

NONREIMBURSABLE SPACE ACT AGREEMENT  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
AND  
SPACE EXPLORATION TECHNOLOGIES CORP  
FOR FLIGHT SAFETY COORDINATION WITH NASA ASSETS

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 SPACE EXPLORATION TECHNOLOGIES CORP located at 1 Rocket Road, Hawthorne , CA 90250-6844 (hereinafter referred to as "Partner" or "SPACEX"). NASA and Partner may be individually referred to as a "Party" and collectively referred to as the "Parties."

ARTICLE 2. PURPOSE

The standard Conjunction Assessment (CA) process used by NASA and other operators is based on services provided by the U.S. Air Force 18th Space Control Squadron (18 SPCS) at Vandenberg Air Force Base. Users send predicted trajectory information through a file exchange website, Space-Track.org, as ephemeris files that contain modelling of future planned maneuvers to 18 SPCS. 18 SPCS then screens that trajectory data against the space object catalog that they maintain, as well as against the orbit trajectory information that they produce themselves for the spacecraft based on tracking data from their Space Surveillance Network (SSN), which does not contain planned maneuvers. Results from both screenings are sent in the form of a set of Conjunction Data Messages (CDMs) to the Owner/Operator (O/O), who performs a risk assessment, determines the need for a mitigation maneuver, and executes such a maneuver if needed. Trajectory data is examined approximately one week in the future to allow sufficient time to accurately predict the close approaches and develop and execute a mitigation plan. The Trajectory Operations Officer (TOPO) at NASA Johnson Space Center performs the risk assessment of close approaches for NASA human spaceflight missions, such as the International Space Station (ISS) and Visiting Vehicles (VVs), while the NASA Conjunction Assessment Risk Analysis (CARA) program at the NASA Goddard Space Flight Center performs the function for all Agency non-human spaceflight missions.

Starlink is a large constellation of spacecraft launched and operated by SpaceX. The goal is to have approximately 1,500 individual spacecraft in an orbit of 550 km by calendar year 2021, with over 600 assets currently in orbit. The Starlink spacecraft are equipped with an autonomous maneuvering capability. Consequently, increased interaction and partnership between NASA and SpaceX is needed to ensure continued safe on-orbit operations and avoidance of conjunctions between agencies satellites and human missions.

Both parties acknowledge that the information shared under this Agreement, through reasonable efforts, furthers the primary goal of avoiding a conjunction. NASA has agreed to not maneuver in the event of a potential conjunction to ensure the parties do not inadvertently maneuver into one another. NASA will operate on the basis that the autonomous maneuvering capability of the Starlink satellites will attempt to maneuver to avoid conjunction with NASA assets, and that NASA will maintain its planned trajectory unless otherwise informed by SpaceX. There may be cases, such as a launch anomaly or other on-orbit Starlink guidance, navigation and control or propulsion system anomalies, where Starlink satellites maneuvering around NASA assets may not be a feasible option and NASA assets would have to maneuver. The veracity and timeliness of the communications between both parties is critical to maintain safe on-orbit operations. All of the activities described in this paragraph are subject to Article 8.

Further, NASA and SpaceX recognize the importance of mitigating spacecraft light interference to ground-based and space-based astronomical observations, as well as leveraging commercially available space situational awareness data and information to support safe spacecraft operations.

The purpose of this Agreement is to define and enable the arrangement, responsibilities, and procedures for flight safety coordination, including CA and launch collision avoidance (COLA), between NASA protected assets and the SpaceX Starlink satellites and related rideshare missions.

### ARTICLE 3. RESPONSIBILITIES

A. NASA will use reasonable efforts to:

- 1) Provide accurate ephemeris and covariance information regarding both human spaceflight assets and CARA-supported assets (together hereinafter referred to as “NASA-protected assets”) to the 18 SPCS in order to execute CA screenings against Starlink satellites. 18 SPCS will provide the results of these screenings to SpaceX, enabling SpaceX to construct Conjunction Data Messages (CDMs) and upload them to the Starlink constellation for use in onboard CA calculations.
- 2) Regularly provide to SpaceX a long-term ISS ephemeris file for mission planning with such frequency as determined by NASA and communicated to SpaceX.
- 3) Provide to SpaceX the CA screening results in the form of CDMs between NASA-protected assets and Starlink satellites at least three times daily via Space-Track.org.
- 4) Contact SpaceX if a NASA mission needs to use a maneuver option within 24 hours of execution that has not already been screened, and provide to SpaceX updated CDMs that contain screening information for this new trajectory.
- 5) Provide at least 8 hours lead-time for emergency trajectory changes (as described in item 4, above).
- 6) Report results of pre-launch analysis and request Starlink launch window cutouts or other mitigating actions, if required, by L-2 days. The risk assessment will be based on Monte Carlo trajectories provided by SpaceX and NASA’s knowledge of its own asset’s mission plans.
- 7) Share technical expertise and lessons learned to collaborate with SpaceX on developing approaches to conjunction assessment-related process updates.
- 8) Provide a list of NASA-protected assets for understanding which injection orbit choices may require coordination with NASA.
- 9) Inform SpaceX as soon as possible about any changes to NASA's CA process that impact SpaceX.
- 10) Work with 18 SPCS and SpaceX to optimize delivery times for SpaceX CDMs.
- 11) Share technical expertise and lessons learned to collaborate with SpaceX on developing approaches to monitoring and mitigating photometric brightness.

B. Partner will use reasonable efforts to:

- 1) Perform evasive action by on-orbit Starlink satellites to mitigate close approaches and avoid collisions with all NASA assets. These evasive actions will be performed because Starlink utilizes automated onboard collision avoidance for risk assessment and maneuver execution.
- 2) Provide pre-launch, utilize launch window cut-outs or other options based on launch COLA gap analysis performed by NASA. Using these cut-outs or other options minimizes the threat of collision between Starlink and NASA assets – including ISS, VVs, and GPM - in the Starlink early-orbit operations phase, when Starlink automatic collision avoidance is not fully available and Starlink satellites are not yet catalogued by 18 SPCS. The parties will exchange data necessary to perform the launch COLA gap analysis.
  - a. As soon as possible, but no later than L-1 week provide to NASA the launch dates and target orbit of Starlink spacecraft so that NASA can determine if there is overlap with NASA operations requiring launch COLA gap analysis.
  - b. By L-5 days, provide to NASA Monte Carlo dispersed trajectories of Starlink at payload deployment for use in the assessments described in NASA's line item 6 above.
  - c. By L-2 days, correspond with NASA to review and confirm launch time options that minimize these risks with ISS, VVs, GPM, and other NASA assets.
- 3) Provide ephemerides to 18 SPCS and NASA at least three (3) times daily to enable the CA screening process to mitigate close approaches and avoid collisions with NASA assets.
- 4) Update maneuverability status on the 18 SPCS file exchange website, Space-Track.org, as soon as practical for any Starlink vehicle that has become non-maneuverable.
- 5) Work with NASA to provide a backup distribution mechanism for ephemeris delivery for redundancy in case Space-Track.org is unavailable.
- 6) At NASA's request, accept out-of-cycle CDMs from NASA and upload them to the Starlink constellation for CA purposes.
- 7) Perform mission orbit operations in such a way as to avoid any notifiable conjunctions with ISS (within  $\pm 2 \times \pm 25 \times \pm 25$  km radial, in-track, cross-track centered on the ISS).
- 8) Inform NASA as soon as possible of any changes to the Starlink CA process that impact NASA.
- 9) Choose Starlink launch injection orbits (nominal and dispersed) that are at least 5km in altitude above or below ISS apogee or perigee.
- 10) Use best effort to avoid choosing injection orbits within 5 km of ISS or NASA CARA-supported assets. If injection must be within 5 km of ISS or NASA CARA-supported asset, contact NASA within one (1) week of official choice of altitude to begin discussions of risk mitigation plans.
- 11) Use best effort to share with NASA specialized analysis regarding methods to reduce satellite photometric brightness, to inform Agency guidance development.

ARTICLE 4. SCHEDULE AND MILESTONES

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

|  |   |
|--|---|
| SpaceX provides to NASA the launch dates and target orbit of Starlink spacecraft so that NASA can determine if there is overlap with NASA operations requiring launch COLA gap analysis.     | As soon as possible but no later than by L-1 week   |
| SpaceX provides to NASA Monte Carlo dispersed trajectories of all Starlink launch stack objects at time of payload deployment.   | By L-5 days   |
| NASA performs COLA gap analysis of received Monte Carlo trajectories.  | By L-2 days   |
| SpaceX and NASA correspond to review NASA COLA gap analysis results and choose safe launch time options asset apogee or perigee.   | L-2 days  |
| SpaceX notifies NASA of Starlink launch injection orbits (nominal and dispersed) that are less than 5km in altitude above or below ISS or other NASA CARA-supported asset apogee or perigee. | Within one (1) week of official choice of altitude (i.e., date of execution of ride share agreement, when applicable) |
| NASA provides SpaceX with updated list of assets to include in Starlink injection orbit protection process.  | Yearly on January 30 and as needed  |

ARTICLE 5. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. 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 NASA's or SpaceX'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, either party in its sole discretion shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA Partners, NASA, in its sole discretion, shall determine the priority as between those Partners. 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 or SpaceX may enter into similar agreements for the same or similar purpose with other private or public entities.

#### ARTICLE 8. LIABILITY AND RISK OF LOSS

This Agreement does not create or otherwise give rise to any claims outside of existing laws and regulations that govern safe satellite operations.

#### ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

##### A. General

1. "Related Entity" as used in this Data Rights Article means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or 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 embodying trade secrets developed at private expense or commercial or financial information that is privileged or confidential, and that includes a restrictive notice, unless the Data is:

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

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

5. 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.

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

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

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

9. Disclaimer of Liability: NASA is not restricted in, or liable for, the use, disclosure, or reproduction of Data without a restrictive notice or for Data Partner gives, or is required to give, the U.S. Government without restriction.

10. Partner may use the following or a similar restrictive notice: Proprietary Data Notice - The data herein include Proprietary Data and are restricted under the Data Rights provisions of Space Act Agreement [provide applicable identifying information]. 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 Related 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 first produced by NASA under this Agreement be protected, and NASA determines it would be Proprietary Data if obtained from Partner, NASA will mark it with a restrictive notice and use reasonable efforts to protect it for five 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 furnishing Party identifies the Data as such when providing it to the Receiving Party, the Receiving Party shall withhold it from public disclosure for a reasonable time one (1) year unless otherwise agreed or the Data is restricted for a longer period herein).

#### F. Copyright

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

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

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

#### G. Data Subject to Export Control

Whether or not marked, technical data subject to the export laws and regulations of the United States provided to 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 Related Entities (as Receiving Party): a. Proprietary Data developed at Disclosing Party's expense outside of this Agreement (referred to as Background Data); b. Proprietary Data of third parties that Disclosing Party has agreed to protect or is required to protect under the Trade Secrets Act (18 U.S.C. § 1905) (referred to as Third Party Proprietary Data); and c. U.S. Government Data, including software and related Data, Disclosing Party intends to control (referred to as Controlled Government Data).

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

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

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

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

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

d. NASA software and related Data will be provided to Partner under a separate Software Usage Agreement (SUA). Partner shall use and protect the related Data in accordance with this Article. Unless the SUA authorizes retention, or Partner enters into a license under 37 C.F.R. Part 404, the related Data shall be disposed of as NASA directs: N/A

4. For such Data with a restrictive notice pursuant to H.2. or such Data identified in this Article, Receiving Party shall:

a. Use, disclose, or reproduce such Data only as necessary under this Agreement;

b. Safeguard such Data from unauthorized use and disclosure;

- c. Allow access to such Data only to its employees and any Related Entity requiring access under this Agreement;
- d. Except as otherwise indicated in 4.c., preclude disclosure outside Receiving Party's organization;
- e. Notify its employees with access about their obligations under this Article and ensure their compliance, and notify any Related Entity with access about their obligations under this Article; and
- f. Dispose of such Data as Disclosing Party directs.

#### I. Oral and visual information

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

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

### ARTICLE 10. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

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

B. The invention and patent rights herein apply to employees and Related Entities of Partner. Partner shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article.

C. 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. NASA and Partner will use reasonable efforts to report inventions made jointly by their employees (including employees of their Related Entities). The Parties will consult and agree on the responsibilities and actions to establish and maintain patent protection for joint invention, and on the terms and conditions of any license or other rights exchanged or granted between them.

### ARTICLE 11. USE OF NASA NAME AND NASA EMBLEMS

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.

#### 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. The party proposing such publication or disclosure shall provide a summary or description of the relevant information to the other party prior to publication.

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

#### ARTICLE 13. DISCLAIMER OF WARRANTY

Goods, services, facilities, or equipment provided by NASA or SpaceX under this Agreement are provided “as is.” NASA and SpaceX 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 the government, SpaceX, 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. Access by NASA to Partner facilities or property, or to a Partner Information Technology (IT) system or application, is contingent upon compliance with Partner security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system/application access.

B. With respect to any export control requirements:

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

## 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 ten years from the Effective Date, whichever comes first.

ARTICLE 17. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Agreement by providing one hundred eighty days advance written notice to the other Party.

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” and “Intellectual Property Rights”-related clauses 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

Stephen G. Jurczyk  
Associate Administrator  
300 E Street SW  
Washington, DC 20546  
Phone: 202-358-1808  
stephen.g.jurczyk@nasa.gov

SPACE EXPLORATION TECHNOLOGIES

CORP

Lee Rosen  
Vice President, Customer Operations & Integration  
1 Rocket Road  
Hawthorne , CA 90250-6844  
Phone: 310-363-6303  
lee.rosen@spacex.com

**Technical Points of Contact**

NASA

Lauri Newman  
CARA Program Manager  
Mail Suite: 590  
8800 Greenbelt Road  
Greenbelt, MD 20771  
Phone: 301-286-3155  
lauri.k.newman@nasa.gov

SPACE EXPLORATION TECHNOLOGIES

CORP

Jeff Tooley  
Launch Vehicle Guidance Navigation and Control  
Lead  
1 Rocket Road  
Hawthorne , CA 90250-6844  
Phone: 310-363-6681  
Jeffrey.Tooley@spacex.com

NASA

Bryan Corley

ISS TOPO Group Lead  
2101 E NASA Parkway  
Houston, TX 77058  
281-483-8013

#### 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."

#### 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 any claims or 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 NASA equipment loaned to Partner.

ARTICLE 27. 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

SPACE EXPLORATION TECHNOLOGIES  
CORP

BY: \_\_\_\_\_  
Stephen G. Jurczyk  
Associate Administrator

BY:  \_\_\_\_\_  
Lee Rosen  
Vice President, Customer Operations & Integration

DATE: \_\_\_\_\_

DATE: 7 JAN 2021