

AMENDMENT NO. 1 to
NONREIMBURSABLE SPACE ACT AGREEMENT
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND SPACE EXPLORATION TECHNOLOGIES CORP.
FOR COMMERCIAL SPACE CAPABILITIES COLLABORATION

PURPOSE OF AMENDMENT AND AGENCY COMMITMENT

The purpose of this Amendment No. 1 to Space Act Agreement No. SAA-QA-14-18883 between the National Aeronautics and Space Administration ("NASA") and Space Explorations Technologies Corp. ("Partner" or "SpaceX"), effective December 18, 2014 (the "Agreement"), is to (1) further define areas of insight and assistance to SpaceX under the Agreement, (2) further define areas in which NASA will have access to and use of SpaceX data and technology to advance NASA's understanding of the development of SpaceX's propulsive descent capabilities and enable NASA's own Mission to Mars, and (3) extend the period of performance under the Agreement.

Now therefore, in consideration of the mutual undertakings in this Amendment, the Agreement is amended in accordance with Article 21 of the Agreement as follows:

I. Amendment to ARTICLE 3. RESPONSIBILITIES

A. The following modification is made to Article 3.A.4:

The phrase "semi-annual" is deleted from Article 3.A.4 and replaced with "quarterly". Also, "half year's" is deleted and replaced with "three month's".

B. The following is added to Article 3 of the Agreement as new Article 3.A.6.:

6. In order to support technology demonstration activities related to SpaceX's Mars capability, NASA agrees to provide technical support and information to SpaceX as set forth in an appropriate Technical Exchange Document ("TED") in accordance with Article 25 below. Representative areas of technical support and information include:

- a. Deep space communications and telemetry
- b. Deep space navigation and trajectory design
- c. Entry, descent and landing system analysis and engineering support
- d. Mars entry aerodynamic / aerothermal database development
- e. General interplanetary mission and hardware consultation and advice
- f. Planetary protection consultation and advice

C. The following modification is made to Article 3.B.3:

The phrase "semi-annual" is deleted from Article 3.B.3 and replaced with "quarterly".
Also, "half year's" is deleted and replaced with "three month's".

D. The following is added to Article 3 of the Agreement as new Article 3.B.4.:

4. Fulfill its obligations as set forth in agreed-to TED(s).

E. The following is added to Article 3 of the Agreement as new Article 3.B.5:

5. Provide Mars EDL Data and Mars Science Data as agreed in Article 9 hereof.

II. Amendment to ARTICLE 4. SCHEDULE AND MILESTONES

A. The table in Article 4 is deleted and replaced with:

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Milestone	Planned Achievement
Milestone1: Kickoff Meeting Success Criteria: Identified resources and plans for developments associated with each of the areas covered by this agreement is determined satisfactory by SpaceX management.	November2014
Milestone2: Area 1 Preliminary Progress Review Success Criteria: Progress in Area 1is determined satisfactory by SpaceX management.	September2015
Milestone 3: Preliminary Red Dragon Mission Review Success Criteria: Progress in mission planning is determined satisfactory by SpaceX management.	Launch – 18 Months
Milestone 4: Detailed Red Dragon Mission Review Success Criteria: Detailed progress in mission planning is determined satisfactory by SpaceX management.	Launch – 9 Months

<p>Milestone 5: Flight Readiness Review</p> <p>Success Criteria: The flight hardware/software, ground facilities (launch site and mission control), end-to-end communication systems, support personnel, and procedures are ready for the mission to the satisfaction of SpaceX management.</p>	<p>Launch – 7 Days</p>
<p>Milestone 6: EDL Readiness Review</p> <p>Success Criteria: EDL flight systems and supporting communications, ground systems and personnel are ready for the EDL phase of the mission to the satisfaction of SpaceX management.</p>	<p>Landing – 60 days</p>
<p>Milestone 8: Post-Mission Review</p> <p>Success Criteria: Performance of flight and ground systems are assessed, any anomalies are understood, and mission data is assessed to the satisfaction of SpaceX management.</p>	<p>Landing + 60 days</p>

III. Amendment to ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS – DATA RIGHTS

A. Article 9 is deleted in its entirety and replaced with the following:

1. General

- a. “Related Entity” as used in this Data Rights Article means a contractor, subcontractor, grantee, or other entity having a legal relationship with either NASA or Partner that is assigned, tasked, or contracted to perform activities under this Agreement.
- b. “Data” means recorded information, regardless of form, the media on which it is recorded, or the method of recording.
- c. “Proprietary Data” means Data that has been or will be disclosed or received under this Agreement 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:
 - i. known or available from other sources without restriction;
 - ii. known, possessed, or developed independently, and without reference to the Proprietary Data;
 - iii. made available by the owners to others without restriction; or
 - iv. required by law or court order to be disclosed.

Partner may use the following or a similar restrictive notice for all Proprietary Data provided to NASA under this Agreement:

Proprietary Data Notice

The data herein include Proprietary Data and are restricted under the Data Rights provisions of Space Act Agreement SAA-QA-14-18883.

- d. Data exchanged under this Agreement is exchanged without restriction except as otherwise provided herein.
- e. 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 c. 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.
- f. 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.
- g. 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.
- h. Disclaimer of Liability: Except as expressly set forth herein, NASA is not restricted in, or liable for, the use, disclosure, or reproduction of Data provided by SpaceX without a restrictive notice or for Data Partner gives, or is required to give, the U.S. Government without restriction.
- i. The Receiving Party shall promptly notify the Providing Party in writing (email is acceptable) of any misuse, misappropriation or unauthorized disclosure of the Providing Party's Proprietary Data marked with a restricted marking and will reasonably cooperate with the Providing Party to stop and prevent such activities.

2. Handling of SpaceX Proprietary Data:

- a. Except as otherwise specifically set forth herein, if Data first produced by Partner or its Related Entities under this Agreement is provided 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 internal U.S. Government use including use by NASA contractors for work under their contracts; provided such contracts include restrictions against further use and disclosure. The Data will be reproduced and used by NASA with the express limitation that it will not, without the written permission of Partner, be used for purpose of competitive procurement, manufacture or in any way disclosed outside the Government.
- b. NASA agrees to identify to Partner any NASA contractors provided access to Partner Proprietary Data under their contracts. If Partner is not able to obtain appropriate assurances of confidentiality from any NASA contractor having access to Partner Proprietary Data, at the request of Partner, NASA will ensure contractor compliance with any contractual restrictions against further use and disclosure of Partner

Proprietary Data, including any requirements applicable to contractor employees having access to Partner Proprietary Data (including ensuring compliance with the terms of NASA FAR Supp. 1852-237-72, Access to Sensitive Information).

3. Mars EDL Data:

- a. "Mars EDL Data" means Data provided to NASA by Partner, as agreed-to by the Parties, to advance the following goals:
 - i. Enablement of post-flight reconstruction of the EDL phases of the mission by NASA. This goal will require raw flight data in engineering units; environments data; and vehicle hardware performance models and control commands necessary to simulate the vehicle's response to control inputs. Examples of hardware performance models include: valve actuation times, mass properties, moments of inertia, and thrust vs. chamber pressure. Examples of environment data include: aerodynamic, aerothermodynamic, thermal, and atmospheric reconstruction.
 - ii. Evaluation of imagery and data on rocket plume/Mars surface interactions by NASA.
 - iii. Validation of the EDL instruments by NASA during transit. To the extent that SpaceX is required to release transit or trajectory information this data will no longer be required to be treated as proprietary.
 - iv. Enablement of substantiation and validation of EDL data and models by the science and engineering communities through open release publications. NASA and SpaceX will agree to coordinate on such publications and to work together to identify the data and information to be released to accomplish this goal.
- b. Handling of Mars EDL Data:

All Mars EDL Data provided to NASA by Partner that includes a restrictive notice will be handled as SpaceX Proprietary Data.

4. Mars Science Data:

- a. "Mars Science Data" means Data collected by NASA and SpaceX characterizing the Martian environment during technology demonstration activities conducted by SpaceX during the term of this Agreement. For the avoidance of doubt, Mars Science Data does not include data revealing the technical performance of the Red Dragon spacecraft including, but not limited to, Mars EDL Data. Mars Science Data does include possible imaging of the Red Dragon spacecraft during entry, descent and landing obtained using NASA assets.
- b. Handling of Mars Science Data:

NASA and Partner will develop an agreed-to Communications Plan for the release and dissemination of Mars Science Data, to include:

- 1. Mars Science Data collected with SpaceX assets during the term of

this Agreement may be withheld from public release or disclosure for a period of no more than six (6) months beginning with receipt of the Data by SpaceX in a form suitable for analysis.

2. Mars Science Data collected with NASA assets during the term of this Agreement shall be considered to be within the public domain. Release of Mars Science Data collected with NASA assets during the term of this Agreement shall be coordinated between NASA and Partner when the release or publication of such Data would reveal details regarding the operation and outcome of the Red Dragon technology demonstration mission.
3. The Communications Plan shall encourage, to the extent practicable, making Mars Science Data available to the scientific community through publication in appropriate journals, planetary data archives, or other established channels as soon as practicable and consistent with good scientific practice.

5. SpaceX Raw Data:

NASA will be supporting the transmission of data from Mars during technology demonstration activities under this Agreement with NASA assets. "SpaceX Raw Data" is unanalyzed data collected with SpaceX assets and transmitted through NASA assets during the terms of this Agreement. SpaceX Raw Data will not be considered to be "provided to NASA" for the purpose of requiring restrictive markings and, notwithstanding any other term of this Agreement, will be handled as SpaceX Proprietary Data.

6. Data First Produced by NASA Under this Agreement:

- a. 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 use reasonable efforts to mark it with a restrictive notice and protect it for five (5) years after its development. During this restricted period the Data may be disclosed and used (under suitable protective conditions) as SpaceX Proprietary Data, 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.
- b. NASA will promptly notify Partner in the event it determines, after such request, that Data created using Partner Proprietary Data and first produced by NASA or its Related Entities under this Agreement would not be Proprietary Data if obtained from Partner.

7. 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 in accordance with the terms of this Agreement.

8. 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 five (5) years unless otherwise agreed or the Data is restricted for a longer period herein.

9. Copyright

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

- a. 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.
- b. Data without the indication that it was produced outside of this Agreement is presumed to be first produced under this Agreement. Except to the extent the Data discloses an invention for which patent protection is being considered, and as provided 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.

10. 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.

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

- a. NASA or Partner (as Disclosing Party) may provide the other Party or its Related Entities (as Receiving Party):
 - i. Proprietary Data developed at Disclosing Party's expense outside of this Agreement (referred to as Background Data);
 - ii. 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
 - iii. U.S. Government Data, including software and related Data, Disclosing Party intends to control (referred to as Controlled Government Data).

- b. 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.
- c. 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.
 - i. Background Data:
 - 1. All Dragon design, performance, testing, qualification, and production information not specifically tailored for Mars mission(s) under this agreement.
 - 2. All launch vehicle design, performance, testing, qualification, and production information.
 - ii. Third Party Proprietary Data:
 - 1. None.
 - iii. Controlled Government Data:
 - 1. None.
 - iv. 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:
 - 1. None.
- d. For Data with a restrictive notice and Data identified in this Agreement, Receiving Party shall:
 - i. Use, disclose, or reproduce the Data as necessary under this Agreement;
 - ii. Safeguard the Data from unauthorized use and disclosure;
 - iii. Allow access to the Data only to its employees and any Related Entity requiring access under this Agreement;
 - iv. Except as otherwise indicated in d.iii., preclude disclosure outside Receiving Party's organization;
 - v. 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
 - vi. Dispose of the Data as Disclosing Party directs.

12. Oral and visual information

- a. If Partner discloses Proprietary Data orally or visually, NASA will have no duty to restrict, or liability for disclosure or use, unless Partner:
 - i. Orally informs NASA before initial disclosure that the Data is Proprietary Data, and

- ii. Reduces the Data to tangible form with a restrictive and gives it to NASA within fifteen (15) calendar days after disclosure.

V. Amendment to ARTICLE 16. TERM OF AGREEMENT

The following modification is made to Article 16:

The date "March 31, 2017" is deleted from Article 16 and replaced with "March 31, 2022."

VI. Amendment to ARTICLE 19. POINTS OF CONTACT

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

<u>NASA</u> Philip R. McAlister Director, Commercial Spaceflight Development NASA Headquarters [REDACTED] 300 E Street, SW Washington, DC 20546	<u>SpaceX</u> Aarti Matthews Mission Manager [REDACTED] 1 Rocket Road Hawthorne, CA 90250
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VII. Incorporation of new ARTICLE 25. IMPLEMENTATION

The following is added to the Agreement as new Article 25:

ARTICLE 25. IMPLEMENTATION

Any technical support and information provided under Article 3.A.6. will be documented and accepted by the Parties in writing in an appropriate Technical Exchange Document ("TED") in advance of such support. This Agreement shall govern and take precedence over all TEDs accepted by the Parties hereunder; no TED shall amend this Agreement. Each TED will reasonably detail the responsibilities, schedule and milestones, and any personnel, property or facilities to be utilized thereunder, stated with sufficient clarity to support development of budgets, efficient resource allocation and sound management. Any modification to any TED shall be executed in writing and signed by an authorized representative of NASA and SpaceX. In the event of a conflict between this Agreement and any TED concerning the scope of support to be provided by NASA, the meaning of its provisions, or the rights, obligations and remedies of the Parties, this Agreement is controlling.

VII. Renumbering of ARTICLE 25. SIGNATORY AUTHORITY

Article 25 is renumbered as Article 26:

ARTICLE 26. SIGNATORY AUTHORITY

The signatories to this Amendment covenant and warrant that they have authority to execute this Amendment No. 1 and agree to the above terms and conditions.

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION

SPACE EXPLORATION
TECHNOLOGIES CORP.

BY: Philip R. McAlister

Philip R. McAlister
Director, Commercial Spaceflight
Development Division

BY: Gwynne E. Shotwell

Gwynne Shotwell
President

Date: 4/26/2016

Date: April 25, 2016