

SPACE

Earth System Science

**Agreement Between the
UNITED STATES OF AMERICA
and the EUROPEAN SPACE AGENCY**

Signed at Noordwijk, The Netherlands

June 15, 2022

Entered into force June 15, 2022



NOTE BY THE DEPARTMENT OF STATE

Pursuant to Public Law 89—497, approved July 8, 1966
(80 Stat. 271; 1 U.S.C. 113)—

“ . . .the Treaties and Other International Acts Series issued under the authority of the Secretary of State shall be competent evidence . . . of the treaties, international agreements other than treaties, and proclamations by the President of such treaties and international agreements other than treaties, as the case may be, therein contained, in all the courts of law and equity and of maritime jurisdiction, and in all the tribunals and public offices of the United States, and of the several States, without any further proof or authentication thereof.”

FRAMEWORK AGREEMENT

BETWEEN

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AND

THE EUROPEAN SPACE AGENCY

FOR A STRATEGIC PARTNERSHIP IN EARTH SYSTEM SCIENCE

TABLE OF CONTENTS

PREAMBLE.....	3
ARTICLE 1 – PURPOSE	3
ARTICLE 2 – DEFINITIONS	3
ARTICLE 3 – SCOPE OF ACTIVITIES	5
ARTICLE 4 – IMPLEMENTING ARRANGEMENTS.....	5
ARTICLE 5 – FINANCIAL ARRANGEMENTS.....	6
ARTICLE 6 – CROSS-WAIVER OF LIABILITY	6
ARTICLE 7 – REGISTRATION OF SPACE OBJECTS	7
ARTICLE 8 – TRANSFER OF GOODS AND TECHNICAL DATA	7
ARTICLE 9 – INTELLECTUAL PROPERTY RIGHTS	8
ARTICLE 10 – RELEASE OF RESULTS AND PUBLIC INFORMATION.....	9
ARTICLE 11 – DATA SHARING	10
ARTICLE 12 – EXCHANGE OF PERSONNEL AND ACCESS TO FACILITIES	10
ARTICLE 13 – CUSTOMS CLEARANCE, TAX EXEMPTION, AND MOVEMENT OF GOODS	10
ARTICLE 14 – OWNERSHIP OF GOODS AND DATA.....	10
ARTICLE 15 – AIRBORNE SCIENCE RESEARCH.....	11
ARTICLE 16 – INVESTIGATIONS OF CLOSE CALLS, MISHAPS, AND MISSION FAILURES	11
ARTICLE 17 – ORBITAL DEBRIS AND SPACECRAFT DISPOSAL	11
ARTICLE 18 – CONSULTATION AND DISPUTE RESOLUTION.....	11
ARTICLE 19 – FINAL PROVISIONS.....	12

PREAMBLE

The National Aeronautics and Space Administration of the United States of America (hereinafter referred to as "NASA") and the European Space Agency (hereinafter referred to as "ESA"), hereinafter jointly referred to as the "Parties" or individually as "Party";

RECALLING the long-standing and mutually beneficial cooperation between NASA and ESA in the field of Earth system science missions;

RECOGNIZING more than a decade of mutually beneficial cooperation through the Joint Program Planning Group (JPPG) established in 2010;

RECALLING the signing of the joint statement of intent between NASA and ESA for a strategic partnership in Earth science on July 13, 2021;

NOTING the time necessary to develop space missions, whereby a strategic partnership in Earth system science should address long-term objectives;

ACKNOWLEDGING that the climate crisis is an urgent global challenge and that together, NASA and ESA can lead a global response to climate change and its impacts through the monitoring of the Earth and its environment with their combined efforts in Earth system science observations, research, and applications in support of adaptation and mitigation measures; and

CONFIRMING NASA's and ESA's resolve to establish a strategic partnership in Earth system science to explore and develop new ways to work together, and with others, to achieve synergy between their activities; coordinate and cooperate on key strategic programmatic, scientific, and policy interests; and identify processes to work more efficiently together;

HAVE AGREED as follows:

ARTICLE 1 - PURPOSE

The purpose of this Framework Agreement (hereinafter referred to as "Agreement") is to define the terms and conditions under which the Parties plan to conduct Earth system science cooperation within the overall framework of a strategic partnership.

ARTICLE 2 - DEFINITIONS

For purposes of this Agreement:

1. "Contributing Entity" means a contractor, subcontractor, grantee, or other entity having a legal relationship with a Party that is assigned, tasked, or contracted to perform activities under this Agreement.

2. "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.
3. "Launch Vehicle" means an object, or any part thereof, intended for launch, launched from Earth, or returning to Earth, which carries Payloads or persons, or both.
4. "Payload" means all property to be flown or used on or in a Launch Vehicle.
5. "Protected Space Operations" means all activities conducted pursuant to this Agreement, or any Implementing Arrangement concluded hereunder, including Launch Vehicle or Transfer Vehicle activities, and Payload activities on Earth, in airspace, in outer space, in transit between Earth and airspace or outer space, or other areas on which the Parties agree, in implementation of this Agreement. Protected Space Operations begins on the date of entry into force of this Agreement and ends when all activities done in implementation of this Agreement are completed. The term "Protected Space Operations" includes, but is not limited to:
 - a) Research, design, development, test, manufacture, assembly, integration, operation, or
use of Launch 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.
6. "Related Entity" means:
 - a) A contractor, subcontractor, user, or customer of a Party at any tier;
 - b) A contractor or subcontractor, including suppliers of any kind, of a user or customer of a Party at any tier;
 - c) A grantee or any other cooperating entity or investigator of a Party at any tier;
 - d) A contractor or subcontractor of a grantee or any other cooperating entity or investigator of a Party at any tier; or
 - e) For purposes of Article 6, and in Implementing Arrangements involving cooperative utilization activities as described in Article 4 below, the term "Related Entity" may also apply to another State or agency or institution of another State, where such State, agency or institution is an entity described above or is otherwise involved in the activities undertaken pursuant to this Agreement.
7. "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.

ARTICLE 3 – SCOPE OF ACTIVITIES

1. The Parties shall identify areas of mutual interest and seek to develop cooperative activities in Earth system science, and shall work closely together to this end.
2. These joint activities may, as mutually agreed, and subject to the provisions of this Agreement and the specific terms and conditions of any Implementing Arrangements concluded pursuant to Article 4, include identification of high-value opportunities to collaborate on joint programs, constellation approaches, and other innovative joint initiatives that may address one or more of the following themes:
 - a. Observing systems to ensure sustained observations, to advance our understanding of the integrated Earth system and climate change and to enable scientific and societal applications from near-real-time to climate scales;
 - b. Collaboration to advance and accelerate scientific understanding of the Earth system and applications of that knowledge;
 - c. Collaboration on data policy, data exploitation, and open science to advance a collaborative culture, enabled by technology, that fosters open sharing of data, information, and knowledge within the scientific community and the wider public; and
 - d. Other areas on which the Parties agree.
3. These activities may take place on the Earth's surface and its interior, in airspace, and in outer space.
4. The Parties shall document areas of mutual interest in a joint strategic implementation plan that is reviewed and updated, at a minimum, every three years.

ARTICLE 4 - IMPLEMENTING ARRANGEMENTS

1. The specific terms and conditions for joint activities pursuant to this Agreement, and the specific roles and responsibilities of the Parties, shall be set forth in Implementing Arrangements between the Parties.
2. Implementing Arrangements pursuant to this Agreement shall include, as appropriate, provisions related to the nature and scope of the joint activities, the individual and joint commitments of the Parties, data management plans to implement the full and open sharing of data, and any other provisions necessary to conduct the joint activities.
3. Such Implementing Arrangements shall be subject to this Agreement, unless the Parties expressly agree otherwise through specific terms set forth in the Implementing Arrangements.

ARTICLE 5 - FINANCIAL ARRANGEMENTS

1. Each Party shall bear the costs of discharging its respective obligations under this Agreement, including travel and subsistence of personnel and transportation of all goods for which it is responsible.
2. The Parties' obligations under this Agreement are subject to the availability of appropriated funds and each Party's respective funding procedures. Should either Party encounter budgetary problems that may affect the activities to be carried out under this Agreement, the Party encountering the problems shall notify and consult with the other Party, as appropriate, as soon as possible.

ARTICLE 6 – CROSS-WAIVER OF LIABILITY

1. 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 including through the International Space Station (ISS). The Parties intend that the cross-waiver of liability be broadly construed to achieve this objective.
2. Cross-waiver of liability:
 - a) 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 (2)(a)(i) through (2)(a)(iii) 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:
 - i. The other Party;
 - ii. A Related Entity of any entity identified in paragraph (2)(a)(i) of this Article; or
 - iii. The employees of any of the entities identified in paragraphs (2)(a)(i) through (2)(a)(ii) of this Article.
 - b) In addition, each Party shall, by contract or otherwise, extend the cross-waiver of liability, as set forth in paragraph (2)(a) of this Article, to its Related Entities by requiring them, by contract or otherwise, to:
 - i. Waive all claims against the entities or persons identified in paragraph (2)(a)(i) through (2)(a)(ii) of this Article; and
 - ii. Require that their Related Entities waive all claims against the entities or persons identified in paragraphs (2)(a)(i) through (2)(a)(iii) of this Article.
 - c) 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, done on March 29, 1972 (the "Liability Convention"), 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. In the event of third-party claims, which may arise out of, *inter alia*, the Liability Convention, the Parties shall consult promptly on any potential liability, on any apportionment of such liability, and on the defense of such claim.

- d) Notwithstanding the other provisions of this Article, this cross-waiver of liability shall not apply to:
- i. Claims between a Party and its own Related Entity or between its own Related Entities;
 - ii. 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;
 - iii. Claims for Damage caused by willful misconduct;
 - iv. Intellectual property claims;
 - v. Claims for Damage resulting from a failure of a Party to extend the cross-waiver of liability to its Related Entities, pursuant to paragraph 2(b) of this Article; or
 - vi. Claims by a Party arising out of or relating to the other Party's failure to perform its obligations under this Agreement.
- e) Nothing in this Article shall be construed to create the basis for a claim or suit where none would otherwise exist.

ARTICLE 7 – REGISTRATION OF SPACE OBJECTS

1. For Implementing Arrangements involving the launch of a NASA space object, NASA shall request its Government to register the space object in accordance with the *Convention on the Registration of Objects Launched into Outer Space* (the "Registration Convention"), done on November 12, 1974.
2. For Implementing Arrangements involving the launch of an ESA space object, ESA shall register the space object in accordance with the Registration Convention.
3. Registration pursuant to this Article shall not affect the rights or obligations of the Government of the United States of America, ESA, or ESA's Member States under the Convention on International Liability for Damage Caused by Space Objects (the "Liability Convention"), done on March 29, 1972.

ARTICLE 8 – TRANSFER OF GOODS AND TECHNICAL DATA

The Parties are obligated to transfer only those goods and technical data, including software, necessary to fulfill their respective responsibilities under this Agreement, in accordance with the following provisions:

1. Without prejudice to ESA's status as an international organization, all activities under this Agreement, including those relating to the transfer of goods and technical data, shall be carried out in accordance with the laws and regulations applicable to each Party.
2. The transfer of technical data for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety shall normally be made without restriction, except as required by paragraphs 1 and 3 of this Article.
3. All transfers of goods and proprietary or export-controlled technical data are subject to the following provisions:
 - a) In the event a Party or its Related Entity finds it necessary to transfer such goods or data, for which protection is to be maintained, such goods shall be specifically identified and such data shall be marked;
 - b) The identification of such goods and the marking on such data shall indicate that the goods and data shall be used by the receiving Party and its Related Entities only for the purposes of fulfilling the receiving Party's or Related Entities' responsibilities under this Agreement, and that such goods and data shall not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Party; and
 - c) The receiving Party and its Related Entities shall abide by the terms of the notice and protect any such goods and data from unauthorized use and disclosure.
4. All goods exchanged in the performance of this Agreement shall be used by the receiving Party or Related Entity exclusively for the purposes of the Agreement. Upon completion of the activities under the Agreement, the receiving Party or Related Entity shall return or otherwise dispose of all goods and marked proprietary or export-controlled technical data provided under this Agreement, as directed by the furnishing Party or Related Entity.
5. The Parties to this Agreement shall cause their Related Entities to be bound by the provisions of this Article by contract or otherwise.

ARTICLE 9 – INTELLECTUAL PROPERTY RIGHTS

1. Nothing in this Agreement shall be construed as granting, either expressly or by implication, to the other Party any rights to, or interest in, any inventions or works of a Party or its Contributing Entities made prior to the entry into force of, or outside the scope of, this Agreement, including any patents (or similar forms of protection in any country) corresponding to such inventions or any copyrights corresponding to such works.
2. Any rights to, or interest in, any invention or work made in the performance of this Agreement solely by one Party, or any of its Contributing Entities, including any patents (or similar forms of protection in any country) corresponding to such invention or any copyright corresponding to such work, shall be owned by such Party,

or Contributing Entity. Allocation of rights to, or interest in, such invention or work between such Party and its Contributing Entities shall be determined by applicable laws, rules, regulations, and contractual obligations.

3. It is not anticipated that there will be any joint inventions made in the performance of this Agreement. Nevertheless, in the event that an invention is jointly made by the Parties in the performance of this Agreement, the Parties shall, in good faith, consult and endeavor to agree within thirty (30) calendar days as to:
 - a) The allocation of rights to, or interest in, such joint invention, including any patents (or similar forms of protection in any country) corresponding to such joint invention;
 - b) The responsibilities, costs, and actions to be taken to establish and maintain patents (or similar forms of protection in any country) for each such joint invention; and
 - c) The terms and conditions of any license or other rights to be exchanged between the Parties or granted by one Party to the other Party.
4. For any jointly authored work by the Parties, should the Parties decide to register the copyright in such work, they shall, in good faith, consult and agree as to the responsibilities, costs, and actions to be taken to register copyrights and maintain copyright protection (in any country).
5. Subject to the provisions of Article 8 (Transfer of Goods and Technical Data) and Article 10 (Release of Results and Public Information), each Party shall have an irrevocable royalty-free right to reproduce, prepare derivative works, distribute, and present publicly, and authorize others to do so on its behalf, any copyrighted work resulting from activities undertaken in the performance of this Agreement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Party or jointly with the other Party.

ARTICLE 10 – RELEASE OF RESULTS AND PUBLIC INFORMATION

1. The Parties retain the right to release public information regarding their own activities under this Agreement. The Parties shall coordinate with each other in advance concerning releasing to the public information that relates to the other Party's responsibilities or performance under this Agreement.
2. The Parties acknowledge that the following data or information does not constitute public information and that such data or information shall not be included in any publication or presentation by a Party under this Article without the other Party's prior written permission:
 - a) Data furnished by the other Party in accordance with Article 8 (Transfer of Goods and Technical Data) which are identified as export-controlled or proprietary; or

- b) Information about an invention of the other Party before a patent application (or similar form of protection in any country) corresponding to such invention has been filed covering the same, or a decision not to file has been made and communicated by that Party.

ARTICLE 11 - DATA SHARING

The Parties agree to the full and open sharing of data from joint activities under this Agreement as soon as such data become available. Implementing Arrangements under this Agreement shall include data management plans to implement the full and open sharing of data.

ARTICLE 12 – EXCHANGE OF PERSONNEL AND ACCESS TO FACILITIES

1. To facilitate implementation of the activities conducted under this Agreement, the Parties may support the exchange of a limited number of their personnel, including personnel from their Related Entities, at an appropriate time and under conditions mutually agreed between the Parties.
2. Access by the Parties' personnel to each other's facilities or property, or to each other's Information Technology (IT) systems or applications, is contingent upon compliance with each other's respective security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system application/access.

ARTICLE 13 – CUSTOMS CLEARANCE, TAX EXEMPTION, AND MOVEMENT OF GOODS

In accordance with applicable laws and regulations, each Party shall facilitate free customs clearance and waiver of all applicable duties and all taxes for goods necessary for the implementation of this Agreement or any Implementing Arrangements hereunder. In the event that any duties or taxes of any kind are nonetheless levied on such goods, such customs duties or taxes shall be borne by the Party of the country levying such duties or taxes.

In accordance with applicable laws and regulations, NASA and ESA, respectively, shall also facilitate the movement of goods into and out of the United States and the relevant ESA Member States as necessary to comply with this Agreement and any Implementing Arrangements hereunder.

ARTICLE 14 – OWNERSHIP OF GOODS AND DATA

Unless otherwise agreed in writing, each Party shall retain ownership of all goods and data it provides to the other Party under the terms of this Agreement, without prejudice to any individual rights of ownership of the Parties' respective Related Entities. For avoidance of doubt, to the extent feasible and recognizing that goods sent into space or

integrated into the other Party's goods cannot be returned, each Party agrees to return the other Party's goods and data in its possession at the conclusion of activities under this Agreement.

ARTICLE 15 – AIRBORNE SCIENCE RESEARCH

Each Party shall facilitate, upon request from the other Party, the provision of aircraft and balloon diplomatic overflight clearances, as necessary.

ARTICLE 16 - INVESTIGATIONS OF CLOSE CALLS, MISHAPS, AND MISSION FAILURES

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, bearing in mind the provisions of Article 8 (Transfer of Goods and Technical Data). In the case of activities under this Agreement which might result in the death of, or serious injury to, persons, or substantial loss of, or damage to property, the Parties agree to establish a process for investigating each such close call, mishap, or mission failure.

ARTICLE 17 - ORBITAL DEBRIS AND SPACECRAFT DISPOSAL

1. The Parties shall apply space debris mitigation measures based on their respective applicable space debris mitigation policies and requirements, 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.
2. In furtherance of the previous paragraph, the Parties agree to plan for the mitigation of orbital debris, including the passivation and disposal of the spacecraft at the end of its mission, as part of the mission planning process.
3. Such a plan shall include which Party has the lead for the end of mission planning, conjunction assessment, and the standards to be used for the mitigation of orbital debris.

ARTICLE 18 – CONSULTATION AND DISPUTE RESOLUTION

1. The Parties shall consult with each other promptly when events occur or matters arise that may call into question the interpretation or implementation of the terms of this Agreement.
2. Any issue in the interpretation or implementation of this Agreement that cannot be resolved by the designated representatives shall be referred for settlement to the ESA Director in charge of Earth Observation Programmes and the NASA Director for Earth Science for the Science Mission Directorate, or their designees. If they are unable to come to an agreement, then the issue shall be referred to the Director

General of ESA and the Administrator of NASA, or their designees. If an issue not resolved through consultation still needs to be resolved, the Parties may agree to submit the dispute to an agreed-upon form of dispute resolution.

ARTICLE 19 – FINAL PROVISIONS

1. This Agreement shall enter into force on the date of the last signature by the Parties.
2. The Agreement shall remain in force for ten (10) years.
3. The Parties may amend this Agreement in writing.
4. This Agreement shall not prejudice or otherwise affect existing agreements between the Parties, or the ability of the Parties to conclude other agreements or arrangements regarding matters within or outside the scope of this Agreement. Furthermore, this Agreement shall not prejudice cooperation of either Party with other States and international organizations.
5. Either Party may terminate this Agreement at any time by giving the other Party at least six (6) months written notice of its intent to terminate. In the event of termination, the terminating Party shall endeavor to minimize any negative impact of such termination on the other Party.
6. Notwithstanding the termination or expiration of this Agreement, its provisions shall continue to apply to cooperation under any Implementing Arrangement subject to this Agreement in effect at the time of termination or expiration, for the duration of such Implementing Arrangements.
7. The provisions of Article 6 (Cross-Waiver of Liability), Article 8 (Transfer of Goods and Technical Data), Article 9 (Intellectual Property Rights), and Article 10 (Release of Results and Public Information), shall continue to apply notwithstanding the termination or expiration of this Agreement unless otherwise agreed in writing by the Parties.

IN WITNESS WHEREOF, the undersigned duly authorized representatives of the Parties have signed this MOU, in two originals, in the English language.

Done at Noordwijk, The Netherlands, on June 15, 2022.

For the National Aeronautics
Space Administration

A handwritten signature in dark ink, appearing to read "Bill Nelson", written over a horizontal line.

Bill Nelson
Administrator

For the European Space Agency

A handwritten signature in dark ink, appearing to read "Josef Aschbacher", written over a horizontal line.

Josef Aschbacher
Director General