Agreement for a cooperative program concerning the development, procurement and use of a space laboratory in conjunction with the space shuttle system, with memorandum of understanding between the National Aeronautics and Space Administration and the European Space Research Organization Done at Neuilly-sur-Seine August 14, 1973, entered into force August 14, 1973 24 UST 2049, TIAS 7722

Parties:

Belgium	Germany, Fed Rep	Netherlands	United Kingdom
Denmark	Italy	Spain	United States
France		Switzerland	

MULTILATERAL

Space Laboratory: Cooperative Program

Agreement done at Neuilly-sur-Seine August 14, 1973; [1]
Entered into force August 14, 1973.
With memorandum of understanding between the National Aeronautics and Space Administration and the European Space Research Organisation.

ACCORD

ENTRE LE GOUVERNEMENT DES ETATS-UNIS D'AMERIQUE
ET CERTAINS GOUVERNEMENTS MEMBRES
DE L'ORGANISATION EUROPEENNE DE RECHERCHES SPATIALES
CONCERNANT UN PROGRAMME COOPERATIF
POUR LE DEVELOPPEMENT, L'ACQUISITION
ET L'UTILISATION D'UN LABORATOIRE SPATIAL
EN LIAISON AVEC LE SYSTEME DE NAVETTE SPATIALE

AGREEMENT

BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA
AND CERTAIN GOVERNMENTS, MEMBERS OF THE
EUROPEAN SPACE RESEARCH ORGANISATION,
FOR A COOPERATIVE PROGRAMME
CONCERNING THE DEVELOPMENT, PROCUREMENT AND USE OF A
SPACE LABORATORY IN CONJUNCTION WITH THE
SPACE SHUTTLE SYSTEM

ÜBEREINKOMMEN

ZWISCHEN DER REGIERUNG DER VEREINIGTEN
STAATEN VON AMERIKA
UND BESTIMMTEN REGIERUNGEN, DIE MITGLIEDER DER
EUROPÄISCHEN WELTRAUMFORSCHUNGS-ORGANISATION SIND,
ÜBER EIN PROGRAMM DER ZUSAMMENARBEIT BEI
DER ENTWICKLUNG BESCHAFFUNG UND
NUTZUNG EINES WELTRAUMLABORATORIUMS
IN VERBINDUNG MIT DEM RAUMTRANSPORTERSYSTEM

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[1] Text as certified by the French Ministry of Foreign Affairs.

PREAMBLE,

The Government of the United States of America
and
the Governments of the Federal Republic of Germany, the Kingdom of Belgium, Spain, the Kingdom of Denmark, the French Republic, the Italian Republic, the Kingdom of the Netherlands, the United Kingdom of Great Britain and Northern Ireland, the Swiss Confederation, parties to the Arrangement between certain Member States of the European Space Research Organisation and the European Space Research Organisation concerning the execution of the Spacelab Programme, opened for signature on 1 March 1973 (the above European Governments and such other Governments as adhere to this Agreement being referred to hereinafter as the "European Partners"),

CONSCIOUS of the challenge and potential of space exploration and convinced that international cooperation in the development and use of new mechanisms for space exploration will further strengthen the bonds of friendship between the countries involved and will in general contribute to world peace;

RECALLING with satisfaction the considerable amount of cooperation in the space field already conducted and now in progress between the countries involved;

DESIRING to extend and expand cooperation already conducted in the space field between the countries involved;

CONVINCED also that such cooperation will result in scientific, technological and economic advantages to their mutual benefit as well as the benefit of all mankind;

RECALLING the invitation extended by the Government of the United States of America to Europe to cooperate in the United States post-Apollo programme;

CONSIDERING that the Government of the United States of America has established policies to make available to other nations launch assistance for scientific and applications space missions for peaceful purposes;

NOTING the decision of the European Space Conference to participate in the post-Apollo programme as expressed in the Resolution adopted in Brussels on December 20, 1972;

CONSIDERING that the European Partners have entrusted to the European Space Research Organisation (hereinafter referred to as "ESRO") to undertake, as a special project, the development of a Space Laboratory (hereinafter referred to as "SL");

CONSIDERING that the Government of the United States of America has entrusted to the National Aeronautics and Space Administration (hereinafter referred to as "NASA") the development of the Space Shuttle;

CONSIDERING that the SL concept is essential for the full exploitation of the Space Shuttle potential;

HAVING NOTED the Memorandum of Understanding [1] between NASA and ESRO drawn up for the purpose of implementing a cooperative programme concerning the development, procurement and use of an SL in conjunction with the Space Shuttle system;

HAVE AGREED AS FOLLOWS:

ARTICLE 1

PURPOSES AND OBJECTIVES

The Government of the United States of America and the European Partners shall engage in a cooperative programme concerning an integrated space transportation and orbital system to provide. (1) for the design, development, manufacture and delivery of the first flight unit of the SL as an element to be integrated with the Space Shuttle, (2) for the use of the Space Shuttle and SL systems for peaceful purposes, (3) for the production and procurement of additional SLs. (4) for appropriate exchanges and interaction in the development and use of the Space Shuttle and SL systems; and (5) for consideration of the timely expansion and extension of this cooperation as their mutual interest warrants.

ARTICLE 2

GENERAL DESCRIPTION OF THE SPACE SHUTTLE AND SL PROGRAMMES

A The Space Shuttle programme refers essentially: to the definition, design and development of a Space Shuttle which will: serve in missions to deliver payloads to earth orbit; maintain station on orbit for mission durations in the order of seven days or more, provide safety monitoring and control over payload elements throughout missions; and provide seating and complete habitability for crews, including free movement between the Shuttle and SL.

B. The SL programme provides for the definition, design, development and procurement of mannable laboratory modules and unpressurised instrument platforms (pallets) attached to and integral with the Shuttle and suitable for conducting research and applications activities on Shuttle sortie missions.

ARTICLE 3

COOPERATING AGENCIES AND IMPLEMENTATION

A. NASA is designated as the cooperating agency of the Government of the United States of America to implement its side of the cooperative programme. ESRO, or its successor organisation, is designated as the cooperating agency of the European Partners to implement their side of the cooperative programme.

B. Detailed provisions for the implementation of this cooperative programme are set forth in the Memorandum of Understanding between NASA and ESRO, dated 14 August 1973, confirmed here-

[1] See p. 2082.

with. Upon formation of a successor organisation to ESRO, the Memorandum of Understanding will be considered as being between NASA and that organisation.

ARTICLE 4

OBLIGATIONS OF THE EUROPEAN PARTNERS

As their part of the cooperative programme the European Partners shall have among their obligations the following:

(1) to design, develop, manufacture and deliver an SL and associated equipment according to mutually agreed specifications and time schedule;

(2) to establish the necessary means and infrastructure in Europe in order to ensure the possibility of the procurement at reasonable prices by the Government of the United States of America of additional such SLs, components and spares as the Government of the United States of America may need;

(3) to ensure the availability of a sustaining engineering capability for the SL to meet the mission operating requirements of the Government of the United States of America; and

(4) to provide for the necessary contingency arrangements to enable the production in the United States of SLs, components and spares in the event that the European Partners fail to complete the first SL or to produce subsequent SLs for procurement by the Government of the United States of America in accordance with agreed specifications and schedules at reasonable prices.

ARTICLE 5

OBLIGATIONS OF THE GOVERNMENT OF THE UNITED STATES OF AMERICA

As its part of the cooperative programme the Government of the United States of America shall have among its obligations the following: (1) to provide relevant information and advice; (2) to provide, subject to its availability and applicable United States laws and regulations, such assistance and for export of such technology, including know-how and hardware, as may be mutually agreed is required for the development and manufacture of the SL; (3) to procure only from the European Partners such additional SLs, components and spares as substantially duplicate the design and capabilities of the first SL, as are needed by the Government of the United States of America, including needs arising from its international programmes, and as are available in accordance with agreed schedules and at reasonable prices; (4) to refrain from separate and independent development of any SL substantially duplicating the design and capabilities of the first SL unless the European Partners fail to produce such SLs, components and spares in accordance with agreed specifications and schedules and at reasonable prices;

(5) to use the first SL developed in Europe as an element integrated with the Space Shuttle system for the peaceful exploration and use of outer space; and (6) to keep the European Partners informed of its plans for future use of the Space Shuttle system, and, in particular, of future concepts which may lead to modifications of the present SL concept, with a view to expanding and extending this cooperation beyond the present Agreement.

ARTICLE 6

ACCESS TO TECHNOLOGY AND INFORMATION

A. The European Partners will have access to that technology, including know-how, which is available to the Government of the United States of America and is needed in order to accomplish successfully their tasks under this cooperative programme, for the same purposes the Government of the United States of America will have access to technology, including know-how, available to the European Partners.

B. The technology, including know-how, which the Government of the United States of America and the European Partners will require from the other for the successful accomplishment of tasks under this cooperative programme will be jointly defined. However, the Government of the United States of America and the European Partners each reserve the right in exceptional cases to arrange for their respective technology so defined to be made available in the form of hardware, rather than know-how.

C. The technology, including know-how, so identified and transferred under this cooperative programme and normally subject to licensing and proprietary control will not be made available beyond the European Partners, their nationals and ESRO acting in their behalf in the SL programme without the express prior approval of the Government of the United States of America. If the European Partners, their nationals or ESRO wish to use this technology, including know-how, for purposes other than the development and production tasks under the cooperative programme and other than in connection with their use of the Space Shuttle and SL, such uses may be arranged on a case-by-case basis in accordance with normal commercial practice and the applicable United States laws and regulations.

D. The Government of the United States of America will give consideration on a case-by-case basis to requests for access to United States technology, including know-how, beyond that which is directly necessary for the execution of the SL programme.

E. Any technology, including know-how, transferred under this cooperative programme to the Government of the United States of America or its nationals by the European Partners will be subject to similar conditions as to availability and use.

F. The access to technology, including know-how, referred to above will be effected in such a way as not to infringe any existing proprietary rights of any person or body in the United States or Europe.

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G. The Government of the United States of America will make available to the European Partners general information related to the design, development, and use of the Space Shuttle and orbital system, particularly that required for the understanding of that system.

H. In those cases where the information requested can be made readily available by agencies of the Government of the United States of America, it will be made available free of charge; in other cases, the Government of the United States of America will use its best efforts to facilitate its availability on favourable conditions.

I. While the Government of the United States of America and the European Partners believe that the SL can be developed within existing European capabilities, it is recognised that some commercial procurement of components and services in the United States is likely. In consideration thereof, the Government of the United States of America shall, in procurement of commercially available components and services related to the development of the Shuttle, follow the principle of giving full recognition to advantages offered in Europe in cost, quality or availability.

J. The provisions of this Article shall be subject to applicable laws and regulations.

ARTICLE 7

USE OF THE SPACE SHUTTLE AND SL

A. The Government of the United States of America shall, consistent with international agreements and arrangements, make the Space Shuttle available for SL missions (experiments and applications) of the European Partners and their nationals on either a cooperative or cost-reimbursable basis.

B. In regard to space missions of the European Partners, the Government of the United States of America shall provide access for use of SLs developed under this cooperative programme for experiments or applications proposed for reimbursable flight by the European Partners, in preference to those of third countries considering, in recognition of the participation of the European Partners in this cooperative programme, that this will be equitable in the event of payload limitation or scheduling conflicts. Experiments or applications proposed for cooperative flight will be selected on the basis of the merit of each proposal in accordance with continuing United States policy; such proposals of the European Partners will be given preference over the proposals of third countries provided their merit is at least equal to the merit of the proposals of third countries. The European Partners will have an opportunity to express their views with respect to the judgement of merit regarding their cooperative proposals.

C. The commercial use of Space Shuttles and SLs will be on a non-discriminatory basis.

The establishment by the Government of the United States of America or by the European Partners of standards and conditions for the commercial use of SL units will be the subject of prior exchange of

views on such standards and conditions, looking toward the maximum practicable harmonisation of the respective policies In exceptional circumstances, should this prove impossible, the exchange of views will take place at the first opportunity thereafter.

D. In order to assure the integrity of operation and management by the Government of the United States of America of the Space Shuttle system, this Government shall have full control over the first SL unit, after its delivery to the Government of the United States of America, including the right to make final determination as to its use for peaceful purposes The Government of the United States of America may make any modifications to the first SL unit it desires. However, in the case of intended major modifications, the European Partners will be given advance notification to permit the opportunity for them to express their views and to provide modification kits

E With regard to the first flight of the first SL unit, the system test objectives will be the responsibility of the Government of the United States of America. The experimental objectives of this first flight will be jointly planned on a cooperative basis Thereafter, the cooperative use of this first SL unit by the European Partners and ESRO will be encouraged throughout its useful life, although not to the exclusion of cost reimbursable use by them. The Government of the United States of America will otherwise have unrestricted use of the first SL unit free of cost

F. The Government of the United States of America will provide SL flight crew opportunities to nationals of the European Partners in connection with their space missions involving an SL. It is contemplated that a European crew member will be included in the flight crew of the first SL flight.

G. The results of NASA and ESRO experiments on cooperative SL missions shall be made freely available to the Parties to this Agreement, subject to any proprietary rights and to the usual priorities to be granted to individual experimenters for the purpose of advance exploitation and publication of the data obtained.

H. The use of Space Shuttles and SLs by European nationals may be arranged through ESRO or by the appropriate European Partner.

Article 8

COSTS

A. The Government of the United States of America and the European Partners shall bear the costs of their respective participation in the cooperative programme under this Agreement.

B. Neither the Government of the United States of America nor the European Partners will seek to recover government research and development costs incurred in the development of items procured from the other in connection with this cooperative programme.

C. With respect to the financial conditions for reimbursable launch services from United States launch sites, European Partners, their

nationals and ESRO will be charged on the same basis as comparable nongovernment United States domestic users.

D. The obligations of the Government of the United States of America and of the European Partners shall be subject to their respective funding procedures.

ARTICLE 9

CONSULTATION AND PLANNING

A. The Parties agree to consult with a view to facilitating a continuing and expanding cooperation in the use of outer space.

B. In order to enhance the opportunities for the European Partners to determine and express their interest in the planning and use of the Space Shuttle system, and particularly the SL, the Government of the United States of America will associate representatives of the European Partners, through consultation and as observers, with mission definition planning for use of the system as well as with planning and management of the overall development of the system.

C The Government of the United States of America will consult with the European Partners on the appropriate measures to be taken in the event the Space Shuttle programme is not continued, and will, consistent with United States policy and the objectives of Articles 7 and 8, make available to the European Partners or ESRO existing alternative launchers for missions of the European Partners being developed for SL flights.

ARTICLE 10

MOVEMENT OF PERSONS AND MATERIALS

A. The Government of the United States of America and the European Partners shall facilitate the movement of persons and materials involved in the cooperative programme under this Agreement into and out of their territories.

B. The Government of the United States of America and the European Partners shall use their best efforts to accord, to such material as may be government-owned, entry free of customs duties and other charges.

C. The Government of the United States of America and the European Partners shall use their best efforts to accord to nongovernment-owned material: (1) entry free of customs duties and other charges; and (2) purchase free of national and other taxes.

ARTICLE 11

LIABILITY

A. The Government of the United States of America shall have full responsibility for damage to its nationals and to its governmental property arising in the course of implementation of this Agreement. The European Partners shall have full responsibility for damage to their nationals, to their governmental property, and, through ESRO, to employees of ESRO and to ESRO property, arising in the course of implementation of this Agreement.

B. In the event of damage, arising from the launch, flight or descent of the Shuttle carrying the SL, to nationals of countries which are not parties to this Agreement, for which damage there is joint liability of the Government of the United States of America and the European Partners under the principles of international law or of the Convention on International Liability for Damage Caused by Space Objects,[1] the Government of the United States of America and the European Partners agree to consult promptly on an equitable sharing of the payment for any settlement required. If agreement is not reached within 180 days, the Government of the United States of America and the European Partners will act promptly to arrange for early arbitration to settle the sharing of such claims following the 1958 model rules on arbitral procedure of the International Law Commission.

C. In the event of damage to nationals of countries not parties to this Agreement, arising from the implementation of this Agreement and not covered by Paragraph B above, such damage shall be the responsibility of the Government of the United States of America and/or the European Partners depending on where the responsibility falls under applicable law.

D Notwithstanding Paragraph A above, with respect to the first SL to be provided by the European Partners, the Government of the United States of America shall be responsible for damage to such first SL after its acceptance by the Government of the United States of America, but shall not be liable for damage occurring in connection with a Space Shuttle launch, flight or descent.

ARTICLE 12

DISPUTES

The resolution of any dispute as to the implementation of the cooperative programme will be the responsibility of the agencies referred to in Article 3 of this Agreement. Only a dispute which, in the view of the Government of the United States of America or the European Partners, seriously and substantially prejudices the execution of the cooperative programme may be referred for resolution to a representative of the Government of the United States of America and to a representative of the European Partners. If these representatives are unable to resolve the dispute, it may be submitted for such arbitration as may be agreed.

ARTICLE 13

AMENDMENTS

The present Agreement may, on the initiative of the Government of the United States of America or of the European Partners, be amended by consent of the Parties. An amendment will enter into force when the Government of the United States of America and the European Partners have notified their approval to the depositary Government.

[1] TIAS 7762; *post*, p. 2389.

ARTICLE 14

ENTRY INTO FORCE AND DEPOSITARY

A. This Agreement shall be signed on August 14, 1973 by the Government of the United States of America and European Partners. The Agreement shall enter into force on this date for the Government of the United States of America and those European Partners which sign not subject to ratification or approval.

B. The Agreement shall remain open for signature for European Partners, not signing on August 14, 1973, for the period from August 15, 1973 to September 24, 1973 The Agreement shall enter into force for a European Partner which signs the Agreement in this period not subject to ratification or approval, on the date of its signature.

C. For those European Partners which sign this Agreement subject to ratification or approval under Paragraph A or Paragraph B above, the Agreement shall have provisional application upon signature. The Agreement shall enter into force for such a European Partner on the date of the deposit of its instrument of ratification or approval with the depositary Government.

D. After September 24, 1973 participation in the cooperative programme may be effected only in accordance with the provisions of Article 15.

E. The Government of the French Republic shall be the depositary Government.

ARTICLE 15

ADHERENCE OF OTHER GOVERNMENTS

A With the consent of the Parties, and subject to such terms as may be agreed by the Parties, other governments may adhere to the present Agreement as European Partners. However, the consent of the Government of the United States of America is not required for the adherence of a present member Government of ESRO.

B. Adherence of a Government may be deposited after the appropriate Parties under Paragraph A above have notified the depositary Government of their consent and shall become effective on the date of deposit of the instrument of adherence.

ARTICLE 16

DURATION

This Agreement shall remain in force until January 1, 1985, but at least for five years from the date of the first flight of the SL. This Agreement shall be extended for three years unless either the Government of the United States of America or the European Partners give notice of termination prior to January 1, 1985 or prior to the expiration of the five years, whichever is applicable. Thereafter, the Agreement shall be extended for such further periods as the Parties may agree.

ARTICLE 17

REGISTRATION

A. The depositary Government shall notify the signatories and adhering Governments of the signatures, ratifications or approvals and adherences.

B. The present Agreement shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.[1]

IN WITNESS WHEREOF the undersigned, duly authorised thereto by their respective Governments, have signed this Agreement.

DONE in Neuilly-sur-Seine, this fourteenth day of August nineteen hundred and seventy-three,

in the English, French and German languages, each version being equally authentic, in a single original which shall be deposited in the archives of the Government of the French Republic which shall transmit duly certified copies thereof to the Government of the signatory and adhering States.

Pour le Gouvernement de la République Fédérale d'Allemagne
For the Government of the Federal Republic of Germany
Für die Regierung der Bundesrepublik Deutschland

Nonnenger V. Knorr

TIAS 7722

Pour le Gouvernement du Royaume de Belgique
For the Government of the Kingdom of Belgium
Fur die Regierung des Konigreichs Belgien

Sous reserve de ratification

Pour le Gouvernement de l'Espagne
For the Government of Spain
Für die Regierung Spaniens

Pour le Gouvernement de la République Française
For the Government of the French Republic
Fur die Regierung der Französischen Republik

Sous réserve d'approbation

Pour le Gouvernement de la République Italienne
For the Government of the Italian Republic
Für die Regierung der Italienischen Republik

Pour le Gouvernement du Royaume des Pays-Bas
For the Government of the Kingdom of the Netherlands
Für die Regierung des Königreichs der Niederlande

Sous réserve de ratification

Pour le Gouvernement du Royaume-Uni de Grande Bretagne et d'Irlande du Nord
For the Government of the United Kingdom of Great Britain and Northern Ireland
Für die Regierung des Vereinigten Königreichs Grossbritannien und Nordirland

Pour le Gouvernement de la Confédération Suisse
For the Government of the Swiss Confederation
Fur die Regierung der Schweizerischen Eidgenossenschaft

Pour le Gouvernement des Etats-Unis d'Amérique
For the Government of the United States of America
Für die Regierung der Vereinigten Staaten von Amerika

Pour le Gouvernement du Royaume de Danemark
For the Government of the Kingdom of Denmark
Für die Regierung des Königreichs Dänemark

sous réserve de ratification.

MEMORANDUM OF UNDERSTANDING BETWEEN THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND THE EUROPEAN SPACE RESEARCH ORGANISATION FOR A COOPERATIVE PROGRAMME CONCERNING DEVELOPMENT, PROCUREMENT AND USE OF A SPACE LABORATORY IN CONJUNCTION WITH THE SPACE SHUTTLE SYSTEM

TIAS 7722

PREAMBLE

Pursuant to the offer of the Government of the United States of America to Europe to participate in the major US space programme which follows the Apollo programme, and in particular in the development of a new space transportation system (Space Shuttle), the execution of which has been entrusted by the Government of the United States of America to the National Aeronautics and Space Administration (NASA), European States, members of the European Space Research Organisation (ESRO), have manifested their desire to develop a Space Laboratory, hereinafter referred to as "SL", in the form of a Special Project within ESRO, for the purpose of participation in the Space Shuttle programme These States, by means of an international Arrangement have charged ESRO or its successor organisation with the execution of the SL programme In order to provide for appropriate association of the two Agencies in the execution of both programmes and in order to assure the necessary coordination between them, NASA, acting for and on behalf of the Government of the United States of America, and ESRO, acting for and on behalf of the Governments of those States participating in this Special Project, have drawn up this Memorandum of Understanding which sets out the particular terms and conditions under which such association and coordination will be effected This Memorandum of Understanding will be subject to provisions of the Agreement between the Governments of the above participating States and the Government of the United States of America concerning this cooperative programme.

ARTICLE I

OBJECTIVES

The purpose of this Memorandum of Understanding is to provide for the implementation of a cooperative programme in which ESRO undertakes to design, develop, manufacture and deliver the first flight unit of an SL, and other materials described in this Memorandum This flight unit will be used as an element to be integrated with the Space Shuttle. This Memorandum sets out furthermore the provisions for ESRO access for use of the SL and for the procurement by NASA of additional SLs, and establishes the cooperative structure between NASA and ESRO for dealing with all questions concerning interface between the Shuttle and SL programmes and concerning the missions to be defined.

ARTICLE II

GENERAL DESCRIPTION OF THE SL PROGRAMME, ITS INTERFACE WITH THE SPACE SHUTTLE, AND ITS USES

1. Summary description of the SL programme

The SL programme provides for the definition, design and development of mannable laboratory modules and unpressurised instrument

platforms (pallets) suitable for accommodating instrumentation for conducting research and applications activities on Shuttle sortie missions. The SL module and SL pallet will be transported, either separately or together to and from orbit in the Shuttle payload bay and will be attached to and supported by the Shuttle orbiter throughout the mission. The module will be characterised by a pressurised environment (permitting the crew to work in shirt sleeves), a versatile capability for accommodating laboratory and observatory equipment at minimum cost to users, and rapid access for users. The pallet, supporting telescopes, antennae and other instruments and equipments requiring direct space exposure, will normally be attached to the module with its experiments remotely operated from the module, but can also be attached directly to the Shuttle orbiter and operated from the orbiter cabin or the ground Both the module and the pallet will assure minimum interference with Shuttle orbiter ground turnaround operations.

2. Interface with Shuttle

The Shuttle will serve in missions to deliver payloads to earth orbit, maintain station on orbit for mission durations in the order of seven days or more, provide safety monitoring and control over payload elements throughout the missions, and provide seating and complete habitability for crews, including free movement between the SL module and the Shuttle In the interest of minimising developmental and operational costs, and maximising reliability, an effort will be made to optimise commonality between SL and Shuttle components

3. Use objectives

The SL will support a wide spectrum of missions for peaceful purposes and will accept readily the addition of special equipment for particular mission requirements The SL will facilitate maximum user involvement and accessibility The flight equipment complement will be capable of augmentation as appropriate to satisfy approved programme needs. It will be possible for users to utilise the SL with or without supplementary equipment for a single experiment or, in the alternative, to utilise only a small portion of the SL in combination with other experiments The standard resources of the SL may be utilised to any degree appropriate by an experimenter adhering to standardised interfaces which are to be defined and procedures which are to be set forth. Considerable flexibility in equipment and mission structuring shall be available to the user for effective mission operation.

ARTICLE III

PHASING AND SCHEDULING

1. Phase B studies

Based on present schedules, the Phase B (preliminary design) studies of the SL are expected to be completed around the end of 1973.

2. Phases C & D

At the completion of the Phase B studies, the parties will mutually agree on a design for immediate implementation and development by ESRO in Phases C & D (final design and hardware development and manufacture).

3. Completion schedules

It is currently planned that the first operational space flight of the Shuttle will occur in late 1979. To permit adequate time for experiment integration, check-out and compatibility testing, the SL flight unit shall be delivered to NASA about one year before the first operational Shuttle flight.

4. Schedule changes

Each party will keep the other fully and currently informed of factors affecting the schedules of the Shuttle and the SL respectively and their potential effects on flight readiness.

ARTICLE IV

PROGRAMME PLANS

The foregoing gross descriptions of the SL programme and of the phasing, scheduling and working arrangements are amplified in greater detail in the preliminary version, dated 30 July 1973, of the Joint Programme Plan The parties recognise that many issues remain to be resolved in the Joint Programme Plan, which is to be developed and updated as appropriate by the Programme Heads. This plan is to be based on the results of preliminary design studies now in progress in both Europe and the United States, on the results of independent and joint studies of user requirements, and on the final definition of, and the requirements for integration with, the Shuttle.

ARTICLE V

RESPECTIVE RESPONSIBILITIES

1. ESRO responsibilities

Among ESRO's responsibilities are the following:

(a) design, develop and manufacture one SL flight unit (consisting of one set of module and pallet sections), one SL engineering model, two sets of SL ground support equipment, initial SL spares, along with relevant drawings and documentation; and qualify and test for acceptance this equipment according to NASA specifications and requirements;

(b) deliver to NASA the items listed above;

(c) design, develop and manufacture such elements as ESRO and NASA may agree to be necessary for the programme in addition to those listed in (a) above,

(d) establish in the US and accommodate in Europe agreed liaison personnel,

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(e) provide all necessary technical interface information,

(f) provide agreed progress and status information,

(g) following delivery of the above flight unit, maintain and fund an SL sustaining engineering capability through the first two SL flight missions, and ensure for NASA's account the future availability to NASA of such engineering capability to meet NASA's operating requirements, on the same conditions as would apply to ESRO;

(h) ensure the production in Europe and possibility of procurement by NASA of subsequent flight units, components and spares, and

(i) provide for preliminary integration of experiments which ESRO supports, as well as acquire the corresponding data, within the overall responsibilities of NASA described in paragraph 2(j) of this Article, and process it.

2 NASA responsibilities

Among NASA's responsibilities are the following

(a) establish in Europe and accommodate in the US agreed liaison personnel,

(b) provide general technical and managerial consultation,

(c) provide all necessary technical interface information,

(d) provide agreed progress and status information,

(e) monitor ESRO technical progress in selected areas as defined in the Programme Plans,

(f) review and concur in the implementation of ESRO activities critical to the NASA programmatic requirements for the SL as defined in the Programme Plans,

(g) specify, in order to assure successful operation of the SL in the Shuttle system, operational plans, and hardware and operational interfaces as defined in the Programme Plans;

(h) conduct systems analyses for development of operational concepts and utilisation plans, and assess the impact of changes at all SL external interfaces;

(i) develop selected peripheral components, not part of, but necessary to the successful operation of the SL (e g. access tunnel, docking ports); and

(j) manage all operational activities subsequent to the delivery of the SL, including experiment integration, crew training, checkout, flight operations, refurbishment, data acquisition, preliminary processing and distribution of data.

3. By agreement of the NASA Administrator and the Director General of ESRO, changes may be made in the above responsibilities, as may be desirable for the implementation of this cooperative programme.

ARTICLE VI

COORDINATION—LIAISON—REVIEWS

1. Programme Heads

Each of the parties has designated in their respective Headquarters an SL Programme Head. They will be responsible for the implementation of this cooperative programme and they will meet and communicate as they require.

2. Project Managers

In addition, each of the parties will designate an SL Project Manager responsible for day-to-day coordination in the implementation of this cooperative programme.

3. Joint SL Working Group (JSLWG)

The two Programme Heads will together establish a Joint SL Working Group with appropriate technical representation from each party. The Programme Heads will be co-chairmen of the JSLWG. The JSLWG will be the principal mechanism for:

(a) the exchange of information necessary to inform both parties fully of the status of both the Shuttle and the SL,

(b) monitoring interface items, problems and solutions;

(c) early identification of issues or problems of either party which may effect the other, and

(d) assuring early action with respect to any problems or requirements.

4. Liaison

The parties shall each provide and accommodate liaison representation at levels as mutually agreed. The representation will be such as to assure each party adequate visibility of the other's progress especially with regard to interfaces and their control. ESRO shall have representation on appropriate Shuttle change control boards to assure adequate opportunity to present the views and interests of ESRO with respect to any change. The ESRO representatives on the boards will have a voice but will not vote. NASA will have similar representation on the comparable ESRO SL board. ESRO and NASA will enable and arrange for visits to their respective contractors as required.

5. Progress reviews

Each party shall schedule progress reviews of its work in the Shuttle and SL programmes and shall provide access to the other to such reviews. Annual reviews will be conducted by the NASA Administrator and the ESRO Director General.

ARTICLE VII

FUNDING

1. Costs

NASA and ESRO will each bear the full costs of discharging their respective responsibilities arising from this cooperative programme, including travel and subsistence of their own personnel and transportation charges for all equipment for which they are responsible.

2. Availability of funds

The commitments by NASA and ESRO to carry out this cooperative programme are subject to their respective funding procedures.

3 Principle on pricing

Neither party will seek to recover government research and development costs incurred in the development of items procured from the other in connection with this cooperative programme.

ARTICLE VIII

NASA PROCUREMENT OF SLs

1. Principle

Subsequent to the delivery by ESRO of the SL unit and other items referred to in Article V,1 (a), NASA agrees to procure from ESRO whatever additional items of this type it may require for programmatic reasons, provided that they are available to the agreed specifications and schedules and at reasonable prices to be agreed. NASA should give an initial procurement order of at least one SL at the latest two years before the delivery of the SL unit referred to above. Recognising the desirability of gaining operational experience with the first flight unit before ordering additional units, but that the price and availability of production units will be dependent on the maintenance of a continuing production capability, NASA will endeavour to provide significant lead time for any subsequent procurement order.

2. NASA abstention from SL development

NASA will refrain from separate and independent development of any SL substantially duplicating the design and capabilities of the first SL unless ESRO fails to produce such SLs, components and spares in accordance with agreed specifications and schedules and at reasonable prices to be agreed. For any NASA SL programme requirements which are not met by SLs developed under this cooperative programme, NASA will have the right to meet such requirements either by making the necessary modifications to the SLs developed under this cooperative programme, or by manufacturing or procuring another SL meeting such NASA requirements.

3. Notice of prospective requirements

NASA will endeavour to give ESRO advance notice of any prospective requirements for substantially modified or entirely new SLs so

as to provide ESRO with an opportunity to make proposals which might meet such requirements.

ARTICLE IX

CONTINGENCIES

1. Non-completion of first SL or failure to meet specifications

NASA's obligations with respect to the SL shall lapse and ESRO will turn over to NASA without charge and without delay all drawings, hardware and documentation relating to the SL if ESRO abandons the development of the SL for any reasons, or ESRO is otherwise unable to deliver the SL flight unit prior to the first operational Shuttle flight, or the completed SL does not meet agreed specifications and development schedules. The right of NASA to use the said drawings, hardware and documentation shall be limited to the completion and operation of the SL programme ESRO shall ensure that it will be in a position to provide as hardware any proprietary item for which it does not hold transmissible rights of reproduction.

2 Non-availability of subsequent SLs

If SLs, components and spares required by NASA after the first flight unit are not available to NASA in accordance with agreed specifications and schedules and at reasonable prices to be agreed, NASA shall be free to produce such units in the United States For this purpose, ESRO will arrange in advance on a contingency basis any necessary licensing arrangements.

3. Design changes

While it is understood that ESRO will be represented on the Shuttle change control boards, NASA reserves the right to require changes affecting the interfaces or operational interactions between the Shuttle and the SL after hearing and considering ESRO's views with respect to the prospective effect of such changes on the SL design or cost. NASA recognises the desirability of avoiding changes resulting in a disproportionate impact on the SL programme. To the extent that changes affect the Shuttle and SL programmes, NASA and ESRO will bear the increases in the costs of their respective Shuttle and SL development contracts.

ARTICLE X

ACCESS TO TECHNOLOGY AND ASSISTANCE BY NASA

1. Principles

(a) ESRO will have access to technology, including know-how available to NASA and needed to accomplish successfully its tasks under this cooperative programme; for the same purposes, NASA will have access to technology, including know-how, available to ESRO. NASA will do its best to arrange for such technical assistance as ESRO and its contractors may require for the satisfactory completion

of the SL programme Access to technology and arrangements for technical assistance shall be consistent with applicable US laws and regulations

(b) NASA will make available to ESRO general information related to the design, development, and use of the Shuttle and orbital system, particularly that required for the understanding of that system.

(c) Requests for use of technology, including know-how, in other than SL development and production tasks will be considered on a case-by-case basis.

(d) To the extent that NASA can make the required information readily available, it will do so without charge, in other cases, NASA will use its best efforts to facilitate its availability on favourable conditions.

(e) The access to technology, including know-how, referred to above will be effected in such a way as not to infringe any existing proprietary rights of any person or body in the United States or Europe

2 Joint definition of areas

The two parties shall provide for the earliest possible joint definition of areas in which help in the procurement of hardware and technical assistance from US Government Agencies or nationals may be required.

3. Form of assistance

In providing such help to ESRO as may be agreed, NASA may respond on an in-house basis or may refer ESRO and/or its contractors to US contractors. NASA reserves the right to arrange for such assistance in the form of hardware, rather than know-how.

4. Quality control and acceptance

Where ESRO needs to procure US hardware, NASA agrees to use its good offices in connection with arranging the services of US quality control and acceptance and cost control and auditing personnel in US plants where available and appropriate.

5 Facilitation of export licenses

Early advance notification of contemplated ESRO procurements of US hardware or technology, including know-how, will facilitate assistance by NASA in connection with arrangements for export licenses consistent with applicable US laws and regulations.

6. Use of US facilities

Where it is jointly determined that it is appropriate and necessary for the conduct of the cooperative programme, NASA will use its good offices in connection with arranging for the use of US Government or contractors' facilities by ESRO and/or its contractors.

ARTICLE XI

PRINCIPLES CONCERNING ACCESS TO AND USE OF SHUTTLE/SL

1. Planning

There shall be adequate European participation in NASA planning for Shuttle and SL user requirements, with a view to providing for inputs relevant to both the SL design and to European use of the SL. Appropriate representation and relevant procedures are being jointly prepared and will be subject to agreement by NASA and ESRO.

2 Flight crews

Flight crew opportunities will be provided in conjunction with flight projects sponsored by ESRO or by Governments participating in the SL programme and utilising the SL It is contemplated that there will be a European member of the flight crew of the first SL flight.

3 Special provisions for the use of the first SL flight unit

(a) In order to assure the integrity of operation and management of the Shuttle system, NASA shall have full control over the first SL unit after its delivery, including the right to make final determination as to its use for peaceful purposes

(b) With regard to the first flight of the first SL unit, the system test objectives will be the responsibility of NASA The experimental objectives of this first flight will be jointly planned on a cooperative basis. Thereafter, the cooperative use of this first SL unit will be encouraged throughout its useful life although not to the exclusion of cost reimbursable use. NASA will otherwise have unrestricted use of the first SL unit free of cost.

(c) NASA may make any modifications to the first SL which it desires. Should NASA find it desirable to effect major modifications to this unit, these shall be discussed with ESRO which will be given the opportunity to provide modification kits. With respect to minor modifications, the normal procedures for configuration control will be relied on to provide adequate information on changes.

4. Subsequent availability and preferred access to participants

While it is premature to define the ultimate terms and conditions for operation and use of the Shuttle with the SL after the first SL mission, it is expected that the following principles will apply:

(a) NASA will make available the Shuttle for SL missions on either a cooperative (non-cost) or a cost-reimbursable basis. In the latter case, costs which may be charged include, but are not limited to, integration, check-out, crew training and data reduction, processing and distribution, as well as the costs of the launching services provided.

(b) In regard to space missions of ESRO and Governments participating in the SL programme, NASA shall provide access for use of SLs developed under this cooperative programme for experi-

ments or applications proposed for reimbursable flight by ESRO and Governments participating in the SL programme, in preference to those of third countries considering, in recognition of ESRO's participation in this cooperative programme, that this will be equitable in the event of payload limitation or scheduling conflicts Experiments or applications proposed for cooperative flight will be selected on the basis of merit in accordance with continuing NASA policy, such proposals of ESRO and Governments participating in the SL programme will be given preference over the proposals of third countries provided their merit is at least equal to the merit of the proposals of third countries ESRO and the Governments participating in the SL programme will have an opportunity to express their views with respect to the judgement of merit regarding their cooperative proposals.

ARTICLE XII

PUBLIC INFORMATION

Each party is free to release public information regarding its own efforts in connection with this cooperative programme However, it undertakes to coordinate in advance any public information activities which relate to the other party's responsibilities or performance

ARTICLE XIII

PATENTS AND PROPRIETARY INFORMATION

Each of the parties and their contractors shall retain unaffected all rights which they may have with respect to any patents and/or proprietary information, whether or not they antedate this Memorandum of Understanding. Where it is mutually determined that patentable or proprietary information should be transferred in the interest of successfully implementing this cooperative programme, this may be done under arrangements which fully recognise and protect the rights involved. In addition, each of the parties shall secure from its contractors the rights necessary to discharge the obligations contained in this Memorandum of Understanding in accordance with its internal rules.

ARTICLE XIV

SETTLEMENT OF DISPUTES

1. Any disputes in the interpretation or implementation of the terms of this cooperative programme shall be referred to the NASA Administrator and the Director General of ESRO for settlement.

2. Should the NASA Administrator and the Director General of ESRO be unable to resolve such disputes, they may be submitted to such other form of resolution or arbitration as may be agreed.

ARTICLE XV

DURATION

This Memorandum of Understanding shall remain in force until 1 January 1985, but at least for five years from the date of the first flight of the SL. This Memorandum shall be extended for three years unless either NASA or ESRO gives notice of termination prior to 1 January 1985, or prior to the expiration of the five years, whichever is applicable. Thereafter, the Memorandum of Understanding shall be extended for such further periods as the parties may agree.

ARTICLE XVI

ENTRY INTO FORCE

This Memorandum of Understanding shall enter into force when both the NASA Administrator and the Director General of ESRO have signed it and it has been confirmed under the terms of the Agreement between the Governments of the participating European States and the Government of the United States of America concerning this cooperative programme.

Dated 14 August 1973

[1] [2]

For the
European Space
Research Organisation

For the
National Aeronautics and
Space Administration

[1] A Hocker
[2] James C. Fletcher