility criteria in Section 2.2.

- Major team members and suppliers including respective roles and contributions to the project and status of the relationship. Team members and suppliers can include for-profit, non-profit, and government entities. Include letters of intent from your primary partners and/or suppliers. Please specifically identify whether the proposed teaming

arrangement includes non-US team members, including the country in which the team member is incorporated or otherwise resides.

If the Proposer has any proposed or current Government relationships, such as contracts or agreements, that are directly related to the proposed LVSP partnership, the Proposer shall identify them and describe how they are related.

B3. Compliance

The Proposer shall self-certify that it complies with the eligibility requirements specified in section 2.2. The Proposer shall describe compliance with applicable Federal laws, regulations, and policies specified in section 2.3. If Proposers intend to rely on Russian suppliers, the Proposer shall explain how its Russian supplier is not a prohibited entity under INKSNA or any other applicable sanctions law, and how the Proposer will conduct its development effort without providing technical assistance to the prohibited entity during the term of the Agreement.

B4. Budget and Financing Plan

The Proposer shall describe the plan to acquire the funds needed to develop, produce, and field the LVSP approach. This shall include:

- Estimate of total cost for LVSP approach development, production, and operational readiness and execution. At a minimum, this estimate shall include a budget breakdown identifying the cost for each major element for each program phase (e.g., development, production, launch, landing, and operation) in current-year dollars phased by Proposer's planned fiscal year. Supporting cost data may be included in Appendix 3. Identify to what extent the projected costs are based on established contract values, historical analogies, or lower fidelity assumptions. Providing a sufficient basis of estimate demonstrating that the Proposer's projected costs are realistic and thus achievable is required for NASA to assess viability of the partnership.

- Plan to acquire the funds needed beyond what the Proposer currently controls through operational readiness including schedule of any planned financing events. To support its financing plan, the Proposer may provide historical and pro-forma financial statements, letters of intent, letters of credit, and other supporting business data in Appendix 3.

- Plan for the timeline on sharing with NASA details on teaming arrangements, potentially including subcontracts or memorandums of understanding (if used), contract after partnership has been selected and initiated. Understanding long-lead development timelines is important to establishing partnership reliability. Plan to demonstrate to NASA continued financial stability and management depth to accomplish the partnership, thus providing NASA confidence that it should continue to provide support for provisioning VIPER rover.

B5. Financial and Business Risks

The Proposer shall describe the financing and business risks associated with the effort and its plans to manage and fund them. These risks are tied to Proposer financing and potential non-mission related business risks such as workforce availability and ability to balance the scope of the Proposer's engineering activities and are separate from the cost and schedule (programmatic) impacts of technical risks and decision-making noted in T4.

B6. Insight approach

NASA does not require proposers to follow milestones from NASA Policy Requirement 7120.5F Program and Project Management Requirements, which defines a variety of milestone reviews. However, NASA expects that any credible LVSP partner will utilize a project management and systems engineering approach to help manage their activities. The Proposer should describe the proposed level of insight given to NASA during the partnership life cycle, including insight into the Proposer's development plans, such that NASA will be sufficiently informed on progress meeting milestones, partnership progress/lifecycle reviews, and the overall viability of continuing with the partnership. The Proposer shall show how the milestones proposed for the CRADA agreement in the proposal's Appendix 1 (Article 4) will provide a holistic picture both of LVSP progress. In addition to its milestone strategy, the Proposer shall provide quarterly updates on schedule, risks, and technical progress to NASA, with major areas of risk philosophy being flagged for NASA input.

Section 1.4 outlines a broad range of milestones- that Proposers may want to consider.

3.2.7 Step 2 Proposal Section V: NASA expenditures and cost

Approach to Cost Reimbursement for additional NASA Services: Provide a summary of the costs of any requested reimbursable NASA services as per Section 2.6's Potential Support Categories, with the details contained in Appendix 2. Costs for NASA Base Insight Support do not need to be addressed in this part of the proposal. Per section 2.6, the Proposer should capture details such as schedule, phasing, etc., to facilitate evaluation and enable codification of the CRADA. The Proposer should make clear how it will reimburse NASA for any additional NASA services to be undertaken outside of the Base Insight Support services. Proposals with more non-reimbursed costs will be evaluated and viewed as detrimental to the likelihood of proposal success.

3.2.8 Step 2 Proposal Appendix 1: Proposed Cooperative Research and Development Agreement (CRADA)

The Proposer shall provide a CRADA using the template included in Appendix A of this Announcement. Proposer inputs needed are generally highlighted in yellow, with addition of proposed technical milestones being the major addition. Separate from these proposed milestones in Article 4, any Proposer-proposed changes to the template terms and conditions are discouraged and must be highlighted and include rationale explaining why the proposed change is requested. Any proposed changes to standard terms will be evaluated for acceptability and will be presented to the Selection Authority. Unacceptable changes to standard terms can impact a

proposer's selection. Additionally, please also note that the Government does not anticipate that post-selection negotiations will include revisions to terms of the CRADA.

Within Article 4 of the CRADA, the Proposer shall provide a list of LVSP development, demonstration and operational milestones. These milestones should be consistent with the guidelines in section 1.4 of this Announcement. These milestones shall be what the Proposer proposes to achieve under its CRADA to accomplish the mission. The purpose of the milestones is to give NASA a guide for ensuring that the Proposer is on track in developing its LVSP approach to justify NASA's continued support under the CRADA. Per B6 above, these milestones shall provide a high level of insight to NASA to justify continued partnership and provision of the VIPER rover.

In compliance with Section 841 of the NASA Transition Authorization Act (NTAA) of 2017, the LVSP agreement will be publicly posted without redaction. Thus, Proposers shall not include any information in the agreement not intended for public release.

3.2.9 Step 2 Proposal Appendix 2: Proposed Government Resources

NASA will provision the VIPER rover for use by the Proposer. NASA will also allow for the use of designated Ground Support Equipment (GSE). Proposer is expected to fully reimburse NASA for the transportation of VIPER and associated GSE to the Partner, as well as the return of the GSE. They may propose retrieving the rover themselves. The Partner may also request other NASA services, equipment, and support on a reimbursable basis. The proposer shall identify the Government resources requested for its LVSP effort as described in paragraph 2.6 of this Announcement as succinctly as possible. The evaluation criteria make clear that minimizing costs to NASA – including costs induced by potential NASA's in-kind contributions such as science team support or rover traverse operations – are detrimental to the likelihood of being selected. The proposer should identify the major anticipated NASA resources to be requested by Government Fiscal Year (October 1 through September 30). This identification shall be an estimate and is not binding. Proposer can elaborate on the functional support requested to accomplish the task. NASA will provide an estimate of the costs needed to accomplish the requested functions and will assess those costs as part of the partnership evaluation. Finalization of the value of NASA support will occur during discussions as part of potential partnership award. The proposer should identify any alignments with existing Government contracts or agreements and how requested Government resources are not in furtherance of work required under such Government contracts or agreements.

3.2.10 Step 2 Proposal Appendix 3: Supplemental Business Data

Proposer shall provide resumes of key personnel and supplemental business data and letters of commitment from prospective sub-partners and/or key suppliers in this appendix as identified in sections B1 and B4 of paragraph 3.2.4.

3.2.11 Step 2 Proposal Appendix 4: Draft Technical Implementation Plan

The Proposer should write a level of detail in their proposal Appendix IV that can form the basis and inform the writing of a separate, subsequent Technical Implementation Plan (TIP) under the implemented CRADA that would contain the technical details and requirements relevant to performance of the agreement. Ideally this should capture key system requirements, initial interface

needs for integrating VIPER rover, constraints and needs, mission operations plan and support. This section will not have a page constraint but will be used to inform the technical realism question of the proposal.

3.2.12 Step 2 Proposal Appendix 5: Schedule and Schedule Overview

Proposer may provide a copy of their schedule in a relevant format, along with sufficient explanatory material to enable evaluators to describe how to view and interpret the schedule.

4. PROPOSAL EVALUATION AND SELECTION

4.1 Process and Criteria

This Section 4 describes the evaluation process NASA intends to use for the selection of a LVSP proposer. Proposers 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. There will be two steps for proposal submissions, with Step 1 following the shorter content outline noted in Section 3 above, and Step 2 following the longer content description noted there.

4.2. Step 1 Process

For Step 1 reviews, there will first be a review to determine that proposals comply with the requirements of 3.1 of this Announcement. The Proposal Evaluation Panel (PEP) will then review the Executive Summary and Step 1 proposal. The PEP shall not continue evaluation of any proposal when it is determined from the Executive Summary or proposal that the proposal is unacceptable because (1) it does not represent a reasonable initial effort to address the objective of the LVSP Initiative; (2) it clearly demonstrates that the Proposer does not understand the objective; or 3) it does not comply with the eligibility criteria in 2.2.

Then the PEP's evaluation will use the following criteria to select potential proposers for Step 2 of this AFPP. These Step 1 criteria have less detail than the criteria described in Step 2 of the evaluation criteria but are meant to identify proposals that may be viable for evaluation in Step 2. The Step 2 criteria will not be used in evaluation of Step 1 proposals.

4.3 Step 1 Evaluation Criteria

The Step 1 criteria are:

1. Technical and Science Approach
    - Feasibility of technical approach to performing LVSP mission; extent to which modifications are required for the VIPER rover, including proposer's experience in design, implementation, launch, and operation of similarly complex missions.
    - Assessment of risk against mission success, including single-point failures and technical performance margins.

- Extent to which proposer demonstrates understanding of what VIPER-generated science data and associated meta-data need to be delivered to NASA.
- Extent to which science data and associated meta-data will be given to NASA without restriction for use and distribution.
- Extent to which visits to separate ice stability regions (ISR; see Section 1.1 for definitions) on the Moon are planned and credible (at least two are required, one of which being in a PSR).

2. Credible Implementation Plan and Development Approach to realizing the mission partnership (Management, Schedule, Funding)
    - Proposer ability to accomplish LVSP partnership (facilities, knowledgeable staff, relevant planetary experience).
    - Management Approach and Funding Capability.
    - Schedule for completion of primary mission and credibility of the proposed schedule. (Earlier landings on the Moon are rated more favorably, and within the LVSP timeframe of five years). The Proposer's past experience of successfully managing schedule during development.
3. Non-reimbursed costs to NASA (more costs are evaluated more unfavorably).

4.4 Step 2 Process

The second step of the process will be an evaluation of the full proposals that are compliant with this Announcement to assess how well the partnership proposal meets the following Step 2 criteria. Prior to detailed evaluation, the eligibility of the proposals will be reexamined based on Section 2.2.

4.5 Step 2 Evaluation Criteria

The Step 2 criteria are of equal importance.:

1. Technical and Science Approach
    - Feasibility of Landing and Operations Success: Relevance of Proposer's experience in developing, operating, and performing planetary science operations that may reduce risk of not successfully achieving mission objectives. Lander and rover operations feasibility. Feasibility of the technical approach to storing, integrating, launching, landing, operating the VIPER rover, with the objective of achieving science goals (i.e. science instrument measurements) as described in Section 1.2. Extent to which identified technical and programmatic risks are addressed and that the Proposer will be capable of effectively mitigating risk. Extent to which proposed responsibilities in the CRADA agreement (appendix 1, Article 4) and draft Technical Implementation Plan (Appendix 4) fully embody and describe key partner responsibilities and major system and interface requirements needed to technically implement the mission. Extent to which implementation of NASA cybersecurity requirements noted in Section 1.1 to enable VIPER rover comms integrity is implemented, with more compliance viewed more favorably. This evaluation section will primarily focus on proposal sections T1, T2, and T4 as well as the relevant appendices.

- Interface with VIPER rover: The extent to which successful launch, in-space transit, and landing of VIPER rover on the Moon can be accomplished without necessitating design or testing and evaluation changes to the rover, such as those due to Proposer's interface requirements from the launch, lander, software, and communication systems. This shall include ensuring that proposer can meet VIPER's requirements for loads, acoustics, and environmental interface requirements as well as power, comm, and other relevant requirements as will be provided in reference documents at the Volatiles Partnership webpage. This evaluation criteria will primarily focus on T3.

- Science operations and return: The extent to which the proposed mission is capable of achieving NASA's planned science goals for the VIPER rover as outlined in Section 1.1. The extent to which VIPER-generated scientific data (raw data from NASA-developed instruments on the VIPER rover and associated meta-data) will be provided to NASA such that NASA scientists can share it broadly with the scientific community following NASA's established open science policy and using the Planetary Data System. Early release of the data will be viewed more favorably. The extent to which visits to separate ice stability regions (ISR; see Section 1.1 for definitions) on the Moon are planned and credible (at least two are required, one of which being in a PSR). Accomplishing the full scope of VIPER's science goals is strongly desired. Further, the extent to which the overall plan for performing the proposed science operations provides details regarding appropriate traverse operations (including timing) to ensure significant mitigation of risk to the successful completion of the science goals. Proposed investigations that would accomplish more ambitious science than that described above, including goals with lower operational risk, will be evaluated more highly. This criterion will primarily focus on Section III as well as any potential (partner) proposed modifications to the intellectual property clauses on data.

2. Schedule

- Faster time to delivery – earlier lunar landings will be rated more highly. Realism of the schedule (including credible basis of estimate and appropriate schedule margin against proposed lunar landing and operations date) provided by Proposer for the delivery of VIPER, including needed integration activities will be assessed and rated more favorably. This criterion will primarily focus on Section III of the proposal as well as T4. Extent to which the Proposer will keep NASA informed of schedule progress, margins and critical path to maintain confidence in program progress.

3. Management

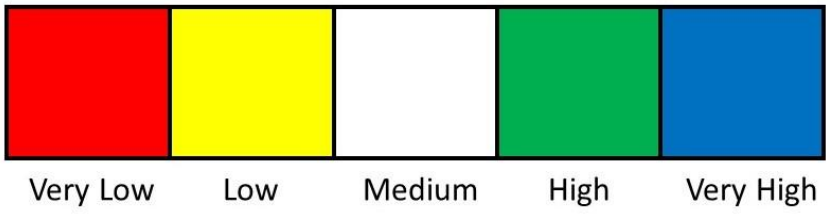
- The extent to which the Proposer has credible and mature financial, schedule, risk, and technical management planning and execution approaches and extent to which mature processes and systems exist and will be employed. The extent to which the Proposer has viable and stable funding necessary to complete the mission. Extent to which recurring, timely and detailed insight provided to NASA throughout the mission life cycle through technical and programmatic milestones that would enable NASA to have confidence in continued progress towards mission outcome success. The extent to which to which the proposer has

a credible management plan and proposer-internal mission cost estimate to execute the partnership. The extent to which the Proposer plans to solicit NASA input and concurrence on fault tolerance philosophy of key lander systems, especially including lander propulsion and GNC design. Extent to which proposer meets the eligibility criteria of being a majority implementer or provider of key subsystems for the LVSP lander, which can enable better ability to manage for success. Extent to which the lander's propulsion and GNC systems are developed and carried out by the Proposal lead. The extent to which proposer's management and financing plan are comprehensive and reflect a viable mission approach. The extent to which financial risks are well understood and mitigated, showing proposer ability to accomplish their portion of LVSP activity. Extent to which proposed responsibilities in the CRADA agreement (appendix 1, Article 4) and draft Technical Implementation Plan (Appendix 4) capture key proposer responsibilities needed to give NASA insight into the mission and ability to successfully complete partnership objectives. This criterion will focus on B1 thru B6.

4. NASA Expenditures and Costs

- The extent to which the partnership may be successfully accomplished with minimal to no additional cost to NASA and does not require NASA to expend any non-reimbursed costs on workforce or services, aside from NASA's voluntary efforts to engage in insight on the project. Any request for non-reimbursable costs will be evaluated less favorably than proposals without such requests, with the magnitude of the requested cost being a factor of the evaluation.

For each proposal, the PEP will assign a rating for each of these criteria as defined in the illustration below. NASA will also estimate the cost of the requested resources to assess as part of criterion 5. NASA may elect to engage proposers during evaluation to ask questions via teleconference to obtain clarification of information provided in the proposals. An acceptable proposal most favorably evaluated will be selected for further due diligence, with consideration given to the range of capabilities proposed.



The next step of the process will be due diligence with proposer(s) whose proposals were evaluated in the previous step. This may include virtual and/or on-site meetings. Proposers will be notified of request for due diligence meetings at least one week in advance of the first such meeting. As part of the notification, NASA will provide the proposers with findings from the initial evaluation and any questions resulting from the initial evaluation. During the due diligence meetings, proposers will have the opportunity to clarify their overall business approach, technical approach, and respond to the findings and questions provided by NASA. In addition, NASA will work with the proposers to

resolve any issues associated with the CRADA and negotiate milestones. NASA reserves the right to ask questions during the due diligence meetings to obtain clarification of information provided in the proposals or presentation materials. The purpose of the discussions is to finalize the milestones and any other open items with the proposed CRADA. After due diligence, NASA may revise its evaluation of the proposals based on their increased understanding and the insight gained.

4.6 Selection and Award

After completing due diligence, NASA will present the results of the proposal evaluation to the Selection Authority (SA), the Associate Administrator of the Science Mission Directorate. The SA will compare the proposals against the criteria of the Announcement and select the proposer whose proposals best meets the objectives of the LVSP Initiative. The competitive process will conclude with execution of a CRADA between NASA and a selected proposer. NASA and the selected Proposer will afterwards work to codify the TIP and other activities needed for partnership execution. All proposers will be notified of the outcome of this competition in a reasonable time period after its conclusion.

NASA may revise the Draft Agreement to incorporate specific language from the selected proposal.

AFPP APPENDIX A: DRAFT COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

[*to be updated to incorporate specific information from selected proposal*]

COOPERATIVE RESEARCH & DEVELOPMENT AGREEMENT
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND
PARTNER
FOR
LUNAR VOLATILES SCIENCE PARTNERSHIP (UTILIZING NASA'S VIPER ROVER)

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 300 E Street SW, Washington, DC 20546 (hereinafter referred to as "NASA") and Partner Organization Name, Partner Division Name located at Address, City, ST 00000-0000 (hereinafter referred to as "Partner" or "PARTNER INITIALS"). NASA and Partner may be individually referred to as a "Party" and collectively referred to as the "Parties."

ARTICLE 2. PURPOSE

This agreement is the result of NASA's request for proposal, or Announcement for Partnership Proposals (AFPP), from parties interested in partnering with NASA to perform science with NASA's Volatiles Investigating Polar Explorer Rover (VIPER) rover, delivering it to the Moon, operating it, and sharing with NASA the science results. The VIPER mission is designed to provide ground truth observations and insights into the composition, distribution, and quantity of volatiles at the Moon's south polar region.

This agreement enables and directs the Partner to deliver the VIPER rover to the lunar surface to conduct the VIPER mission on the Moon that achieves NASA's science objectives for VIPER. The mission may also include other NASA exploration objectives, as well as any Partner objectives. NASA is committed to building an open science community. NASA's VIPER rover, including supporting documentation, GSE, and operation systems are contributed "as is". The Partner is responsible for completing any remaining systems level testing, arranging for the integration and successful landing on the Moon, conducting a science/exploration campaign, and openly disseminating science data [to be updated to reflect accepted proposal language]. The Partner will provide all other resources required to complete the mission from the hardware's current state and to fully reimburse NASA for use of any NASA capabilities (including but not limited to any additional testing and anomaly resolution activities, payload preparation and processing support, or science/instrument/operations teams support) needed to successfully conduct the mission.

ARTICLE 3. RESPONSIBILITIES

A. NASA will make all reasonable efforts to:

1. Provide a point of contact for Partner from NASA's Lunar Volatile Sciences Partnership management team within 30 days after the effective date of this Agreement.
2. Provide method for Partner to transfer data.
3. Review data, information and assessments provided by Partner.
4. Attend regularly scheduled meetings with Partner regarding the past period's milestones and upcoming activities.
5. Provide NASA's VIPER rover for Partner's implementation of the LVSP approach along with essential Ground Support Equipment (GSE).
6. NASA will provide formal written approval or disapproval to Partner requests for approval to allow for testing or design changes to VIPER rover, and work with Partner to assess such requests.
7. Coordinate with the Partner on planned media announcements and scientific information sharing.
8. Attend Partner milestone reviews after coordination with Partner.
9. Provide concurrence to Partner proposed lunar landing site location and rover traverse plan.
7. NASA's science team shall support processing, calibration, validation, and analysis of VIPER-generated science data during and after mission operations, along with the delivery of all science data to the Planetary Data System.
9. Provide NASA furnished services, facilities, and technologies as summarized in Appendices 1 and 2, further defined in the Technical Implementation Plan(s) (TIP).

B. Partner will use reasonable efforts to:

1. Develop and implement a strategy and increasingly more detailed plan for landing the VIPER rover on the Moon, operating it, and achieving science goals.
2. Integrate the VIPER rover on a subsystem of the LVSP's lunar lander, including needed assembly, integration and testing.
3. Launching the VIPER rover and associated LVSP lunar lander from Earth to the Moon
4. In accordance with Article II of the Registration Convention, the lunar rover VIPER shall be registered on the U.S. registry.
5. Transiting VIPER rover and landing it on the Moon at a NASA concurred location using the Partner's LVSP landing element.
6. Enable VIPER rover to roll-off LVSP lander element or transition it off lander using another mechanism that does not require changes to the VIPER rover design.
7. Ensuring launch, in-space transit, lunar orbit, lunar descent and rover surface environments, loads, and thermal conditions are within the specs of the existing VIPER rover's design capabilities, maintaining rover integrity and preventing need for any VIPER design changes prior to the mission

8. Developing a detailed concept of operations that allows for successful mission activity in the above phases, including roles for VIPER turn-on, lunar comms and other critical tasks.
9. Partner shall obtain written NASA approval prior to any additional environmental testing or design modifications to the VIPER rover, providing NASA with sufficient technical and risk rationale for the work, along with a summary of relevant risk mitigation efforts.
10. Provide NASA with information regarding their progress towards the milestones identified in Article 4.
11. Take every reasonable effort to prevent design changes to the VIPER rover, especially as that might require new testing or create new technical risks.
12. Conduct agreed upon milestone reviews establishing whether milestone criteria are satisfied and demonstrating continued progress toward mission success.
13. Conduct quarterly scheduled meetings with NASA regarding the past period's progress, provide information demonstrating that any milestone success criteria (if a milestone occurred) have been met, and discuss upcoming activities.
14. Provide NASA with VIPER-derived scientific data and relevant meta-data (per Article IX) that NASA can distribute without use restrictions, including to the Planetary Data System
15. Provide equipment as identified and described in any TIP. All equipment provided by Proposer to NASA shall include documentation stating build, revision, and traceability information and remains the property of the Partner at all times.
16. Fulfill its obligations in any TIP.
17. Obtain NASA concurrence on final landing site and traverse approach.
18. Coordinate with the Partner on planned media announcements and scientific information sharing, ensuring that NASA shares credit in major VIPER-generated discoveries.

ARTICLE 4. SCHEDULE AND MILESTONES

The planned major milestones for the activities defined in the "Responsibilities" Article are as follows: [The following are notional placeholders as described in Section 1.4. Step 2 Proposal instructions provide examples of milestones that may be proposed to be added as part of a Step 2 proposer's Appendix 1 Article 4. The Partner is expected to propose technical and programmatic milestones that would be added into this Article which would capture ways in which the Partner will demonstrate progress toward the LVSP mission, and to provide NASA with confidence in that progress.]

NASA will provide method for Partner to transfer data.	+ 1 month of CRADA
Joint Quarterly Progress Report Presentation	
Partnership Progress Reviews. NASA will establish a review board to participate in all progress reviews that will submit a report to the DAA/ESSIO, the AA/SMD and the AA.	
Placeholder for additional milestones: Notional examples of additional milestones: financial backing milestones, integration reviews, start of integration, etc.	

ARTICLE 5. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA an estimated cost of $1.00 for NASA to carry out its responsibilities under this Agreement. (additional Partner requested NASA assistance will be reimbursed at agreed upon rate). In no event will NASA transfer any U.S. Government funds to Partner under this Agreement. Payment must be made by Partner in advance of initiation of NASA's efforts on behalf of the Partner.
The Partner agrees to pay NASA $_____ prior to initiation of work under this Agreement, and another $_____ one week prior to the start of Milestone No. x.

B. Payment shall be payable to the National Aeronautics and Space Administration through the NASA Shared Services Center (NSSC) (choose one form of payment):

(1) U.S. Treasury FEDWIRE Deposit System, Federal Reserve Wire Network Deposit System;

(2) pay.gov at https://www.nasa.gov/specials/nssc-pay/ and select the appropriate NASA Center for the agreement from the drop down; or

(3) check. A check should be payable to NASA and sent to:

NASA Shared Services Center
FMD – Accounts Receivable For the Accounts of:
National Aeronautics and Space Administration
Building 1111,
Jerry Hlass Rd.,
Stennis Space Center, MS 39529

Payment by electronic transfer (#1 or #2, above), is strongly encouraged, and payment by check is to be used only if circumstances preclude the use of electronic transfer. All payments and other communications regarding this Agreement shall reference the Center name, title, date, and number of this Agreement.

C. NASA will not provide services or incur costs beyond the existing payment. Although NASA has made a good faith effort to accurately estimate its costs, it is understood that NASA provides no assurance that the proposed effort under this Agreement will be accomplished for the above estimated amount. Should the effort cost more than the estimate, Partner will be advised by NASA as soon as possible. Partner shall pay all costs incurred and has the option of canceling the remaining effort or providing additional funding in order to continue the proposed effort under the revised estimate. Should this Agreement be terminated, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within [insert timeframe, cannot exceed one (1) year] after completion of all effort under this Agreement, and promptly thereafter return any unspent funds to Partner. Return of unspent funds will be processed via Electronic Funds Transfer (EFT) in accordance with 31 C.F.R. Part

208 and, upon request by NASA, Partner agrees to complete the Automated Clearing House (ACH) Vendor/Miscellaneous Payment Enrollment Form (SF 3881).

D. 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 either party's goods, services, facilities, or equipment. In the event that either party's projected availability changes, the other party shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that either party's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Agreement. Should a conflict arise, each party in its sole discretion shall determine whether to exercise that priority. Each Party, in its sole discretion, shall determine the priority of use of their own goods, services, facilities, or equipment. 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 private or public entities.

ARTICLE 8. LIABILITY

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, or any other forum in which a claim is brought, 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. Partner 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, Partner employees or the employees of Partner's related entities, or for damage to, or loss of, Partner'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. Partner 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.

ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. General

1. "Contributing Entity" means a contractor, subcontractor, or other entity having a legal relationship with NASA or Partner that is assigned, tasked, or contracted 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 developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged, 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;
c. made available by the owners to others without restriction; or
d. required by law or court order to be disclosed without restriction.

4. "Background Data" means Partner's Proprietary Data developed outside of this Agreement.

5. "Third Party Proprietary Data" means Proprietary Data of third parties that disclosing Party has agreed to protect or where the Government is required to protect under federal law (e.g., 18 U.S.C. §1905).

6. "Controlled Government Data" means information the United States Government creates or possesses that requires safeguarding or dissemination controls.

7. "Scientific Data" means all raw data from a NASA-developed instrument and associated meta-data on the VIPER rover.

8. Data exchanged under this Agreement is exchanged without restriction except as otherwise provided herein.

9. 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.

10. If the Parties exchange Data having a notice that the receiving Party deems is ambiguous or unauthorized, the receiving Party shall notify the disclosing Party. If the notice indicates a restriction, the receiving Party shall protect the Data under this Article until otherwise directed in writing by the disclosing Party.

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

12. Disclaimer of Liability: Neither Party is restricted in, or liable for, the use, disclosure, or reproduction of Proprietary Data without a restrictive notice. NASA is not restricted in, or liable for, the use, disclosure, or reproduction of Data Partner gives, or is required to give, the U.S. Government without restriction.

13. Partner may use the following or a similar restrictive notice:
Proprietary Data Notice
The data herein include Proprietary Data and are restricted under the Intellectual Property - Data Rights provisions of Space Act Agreement [provide applicable identifying information].

Partner 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 Partner Under this Agreement

If Data first produced by Partner or its Contributing Entities under this Agreement is given to NASA, and the Data is Proprietary Data, and it includes a restrictive notice, NASA will use reasonable efforts to protect it. The Data will be disclosed and used (under suitable protective conditions) only for U.S. Government purposes.

C. Data First Produced by NASA Under this Agreement. If Partner requests that Data (excluding Scientific Data, noted above) first produced by NASA under this Agreement be protected, and NASA determines it would be Proprietary Data if obtained from Partner, NASA will both mark it with a restrictive notice and use reasonable efforts to protect it for [insert a period of up to five years, typically one or two years] after its development. During this restricted period the Data may be disclosed and used (under suitable protective conditions) for U.S. Government purposes only, and thereafter for any purpose. Partner must not disclose the Data without NASA’s written approval during the restricted period. The restrictions placed on NASA do not apply to Data disclosing a NASA owned invention for which patent protection is being considered.

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 disclosing 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, data subject to the export laws and regulations of the United States provided to Partner 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 Partner (as disclosing Party) may provide the other Party or its Contributing Entities (as receiving Party) any Background Data, Controlled Government Data, and/or Third Party Proprietary Data, subject to the following conditions:
a. Background Data, Third Party Proprietary Data, and Controlled Government Data provided by disclosing Party to receiving Party shall be marked by disclosing Party with a restrictive notice; and
b. Background Data, Third Party Proprietary Data, and Controlled Government Data shall be

identified in a separate technical document. The technical document should be comprehensive, should be kept current, and does not supersede any restrictive notice on the Data.

2. Notwithstanding H.3., NASA software and related Data will be provided to Partner under a separate Software Usage Agreement (SUA). Partner shall use and protect the software and related Data in accordance with the SUA. The NASA software and related Data expected to be provided is:
[insert name and NASA Case No. of the software; if none, insert "None."]

3. For such Data identified with a restrictive notice pursuant to H.1, 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 Contributing Entity requiring access under this Agreement, or as required by law or court order to be disclosed;
d. Except as otherwise indicated in 3.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 Contributing 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 either Party discloses Proprietary Data or Controlled Government Data orally or visually, the other Party will have no duty to restrict, or liability for disclosure or use, unless the disclosing party:

1. Orally informs the other Party before initial disclosure that the Data is Proprietary Data or Controlled Government Data, and

2. Reduces the Data to tangible form with a restrictive notice and gives it to the other Party within ten (10) calendar days after disclosure.

J. Handling of Scientific Data

1. Scientific Data shall be provided to NASA as soon as practicable (and not to exceed six months) without use and disclosure restrictions unless required by national security regulations (e.g., classified information).

ARTICLE 10. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

A. General

1. Definitions.

(a) “Exclusive License” means the grant by the owner of an invention of the exclusive right to make, use, or sell the invention.

(b) “Invention” means any invention or discovery that is or may be patentable or otherwise protected under Title 35, United States Code, or a novel variety of plant that is or may be patentable under the Plant Variety Protection Act. (15 U.S.C. § 3703(7)).

(c) “Invention Disclosure” means the document identifying and describing an Invention and the Making of such Invention.

(d) “Made” when used in conjunction with any Invention means the conception or first actual reduction to practice of such Invention. (15 U.S.C. § 3703(8)).

(e) “Non-Subject Invention” means any Invention that is not a Subject Invention.

(f) “Patent Application” means an application for patent protection for an Invention with any domestic or foreign patent-issuing authority.

(g) “Contributing Entity(ies)” means an employee, contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner, that is assigned, tasked, or contracted to perform activities under this Agreement.

(h) “Subject Invention” means any Invention Made in the performance of the Cooperative Work.

2. NASA has determined that 51 U.S.C. § 20135(b) does not apply to this Agreement. Therefore, title to inventions made (conceived or first actually reduced to practice) under this Agreement remain with the respective inventing party(ies). No invention or patent rights are exchanged or granted under this Agreement, except as provided herein.

3. Partner shall ensure that its Contributing Entities know about and are bound by the obligations under this Article.

4. NASA will advise the Partner in the event NASA intends to use Contributing Entities to fulfill some or all of its obligations under the CRADA.

B. Disclosure of Subject Inventions.

1. Timely Invention Disclosure by Inventors. Each Party shall instruct its Contributing Entities to submit an Invention Disclosure to that Party within ninety (90) calendar days of making a Subject Invention, unless a different time period is required by circumstances. In the case of a Subject Invention Made jointly by inventors from both Parties or such Parties’ Contributing Entities, the employee-inventor(s) shall submit an Invention Disclosure to their respective employer.

2. Obligation to Provide Invention Disclosures to the Other Party. Each Party shall provide the other Party with a copy of each Invention Disclosure reporting a Subject Invention within sixty (60) calendar days of receiving the Invention Disclosure.

3. Protection of Reported Subject Inventions. When Subject Inventions are reported and disclosed between the Parties in accordance with the provisions of this clause, the receiving Party agrees to withhold such reports or disclosures from public access for a reasonable time (presumed to be 1 year unless otherwise mutually agreed or unless such information is restricted for a longer period herein) in order to facilitate the allocation and establishment of the invention and patent rights under these provisions.

4. Additional Disclosure and Reporting Obligations. Each Party shall instruct its employees to submit a written disclosure to that Party of (1) solutions to technical problems and (2) unique increases to the general body of knowledge that result from the Cooperative Work but do not qualify as Subject Inventions. Each Party shall provide the other Party with a copy of each such written disclosure within sixty (60) calendar days of receiving the written disclosure from its employee.

C. Ownership of Inventions.

1. Ownership of Subject Inventions. Each Party shall be entitled to own the Subject Inventions of its employees. For any Invention Made jointly by employees of the Parties, each Party shall have ownership of the Subject Invention in the form of an undivided interest.
2. Ownership of Non-Subject Inventions. Each Party owns its Non-Subject Inventions.

D. Filing of Patent Applications.

1. Inventions by One Party.

a. For Subject Inventions Made solely by employees of one Party, said Party has responsibility for filing Patent Applications on said Subject Inventions subject to the election to file set forth below. Each Party shall notify the other Party within 30 calendar days of filing a Patent Application on any such Subject Inventions and shall provide the other Party with copies of the Patent Applications it files on any Subject Invention.
b. Partner agrees to include the following statement in any patent application it files for a Subject Invention Made by its employees:

The invention described herein may be manufactured and used by or for the U.S. Government for U.S. Government purposes without the payment of royalties thereon or therefore.

2. Joint Inventions.

a. In the case of a Subject Invention jointly Made by employees of both Parties, the Parties shall confer and agree as to which Party will file any Patent Application. Each Party shall cooperate with the other Party to obtain inventor signatures on Patent Applications, assignments or other documents required to secure patent protection.
b. Each Party shall provide the other Party with copies of the Patent Applications it files on any Subject Invention jointly Made by employees of both Parties, along

with the power to inspect and make copies of all documents retained in the official Patent Application files by the applicable patent office.

c. Partner agrees to include the following statement in any Patent Application it files for an invention Made jointly between NASA employees (or employees of a NASA Contributing Entity) and employees of Partner:

The invention described herein may be manufactured and used by or for the U.S. Government for U.S. Government purposes without the payment of royalties thereon or therefor.

3. Election to File. If either Party elects not to file a Patent Application on a Subject Invention, it must advise the other Party within ninety (90) calendar days from the date the Subject Invention is reported or sixty (60) calendar days prior to any statutory bar date related to a Subject Invention, whichever date occurs first. Thereafter, the other Party may elect to file a Patent Application on such Subject Invention and, upon request by the other Party, the non-electing Party shall assign the Subject Invention to the other Party and shall cooperate with the other Party to obtain inventor signatures on Patent Applications, assignments or other documents required to secure patent protection. In the event neither of the Parties elects to file a Patent Application on a Subject Invention, either or both (if a joint invention) may, after providing written notice to the other Party, release the right to file to the inventor(s), subject to a nonexclusive, nontransferable, irrevocable, paid-up license to practice the Subject Invention or have the Subject Invention practiced on its behalf.

4. Patent Expenses. The expenses associated with the filing of Patent Applications, as specified herein, shall be borne by the Party filing the Patent Application. The fees payable to the U.S. Patent and Trademark Office in order to maintain the patent's enforcement will be payable by the owner of the patent at that Party's option.

5. If either Party determines that it will not continue to prosecute or maintain a patent for a Subject Invention, either in the U.S. or in foreign countries, the filing Party shall so inform the other Party so that the other Party may make the determination whether to continue to prosecute for or maintain patent protection. If the non-filing Party makes the determination to continue to prosecute for or maintain patent protection and so notifies the filing Party, the filing Party shall assign title to the Subject Invention to the non-filing Party and the non-filing Party shall be responsible for all costs associated with such continued filing, prosecution, or maintenance.

E. Licenses.

1. Limitation on Assignment of Licenses Granted Under This Agreement. No license of a Subject Invention granted under this Agreement shall be assigned except to the successor in interest of that part of Partner's business to which such license pertains.2. License Reservation. Any license of a Subject Invention granted to Partner pursuant to this Agreement, whether an Exclusive License or non-exclusive license, will be subject to the reservation of the following rights:

a. As to Subject Inventions Made solely or jointly by NASA employees, NASA reserves the irrevocable, royalty-free right of the U.S. Government to practice the invention or have the invention practiced on behalf of the Government for research or other Government purposes, or on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.
b. As to Subject Inventions Made solely or jointly by employees of a NASA Contributing Entity, NASA reserves the rights as set forth in paragraph (a) above, as well as the revocable, nonexclusive, royalty-free license in the Contributing Entity as set forth in 14 C.F.R. § 1245.108 or 37 C.F.R. § 401.14 (e), as applicable.
(c) As to any Exclusive Licenses or assignment of a Subject Invention, NASA shall retain the right to require Partner to grant to a responsible applicant a nonexclusive, partially exclusive, or exclusive license to use the Subject Invention in applicant's licensed field of use, on terms reasonable to the circumstances, or if Partner fails to grant such a license, to grant the license itself, if NASA determines that: (i) the action is necessary to meet health or safety needs that are not reasonably satisfied by the Partner; (ii) the action is necessary to meet requirements for public use specified by Federal regulations, and such requirements are not reasonably satisfied by the Partner; or (iii) Partner has failed to comply with an agreement containing provisions described in subsection (3)(b)(iv) below. A determination under this section is subject to administrative appeal and judicial review under 35 U.S.C. § 203(b).

3. Subject Inventions.
a. Nonexclusive License to Subject Inventions.
i. Partner grants to the U.S. Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice Subject Inventions Made by employees of Partner and, where Partner has such rights, Subject Inventions Made by employees of Partner Contributing Entities, and to have such Subject Inventions practiced throughout the world by or on behalf of the U.S. Government for research or other U.S. Governmental purposes.
ii. NASA grants to Partner a nonexclusive, nontransferable, irrevocable, paid-up license to practice Subject Inventions Made by employees of NASA and, where NASA has such rights, Subject Inventions Made by employees of NASA Contributing Entities. Such license shall not permit Partner to grant sublicenses.
b. Option for Exclusive License to Subject Inventions.
i. Option. NASA gives Partner the option of acquiring an Exclusive License for the field of use described in paragraph (iii) below in the Government's rights in any Subject Invention Made in whole or in part by a NASA employee or the employee of a NASA Contributing Entity. In order to exercise this option, Partner must notify NASA in writing within ninety (90) calendar days of notification of the filing of a patent application on the Subject Invention by NASA.
ii. License Execution. Each license for a Subject Invention shall be implemented through a written Exclusive License agreement executed by both Parties. The license shall be for reasonable consideration to be negotiated for each licensed Subject Invention. Partner must execute the Exclusive License to the Subject Invention within

one hundred twenty (120) calendar days of election to exercise the option, or the Invention may be made available for licensing to the public in accordance with 37 CFR Part 404. Any Exclusive License granted by NASA in a Subject Invention is subject to the statutorily required reservation by the Government of a nonexclusive, irrevocable, paid-up license to practice the Subject Invention or have that Subject Invention practiced throughout the world by or on behalf of the Government and statutory march-in rights in accordance with 15 U.S.C. 3710a(b)(1). Any Exclusive License granted by NASA in a Subject Invention shall include Partner's right of enforcement under chapter 29 of title 35.

iii. Field of Use. [*Describe FIELD OF USE – this will be negotiated with the CRADA Partner prior to the signing of the CRADA.*]

iv. U.S. Manufacturing Clause. Each Exclusive License for a Subject Invention shall include a clause requiring products embodying Subject Inventions or produced through the use of Subject Inventions will be manufactured substantially in the United States.

c. Cancellation of Exclusive License Option to Subject Inventions. NASA may cancel any option for an Exclusive License to a Subject Invention granted under this Agreement in the event that:

a) Partner fails to make any payment as agreed in this Agreement; or

b) Partner fails to perform according to the responsibilities set forth in the Responsibilities Article of this Agreement; or

c) Partner materially breaches any other provision of this Agreement and fails to cure such breach with thirty (30) days following notices received from NASA; or

d) Partner becomes a foreign owned, controlled, or influenced (FOCI) organization that does not qualify under the requirements of Executive Order 12591, Section 4(a); or

e) The Agreement is terminated unilaterally by Partner.

4. Non-Subject Inventions.

a. Licenses to Non-Subject Inventions. Except as expressly provided for herein, this Agreement does not grant any Party a license, express or implied, to any Non-Subject Invention.

b. Preexisting Non-Subject Inventions Pertinent to the Cooperative Work.

i. Non-Subject Inventions pertinent to the Cooperative Work that are specifically identified as property of NASA and for which a patent application has been filed prior to the effective date of this Agreement include but are not limited to the following:
[*List Invention Title, inventor name(s), patent number, or NASA NTR number if an Invention disclosure, or Patent Application Serial Number, and date of issue (for patents only); or if none, insert "None" or "Not Applicable".*]

ii. Non-Subject Inventions pertinent to the Cooperative Work that are specifically identified as property of Partner include but are not limited to the following:
[*List Invention Title, inventor name(s), patent number, or attorney's docket number if an Invention disclosure or Patent Application Serial Number, and date of issue (for patents only); or if none, insert "None" or "Not Applicable".*]

c. Research License. Each Party shall allow the other Party to practice any of its Non-Subject Inventions listed above for the purpose of performing the Cooperative Work. No license, express or implied, for commercial application(s) is granted to either Party in Non-Subject Inventions by performing the Cooperative Work. For commercial application(s) of Non-Subject Inventions, a license must be obtained from the owner.

ARTICLE 11. USE OF PARTIES' NAME AND IDENTIFIERS

A. NASA Name and Initials

Partner 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, Partner 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. Partner must submit any proposed use of the emblems to NASA Communications for review and approval.

C. Partner Name and Trademarks

NASA shall not use Partner's name or trademarks in a way that creates an impression that the product or service has the authorization, support, sponsorship, or endorsement of the Partner. NASA will make no use of the Partner trademarks except as permitted by law and this Agreement.

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

NASA or Partner 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, which in the case of umbrella agreements includes any associated annexes, will be disclosed, without redactions, in accordance with the NTAA.

ARTICLE 13. DISCLAIMER OF WARRANTY

Goods, services, facilities, or equipment provided under this Agreement are provided "as is." All NASA-provided goods, services, facilities, or equipment shall be provided on a best-effort basis. The Partner's decision to utilize NASA-provided goods, services, facilities, or equipment will be at the Partner's own risk and will not relieve the Partner of responsibility for completion of milestones or any stated responsibilities under the agreement. Parties make 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 Party 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.

ARTICLE 14. 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. Partner agrees that nothing in this Agreement will be construed to imply that NASA authorizes, supports, endorses, or sponsors any product or service of Partner resulting from activities conducted under this Agreement, regardless of the fact that such product or service may employ NASA-developed technology.

ARTICLE 15. 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; and suspension and debarment laws and regulations. Access by a Partner 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, including use of Interconnection Security Agreements (ISAs), when applicable.

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 or any Annex to this Agreement. In the absence of available license exemptions or exceptions, the Partner 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 Partner shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of work under this Agreement or any Annex 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 Partner will be responsible for all regulatory record-keeping requirements associated with the use of licenses and license exemptions or exceptions.

4. The Partner 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 Partner 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 Partner 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. With respect to the requirements in Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year 2019, Public Law 115-232:

1. In performing this Agreement, Partner will not use, integrate with a NASA system, or procure with NASA funds (if applicable), "covered telecommunications equipment or services" (as defined in Section 889(f)(3) of the NDAA).
2. The Partner will ensure that the provisions of this Article apply to its Related Entities.

E. With respect to the requirements in Section 3 (a) (1) of the "One Small Step to Protect Human Heritage in Space Act" (Pub. L. 116-275):

1. In carrying out lunar activities under this agreement, Partner shall comply with "NASA's Recommendations to Space-Faring Entities: How to Protect and Preserve the Historic and Scientific Value of U.S. Government Lunar Artifacts" issued on July 20, 2011 and updated on October 28, 2011, and any successor recommendations, guidelines, best practices or standards relating to the principle of due regard and the limitation of harmful interference with Apollo landing site artifacts issued by NASA.

2. The Partner will ensure that the provisions of this Article apply to its Related Entities.

F. Debris Mitigation Clause

The Partner shall ensure that its operations are consistent with the Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space, endorsed by the United Nations General Assembly in its Resolution 62/217 of December 22, 2007, and all applicable U.S. Government regulations, policies and directives. Furthermore, the Partner shall comply with the U.S. Government Orbital Debris Mitigation Standard Practices (2019) and meet the orbital debris requirements of all licensing authorities (including the Federal Aviation Administration (FAA) and the Federal Communications Commission (FCC)). For cislunar and beyond LEO activities, the Partner shall provide ephemeris data to NASA or another authorized entity responsible for conjunction assessment and collision avoidance of spaceflight activities. The Partner will ensure that the provisions of this Article apply to its Related Entities. The Partner should reference the Conjunction Assessment Best Practices Handbook as a guide to follow. [link: https://nodis3.gsfc.nasa.gov/OCE_docs/OCE_50.pdf]

G. Required Notification of Deviations to Activities

The Partner shall ensure that NASA and any other required authority(ies) are promptly notified, consistent with the terms of this Agreement, regarding any changes to the proposed mission activities before execution of such changes during the time of transit to the Moon or use on the surface of the Moon. The proposed mission activities include NASA, Partner, and any non-NASA activities. The Partner shall also promptly notify NASA and any other required authority(ies) when the Partner's lunar operations have concluded.

ARTICLE 16. TERM OF AGREEMENT

This Agreement becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or five years from the Effective Date, whichever comes first.

ARTICLE 16. TERMINATION

A. Unilateral Termination

Either Party may unilaterally terminate this Agreement by providing sixty (60) calendar days written notice to the other Party. In the event of termination by either party, each party is responsible for its own costs, including costs of termination, except that Partner will be responsible for all costs associated with return of NASA equipment, including disintegration and shipment costs. However, Partner will be obligated to reimburse NASA for all costs for which the Partner had previously agreed to reimburse NASA prior to termination and that have been incurred in support of this Agreement up to the date the termination notice is received by NASA. In the event of any termination, neither NASA nor the Partner 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.

B. Coordination in the Event of Termination

Upon service of written notice of Termination, the Parties will engage in discussions to develop a schedule for orderly closeout of the Partnership. The schedule will address any activities needed to conclude the partnership, including a plan for return of VIPER and any other NASA equipment provisioned under the agreement. If disintegration activities are required to separate VIPER hardware from Partner hardware, including Partner provided instruments, lander, or other launch equipment, the Parties will work to develop a mutually agreeable technical plan for disintegration and shipment.

C. Rights in Intellectual Property

The clauses “INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS” and “INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS” survive termination. Any data in existence at the time the notice of termination was served, and that was subject to the requirement to be provided to NASA under the agreement, must be provided within 60 days of service of the notice.

ARTICLE 18. 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 19. POINTS OF CONTACT

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

Management Points of Contact

NASA National Aeronautics and Space Administration	Partner Organization Name Partner Division Name
Name	Name
Title	Title
Address	Address
City, ST 00000-0000	City, ST 00000-0000
Phone: Phone	Phone: Phone
Email:	Email:

Technical Points of Contact

NASA National Aeronautics and Space Administration
Name
Title
Address
City, ST 00000-0000
Phone: Phone
Email:

Partner Organization Name
Partner Division Name
Name
Title
Address
City, ST 00000-0000
Phone: Phone
Email:

Principal Investigator Point of Contact

NASA National Aeronautics and Space Administration
Name
Title
Mail Stop: Mail Stop
300 E Street SW
Washington, DC 20546
Phone: Phone
Email:

Partner Organization Name
Partner Division Name
Name
Title
Address
City, ST 00000-0000
Phone: Phone
Email:

ARTICLE 20. DISPUTE RESOLUTION

Except as otherwise provided in the Article entitled "Priority of Use," 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 Partner 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 21. INVESTIGATIONS OF MISHAPS AND CLOSE CALLS

In the case of a close call, mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation. For all NASA mishaps or close calls, Partner agrees to comply with NPR 8621.1, "NASA Procedural Requirements for Mishap and Close

Call Reporting, Investigating, and Recordkeeping." Partner is expected to conduct its own mishap investigations as appropriate, through which NASA personnel may participate. Partner will define their approach in a mishap plan that will be agreed to by NASA. Proposer must identify a timeline for development of the mishap plan and how it would be approved and incorporated into the technical implementation plan.

ARTICLE 22. MODIFICATIONS

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

ARTICLE 23. ASSIGNMENT

Neither this Agreement nor any interest arising under it will be assigned by the Partner or NASA 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 24. APPLICABLE LAW

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

ARTICLE 25. 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 26. LOAN OF GOVERNMENT PROPERTY

The parties shall enter into a NASA Form 893, Loan of NASA Equipment, for any NASA equipment loaned to Partner. This applies to loaned equipment or property that the Partner may request outside of the provisioned NASA VIPER rover and associated Ground Support Equipment.

ARTICLE 27. PROVISIONED GOVERNMENT PROPERTY

A. General

1. “Equipment” means the VIPER rover along with essential Ground Support Equipment (GSE) provided to Partner for the exclusive purpose of implementing the goals of the LVSP partnership as defined in this agreement.
2. The Equipment is provided in “as-is” condition with no expressed or implied warranties of any kind. NASA retains title to all equipment.

B. Conditions for Use of the Equipment

1. Partner shall be responsible for all costs associated with disassembly, assembly, shipping, receiving, handling, packaging, and storing of the Equipment, including the costs to return the Equipment to NASA in the event of agreement termination.
2. Partner shall immediately report to NASA any losses, damage, or destruction of the Equipment within 5 business days of Partner's discovery thereof.
3. Partner assumes full responsibility for the care, protection, and use of the Equipment and shall maintain the Equipment in good condition. Partner shall not permit its use for other than the purpose of this Agreement, and shall not loan, transfer, or redeliver the Equipment to any third party without advance notification to and approval by NASA, which will not be unreasonably withheld.
4. Partner shall grant NASA access to the Equipment upon request.

ARTICLE 28. SIGNATORY AUTHORITY

The signatories to this Agreement covenant and warrant that they have authority to execute this Agreement. By signing below, the undersigned agrees to the above terms and conditions.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	PARTNER ORGANIZATION NAME PARTNER DIVISION NAME
BY:_____	BY:_____
Name	Name
Title	Title
DATE:_____	DATE:_____

APPENDIX A: USE OF GOVERNMENT FUNDED EQUIPMENT

Item & Identifier	Via (e.g., Associated Contract)	Cost ($)	Anticipated Reimbursement ($)

APPENDIX B: GOVERNMENT FUNDED SERVICES

Item & Identifier	Via (e.g., Associated Contract)	Cost ($)	Anticipated Reimbursement ($)

APPENDIX C: PARTNER FUNDED REQUIREMENTS

Item & Identifier	Via (e.g., Associated Contract)	Cost ($)	Anticipated Reimbursement ($)

APPENDIX 1
EXECUTIVE SUMMARY

(INSTRUCTION TO PROPOSER: Insert here a publicly releasable summary of your capability(ies))

APPENDIX 2:
NASA Furnished Services, Facilities, Equipment, and Technologies

(INSTRUCTIONS TO PROPOSER: LEAVE THIS BLANK. THIS WILL BE COMPLETED DURING CRADA EXECUTION.)