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**United States of America
and
European Space Agency**

Memorandum of Understanding between the United States National Aeronautics and Space Administration and the European Space Agency enabling early utilization opportunities of the International Space Station. Washington, 11 March 1997, and Paris, 18 March 1997

Entry into force: *18 March 1997 by signature, in accordance with article 16*

Authentic text: *English*

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**États-Unis d'Amérique
et
Agence spatiale européenne**

Mémorandum d'accord entre la National Aeronautics and Space Administration des États-Unis d'Amérique et l'Agence spatiale européenne donnant des possibilités d'utilisation initiale de la Station spatiale internationale. Washington, 11 mars 1997, et Paris, 18 mars 1997

Entrée en vigueur : *18 mars 1997 par signature, conformément à l'article 16*

Texte authentique : *anglais*

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[ENGLISH TEXT – TEXTE ANGLAIS]

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND THE
EUROPEAN SPACE AGENCY
ENABLING EARLY UTILIZATION OPPORTUNITIES OF
THE INTERNATIONAL SPACE STATION**

The United States National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA) (hereinafter referred to as "the Parties"),

Recalling the NASA Administrator's offer at the November 1993 Heads of Agency meeting in Montreal, Canada, to seek mutually beneficial opportunities to cooperate in Phases 1, 2, and 3 of the International Space Station program,

Recalling the subscription on July 19, 1994 by Member States of ESA of the additional Declaration to the Columbus Program on early delivery to NASA of Space Station items,

Recalling the *Agreement Among the Government of the United States of America, Governments of Member States of the European Space Agency, the Government of Japan, and the Government of Canada on Cooperation in the Detailed Design, Development, Operation, and Utilization of the Permanently Manned Civil Space Station (IGA)* signed on September 29, 1988, which has not yet entered into force for the European Partner,

Recalling the *Memorandum of Understanding Between the United States National Aeronautics and Space Administration and the European Space Agency on Cooperation in the Detailed Design, Development, Operation and Utilization of the Permanently Manned Civil Space Station (Space Station MOU)* signed on September 29, 1988, in particular the provisions of Articles 4.1, 8.3.a.2 and 8.3.k, which anticipate barter, purchase, or other arrangements between partners for obtaining additional Space Station utilization opportunities,

Recalling the NASA/ESA "Early Utilization Agreement in Principle" signed on May 6, 1994.

Recognizing that NASA and ESA have a mutual interest in utilization activities in the early phases of the Space Station program,

Considering ESA's interest in Space Station utilization accommodations and resources, and specified Space Shuttle flight crew opportunities, prior to the on-orbit assembly and verification of the European pressurized laboratory; and NASA's interest in specified infrastructure equipment to enhance the early utilization capability of the Space Station,

Have agreed as follows:

ARTICLE 1 -- Purpose

- 1.1 The purpose of this MOU is to establish arrangements between NASA and ESA for the provision by NASA to ESA of early utilization opportunities during Phases 1, 2, and 3 of the International Space Station (ISS) program prior to the on-orbit assembly and verification of the European pressurized laboratory, as well as specified Space Shuttle opportunities, as indicated in Article 2, in exchange for the provision by ESA to NASA of the Space Station utilization enhancement items described in Article 3.
- 1.2 The specific objectives of this MOU are to:
 - (a) record the mutual commitments and detail the respective roles and responsibilities of the Parties in this cooperation;
 - (b) establish, consistent with Article 5 below, the program management structure and interfaces necessary to ensure effective planning and coordination in the conduct of the activities in accordance with this MOU; and,
 - (c) increase the overall expertise of the Parties and improve their capabilities in order to better prepare for the utilization and operation of the international Space Station.
- 1.3 The Parties intend this MOU to be consistent with the provisions of the Agreement on Cooperation in the Detailed Design, Development, Operation, and Utilization of the Permanently Manned Civil Space Station (1988 IGA) and the NASA-ESA Memorandum of Understanding on Cooperation in the Detailed Design, Development, Operation, and Utilization of the Permanently Manned Civil Space Station (1988 MOU), both done at Washington on 29 September 1988. All cooperation between the Parties under this MOU will be carried out consistent with the provisions of those agreements. It is contemplated by the Parties that a new Intergovernmental Agreement will supersede the 1988 IGA and that a new Memorandum of Understanding on

Space Station cooperation between NASA and ESA will supersede the 1988 MOU. When the new agreements enter into force, all cooperation between the Parties under this MOU will be carried out consistent with the provisions of those new agreements. Until the 1988 agreements are superseded, in the event there is any conflict between the provisions of this MOU and the 1988 agreements, such conflict shall be resolved by giving precedence to the 1988 agreements. Once the new Intergovernmental Agreement and the new Space Station Memorandum of Understanding have superseded the original agreements, in the event of a conflict between the provisions of this MOU and the new agreements, such conflict shall be resolved by giving precedence to those new agreements.

ARTICLE 2 – ESA Early Utilization

2.1 NASA, using all reasonable efforts, will provide ESA the following early utilization opportunities in exchange for ESA's provision of the Space Station utilization enhancement items described in Article 3. These early utilization opportunities will be compatible with NASA's utilization of the ISS:

- 2.1.1 Access by ESA to 50% of the experiment module accommodations in a NASA payload rack in the U.S. Laboratory for a period of 2 years for use by an experiment module or modules provided by ESA through a cooperative research agreement between NASA and ESA.
- 2.1.2 The accommodation of European-provided research equipment in a U.S. research facility or facilities, in addition to that access provided in 2.1.1 above, for a period of 2 years. The experiment volume to be made available will be the equivalent of up to four mid-deck lockers. This accommodation will occur through a cooperative research agreement between NASA and ESA.
- 2.1.3 The conduct of research, including Earth and/or space viewing research, using one-half of one attached payload accommodation site on the truss from the first availability of such a site and a suitable launch opportunity for a period of 3 years.

For the ESA-provided payloads thus accommodated, NASA will provide ESA with a commensurate share of utilization resources. If these payloads are not part of a cooperative program with NASA, ESA will be provided the option to purchase a commensu-

rate share of supporting services (data transmission and transportation).

- 2.1.4 Provision of two Space Shuttle flight opportunities for ESA astronauts to be accommodated in the Phase 1 program and/or that portion of Phase 2/3 prior to the on-orbit assembly and verification of the European pressurized laboratory.
- 2.2 The cooperative research agreements cited in subparagraphs 2.1.1 and 2.1.2 above will be consistent with the mechanisms established by multilateral research discipline planning groups, will reflect the mutual scientific, technical and programmatic interests of NASA and ESA, and will be within the known scientific, technical, and budgetary capabilities of both Parties. NASA and ESA will each assume full financial responsibility for its respective commitments such that there is no exchange of funds between them. Unless otherwise agreed, the research disciplines to be considered under these cooperative agreements will be within the areas of responsibility of NASA's Office of Life and Microgravity Sciences and Applications and the ESA Directorate for Manned Spaceflight and Microgravity.
- 2.3 ESA's access to the pressurized payload accommodations described in subparagraphs 2.1.1 and 2.1.2 is targeted to commence no later than November 2000 in order to satisfy the intent of this MOU to provide ESA with these utilization opportunities prior to the on-orbit assembly of the European pressurized laboratory. Specific flight dates will be documented and updated as necessary in the cooperative research agreements described in paragraph 2.2, and controlled in the U.S. Partner Utilization Plan for ISS.
- 2.4 In order to ensure that European-provided payloads referred to in paragraph 2.1 are compatible with the U.S. Laboratory interfaces, and with external payloads-to-Station interfaces in the case of European-provided external payloads, NASA will:
 - 2.4.1 Provide ESA with necessary interface information.
 - 2.4.2 Provide ESA with standard integration services free of charge.
 - 2.4.3 For pressurized payloads, grant ESA access to appropriate interface simulators in the United States, enabling verification and checkout of the ESA-provided payloads.