



*The University of Mississippi School of Law*

**The National Center for Remote Sensing, Air, and Space Law**

Informational resources on the legal aspects of human activities using aerospace technologies

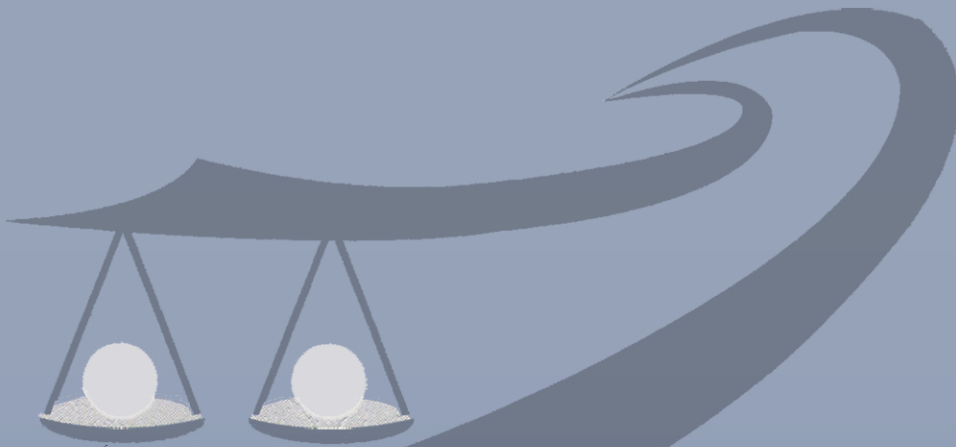
# Space Law: Selected Documents 2011

## Volume 2: International Space Law Documents

Compiled by P.J. Blount

P.J. Blount, editor

Joanne Irene Gabrynowicz, editor



A supplement to the Journal of Space Law

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## **National Center for Remote Sensing, Air, and Space Law**

Founded in 1999, the National Center for Remote Sensing, Air, and Space Law is a reliable source for creating, gathering, and disseminating objective and timely remote sensing, space, and aviation legal research and materials. The Center serves the public good and the aerospace industry by addressing and conducting education and outreach activities related to the legal aspects of aerospace technologies to human activities.

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Compiled by P.J. Blount  
P.J. Blount, editor  
Joanne Irene Gabrynowicz, editor



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The National Center for Remote Sensing, Air, and Space Law at  
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Dedicated to

To all the men and women who served in the U.S.  
Space Shuttle program.  
1976-2011

"Law must precede man into space."

- Andrew G. Haley, *Space Age Presents  
Immediate Legal Problems*, 1  
PROCEEDINGS OF THE FIRST COLLOQUIUM  
ON THE LAW OF OUTER SPACE 5 (1959)

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# Space Law: Selected Documents 2011

## Volume 2: International Space Law Documents

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**Space Law: Selected Documents 2011**

**Volume 1: National Space Law Documents**

**Volume 2: International Space Law Documents**

**Foreword**

**by**

**Joanne Irene Gabrynowicz**

This compilation of space law documents for the year 2011 was gathered primarily from postings placed on the aerospace law blog, *Res Communis* from 1 January through 31 December 2011. *Res Communis* is hosted by the National Center for Remote Sensing, Air, and Space Law (Center) at the University of Mississippi School of Law. The postings are supplemented with materials from other sources that were published during 2011, but which were not published on *Res Communis*.

The blog's name, *Res Communis*, is taken from the Latin legal term or art that means, in part, "things common to all; that is, those things that are used and enjoyed by everyone." *Res Communis* is also a fundamental principle that provides a major part of the foundation of the international space law regime. The name was chosen because of its specific relevance to space law and to express the Center's intent that the blog provide the aerospace law community with a reliable, timely source of legal materials.

The annual compilation is a special supplement to the *Journal of Space Law*, the world's oldest law review dedicated to space law. The *Journal of Space Law*, beginning with the first volume published in 1973, is available on line at the Center's website, <http://spacelaw.olemiss.edu/>, and through HeinOnline, <http://heinonline.org/>.

This year's compilation is again in two volumes: national space law documents and international documents. The body of space law continues to grow in size and complexity. During 2011, the U.S. space law corpus was integrated into the United States Code as Title 51, *National and Commercial Space Programs*. This was the first time in 83 years that a new Title was added to the Code.<sup>1</sup> It can be expected that space law will continue to change for the practitioner, academic, and government lawyer. The reader can find updated material on an on-going basis at <http://rescommunis.olemiss.edu/>.

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<sup>1</sup> The *Journal of Space Law* published a complete reference guide to Title 51 in a special issue, 37 J. Space L. (2011). Due to the historic nature of Title 51, the *Journal* has made the electronic version the entire volume available at no cost. See, <http://www.spacelaw.olemiss.edu/jsl/back-issues/jsl-37-1.html>.

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POSTAL ADDRESS—ADRESSE POSTALE: UNITED NATIONS, N.Y. 10017  
CABLE ADDRESS—ADRESSE TELEGRAPHIQUE: UNATIONS NEWYORK

Reference: C.N.101.2011.TREATIES-1 (Depositary Notification)

CONVENTION RELATING TO THE DISTRIBUTION OF PROGRAMME-  
CARRYING SIGNALS TRANSMITTED BY SATELLITE

BRUSSELS, 21 MAY 1974

CHILE: ACCESSION

The Secretary-General of the United Nations, acting in his capacity as depositary,  
communicates the following:

The above action was effected on 8 March 2011.

The Convention will enter into force for Chile on 8 June 2011 in accordance with its article  
10 (2) which reads as follows:

"For each State ratifying, accepting or acceding to this Convention after the deposit of the fifth  
instrument of ratification, acceptance or accession, this Convention shall enter into force three months  
after the deposit of its instrument."

8 March 2011

A handwritten signature in black ink, appearing to be "J. G. W.", is written below the date.

Attention: Treaty Services of Ministries of Foreign Affairs and of international organizations concerned.  
Depositary notifications are issued in electronic format only. Depositary notifications are made available to  
the Permanent Missions to the United Nations in the United Nations Treaty Collection on the Internet at  
<http://treaties.un.org>, under "Depositary Notifications (CNs)". In addition, the Permanent Missions, as well  
as other interested individuals, can subscribe to receive depositary notifications by e-mail through the Treaty  
Section's "Automated Subscription Services", which is also available at <http://treaties.un.org>.



POSTAL ADDRESS—ADRESSE POSTALE: UNITED NATIONS, N.Y. 10017  
CABLE ADDRESS—ADRESSE TELEGRAPHIQUE: UNATIONS NEWYORK

Reference: C.N.267.2011.TREATIES-1 (Depositary Notification)

TAMPERE CONVENTION ON THE PROVISION OF TELECOMMUNICATION  
RESOURCES FOR DISASTER MITIGATION AND RELIEF OPERATIONS

TAMPERE, 18 JUNE 1998

ICELAND: RATIFICATION

The Secretary-General of the United Nations, acting in his capacity as depositary,  
communicates the following:

The above action was effected on 13 May 2011.

The Convention will enter into force for Iceland on 12 June 2011 in accordance with its article  
12 (4) which reads as follows:

"For each State which signs definitively or deposits an instrument of ratification, acceptance,  
approval or accession, after the requirement set out in paragraph 3 of this Article has been fulfilled, this  
Convention shall enter into force thirty (30) days after the date of the definitive signature or consent to  
be bound."

13 May 2011

A handwritten signature in black ink, appearing to be "J. G. W.", is written below the date.

Attention: Treaty Services of Ministries of Foreign Affairs and of international organizations concerned.  
Depositary notifications are issued in electronic format only. Depositary notifications are made available to  
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POSTAL ADDRESS—ADRESSE POSTALE: UNITED NATIONS, N.Y. 10017  
CABLE ADDRESS—ADRESSE TELEGRAPHIQUE: UNATIONS NEWYORK

Reference: C.N.687.2011.TREATIES-2 (Depositary Notification)

CONSTITUTION OF THE ASIA-PACIFIC TELECOMMUNITY

BANGKOK, 27 MARCH 1976

KIRIBATI: ACCESSION

The Secretary-General of the United Nations, acting in his capacity as depositary, communicates the following:

The above action was effected on 7 October 2011.

The Constitution will enter into force for Kiribati on 6 November 2011 in accordance with its article 19 (2) which reads as follows:

"The instrument of accession shall become effective on the thirtieth day after the date of its deposit. .... ."

It is further noted that the 1981, 1991 and 2002 Amendments to the Constitution also bind Kiribati.

11 October 2011

A handwritten signature in black ink, appearing to be "J. G. W.", is written below the date.

Attention: Treaty Services of Ministries of Foreign Affairs and of international organizations concerned. Depositary notifications are issued in electronic format only. Depositary notifications are made available to the Permanent Missions to the United Nations in the United Nations Treaty Collection on the Internet at <http://treaties.un.org>, under "Depositary Notifications (CNs)". In addition, the Permanent Missions, as well as other interested individuals, can subscribe to receive depositary notifications by e-mail through the Treaty Section's "Automated Subscription Services", which is also available at <http://treaties.un.org>.



POSTAL ADDRESS—ADRESSE POSTALE: UNITED NATIONS, N.Y. 10017  
CABLE ADDRESS—ADRESSE TELEGRAPHIQUE: UNATIONS NEWYORK

Reference: C.N.801.2011.TREATIES-2 (Depositary Notification)

CONVENTION RELATING TO THE DISTRIBUTION OF PROGRAMME-  
CARRYING SIGNALS TRANSMITTED BY SATELLITE

BRUSSELS, 21 MAY 1974

REPUBLIC OF KOREA: ACCESSION

The Secretary-General of the United Nations, acting in his capacity as depositary,  
communicates the following:

The above action was effected on 19 December 2011.

The Convention will enter into force for the Republic of Korea on 19 March 2012 in  
accordance with its article 10 (2) which reads as follows:

"For each State ratifying, accepting or acceding to this Convention after the deposit of the fifth  
instrument of ratification, acceptance or accession, this Convention shall enter into force three months  
after the deposit of its instrument."

19 December 2011

A handwritten signature in black ink, appearing to be "J. G. W.", is written below the date.

Attention: Treaty Services of Ministries of Foreign Affairs and of international organizations concerned.  
Depositary notifications are issued in electronic format only. Depositary notifications are made available to  
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as other interested individuals, can subscribe to receive depositary notifications by e-mail through the Treaty  
Section's "Automated Subscription Services", which is also available at <http://treaties.un.org>.

DEPARTMENT OF FOREIGN AFFAIRS AND TRADE  
CANBERRA

AGREEMENT

BETWEEN

THE GOVERNMENT OF AUSTRALIA

AND

THE EUROPEAN SPACE AGENCY

FOR A CO-OPERATIVE SPACE VEHICLE TRACKING PROGRAM

done at Cape Town on 5 October 2011

Not yet in force  
[2011] ATNIF 23

**THE GOVERNMENT OF AUSTRALIA AND THE EUROPEAN SPACE AGENCY** ("the Parties"),

**DESIRING TO BUILD** on the longstanding co-operation in space vehicle tracking established since 1976, and

**RECOGNISING** the importance of the European Space Agency's Australian facilities, including particularly at New Norcia, to the mutual benefit of the Parties, and

**CONSIDERING** that the purpose of the European Space Agency is to promote space research and technology for space applications exclusively for peaceful purposes, and that the Australian Government is committed to utilizing and developing space and its applications also for peaceful purposes, and

**DESIRING** to strengthen the mutual benefits of international scientific and educational co-operation gained through the peaceful uses of space,

**HAVE AGREED AS FOLLOWS:**

## **ARTICLE 1**

For the purposes of this Agreement:

- (a) "Agency" means the European Space Agency which is responsible for giving effect to this Agreement on the European side;
- (b) "Agreed Activities" means the activities referred to in Article 2;
- (c) "Australian co-operating agency" means, unless otherwise determined by the Australian Government, the Department of Innovation, Industry, Science and Research, which shall be responsible on the Australian side for giving effect to this Agreement;
- (d) "Convention" means the Convention for the Establishment of a European Space Agency, which was opened for signature in Paris on 30 May 1975 and entered into force on 30 October 1980; and

- (e) "Facilities" means facilities owned and operated by the Agency, owned by the Agency and operated by a third party on behalf of the Agency, or facilities not owned by the Agency and providing space tracking services to the Agency,
- (f) "Implementing Arrangements" means the arrangements concluded pursuant to Article 4.1.

## **ARTICLE 2**

1. The Agency, in association with the Australian Government, may participate in Australia in the following activities:
  - (a) tracking and telecommand of the Agency's space vehicles or other space vehicles as may be arranged between the Agency and the Australian co-operating agency, and
  - (b) acquiring data from these space vehicles.
2. The space vehicles referred to in paragraph 1 shall be operated in accordance with the Convention and for civil research and technology and their space applications.

## **ARTICLE 3**

In order to participate in the Agreed Activities, the Agency may, in accordance with this Agreement and the Implementing Arrangements, make use of the Facilities in Australia designated in the Implementing Arrangements.

## **ARTICLE 4**

1. The Agreed Activities, including the establishment, operation, maintenance and use of the Facilities, shall be undertaken by the Agency and the Australian Government in accordance with the Implementing Arrangements. The Implementing Arrangements shall be made consistent with the terms of this Agreement.
2. The Agency shall notify the Australian Government of its operational requests, or any changes to these, in writing.
3. The Implementing Arrangements may be modified by mutual determination between the Agency and the Australian co-operating agency.

## **ARTICLE 5**

Except as otherwise provided in this Agreement, the Agency shall bear the costs of operating and maintaining the Facilities that it requires for the purposes of this Agreement and the costs of establishing any new Facilities, subject to any contribution by the Australian Government, as the Parties may from time to time arrange.

## **ARTICLE 6**

The Agency and the Australian Government shall, in accordance with their respective rules and procedures, provide each other, on request, with scientific data acquired through the Agreed Activities, and with the results of any consequent studies. The publication of such results shall be subject to any priority rights of scientific investigators.

## **ARTICLE 7**

1. The Facilities used for the Agreed Activities may be used for independent Australian activities endorsed by the Australian Government and for other independent scientific activities as may be arranged between the Agency and the Australian Government. Such activities shall be conducted so as not to interfere with the conduct of the Agreed Activities. The Agency shall not become liable for any costs arising from such use of the Facilities.
2. If the Australian Government wishes, it may for its own purposes and at its own cost construct facilities and install and use equipment on the site of the Facilities referred to in the Implementing Arrangements provided this does not interfere with the Agreed Activities. Use by the Agency of such facilities constructed by the Australian Government shall be covered by a separate arrangement between the Agency and the Australian co-operating agency.

## **ARTICLE 8**

The Agency and the Australian co-operating agency shall make freely available to each other details in regard to all Agreed Activities and to the planning of all Agreed Activities undertaken pursuant to this Agreement.

## **ARTICLE 9**

The Agency shall retain title to equipment, materials, supplies and other property brought into or acquired in Australia by it or on its behalf at its own expense, for the Agreed Activities. Consistent with this Agreement, the Agency may remove such property from Australia at its own expense and free from export duties or similar charges, upon the termination of this Agreement or upon reasonable notice to the Australian Government. Such property shall not be disposed of within Australia except under conditions acceptable to both the Agency and the Australian Government.

## **ARTICLE 10**

1. The Australian Government shall, in accordance with its laws, regulations and procedures, facilitate the entry into and temporary stay in Australia of persons not normally resident in Australia employed or engaged as staff, consultants or contractors by the Agency in connection with the Agreed Activities.
2. The effects for the personal and household use of such persons entering Australia for the purpose of the Agreed Activities shall be permitted free entry in accordance with Australian customs law in effect at the date the goods are imported.

## **ARTICLE 11**

1. The Australian Government shall take the necessary steps to facilitate the admission into Australia of all equipment, materials, supplies and other property provided by or on behalf of the Agency in connection with the Agreed Activities.
2. No duties, taxes or like charges other than indirect taxes shall be levied on the equipment, materials, supplies and other property which are certified by the Agency to be imported for use in the Agreed Activities and which it certifies at the time of entry are, or are intended to be, the property of the Agency.
3. For the purposes of this Article, 'indirect taxes' means the goods and services tax, the wine equalisation tax, and the luxury car tax.

## **ARTICLE 12**

The Agency shall utilise to the maximum extent practicable Australian resources in the Agreed Activities. The Agreed Activities shall be carried out by Australian personnel, except to the extent

otherwise provided in the Implementing Arrangements between the Agency and the Australian co-operating agency, under the Agency's operational directives.

### **ARTICLE 13**

The Agency shall undertake the Agreed Activities respecting Australia's national security requirements. In this respect:

- a) The Agency shall allow technical understanding of the equipment associated with the Facilities, and the broader systems to which they contribute by the relevant Australian Government agencies;
- b) Notwithstanding the Agency's status as an Inter-Governmental Organization, the Agency shall allow a right of Australian Government access to the Facilities for the purpose of verifying compliance with Australian national security requirements, upon specific request, with adequate notice, and with the presence of an Agency representative;
- c) Any data obtained by the Australian Government as a result of compliance inspections under paragraph (b) shall be treated in confidence and used for no other purpose than verifying compliance with Australian national security requirements;
- d) In case the Australian Government establishes deviation from its established national security requirements, the Agency shall immediately bring the Facilities into compliance. The Agency shall allow the Australian Government an ability to deactivate the Facilities;
- e) The Agency shall notify the Australian Government of any changes to the role, function, capability or management of the Facilities;
- f) The Agency agrees to use the Facilities only for the purpose of its official activities and programmes and for peaceful purposes. The Agency agrees not to use the Facilities, information collected through the Facilities, or activities associated with the Facilities for purposes which are contrary to Australia's sovereignty or national interests.



## **ARTICLE 14**

1. The Australian Government shall use its best endeavours to ensure that the frequency bands set out in the Implementing Arrangements are and remain available to carry out the Agreed Activities in accordance with the terms of this Agreement and the Implementing Arrangements.
2. The Agency shall take the necessary steps under Australian law to secure access to, and achieve domestic registration of, the radiofrequency spectrum necessary for the Agency to carry out the Agreed Activities. The Australian Government shall use its best endeavours to provide the Agency with access to the requested radiofrequency spectrum, and to achieve domestic registration of this spectrum.
3. Subject to achieving Australian domestic registration in accordance with paragraph 2, the Australian Government shall use its best endeavours to assist the Agency in obtaining registration with the International Telecommunication Union of radiofrequency spectrum usage necessary for the Agreed Activities.
4. The operation of radio transmitting and receiving equipment for the Agreed Activities shall comply with Australian law and the requirements of the relevant Australian authorities, including in accordance with the Implementing Arrangements.
5. The Australian Government shall use its best endeavours to protect the radio receiving Facilities used for the Agreed Activities from harmful radiofrequency interference from radiocommunications stations within Australia that are subject to Australian law. The measures to be taken by the Australian Government in this respect shall be specified in the Implementing Arrangements.

## **ARTICLE 15**

In order to facilitate the implementation of this Agreement and the Implementing Arrangements representatives of the Parties shall meet as frequently as necessary for that purpose, but not less than once a year. Such meetings shall be held at Canberra unless otherwise agreed.

## **ARTICLE 16**

1. Both Parties may agree to any amendments to this Agreement. Any such amendments shall be recorded in writing and signed by both Parties.
2. Any amendment shall enter into force upon written notification by the Australian Government to the Agency that all internal procedures for its entry into force have been fulfilled.

## **ARTICLE 17**

1. Any dispute on the interpretation or application of this Agreement shall be referred to the Head of the Australian co-operating agency and the Director General of the Agency for amicable resolution in the first instance.
2. Should they be unable to resolve the dispute, then it shall promptly be submitted to an Arbitral Tribunal constituted by three members. One arbitrator shall be designated by the Australian Government, one by the Agency and the third one shall be designated by the first two arbitrators and shall act as a chairperson. Should the first two arbitrators be unable to agree on the choice of the third arbitrator, the latter shall be designated by the Secretary-General of the Permanent Court of Arbitration.
3. The Tribunal shall determine its own procedure and its seat.
4. The decision of the Arbitral Tribunal shall be determined in accordance with the provisions of this Agreement by majority vote. The decision of the Tribunal shall be final and binding on the Parties and shall be without appeal. The decision shall be executed in accordance with the rules of procedure in force in the country in which it is to be executed. The Parties shall contribute equally to the expenses of the Tribunal unless the Tribunal should decide otherwise.

## ARTICLE 18

1. This Agreement shall enter into force upon written notification by the Australian Government to the Agency that all internal procedures for its entry into force have been fulfilled.
2. The *Agreement between the Government of Australia and the European Space Agency for a Co-operative Space Vehicle Tracking Program done at Paris on 15 June 1979, and as amended by an exchange of letters of 21 January 1987*, shall terminate upon this Agreement coming into force.
3. This Agreement shall remain in force until five years after the date on which one Party has given to the other Party written notice of its intention to terminate the Agreement.

DONE at CAPE TOWN on the fifth day of October 2011 in two originals in the English language.

For the Australian Government

For the European Space Agency

This page intentionally left blank.

April, 22, 2011

Excellency,

I have the honor to acknowledge the receipt of your note of today's date, which reads as follows:

"I have the honor to refer to the agreement between the Government of Japan and the Government of the United States of America concerning the cooperation between the Institute of Space and Astronautical Science of Japan (hereinafter referred to as "ISAS") and the National Aeronautics and Space Administration of the United States of America ("NASA") on the Mu Space Engineering Spacecraft-C Program (hereinafter referred to as "the Program"), which was effected by the Exchange of Notes dated April 25, 2003 (hereinafter referred to as the "Agreement").

"In consideration of the continuing mutually beneficial relationship between the two Governments in the field of peaceful exploration and use of outer space; taking into account the Agreement between the Government of Japan and the Government of the United States of America on Cooperation in Research and Development in Science and Technology, signed at Toronto on June 20, 1988, as extended and amended; and reaffirming that the provisions of the Agreement between the Government of Japan and the Government of the United States of America Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, signed at Washington on April 24, 1995, and the Exchange of

His Excellency  
Ichiro Fujisaki,  
Ambassador of Japan.

**DIPLOMATIC NOTE**

Notes of the same date between the two Governments concerning subrogated claims shall apply to the Program, I have further the honor to propose, on behalf of the Government of Japan, that the Agreement shall be extended for a period of ten years from April 25, 2011.

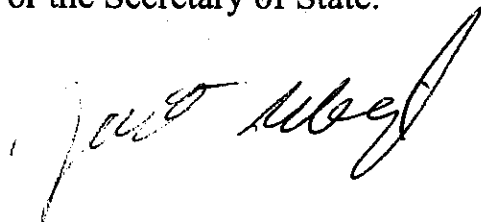
“I have further the honor to confirm that all the rights and obligations of ISAS under the Agreement were succeeded to by the Japan Aerospace Exploration Agency (“JAXA”).

“I have further the honor to propose that, if the foregoing is acceptable to the Government of the United States of America, this Note and Your Excellency’s Note in reply shall constitute an agreement between the two Governments, which shall enter into force on the date of Your Excellency’s reply.”

I have further the honor to confirm on behalf of the Government of the United States of America that the foregoing is acceptable to the Government of the United States of America and to agree that your note and this note in reply shall constitute an agreement between the two Governments, which shall enter into force on the date of this reply.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Secretary of State:

A handwritten signature in dark ink, appearing to read "John M. Albig", is written over a faint, larger signature that appears to read "John M. Albig".



**EMBASSY OF JAPAN  
WASHINGTON, D. C.**

Washington, April 22, 2011

Excellency,

I have the honor to refer to the agreement between the Government of Japan and the Government of the United States of America concerning the cooperation between the Institute of Space and Astronautical Science of Japan (hereinafter referred to as "ISAS") and the National Aeronautics and Space Administration of the United States of America (NASA) on the Mu Space Engineering Spacecraft-C Program (hereinafter referred to as "the Program"), which was effected by the Exchange of Notes dated April 25, 2003 (hereinafter referred to as the "Agreement").

In consideration of the continuing mutually beneficial relationship between the two Governments in the field of peaceful exploration and use of outer space; taking into account the Agreement between the Government of Japan and the Government of the United States of America on Cooperation in Research and Development in Science and Technology, signed at Toronto on June 20, 1988, as extended and amended; and reaffirming that the provisions of the Agreement between the Government of Japan and the Government of the United States of America Concerning Cross-Waiver of Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes, signed at Washington on April 24, 1995, and the Exchange of Notes of the same date between the two Governments concerning subrogated claims shall apply to the Program, I have further the honor to propose, on behalf of

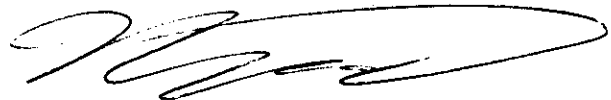
the Government of Japan, that the Agreement shall be extended for a period of ten years from April 25, 2011.

I have further the honor to confirm that all the rights and obligations of ISAS under the Agreement were succeeded to by the Japan Aerospace Exploration Agency (JAXA).

I have further the honor to propose that, if the foregoing is acceptable to the Government of the United States of America, this Note and Your Excellency's Note in reply shall constitute an agreement between the two Governments, which shall enter into force on the date of Your Excellency's reply.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Ambassador Extraordinary  
and Plenipotentiary of Japan



Her Excellency  
Hillary Rodham Clinton  
The Secretary of State



**IMPLEMENTING ARRANGEMENT  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
OF THE UNITED STATES OF AMERICA  
AND  
THE NORWEGIAN SPACE CENTRE  
OF  
THE KINGDOM OF NORWAY  
ON THE  
INTERFACE REGION IMAGING SPECTROGRAPH (IRIS) MISSION**

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## **PREAMBLE**

The National Aeronautics and Space Administration of the United States of America (hereinafter referred to as "NASA"), and the Norwegian Space Centre of Norway (hereinafter referred to as "NSC") (hereinafter collectively referred to as the "Implementing Agencies"):

Recognizing that NSC's mission is to promote and guide space research and technology for scientific and technical purposes;

Recognizing that NASA's mission is to pioneer the future in space exploration, scientific discovery, and aeronautics research;

Recalling the terms of the Agreement between the United States of America and the Kingdom of Norway for Cooperation in the Civil Uses of Outer Space signed on October 20, 2000, and November 14, 2001, which on October 23, 2006 was extended to November 2016 (hereinafter referred to as the "Framework Agreement");

Have agreed as follows:

## **ARTICLE 1 PURPOSE OF COOPERATION**

The purpose of this Implementing Arrangement is to set forth the respective responsibilities of the Implementing Agencies and the terms and conditions under which they will cooperate in the ground station support of the NASA Interface Region Imaging Spectrograph (IRIS) mission.

## **ARTICLE 2 DESCRIPTION OF THE IRIS MISSION COLLABORATION**

NASA and NSC have agreed to collaborate on the IRIS mission. Specifically NASA and NSC will collaborate on IRIS observations, which will be collected through several ground stations around the globe, including one located at the Kongsberg Satellite Services - Norwegian Space Centre (KSAT-NSC) station in Svalbard, Norway. The objective of this activity is for NASA and NSC to use a solar telescope and spectrograph to explore the solar chromospheres. This is a crucial region for understanding energy transport into the solar wind and an archetype for stellar atmospheres. Recent discoveries have shown the chromosphere is significantly more dynamic and structured than previously thought. The IRIS mission will greatly extend the scientific output of existing heliophysics spacecraft that follow the effects of energy release processes from the Sun to Earth. The unique instrument capabilities, coupled with state of the art 3-D modeling, will explore this dynamic region in detail.

The collaboration includes analysis of the IRIS observations using 3-D numerical models from the Institute of Theoretical Astrophysics (ITA) at the University of Oslo, Norway. The ground station support from KSAT-NSC in Svalbard will be for 25 months following the launch of IRIS.

The ground station will support an adequate number of downlink and uplink passes to support operations and an average data rate on the order of 50 gigabytes (Gbytes) per day.

It is the intention of the Implementing Agencies to encourage and conduct joint science investigations, technology testing, and simulated mission operations to gain a better understanding of the energy transport into the solar wind and an archetype for stellar atmospheres and gain scientific, technological, and operational knowledge that would contribute to future missions.

### **ARTICLE 3 RESPONSIBILITIES**

#### **3.1 NASA Responsibilities**

NASA shall use reasonable efforts to carry out the following responsibilities:

1. Design, build, launch, and operate the IRIS spacecraft;
2. Facilitate and support KSAT-NSC Svalbard ground station uplink and downlink activities, including pre-launch testing;
3. Facilitate access to mutually agreed-upon sites in the United States for NSC-sponsored personnel and NSC-owned or -sponsored scientific or technology equipment for the purpose of conducting science investigations;
4. Encourage and support joint NASA-NSC data downlink and uplink analysis activities in Norway and the United States;
5. Conduct all field activities in accordance with safety and environmental procedures established for that site by the cognizant Norwegian or American authorities;
6. Provide security for NSC-owned or -sponsored equipment at the mutually agreed-upon sites in the United States; and
7. Encourage joint educational and outreach activities involving teachers, students, media, and public outreach programs associated with the research.

#### **3.2 NSC Responsibilities**

NSC shall use reasonable efforts to carry out the following responsibilities:

1. Provide ground station support from KSAT-NSC Svalbard, Norway, for an adequate number of uplink and downlink passes to support IRIS operations at an average data rate on the order of 50 Gbytes per day, including pre-launch testing, up to 25 months after launch.

This will not involve any transfer of funds between the Implementing Agencies. Any activity beyond the 25-month operation period will be subject to separate discussions;

2. Facilitate access to mutually agreed-upon sites in Norway for NASA-sponsored personnel and NASA-owned or -sponsored scientific or technology equipment for the purpose of conducting science investigations;
3. Encourage and support joint scientific analysis activities in Norway and the United States including analysis of the IRIS observations using 3-D numerical models from the ITA;
4. Conduct all field activities in accordance with safety and environmental procedures established for that site by the cognizant Norwegian or American authorities;
5. Provide security for NASA-owned or -sponsored equipment at the mutually agreed-upon sites in Norway; and
6. Encourage joint educational and outreach activities involving teachers, students, media, and public outreach programs associated with the field research.

#### **ARTICLE 4 POINTS OF CONTACT**

The NASA designated point of contact is:

Mr. George Albright  
IRIS Program Executive  
Science Mission Directorate  
NASA Headquarters  
Washington, DC 20546 USA  
Phone: +1-202-358-0356  
Fax: +1-202-358-3095  
E-mail: [george.albright@nasa.gov](mailto:george.albright@nasa.gov)

The NSC designated point of contact is:

Dr. Pål Brekke  
Norwegian Space Centre  
P.O. Box 113 Skoyen  
0212 Oslo, Norway  
Phone: +47 22511827  
Fax: +47 22511801  
E-mail: [paal.brekke@spacecentre.no](mailto:paal.brekke@spacecentre.no)

## **ARTICLE 5 LIABILITY**

1. Each Implementing Agency hereby waives any claim against the other Implementing Agency, employees of the other Implementing Agency, the other Implementing Agency's Related Entities (including but not limited to contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors or subcontractors at any tier), or employees of the other Implementing Agency's Related Entities for any injury to, or death of, the waiving Implementing Agency's employees or the employees of its Related Entities, or for damage to, or loss of, the waiving Implementing Agency's property or the property of its Related Entities arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.
2. Each Implementing Agency further agrees to extend this cross-waiver to its Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Implementing Agency, Related Entities of the other Implementing Agency, and employees of the other Implementing Agency or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement. Additionally, each Implementing Agency shall require that its Related Entities extend this cross-waiver to their Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Implementing Agency, Related Entities of the other Implementing Agency, and employees of the other Implementing Agency or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement.

## **ARTICLE 6 DATA POLICY**

The Implementing Agencies shall have access to and use of all data generated under this Implementing Arrangement. The scientific data generated under this Implementing Arrangement will be made available for public access as soon as practicable.

## **ARTICLE 7 INTELLECTUAL PROPERTY RIGHTS**

1. Nothing in this Implementing Arrangement shall be construed as granting, either expressly or by implication, to the other Implementing Agency any rights to, or interest in, any inventions or works of an Implementing Agency or its Related Entities made prior to the entry into force of, or outside the scope of, this Implementing Arrangement, 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 Implementing Arrangement solely by one Implementing Agency or any of its Related 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 Implementing Agency or Related Entity. Allocation of rights to, or interest in, such invention or work between such Implementing Agency and its Related 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 Implementing Arrangement. Nevertheless, in the event that an invention is jointly made by the Implementing Agencies in the performance of this Implementing Arrangement, the Implementing Agencies shall, in good faith, consult and agree within 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 Implementing Agencies or granted by one Implementing Agency to the other Implementing Agency.
4. For any jointly authored work by the Implementing Agencies, should the Implementing Agencies 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 (Release of Results and Public Information) and Article 9 (Exchange of Goods and Technical Data) of this Implementing Arrangement, each Implementing Agency 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 Implementing Arrangement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Implementing Agency or jointly with the other Implementing Agency.

## **ARTICLE 8**

### **RELEASE OF RESULTS AND PUBLIC INFORMATION**

1. The Implementing Agencies retain the right to release public information regarding their own activities under this Implementing Arrangement. The Implementing Agencies shall coordinate with each other in advance concerning releasing to the public information that

relates to the other Implementing Agency's responsibilities or performance under this Implementing Arrangement.

2. The Implementing Agencies shall make the final results obtained from this mission available to the general scientific community through publication in appropriate journals or by presentations at scientific conferences as soon as possible and in a manner consistent with good scientific practices.
3. The Implementing Agencies 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 an Implementing Agency under this Article without the other Implementing Agency's prior written permission:
  - (a) data furnished by the other Implementing Agency in accordance with Article 9 (Exchange of Goods and Technical Data) of this Implementing Arrangement that is export-controlled, classified, or proprietary; or
  - (b) information about an invention of the other Implementing Agency before an application for a patent (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.

## **ARTICLE 9 EXCHANGE OF GOODS AND TECHNICAL DATA**

Pursuant to Article 2 of the Framework Agreement, Article 6 (Exchange of Technical Data and Goods) of the Framework Agreement is not applicable to this Implementing Arrangement. Rather, the following sub-provisions of the Implementing Arrangement apply.

The Implementing Agencies are obligated to transfer only those technical data (including software) and goods necessary to fulfill their respective responsibilities under this Implementing Arrangement, in accordance with the following provisions, notwithstanding any other provisions of this Implementing Arrangement:

1. All activities under this Implementing Arrangement shall be carried out in accordance with the Implementing Agencies' national laws and regulations, including those laws and regulations pertaining to export control and the control of classified information.
2. The transfer of technical data for the purpose of discharging the Implementing Agencies' responsibilities with regard to interface, integration, and safety shall normally be made without restriction, except as required by paragraph 1 above.
3. All transfers of goods and proprietary or export-controlled technical data are subject to the following provisions:



- (a) In the event an Implementing Agency or its Related Entity (defined for the purpose of this Article as contractors, subcontractors, grantees, or cooperating entities, or any lower tier contractor, subcontractor, grantee, or cooperating entities of an Implementing Agency) 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 for such goods and the marking on such data shall indicate that the goods and data shall be used by the receiving Implementing Agency and its Related Entities only for the purposes of fulfilling the receiving Implementing Agency's or Related Entities' responsibilities under this Implementing Arrangement, and that such goods and data shall not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Implementing Agency or its Related Entity.
  - (c) The receiving Implementing Agency or Related Entity shall abide by the terms of the notice and protect any such goods and data from unauthorized use and disclosure.
  - (d) The Implementing Agencies to this Implementing Arrangement shall cause their Related Entities to be bound by the provisions of this Article through contractual mechanisms or equivalent measures.
4. All goods exchanged in the performance of this Implementing Arrangement shall be used by the receiving Implementing Agency or Related Entity exclusively for the purposes of the Implementing Arrangement. Upon completion of the activities under the Implementing Arrangement, the receiving Implementing Agency or Related Entity shall return or otherwise dispose of all goods and marked proprietary or export-controlled technical data provided under this Implementing Arrangement, as directed by the furnishing Implementing Agency or Related Entity.

## **ARTICLE 10**

### **RELATIONSHIP TO THE FRAMEWORK AGREEMENT**

This Implementing Arrangement, concluded pursuant to Article 2 of the Framework Agreement, incorporates by reference and is subject to the terms and conditions of the Framework Agreement, except as otherwise provided for in this Implementing Arrangement.

## **ARTICLE 11**

### **AMENDMENTS**

This Implementing Arrangement may be amended through mutual written agreement by the Implementing Agencies.


**ARTICLE 12**  
**ENTRY INTO FORCE AND DURATION**

This Implementing Arrangement shall enter into force on the last date of signature and shall remain in force for ten (10) years unless terminated by one Implementing Agency by providing at least ninety (90) days' advance written notice to the other Implementing Agency of its intent to terminate.

The obligations of the Implementing Agencies set forth in the provisions in Article 5 (Liability) and Article 7 (Intellectual Property), and Article 9 (Exchange of Goods and Technical Data) of this Implementing Arrangement shall continue to apply after the expiration or termination of this Implementing Arrangement.

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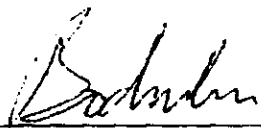
FOR THE NATIONAL AERONAUTICS  
AND SPACE ADMINISTRATION:

  
\_\_\_\_\_  
Michael F. O'Brien  
Associate Administrator  
for International and Interagency Relations

Dec 14, 2010  
\_\_\_\_\_  
Date

Washington, DC  
\_\_\_\_\_  
Place

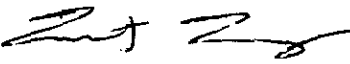
FOR THE NORWEGIAN SPACE  
CENTRE:

  
\_\_\_\_\_  
Bo Andersen  
Director General

January 10, 2011  
\_\_\_\_\_  
Date

Oslo  
\_\_\_\_\_  
Place

I certify That This is a true copy of the  
Signed original ERIS agreement.

  
\_\_\_\_\_  
Timothy Tawney  
10 International Programs Specialist  
NASA HQ

**AGREEMENT  
BETWEEN  
THE UNITED STATES OF AMERICA  
AND  
ROMANIA  
ON THE DEPLOYMENT OF THE UNITED STATES BALLISTIC MISSILE  
DEFENSE  
SYSTEM IN ROMANIA**

**Preamble**

The United States of America and Romania (hereafter referred to as the "Parties");

*Having in mind* the United States – Romanian Strategic Partnership and the further development thereof, and recognizing that a very important pillar of the United States – Romanian relationship is the solidarity embodied in Article 5 of the North Atlantic Treaty, the United States and Romania recognize the importance of enhancing their individual and collective national security by working within the North Atlantic Treaty Organization (hereafter referred to as "NATO"), the United Nations, and other international organizations, consistent with the United Nations Charter and international law;

*Reaffirming* their strong will to work together towards contributing to, in accordance with the principle of the indivisibility of the security of NATO and with the principle of NATO solidarity, the NATO missile defense capability, as a key mission of the Alliance, with the aim of providing full coverage and protection for all NATO European populations, territory and forces, as well as to shaping NATO's central role in missile defense in Europe;

*Recognizing* their shared vision of a broader and deeper Strategic Partnership between the United States and Romania, including the further development of enhanced mechanisms of political and military consultations in order to improve their mutual security, within the framework of Article 3 of the North Atlantic Treaty;

*Recognizing* the application of the provisions of the North Atlantic Treaty, done at Washington on April 4, 1949; the Agreement between the Parties to the North Atlantic Treaty Regarding the Status of Their Forces, done at London on June 19, 1951 (hereafter referred to as the "NATO SOFA"); the Agreement between the United States of America and Romania regarding the status of United States forces in Romania, done at Washington on October 30, 2001 (hereafter referred to as the "Supplemental SOFA"); the Agreement between the United States of America and Romania regarding the activities of United States forces located on the territory of Romania, done at Bucharest on December 6, 2005 (hereafter referred to as the "Defense Cooperation Agreement"); the Agreement between the Government of the United States of America and the Government of Romania concerning Measures for

the Protection of Classified Military Information, done at Washington on June 21, 1995 (hereafter referred to as the "Classified Military Information Agreement"); and the Agreement between the Parties to the North Atlantic Treaty for the Security of Information, done at Brussels on March 6, 1997 (hereafter referred to as the "NATO Security Agreement");

*Recognizing* that the proliferation of weapons of mass destruction and of the means of their delivery, including ballistic missiles, poses a grave and increasing threat to international peace and security, and to the populations, territory and forces of the Parties, their allies and partners;

*Reconfirming* the exclusively defensive nature of the United States *European Phased Adaptive Approach for Ballistic Missile Defense* and its consistency with the United Nations Charter;

*Recognizing* also the need to combine and enhance their efforts for purposes of individual and collective self-defense, to maintain international peace and security, and to further enhance their capabilities for an appropriate response to threats and attacks, including those of a terrorist nature;

*Reaffirming* that deployment of ballistic missile defense interceptors in the territory of Romania represents an important contribution by Romania to the building and further enhancement of the United States missile defense system as well as to the NATO missile defense capability;

*Recognizing* that cooperation with NATO allies and partners, in defense against the threat of ballistic missiles is important, and that deployment of United States ballistic missile defense interceptors in the territory of Romania enhances the existing security relationship between the United States and Romania and contributes to international peace and security and to the security of the United States, Romania, and NATO;

*Bearing in mind* their common defense interests and recognizing that cooperation in the field of ballistic missile defense constitutes one of the elements of broader bilateral security cooperation, which should contribute to the strengthening of the security of the Parties;

*Recognizing* their strong, successful and longstanding cooperation under the Defense Cooperation Agreement;

*Acknowledging* the intent of the Parties to assess the effective implementation of the Supplemental SOFA and of the Defense Cooperation Agreement and, if mutually agreed, update those agreements;

Have agreed as follows:





Article I  
Purpose and Scope

1. This Agreement establishes the rights and obligations of the Parties with respect to the deployment of a United States Ballistic Missile Defense System in the territory of Romania on the *Deveselu* base.
2. Each and every provision of the Supplemental SOFA and the Defense Cooperation Agreement shall apply to this Agreement, unless this Agreement provides otherwise. For matters not covered by this Agreement or the Supplemental SOFA or the Defense Cooperation Agreement, to the extent such matters are covered by the NATO SOFA, the NATO SOFA shall apply.

Article II  
Definitions

For the purposes of this Agreement, the following terms are hereunder defined:

1. "United States Ballistic Missile Defense System in Romania" includes non-nuclear interceptors, as well as those components needed for the operation of such interceptors identified in Article V paragraph 1, and associated mission and mission support equipment and infrastructure for defense against ballistic missile attack.
2. "Base" means the military area in the locality of *Deveselu*, used by United States forces pursuant to the provisions of this Agreement and for the duration thereof, for the purpose of deployment and operation of the United States Ballistic Missile Defense System in Romania, in accordance with Article I paragraph 5 of the Defense Cooperation Agreement and consistent with Article I paragraph 2 of this Agreement.
3. "Facility" means the area located within the Base where the United States Ballistic Missile Defense System in Romania and supporting infrastructure are located and with respect to which the United States controls access, in accordance with Article I paragraph 5 of the Defense Cooperation Agreement and consistent with Article I paragraph 2 of this Agreement.
4. "Restricted Airspace" is a designated area subject to certain restrictions, due to the existence of hazards to aircraft and taking into account the need for operational security in the vicinity of the Romanian Base.

**Article III**  
**NATO and the United States Ballistic Missile Defense System**

1. The Parties shall support close coordination within NATO, and shall work together in the development of the NATO missile defense capabilities.
2. The United States fully intends for the United States Ballistic Missile Defense System to be interoperable with and a contribution to the evolving NATO missile defense capability.
3. In addition to continued United States and Romanian participation in NATO programs, the Parties intend to further develop bilateral security cooperation, including through fulfillment of the principles and objectives of this Agreement.
4. Within the context of, and consistent with the North Atlantic Treaty and the United States - Romanian Strategic Partnership, the United States is firmly committed to the security of Romania; and within NATO's commitment in this sense, to defend Romania, along with the NATO European populations, territory, and forces, by means of its ballistic missile defense system, against the increasing threat posed by the proliferation of ballistic missiles and against a potential ballistic missile attack.

**Article IV**  
**The Base**

1. The Base is under Romanian sovereign jurisdiction and the property of Romania. Romania shall retain ownership of, and title to, the Base in accordance with the applicable provisions of the Defense Cooperation Agreement. The United States forces shall be authorized access to and use of the Base with full respect for Romanian law in accordance with applicable provisions of the Defense Cooperation Agreement, and may use the Base to host the Facility.
2. Consistent with Article IV of the Defense Cooperation Agreement, all buildings, including those constructed, used, altered or improved by United States forces, are the property of Romania, while movable objects and fixtures remain the property of United States forces or United States contractors as appropriate.
3. The laws applicable on the territory of Romania apply in the area of the Base, as set forth in this Agreement. It is the duty of the United States force and its civilian component and the members thereof as well as their dependents to respect the laws of Romania, and to abstain from any activity inconsistent with the spirit of the present Agreement.
4. The United States forces shall use the Base without prejudice to the sovereignty and laws of Romania.



5. Operations on the Base shall be conducted with due regard for public health and safety.

6. The United States and Romania shall coordinate and cooperate regarding transportation security for United States ballistic missile defense assets during transportation within the territory of Romania outside the Base. Romania recognizes the right of the United States to protect these assets. The applicable procedure shall be addressed in an implementing arrangement.

7. Romania shall ensure, according to the Romanian legislation in force, that use of the land areas surrounding the Base is consistent with the operation of the Facility and the United States Ballistic Missile Defense System in Romania. The United States shall furnish relevant information to Romania to regulate the use of land areas surrounding the Base. The specific parameters and limitations on land use shall be established in an implementing arrangement.

8. Romania shall establish Restricted Airspace over and around the Base. Romania shall develop air traffic restrictions. Detailed parameters for the aforesaid zones, as well as the principles of their establishment and operation, and of cooperation between relevant United States and Romanian authorities regarding use of Romanian airspace, shall be set forth in an implementing arrangement. The United States shall furnish relevant information to Romania to regulate the airspace over and around the Base.

9. The number of members of the United States force and civilian component deployed at the Base after construction is completed and operations begin shall not exceed 500. The routine number of members of the United States force deployed to the Base will be approximately 150 persons.

10. The United States may, after obtaining the necessary authorization, as set forth in paragraphs 11 and 12, undertake construction activities on, and make major alterations and improvements to, and maintain, sustain, and operate ballistic missile defense structures and infrastructure on the Base. In the course of such activities, the United States may:

- (a) use, alter, or demolish existing structures and infrastructure on the Facility;
- (b) clear existing vegetation; and
- (c) excavate soil on the Facility with due consideration for the Romanian legislation in the field of protection of archeological sites.

11. Prior to beginning a construction activity related to the Base, the United States shall provide Romania with a construction schedule. The United States will also submit all the relevant construction documentation in advance of seeking the Romanian authorization. Romania shall respond to the United States request for the authorization within thirty days of the formal submission of the relevant documents. In case of construction inside the Base, if Romania does not issue the authorization

within thirty days, the United States may proceed with the scheduled construction activities.

12. Romania shall obtain the necessary authorization for the construction in accordance with the Romanian law and the provisions of the Defense Cooperation Agreement and applicable implementing arrangements. In the case of construction inside the Base, this authorization will allow the United States to begin construction after thirty-five percent of the design is submitted to Romania, while in the case of construction outside the Base and related to it, this authorization will allow the United States to begin construction after one hundred percent of the design is submitted to Romania.

13. United States forces shall utilize local physical persons and legal entities as suppliers of articles and services to the extent feasible for the performance of a contract when the bids of such suppliers are competitive and constitute the best value.

14. To the extent permissible, United States forces shall accord to contractors who are citizens of Romania and are registered legal entities in the territory of Romania treatment no less favorable than that accorded to contractors who are not citizens of Romania and legal entities not registered in Romania.

15. The Base, and the Romanian military and civilian personnel staying on the Base, shall be under Romanian command exercised by a representative of the Romanian Armed Forces (hereafter referred to as the "Romanian Commander").

16. The Romanian Commander shall be identified within thirty days of the entry into force of this Agreement. The Romanian Commander or his or her designees shall be the Romanian point of contact regarding activities related to Base operations. The Romanian point of contact shall have an office on the Base.

17. The Romanian Commander shall, *inter alia*:

- (a) advise regarding relations with Romanian governmental and local institutions and facilitate contacts with such institutions;
- (b) participate in coordinating mutual logistics support for the military and civilian personnel deployed on the Base;
- (c) participate in coordinating the provision of security on the grounds of the Base;
- (d) participate in coordinating joint training on the grounds of the Base; and
- (e) advise the United States Senior Representative regarding Romanian law relevant to Base operation.

18. The Romanian Commander shall notify the United States Senior Representative of actions by United States forces, dependents, United States contractors, and United States contractor employees on the Base that appear to be inconsistent with Romanian law. The Romanian Commander and the United States Senior Representative shall cooperate to prevent and address such situations.



19. The Romanian Commander and his or her authorized representatives shall have access to the entire area of the Base, as provided in Article V paragraph 6.

20. The Romanian Commander shall, with the concurrence of the United States Senior Representative, establish the procedures for access to the Base, including appropriate safety and security measures to be applied for entering the Base, and shall issue appropriate passes to the Base.

21. Romania shall be responsible for providing security and protection for the Base outside the perimeter of the Facility.

22. Applying the Defense Cooperation Agreement, the Supplemental SOFA and their relevant implementing arrangements, the Parties, including the United States Senior Representative and the corresponding Romanian Commander shall exchange information concerning the security and protection of the Base, and Romania shall coordinate with the United States on the planning for such security and protection, both prior to and after the United States Ballistic Missile Defense System in Romania achieves operational status.

23. In the event that security and protection are to be provided by contractors, such entities shall comply with all relevant requirements of Romanian law.

24. In the event either the United States Senior Representative or the Romanian Commander becomes aware of a crisis situation on the Base that may affect the safety of the population inhabiting the region, that Senior Representative or Commander shall promptly notify his/her counterpart.

25. The Parties undertake to cooperate, as appropriate, with respect to intelligence sharing on all threats to the Base or related to the operation of the United States Ballistic Missile Defense System in Romania.

26. The Parties shall carry out this cooperation with regard to the Base and the Facility and ensure procedures for timely exchange of intelligence and counter-intelligence through appropriate institutions or organizations, according to mechanisms to be stipulated in an implementing arrangement.

27. The boundaries of the Base and the Facility shall be represented, for illustrative purposes, on the appended map. Technical details of that map may be updated by an implementing arrangement.



Article V  
The Facility

1. The Facility includes components of the United States Ballistic Missile Defense System in Romania such as, but not limited to: a launch system, command and control system, radar system, communication system, utilities infrastructure, security infrastructure, fuel storage and distribution infrastructure, associated mission and mission support equipment and infrastructure.
2. The description of the elements, including the interceptors, of the United States Ballistic Missile Defense System in Romania, and the number of members of the force and the civilian component stationed at the Base, as well as any permanent changes, shall be reported in writing to Romania upon initial deployment and every six months thereafter, and shall be the subject of periodic consultations between the United States Senior Representative and the Romanian Commander. The number of members of the force and the civilian component shall not exceed the number set forth in Article IV paragraph 9 without the express prior written consent of the Romanian Ministry of National Defense.
3. The United States shall provide to Romania data concerning United States forces, United States contractors, United States contractor employees and dependents working or living on the Base. Provisions regarding the type, frequency, and procedures for the provision of such data shall be established in an implementing arrangement to this Agreement.
4. The United States shall have exclusive use of, and unrestricted access to, the Facility on the Base.
5. The United States shall control access to the Facility on the Base.
6. The Romanian Commander and his or her authorized representatives shall have prompt access to the Facility, consistent with operational, safety, and security requirements.
7. Representatives of competent agencies of Romania, to include but not limited to, Ministry of National Defense personnel, emergency response personnel, and law enforcement personnel shall be granted prompt access to the Facility, when required for official purposes, consistent with operational, safety, and security requirements.
8. Prior to the United States Ballistic Missile Defense System in Romania becoming fully operational, the United States shall appoint a Senior Representative, who shall be the United States single point of contact regarding day-to-day activities under this Agreement, and who shall have authority over the Facility and United States forces, dependents, United States contractors, United States contractor employees, and other individuals employed by United States forces on the Base.



9. The United States Senior Representative shall have exclusive authority over activities and operations on the Facility.

10. The United States Senior Representative also shall be responsible for matters relating to property, infrastructure, installations, supplies, equipment, and materiel located on the Base, but outside the Facility, that are owned or operated exclusively by the United States.

11. The United States shall be responsible for providing security and protection for the Facility. Applying the Defense Cooperation Agreement, the Supplemental SOFA and their relevant implementing arrangements, the Parties shall exchange information concerning the security and protection of the Facility, and the United States shall coordinate and cooperate with Romania on the planning for such security and protection, both prior to and after the United States Ballistic Missile Defense System in Romania achieves operational status.

12. The United States shall notify in writing, and consult with Romania at least 30 days prior to major modifications to the United States Ballistic Missile Defense System in Romania and to missile defense components on the Base/Facility. The United States shall duly take into consideration and address the potential concerns of Romania.

#### **Article VI**

#### **Command and Control of the Ballistic Missile Defense System**

1. Romania has sovereign jurisdiction over the Base. The United States shall have exclusive command and control of the United States Ballistic Missile Defense System in Romania.

2. The Parties confirm that the United States Ballistic Missile Defense System in Romania shall be used exclusively for self-defense purposes, in conformity with international law and the principles and norms regulating the inherent right of individual and collective self-defense.

3. Consultation, command, and control arrangements for the use of missile defense interceptors deployed in the facility, will be vetted through respective Romanian and United States participation in the NATO North Atlantic Council and relevant NATO committees. This will ensure alignment with the policies established by the principal decision-making structure for NATO territorial missile defense.

4. The United States shall consult with Romania regularly and whenever necessary at the request of either Party concerning the United States ballistic missile defense

system and its operation as it relates to the North Atlantic area, as that term is used in the North Atlantic Treaty, including on issues related to the consequences of a missile defense operation launched from the territory of Romania.

5. The United States shall provide to Romania a means to receive current information regarding the United States ballistic missile defense operations related to the North Atlantic area and the status of the Facility. The United States shall promptly inform Romania by providing situational awareness including missiles being tracked by the system, the origin and projected impact of such missiles, and missile defense engagements by the missile defense components deployed on Romanian territory, to ensure the appropriate level of cooperation in case of a missile defense operation. Further details on the topics addressed in this paragraph shall be included in an implementing arrangement.

6. The United States shall facilitate the education and instruction of the members of the Romanian Armed Forces in command and control and operations of ballistic missile defense systems, including interceptors, for the purpose of gaining insight into the development of preplanned command and control arrangements for ballistic missile defense operations and the overarching functionalities of ballistic missile defense systems. This will include education and instruction for missile defense operations, such as those that will be developed within NATO and implemented in a NATO context.

7. The United States and Romania shall establish a Romanian liaison officer position within the United States European Command to ensure a continued close strategic partnership in a number of areas, including ballistic missile defense. Specific details shall be discussed within the Joint Committee and shall be addressed in a separate implementing arrangement.

#### **Article VII** **Classified Information**

All classified information provided or generated pursuant to this Agreement shall be protected in accordance with the Classified Military Information Agreement, except that NATO-classified information shall be handled in accordance with the NATO Security Agreement.

#### **Article VIII** **Environment, Health and Safety**

1. In accordance with Article XIV of the Defense Cooperation Agreement and the Environmental Matters Implementing Arrangement thereto, the Parties confirm their



agreement to implement this Agreement in a manner consistent with the protection of the natural environment and human health.

2. The Parties shall pursue a preventive approach to environmental protection. To this end, all problems that may arise shall be dealt with expeditiously in order to prevent any lasting damage to the environment or endangerment of human health and safety. The United States shall provide Romania information concerning the impact of the electromagnetic spectrum on human safety.

3. Further issues concerning any relevant impact on the environment shall be addressed in the existing implementing arrangement.

**Article IX**  
**Coordination with Romanian Local Authorities**

The United States Senior Representative and Romanian Commander may consult regarding local matters with the local authorities from the area where the Base is located.

**Article X**  
**Claims**

1. Claims arising in Romania for damage in the territory of Romania shall be handled in accordance with the Supplemental SOFA and Article VIII of the NATO SOFA.

2. Romania will not take responsibility for any damage, or for any claims related to such damage, caused outside the territory of Romania by elements of the United States Ballistic Missile Defense System in Romania, assuming such damage is not the result of actions or negligence by Romania.

3. In implementing this Article, the Parties shall, at the request of either Party, meet with the aim of reaching a mutually agreeable, fair, and just resolution of claims in a timely manner, given the circumstances and the respective obligations of the Parties.

**Article XI**  
**Financial responsibilities between the Parties**

1. The obligations of the Parties under this Agreement shall be subject to the availability of funds appropriated for such purposes. This paragraph is without



prejudice to any obligations of the Parties arising pursuant to the NATO SOFA and the Supplemental SOFA.

2. Each Party shall be responsible for the costs of carrying out its obligations under this Agreement:

(a) Except as may be otherwise agreed, the United States shall be responsible for the cost of:

(1) transportation, construction, maintenance, sustainment, and operation of ballistic missile defense interceptors and related facilities on the Facility; and

(2) services requested, received, and rendered, and processing fees in direct connection with such interceptors and facilities, such as utilities and telecommunications lines which it will pay at a rate no less favorable than that granted to Romanian Armed Forces located at the Base, except as may be otherwise agreed.

(b) Except as may be otherwise agreed, Romania shall be responsible for the cost of:

(1) construction, maintenance, sustainment, and operation of facilities under Romanian command, or for the exclusive or primary use by Romanian authorities, at the Base; and

(2) local taxes related to the Base with regard to ownership of land and other immovable property.

(c) If in connection with the construction and operation of the Base, the Parties agree that it is necessary to construct or modify premises, facilities, roads, utilities, communications, or other infrastructure, related to but located outside the Facility, including outside the Base, for joint use by Romania and the United States, such construction or development, and operations and maintenance costs thereof, shall be shared by the Parties on the basis of proportionate use, consistent with Article II paragraph 5 of the Defense Cooperation Agreement, unless otherwise agreed.

(d) The United States shall reimburse Romania for the agreed costs of agreed upon specified services provided by Romania to assist the United States.

#### **Article XII** **Implementation**

1. For the implementation of this Agreement, a Joint Sub-Committee shall be established under the Joint Committee established in accordance with Article XI paragraph 2 of the Defense Cooperation Agreement.

2. The elements concerning establishment, composition and functioning of the Joint Sub-Committee shall be specified in an implementing arrangement.



3. In accordance with Article XI paragraph 1 of the Defense Cooperation Agreement, the Parties or their designees may enter into additional implementing arrangements, or amend applicable implementing arrangements, necessary to carry out the provisions of this Agreement.

4. Consistent with Article I paragraph 2 of this Agreement, the existing arrangements concluded for the implementation of the Defense Cooperation Agreement shall be applied also for the purpose of implementing this Agreement, as established by the Parties, by means of an inventory, to be finalized preferably no later than 90 days from the entry into force of this Agreement. The implementing arrangements that need to be amended shall be modified by the consent of the Parties as soon as possible.

**Article XIII**  
**Interpretation and Settlement of Disputes**

1. In accordance with Article XV of the Defense Cooperation Agreement, any issue or dispute regarding the interpretation or application of this Agreement, including disputes between the United States Senior Representative and the Romanian Commander concerning the day-to-day operation of the Base, shall be resolved only through bilateral consultations.

2. Such disputes shall be resolved at the lowest competent level by means of consultation between the representatives of the Parties.

3. Any dispute may be submitted for further consideration, and, where possible, resolution, to the Joint Committee established in accordance with Article XI paragraph 2 of the Defense Cooperation Agreement or to consultations between the Parties.

**Article XIV**  
**Entry into Force, Duration, Termination, and Amendment**

1. This Agreement is concluded for an indefinite period and shall enter into force in accordance with the internal laws of each Party and upon the date of the receipt of the later of the written notifications whereby the Parties inform each other, through diplomatic channels, that all their internal procedures necessary to bring this Agreement into force have been fulfilled.

2. This Agreement may be amended through written agreement of the Parties. Any such amendment shall enter into force in accordance with the provisions of paragraph 1 of this Article.

3. This Agreement may be terminated at any time by either Party upon a two-year written notice to the other Party.

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

DONE at Washington, this 13<sup>th</sup> day of September 2011, in duplicate, in the English and Romanian languages, both texts being equally authentic.

FOR  
THE UNITED STATES OF AMERICA:

*Hillary Rodham Clinton*

FOR  
ROMANIA:

*T. Moro*



ARKIVEXEMPLAR

**IMPLEMENTING ARRANGEMENT  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
OF THE UNITED STATES OF AMERICA  
AND  
THE SWEDISH NATIONAL SPACE BOARD  
OF THE KINGDOM OF SWEDEN  
FOR  
COOPERATION IN AERONAUTIC AND SPACE RESEARCH  
USING NANOSATELLITE TECHNOLOGIES**

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## PREAMBLE

The National Aeronautics and Space Administration of the United States of America (hereinafter referred to as "NASA"), and the Swedish National Space Board of the Kingdom of Sweden (hereinafter referred to as "SNSB") (together hereinafter referred to as the "Implementing Agencies"):

Recognizing the mutual interest of the Implementing Agencies in the exploration and use of outer space for peaceful purposes;

Recognizing nearly three decades of successful space science cooperation between the Implementing Agencies;

Recognizing the value of international cooperation and of combining efforts for the exploration and use of outer space; and

Recalling the terms of the Framework Agreement between the Government of the United States of America and the Government of the Kingdom of Sweden for Cooperative Activities in the Exploration and Use of Outer Space for Peaceful Purposes, signed at Stockholm October 14, 2005 (hereinafter referred to as the "Framework Agreement");

Have agreed as follows:

## ARTICLE I PURPOSE OF COOPERATION

The purpose of this Implementing Arrangement is to set forth the respective responsibilities of the Implementing Agencies and the terms and conditions under which they will cooperate on aeronautics and space research using nanosatellite (NanoSat) technologies.

SNSB, in collaboration with AAC Microtec AB of Sweden, funded the development of a miniature Remote Terminal Unit (RTU) platform that enables engineers to rapidly design and implement powerful, high-speed sensors on standardized small spacecraft busses. The RTU offers flexibility with integration standards, allowing operation as either an on-board computer with redundant interfaces or as a standard interface module featuring plug-and-play common interfaces. The RTU uses a low temperature, co-fired ceramic substrate with better heat conductivity than printed circuit boards, making it well-suited for use in low-Earth orbit (LEO) programs or environments with up to 30 kilorads of radiation. SNSB, also in cooperation with AAC Microtec AB, funded the development of an advanced 3-dimensional wafer-level packaging (WLP) technology that combines microelectronics and micro-electro-mechanical system (MEMS) sensors in confined spaces using thru-silicon-via (TSV) for wafer stacking and flip-chip technology for forming stacked interconnects.

Cooperation under this Implementing Arrangement will involve an investigation into the standardization and interoperability of these existing technologies and NASA's NanoSat platform. Testing will be conducted at the NASA Ames Research Center (ARC) in both laboratory and real or simulated operational settings. The initial evaluation of a common NanoSat bus and architecture may be followed by a proposal for a joint science mission demonstrating the flexible exchange of payloads, which would require a separate Implementing Arrangement.

## **ARTICLE 2 RESPONSIBILITIES**

NASA shall use reasonable efforts to carry out the following responsibilities:

1. Receive RTU and 3-dimensional wafer packaging technology from AAC Microtec AB for research, evaluation and testing. Use the RTU and 3-dimensional wafer packaging technology for testing purposes;
2. Collaborate with AAC Microtec AB on the development of engineering, configuration and testing protocols to demonstrate RTU and 3-dimensional packaging technology for use with small satellite and space applications;
3. Conduct testing of the RTU and 3-dimensional packaging technology in accordance with protocols developed with AAC Microtec AB;
4. Provide SNSB and AAC Microtec AB with data regarding NASA's test results;
5. Coordinate with SNSB and AAC Microtec AB on the preparation of a final report on the initial integration and testing of NanoSat technologies;
6. Coordinate with SNSB on the potential development of a proposal for a joint scientific mission that may incorporate a NASA experiment and one or two SNSB scientific experiments for interface testing under a separate Implementing Arrangement; and
7. Coordinate with SNSB on any news releases and/or widely distributed publications that result from activities performed under this Implementing Arrangement.

SNSB shall, through AAC Microtec AB, use reasonable efforts to carry out the following responsibilities:

1. Provide NASA with RTU and 3-dimensional packaging technology for research, evaluation and testing;

2. Collaborate with NASA on engineering, software programming, configuration, and testing protocols to demonstrate RTU and 3-dimensional packaging technology for use with small satellite and space applications;
3. Coordinate with NASA on the preparation of a final report on the initial integration and testing of NanoSat technologies;
4. Coordinate with NASA on the potential development of a proposal for a joint scientific mission that may incorporate a NASA experiment and one or two SNSB scientific experiments for interface testing under a separate Implementing Arrangement; and
5. Coordinate with NASA on any news releases and or widely distributed publications that result from activities performed under this Agreement;

NASA and SNSB shall on occasion, as appropriate, provide representatives to visit the facilities of the other Implementing Agency to participate in integration and testing and to observe, confer with, and advise the other Implementing Agency in regard to aspects of standardization and interoperability of NanoSat technologies.

### **ARTICLE 3 POINTS OF CONTACT**

The NASA Headquarters designated points of contact are:

Dr. Jitendra Joshi  
Chief Technical Advisor, Advanced Capabilities Division  
Exploration Systems Mission Directorate  
NASA Headquarters  
300 E Street SW  
Washington DC 20546-0001  
Telephone: (202) 358-5210  
Fax: (202) 358-3091  
E-Mail: [jitendra.a.joshi@nasa.gov](mailto:jitendra.a.joshi@nasa.gov)

Mr. Jason Crusan  
Chief Technologist for Space Operations  
Space Operations Mission Directorate  
NASA Headquarters  
300 E Street SW  
Mail Suite 7N39  
Washington DC 20546-0001

Telephone: (202) 358-0635  
Fax: (202) 358-3530  
E-Mail: [jason.c.crusan@nasa.gov](mailto:jason.c.crusan@nasa.gov)

Mr. Brant Sponberg  
Program Executive, SmallSat Programs  
Office of the Chief Technologist  
NASA Headquarters  
Room 5U36  
300 E Street SW  
Washington DC 20546-0001  
Telephone: (202) 358-2016  
Fax: (202) 358-4336  
E-Mail: [brant.l.sponberg@nasa.gov](mailto:brant.l.sponberg@nasa.gov)

The NASA ARC designated point of contact is:

Mr. John Hines  
Chief Technologist  
NASA Ames Research Center  
Bldg. 202, Rm. 3  
P.O. Box 1, Moffett Field, CA 94035-0001  
Telephone: (650) 604-5538  
Fax: (650) 604-2970  
E-Mail: [John.Hines@nasa.gov](mailto:John.Hines@nasa.gov)

The SNSB designated point of contact is:

Mr. Christer Nilsson  
Industrial Affairs Officer  
P.O. Box 4006  
SE-171 04 Solna  
Sweden  
Telephone: +46 8 627 6496  
E-Mail: [Christer.Nilsson@snsb.se](mailto:Christer.Nilsson@snsb.se)

Any change in an Implementing Agency's points of contact, or in the corresponding details, will be communicated in writing by the Implementing Agency making such a change to the other Implementing Agency.

#### **ARTICLE 4 DATA POLICY**

The Implementing Agencies shall have access to and use of all data generated under this Implementing Arrangement at the time the data is generated. The scientific data generated under this Implementing Arrangement will be made available for public access as soon as practicable.

#### **ARTICLE 5 INTELLECTUAL PROPERTY RIGHTS**

1. Nothing in this Implementing Arrangement shall be construed as granting, either expressly or by implication, to the other Implementing Agency any rights to, or interest in, any inventions or works of an Implementing Agency or its Related Entities made prior to the entry into force of, or outside the scope of, this Implementing Arrangement, 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 Implementing Arrangement solely by one Implementing Agency or any of its Related 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 Implementing Agency or Related Entity. Allocation of rights to, or interest in, such invention or work between such Implementing Agency and its Related 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 Implementing Arrangement. Nevertheless, in the event that an invention is jointly made by the Implementing Agencies in the performance of this Implementing Arrangement, the Implementing Agencies shall, in good faith, consult and agree within 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 Implementing Agencies or granted by one Implementing Agency to the other Implementing Agency.

4. For any jointly authored work by the Implementing Agencies, should the Implementing Agencies 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 6 (Exchange of Technical Data and Goods) of the Framework Agreement and Article 6 (Release of Results and Public Information) of this Implementing Arrangement, each Implementing Agency 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 Implementing Arrangement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Implementing Agency or jointly with the other Implementing Agency.

#### **ARTICLE 6 RELEASE OF RESULTS AND PUBLIC INFORMATION**

1. The Implementing Agencies retain the right to release public information regarding their own activities under this Implementing Arrangement. The Implementing Agencies shall coordinate with each other in advance concerning releasing to the public information that relates to the other Implementing Agency's responsibilities or performance under this Implementing Arrangement.

2. The Implementing Agencies shall make the final results obtained from cooperation under the Implementing Arrangement available to the general scientific community through publication in appropriate journals or by presentations at scientific conferences as soon as possible and in a manner consistent with good scientific practices.

3. The Implementing Agencies 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 an Implementing Agency under this Article without the other Implementing Agency's prior written permission:

(a) Data furnished by the other Implementing Agency in accordance with Article 6 (Exchange of Technical Data and Goods) of the Framework Agreement that is export-controlled, classified, or proprietary; or

(b) Information about an invention of the other Implementing Agency before an application for a patent (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.



**ARTICLE 7  
RELATIONSHIP TO THE FRAMEWORK AGREEMENT**

This Implementing Arrangement incorporates by reference and is subject to the Framework Agreement. In the event of a conflict between the provisions of this Implementing Arrangement and the Framework Agreement, the terms of the Framework Agreement shall prevail.

**ARTICLE 8  
AMENDMENTS**

This Implementing Arrangement may be amended through mutual written agreement by the Implementing Agencies.

**ARTICLE 9  
ENTRY INTO FORCE AND DURATION**

This Implementing Arrangement shall enter into force upon the date of the final signature and shall remain in force for ten (10) years unless terminated by one Implementing Agency providing written notice of its intention to the other Implementing Agency at least ninety (90) days in advance of its intent to terminate.

FOR THE NATIONAL AERONAUTICS  
AND SPACE ADMINISTRATION:

FOR THE SWEDISH NATIONAL SPACE  
BOARD:

  
\_\_\_\_\_

  
\_\_\_\_\_

Place: Washington, D.C.

Place: Solna, Sweden

Date: May 10, 2011

Date: May 19, 2011

I certify that this is a true copy  
of the signed original.



31 May 2011

Patrick Longenbaker  
International Program Specialist

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## THE MOMBASA DECLARATION ON SPACE AND AFRICA'S DEVELOPMENT

*The participants in the Fourth African Leadership Conference on Space Science and Technology for Sustainable Development (ALC IV), held in Mombasa from 26 to 28 September 2011,*

**Recalling** that humans have always gazed at the sky with wonder and that from this was born the curiosity that led to scientific discoveries that laid the foundations of modern space science and technology;

**Recognizing** the major contribution that space science and technology makes to the well-being of humanity and specifically to the economic, social and cultural development of Africa in terms of Earth observation, satellite navigation and communications services that support, *inter alia*, education, health, environmental monitoring, management of natural resources, disaster management, meteorological forecasting and climate modelling;

**Recognizing** that space science responds to the universal human urge to explore the unknown, thereby enhancing our knowledge of the natural world and providing a powerful source of inspiration for the youth to embrace science and technology;

**Considering** that space transcends national boundaries and local interests, permitting the development of solutions to address common challenges faced by all African countries;

**Reaffirming** that the exploration and use of outer space is the province of all humankind, and that outer space should be utilized for peaceful purposes and in the interests of maintaining international peace and security, in accordance with international law, including the Charter of the United Nations, and as proclaimed in the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* (Outer Space Treaty);

**Recognizing** that the orderly conduct of space activities is beneficial to all countries, whether or not they have national space programmes, and that the observance by States and by international organizations of the provisions of the outer space treaties should be encouraged;

**Recognizing** that the space environment is becoming increasingly crowded and that actions of one actor in outer space hold potential consequences for many other actors, and that emerging space nations do not have the luxury of entering into a pristine environment, but have to take cognisance of the effects of their actions on all other users of outer space;

**Recognizing** the role played by the United Nations Committee on the Peaceful Uses of Outer Space in fostering international cooperation in outer space activities;

**Convinced** that international cooperation is the best manner to promote the peaceful uses of outer space;

**Recalling** that the United Nations General Assembly, in its resolution 65/97, emphasizes that regional and inter-regional cooperation in the field of space activities is essential to strengthen the peaceful uses of outer space, to assist States in the development of their space capabilities and to contribute to the achievement of the goals of the United Nations Millennium Declaration, and in that regard recognizes the important role played by conferences and other mechanisms in strengthening regional and international cooperation among States;

**Recalling** that the African Leadership Conference on Space Science and Technology for Sustainable Development was born out of a need for a regional platform to improve cooperation among African space professionals and to raise awareness among African governments of the important benefits of space science and technology for Africa's sustainable development;

**Noting with satisfaction** that the African Leadership Conferences on Space Science and Technology for Sustainable Development, held in Abuja in 2005, South Africa in 2007, Algeria in 2009 and Kenya in 2011, have contributed to a better understanding of space technology and to capacity-building in the utilization of space technology for social and economic development in Africa and that these conferences have also led to the creation of the African Resource Management Constellation project;

Adopted by the 4<sup>th</sup> African Leadership Conference on Space Science and Technology for Sustainable Development at its final plenary meeting on 28 September 2011

**Further noting** the valuable contributions of participants of the various technical fora of ALC IV;

**And convinced** that efforts should be undertaken to facilitate substantive joint projects between “space-capable” and “non-space-capable” countries in Africa;

**Declare** their commitment to harness space science and technology for the betterment of the human condition in Africa through the following actions:

- (a) For protection of Africa’s natural environment and the collective management of the continent’s resources for sustainable socioeconomic development, action should be taken:
  - a. To develop and implement the African Resource Management Constellation;
  - b. To make maximum use of existing capabilities in worldwide satellite coverage;
  - c. To assess the infrastructure related to data availability, archiving and dissemination in Africa, particularly in regard to freely available fundamental data;
  - d. To promote data exchange among African countries and to develop data exchange policies and models;
- (b) For the enhancement of human security, development and welfare, action should be taken:
  - a. To improve public health services by expanding and coordinating space-based services for tele-health and telemedicine;
  - b. To implement an integrated regional disaster management system, in coordination with existing international efforts, such as UN-SPIDER and its Regional Support Offices in Africa;
  - c. To improve literacy and enhance education by implementing and coordinating satellite-based tele-education programmes and the related ground-based infrastructure;
- (c) For the development of Africa’s human capital resources in space science and technology, action should be taken to:
  - a. To improve access to high-level education and training in space science and technology on the continent;
  - b. To acknowledge and harness the expertise already present on the African continent through the development of a comprehensive database of African space science and technology experts;
  - c. To align with existing human capital development initiatives of the African Union;
  - d. To utilize existing training centres in Africa and to promote greater cooperation among education and training institutions to develop appropriate training programmes in space science and technology that respond to Africa’s needs;
  - e. To encourage African countries to increase their utilisation of and support for the Regional Centres for Space Science and Technology Education, affiliated to the United Nations, located in Morocco and Nigeria;
  - f. To promote knowledge sharing through regional space conferences and through scholarly interaction among African institutions;
  - g. To support the existing networks and associations of space professionals in Africa;
  - h. To encourage the development and implementation of university curricula in space science and technology in Africa;
- (d) For the advancement of scientific knowledge of outer space and to protect the space environment for future generations, action should be taken:
  - a. To promote and strengthen intra-African cooperative activities in areas such as astronomy, space physics and the study of near-Earth objects and to encourage participation of African institutions in global lunar and planetary exploration efforts;
  - b. To protect the near-Earth space environment through responsible actions in outer space, including the implementation of the Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space, and other established international best practices in this regard;
  - c. To ensure that the activities of African States do not introduce electromagnetic interference that may disrupt space applications or interfere with Earth observation in certain bands or with ground-based astronomical activities;

- (e) For the advancement of the widest possible adherence to international treaties governing the use of outer space for peaceful purposes, action should be taken:
  - a. To encourage African States to accede to the existing United Nations treaties governing the peaceful uses of outer space in order to protect their legitimate rights and interests in space activities;
  - b. To encourage African States to develop national policies and regulatory frameworks to govern the activities of States and their space agencies at the level of domestic legal order and to regulate such activities under their legal jurisdictions;
  - c. To encourage closer cooperation and dialogue between universities and institutions with established space law programmes and those wishing to develop such programmes, for the benefit of students and professionals in the public and private sector;
  - d. To promote overall capacity-building in space law in Africa, for which regional coordination and cooperation could play an important role;
- (f) For the enhancement of public awareness of the importance of space activities, action should be taken:
  - a. To promote the celebration, in all African countries, of World Space Week, proclaimed by the United Nations General Assembly to be celebrated annually from 4-10 October.
  - b. To increase awareness among decision makers and the general public in Africa of the importance of utilising space infrastructure to improve the common economic and social welfare of humanity;
  - c. To encourage all African countries to provide their children and youth, of both genders, with opportunities to learn more about space science and technology and its importance to human development, as an investment in the future;
  - d. To develop a mechanism for the sharing of experiences, knowledge and resources to improve space awareness in Africa;
- (g) For the strengthening of space activities in the African Union, action should be taken:
  - a. To establish, within the African Union, the African Leadership Conference on Space Science and Technology for Sustainable Development as a consultative mechanism on space science and technology;
  - b. To encourage participation of a greater number of African States in the ALC through engagement with the African Union;
  - c. To establish a special African Union fund for the purpose of implementing the recommendations of the ALC conferences;
- (h) For the strengthening of African participation in the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), and other global space fora, action should be taken:
  - a. To reaffirm the importance for African member States of COPUOS to participate actively in the sessions of COPUOS and its Scientific and Technical Subcommittee and Legal Subcommittee;
  - b. To promote better coordinated African participation in COPUOS and other global space fora, to ensure that the agendas in those fora address Africa's needs and to engage in those fora with well developed African positions on key issues;
  - c. To affirm, through statements in COPUOS, the value of the United Nations Programme on Space Applications for Africa and the importance of ensuring the provision of adequate resources for the continuation of this Programme;
  - d. To take note of the outcomes and recommendations of other regional conferences for Asia and the Pacific and Latin America and the Caribbean, that are relevant to efforts to promote cooperation in the peaceful uses of outer space at the regional, inter-regional and global levels.

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# **Joint Announcement on United States–Japan GPS Cooperation**

**January 13, 2011**

**Tokyo, Japan**

The Governments of the United States of America and Japan convened a plenary meeting in Tokyo, Japan on January 13, 2011, to review and discuss cooperation in the civil use of the Global Positioning System (GPS) and GPS augmentations, including Japan's Multi-functional Transport Satellite (MTSAT) Satellite-based Augmentation System (MSAS) and Quasi-Zenith Satellite Systems (QZSS). The GPS consultations are held regularly pursuant to the "Joint Statement on Cooperation in the Use of the Global Positioning System" signed by the heads of the two Governments on September 22, 1998.

During the meeting, the United States (U.S.) representatives described the status of Wide Area Augmentation System (WAAS) and GPS modernization and the United States' international GPS cooperation with third parties. Representatives of the Government of Japan reported on the status of the MSAS and QZSS programs and on Japan's international Global Navigation Satellite System (GNSS) – related cooperation activities. Both Governments reaffirmed the importance of providing open access to basic space-based positioning, navigation and timing (PNT) services for peaceful purposes, free of direct user fees. Both Governments reiterated that GPS and its augmentations have become indispensable for modern life in the U.S., Japan and the world, providing essential services and increased efficiencies in a broad range of applications, such as aviation and maritime safety-of-life, geodetic surveying, car and personal navigation, mobile telephone timing, international financial transactions and electric power transmission.

Representatives of both Governments reviewed the ongoing work of the GPS/QZSS Technical Working Group (TWG), which was established to foster close cooperation during the development of QZSS. The TWG reaffirmed that GPS and QZSS are designed to be compatible and highly interoperable. Both Governments noted with satisfaction that the Japan Aerospace Exploration Agency (JAXA) and the U.S. National Oceanic and Atmospheric Administration (NOAA) have commenced operations of a QZSS Monitoring Station (MS) on NOAA property in Guam. A similar effort between JAXA and the U.S. National Aeronautics and Space Administration (NASA) to establish both a QZSS MS and a Two-Way Satellite Time and Frequency Transfer station at a NASA facility in Hawaii, in support of Japan's National Institute of Information and Communications Technology (NICT) and the U.S. Naval Observatory (USNO), is expected to be completed shortly. Both Governments intend to continue cooperation in protecting spectrum used for GNSS and also reaffirmed the importance of pursuing the interoperability and compatibility of all current and planned GNSS with GPS and QZSS.

This 8th Plenary meeting strengthened cooperative relations between the United States and Japan. Both Governments acknowledged the important future contribution of QZSS to the space-based PNT services of Japan. They affirmed that continued close cooperation in the area

of navigation satellite system will contribute to the peaceful development of the Asia-Pacific region and promote global economic growth. In that regard, both Governments welcomed the 6th meeting of the International Committee on Global Navigation Satellite Systems (ICG-6) to be held in Tokyo, September 5-9, 2011 and the 3rd Asia Oceania Regional Workshop on GNSS to be held in Japan's fiscal year 2011.



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## Conference on Disarmament

23 August 2011

Original: English

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**Letter dated 21 June 2011 from the Permanent Representative of Canada to the Conference on Disarmament addressed to the Secretary-General of the Conference transmitting the summary report on the tenth annual space security conference entitled *Space Security 2011: Building on the Past, Stepping toward the Future*, organized by the United Nations Institute for Disarmament Research (UNIDIR) in April 2011**

It is my pleasure to forward to you a copy of the summary report on the 10<sup>th</sup> Annual Space Security Conference organized by the United Nations Institute for Disarmament Research. This conference, which took place in April 2011, was entitled: *Space Security 2011: Building on the Past, Stepping towards the Future*.

The Canadian Mission would be grateful if this report could be issued as an official document of the Conference on Disarmament and distributed to all Member States to the Conference as well as to Observer States participating in the Conference.

(Signed): Marius Grinius  
Ambassador  
Permanent Representative  
to the Conference on Disarmament

## Space Security 2011: Building on the Past, Stepping towards the Future<sup>1</sup>

1. “Space Security 2011: Building on the Past, Stepping towards the Future” was the tenth annual conference in the series organized by the United Nations Institute for Disarmament Research on the issue of space security, the peaceful uses of outer space, and the prevention of an arms race in outer space (PAROS).

2. The purpose of this conference series is to broaden and deepen the debate on the need to prevent an arms race in outer space and to foster space security for the future and, in line with UNIDIR’s mandate, to promote informed participation by all states in disarmament efforts and to assist delegations to the Conference on Disarmament (CD) in preparation for possible substantive discussions on PAROS. Since the first conference was held by UNIDIR on this issue in 2002, these conferences have received the financial and material support of a number of Member States, foundations and non-governmental organizations, demonstrating the broad and sustained political support for these discussions.

3. The conference comprised six panel discussions, each followed by question and answer sessions:

- (a) The Threats—Today and Tomorrow;
- (b) Ongoing Processes and Proposals—Next Steps;
- (c) Incorporating Today’s Tools into Future Regimes;
- (d) The Verification Challenge—The Art of the Possible;
- (e) Cross-institutional Cooperation—Linking and Learning; and
- (f) Engaging Critical Actors.

4. The conference convened in Geneva, Switzerland, at the Palais des Nations on 4–5 April 2011. The meeting was organized by UNIDIR with the assistance of Secure World Foundation and The Simons Foundation and was supported financially and materially by the Governments of Canada, the People’s Republic of China, the Russian Federation and the United States of America, as well as by the Secure World Foundation and The Simons Foundation. Conference participants included representatives from UN and CD member states, CD observers, non-governmental organizations and civil society.

### OPENING REMARKS

**Mr. Sergei Ordzhonikidze**  
**Director-General of United Nations Office at Geneva**

5. The conference was opened with remarks from Mr. Sergei Ordzhonikidze. He welcomed the opportunity to participate in another UNIDIR conference and pointed out that the international community would be celebrating the fiftieth anniversary of the first manned spaceflight the following week on 12 April 2011. That flight by Soviet cosmonaut Mr. Yuri Gagarin turned a new page in the history of civilization and opened space to humanity, Mr. Ordzhonikidze remarked. Today, outer space is indispensable to everyday life. It is used for telecommunications, banking, agricultural planning, natural resource

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<sup>1</sup> The full report and audio files of all of the presentations are available on UNIDIR’s website ([www.unidir.org](http://www.unidir.org)).

protection and early warning of extreme environmental events. In addition, space technology is critically important to monitoring the pace and extent of global warming. Mr. Ordzhonikidze emphasized that while space assets are not a panacea for today's global challenges, their usage has, and will continue to have, a major role to play in enabling multilateral responses. As a consequence, it is more urgent than ever before that space remain a peaceful domain.

6. All states have an inalienable right to access outer space for research and peaceful use as the 1967 Outer Space Treaty (OST) dictates. Therefore, it is natural that space security should be their common goal. States must join their efforts in search of a way to consolidate space security and stability, because one depends critically on the other. The weaponization of space will trigger unpredictable consequences, similar to those at the onset of the nuclear era. Weapons deployment in outer space by one state will inevitably spark a chain reaction and risk a spiralling arms race both in space and on Earth, Mr. Ordzhonikidze warned. He reminded the audience that PAROS is one of the CD's four core agenda issues and has been included in all proposals since 1982 for the CD's programme of work. Further, there is a growing demand in the international community to see concrete measures taken to strengthen space security. The more we depend on space, the more we need space security.

7. Mr. Ordzhonikidze pointed out that, lately, several states have tabled a number of proposals for preventive measures against the emergence of new, destabilizing weapons. In 2008, Russia and China officially submitted to the CD a draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), which could provide a good basis for further discussions and possibly lead to eventual PAROS negotiations. Additionally, the General Assembly adopted resolution 65/68, which emphasized the need for transparency- and confidence-building measures (TCBMs). Mr. Ordzhonikidze concluded by expressing his hope that this conference would contribute to a balanced discussion of all tabled initiatives and help promote space security issues in the CD.

**Mr. Wang Qun**

**Ambassador for Disarmament Affairs and Deputy Permanent Representative of the People's Republic of China to the United Nations Office at Geneva and Other International Organizations**

8. Mr. Wang Qun began his remarks by acknowledging that UNIDIR has enabled the CD and its PAROS discussions through these annual space security conferences. In turn, the CD has made important contributions to safeguarding space security. Annual General Assembly resolutions have transformed space security into a concept with growing popular support. From 1985 to 1994, the ad hoc PAROS committee in the CD conducted discussions that laid the technical groundwork for possible formal negotiations. Mr. Wang recognized that since 1995 the CD had been unable to conduct substantive discussions under the PAROS agenda item. However, he added that some CD members had nevertheless conducted a large amount of research and discussion on the subject, which lay a substantive foundation for any work the CD would do in the future.

9. Mr. Wang highlighted that the importance of space grows every day. On the one hand, the ever increasing growth of space activities may engender a growing risk of an arms race and uncertainty in space security. On the other hand, even though the shortcomings of the existing legal regime are widely recognized, it has been very difficult to discuss the option of negotiating a new treaty. Mr. Wang questioned how the international community could work through such a dilemma. He hoped that three issues might stimulate further discussion. First, he argued that the CD should remain the primary forum for political, legal, technical and institutional discussions and for constructing any

new legal instruments on the PAROS issue. He reminded the audience that the CD has a clear mandate as the sole forum for negotiating international arms control measures. Additionally, the CD is the most representative forum for such discussions and is home to more than 30 years of valuable expertise in related fields. He added that the CD is well equipped to negotiate any new legal instruments on outer space. Second, Mr. Wang argued for the advancement of establishing rules for space behaviour in a pragmatic manner. As part of this effort, TCBMs can enhance trust, reduce accidents and errors, and regularize space activities. They can also be a useful supplement to any binding legal instrument aimed at preventing an arms race in space. Mr. Wang emphasized that the best way to establish rules is through broadly participatory and representative TCBMs. The Code of Conduct for Outer Space Activities proposed by the European Union and the Canadian proposal in the CD has attracted great interest from many parties in regard to possible TCBMs. Further, the General Assembly resolution calling for the formation of a Group of Governmental Experts (GGE) will provide a highly authoritative forum for discussions on the subject. Third, Mr. Wang called for the adoption of a varied and inclusive approach. The pursuit of a legally binding PAROS agreement and TCBMs are two complementary processes. Therefore, Mr. Wang underlined, the international community cannot pursue one and avoid or lose sight of the other. He hopes that the two approaches will build on each other to reduce risk and enhance security and safety in space.

**Marius Grinius**

**Ambassador and Permanent Representative of Canada to the United Nations and to the Conference on Disarmament**

10. Mr. Marius Grinius began his remarks by establishing that the topic of space security is more relevant than ever as mankind's use of space has grown exponentially and the global community greatly depends on the sustainable and peaceful use of outer space. Yet, Mr. Grinius highlighted, humanity's ability to ensure such continued use is challenged. That is the challenge the CD must face.

11. Mr. Grinius mentioned that Canada has always supported space activities and planetary exploration missions as a way of expanding human knowledge. The importance of space to Canada can be seen in its thriving commercial, civil, defence and university research programmes on space-related issues. Furthermore, the Canadian Space Agency is recognized worldwide for the quality of its projects and capacity to cooperate effectively with other agencies. The Canadian commercial space sector is a global leader in developing space robotics and satellite equipment. For these reasons and more, promoting the peaceful use of outer space is very important to Canada. As such, Canada has taken an active role in leading PAROS discussions at the CD.

12. Mr. Grinius reminded that more work needs to be done in order to ensure that humanity is guaranteed peaceful and sustainable use of outer space. He acknowledged UNIDIR's valuable contribution to the work of the CD and the UN Committee on the Peaceful Uses of Outer Space (COPUOS) in bringing together relevant players. He concluded by stating that the Government of Canada is very pleased to support this conference and is sure that the ensuing discussions will advance work towards ensuring that all mankind benefits from the peaceful use of outer space.

**Panel 1**

**The threats □ today and tomorrow**

13. One of the biggest challenges in building future binding or non-binding regimes for space security is understanding the current threats and where technology is rapidly heading. The first panel aimed to shed light on those issues and began with a presentation from

Mr. Lars Höstbeck, Deputy-Head of the Defence and Security Systems and Technology Division of the Swedish Defence Research Agency. Mr. Höstbeck presented on “Available and Emerging Weapons Technologies”, which looked at the concept of space weapons, how they work and some possible and impossible examples.

14. The next presentation was given jointly by Mr. Tal Dekel and Mr. Ram Levi from the Yuval Ne’eman Workshop for Science, Technology and Security at Tel Aviv University in Israel. Together, they presented on “National Capabilities and Programmes” and provided an overview of various states’ current space abilities. Mr. Dekel began by quoting the *2010 Space Security Index* definition of space security: “the secure and sustainable access to, and use of, space and freedom from space-based threats”. He noted that, based on their research, this definition of space security should be expanded to address all threats to space systems. The study’s methodology was to perform a bottom-up analysis of recent space security events and then perform a top-down analysis of the official programmes and capabilities of a few spacefaring states.

15. Mr. Ram Levi discussed national programmes and capabilities. Much of the technology under development or being deployed is dual-use and designed for peaceful purposes such as debris removal or broadcasting, but some systems could be said to be just one decision away from becoming anti-satellite weapons (ASATs). Jamming capabilities are most common and their use poses a serious threat; of particular concern is the potential for escalation in a crisis situation. Additionally, many states are developing cyberattack capabilities, which would represent a true threat to space systems.

16. Mr. Emmet Fletcher, Head of the Space Situational Awareness, Space Surveillance, and Tracking Segment of the European Space Agency, presented on “Flying Blind: the Need for Multilateral Space Surveillance Capability”. He began by providing a brief survey of the many ways humanity relies on space. From navigation to telecommunications, from treaty verification to land surveys, space is increasingly incorporated into daily life. Mr. Fletcher then showed a graph of the growth of space objects and pointed to moments where growth had spiked, such as around the Iridium–Cosmos collision of February 2009. There are about 800 active satellites among the millions of space objects in orbit. Moreover, the quantity of these objects is only set to increase further.

#### *Discussion segment*

17. A question was asked about the difference between the Inter-agency Space Debris Coordination Committee (IADC) Mitigation Guidelines and the upcoming ISO guidelines. It was mentioned that the ISO standards had already been issued, under the number 24113. The IADC brings together national space agencies to coordinate research. No other actors are involved. Their guidelines are meant to be implemented at state level if they are found to be sufficient. The ISO standards, on the other hand, were developed by academia, industry and governments. They can be used as binding requirements in licensing, for example, and, in this sense, are very useful in commercial and government operations.

18. Another participant asked if a hypersonic space plane might become a weapon if it entered orbit. If it enters orbit, it is no more a weapon than a satellite simply because it is in orbit. The question is what payloads it carries and from where (in orbit or in airspace) it might release or use any weapon-type payload. However, this area is still unexplored and should be better understood if the discussion on space security is to move forward.

**Panel 2****Ongoing processes and proposals □ next steps**

19. The second panel began with a presentation from Mr. Sergey Koshelev, Deputy Director of the Department of Security and Disarmament Affairs at the Russian Federation Ministry of Foreign Affairs. His presentation was entitled “Using the 2012 GGE to Forward the Process”. He commenced his remarks by noting that he had participated in the first UNIDIR space security conference. Mr. Koshelev then turned to the issue of TCBMs. He mentioned that the proposed PPWT was designed to prevent a worst-case scenario. TCBMs are important elements of any effort to prevent the placement of weapons in outer space. They are not at odds with the PPWT. On the contrary, they are part of the proposed treaty negotiations. The Russian Federation strongly believes that the pursuit of TCBMs could facilitate negotiations on the PPWT. Increased predictability of military space activities through such measures could reduce tensions in the space domain and prevent future conflict. Mr. Koshelev acknowledged that the development of formal verification measures for the PPWT would be a complex task. As a result, Russian federation and China proposed that these measures be added later as an annex to the original treaty. Meanwhile, TCBMs will compensate for the interim lack of verification mechanisms.

20. Next, Mr. Frank Rose, Deputy Assistant Secretary for Space and Defense Policy at the USA Department of State, presented on “Strengthening Stability in Space”. He expressed his hope that the conference would help inform the international community’s efforts to strengthen security and stability in space. He also mentioned the new USA National Space Policy, which was released in 2010. Consistent with President Obama’s guidelines in the Policy the United States of America is pursuing measures to strengthen space security and stability. His remarks focused on how shared space situational awareness (SSA) and TCBMs might help achieve that.

21. Mr. Zhang Ze, Deputy Director at the Chinese Ministry of Foreign Affairs, presented on the topic of “Deepening Discussions on the PPWT” and summarized how past events have led to the current draft treaty. He began by giving a brief history of PAROS in the CD. It was first introduced to the Conference in 1981 by General Assembly resolution 36/97C. The following year, it was listed as a CD agenda item. From 1985 to 1994, there was an ad hoc committee on PAROS in the CD that produced 10 annual reports. Mr. Zhang acknowledged the contribution made by this ad hoc committee to deepening discussions on PAROS. In spite of the stalemate in the CD that began in 1995, discussions have continued on PAROS. In addition, many states launched useful initiatives for enhancing space security.

*Discussion segment*

22. One participant asked whether the United States of America viewed TCBMs as an alternative to a legally binding instrument. The United States of America sees TCBMs as a first step in laying down a much-needed foundation of trust and transparency. It was mentioned that TCBMs also preceded the OST.

23. Another participant pointed out that current space security negotiations focus on the prevention of space weaponization and conflict. If the CD and the international community continue to delay these negotiations, they will be forced to deal instead with the control of weaponization and hostilities in space. This particular participant was optimistic because, when the PPWT was first proposed, the United States of America presented a long list of complaints. That list seems to have diminished. The participant encouraged the United States of America to consider discussing the proposal and re-emphasized China’s and the Russian Federation’s willingness to discuss draft revisions. The concerns of the United

States of America with the PPWT were reiterated, and it was stated that the United States of America sees the Code of Conduct as the next best step.

24. One participant referred to the United States of America concerns about the PPWT draft not including ground-to-space kinetic ASATs and not being effectively verifiable. It was explained that such weapons go through a process of research, development, testing and use against an adversary. While the first two elements are not effectively verifiable, the latter are easily so and most states currently have the technology to do so. The participant wondered if the United States of America would reconsider the PPWT if the draft were amended to include those two verifiable elements for kinetic ASATs. It was pointed out that the United States of America is also concerned with the PPWT on the issue of breakout capability. In order for the United States of America to be comfortable with the draft treaty, this would need to be addressed as well. It was also pointed out that the USA ratification process for legally binding agreements is particularly difficult. The USA Senate would be unlikely to consider any treaty that was not perceived as effectively verifiable.

25. Another participant questioned how the PPWT might contribute to space security from the standpoint of the broader political context. It was pointed out that space security reflects the security dynamic on Earth. The current draft of the PPWT seems to largely ignore the changing political and security dynamic on Earth. In that sense, how could the PPWT add to the security dynamic? This open-ended question is extremely difficult to answer. How does any arms control, non-proliferation or disarmament treaty contribute to international security? China and the Russian Federation are open to discussing how the draft PPWT might enhance the security of all in space and on Earth. Further, it was commented that the PPWT is a preventive measure, which is preferable to measures that aim to control events after they have occurred. Also, as a preventive measure, it could forestall an arms race in space and enhance international transparency. Finally, it was observed that the PPWT aims to strike a balance between preventing space conflict, protecting the inherent right of states to self-defence and enabling states to continue developing military capabilities—if certain major players are unwilling to discuss the treaty, there will be a stalemate.

### **Panel 3** **Incorporating today's tools into future regimes**

26. Mr. Steven Freeland, Professor of International Law at the University of Western Sydney in Australia, opened the third panel with his presentation on “International Humanitarian Law and Codifying Constraints on Space Warfare”. Before explaining how international humanitarian law (IHL) relates to space, Mr. Freeland summarized some legal aspects of the space domain. From the onset, outer space was designated a unique environment from a legal perspective. Along with that designation came some relatively uncontroversial fundamental principles about the domain's legality, such as freedom of access and non-appropriation principles. However, it is important to understand that there is still no legal definition of outer space. Many states have adopted different demarcation lines for where sovereign airspace ends and outer space begins. In Mr. Freeland's opinion, establishing an internationally accepted definition for outer space will facilitate progress on space security debates.

27. The next presentation was entitled “Diplomatic Options Reinforcing Outer Space Security”, delivered by Mr. Paul Meyer (Ambassador) of The Simons Foundation. He began by referring to diplomacy as the art of the possible. Most diplomatic practitioners tend towards pragmatism and make the most of any given situation by considering the actors and elements at play. This is especially the case in multilateral relations. However, what is perceived to be possible can change rapidly. Such changes in outlook are the result

of significant external events that alter threat perceptions and, thus, perceptions of what is possible in international relations.

28. The last presentation of the third panel was on “Lessons from Other Legal Regimes”. Mr. Michael Krepon, President Emeritus of the Henry L. Stimson Center, presented on this topic. He began by acknowledging that outer space is a demanding domain in which to operate and warned that it could worsen if states do not cooperate with each other. He indicated that the international community faces an important crossroads defined by the growing potential for cooperation on one hand and growing friction on the other. The path followed now will have lasting effects on the space environment and humanity’s ability to operate there.

*Discussion segment*

29. A question was asked about the emergence of norms in commercial and military sectors and how it compares to progress made in the diplomatic realm. It was stated that norm-building in the commercial and military sectors is far more advanced and that diplomacy lags behind. In the military realm, most norms rely on a sort of tacit understanding. If someone engages in provocative actions in space, others respond in a manner that is noticeable to the provocateur. Further, there has been considerable military restraint in the space domain thus far, arguably out of a shared understanding of the domain’s fragility with respect to debris. The real question is how the military and commercial sectors can facilitate the “catch up” of diplomacy in establishing norms.

30. The second question was how IHL might apply to commercial space capabilities that are used to support military operations. It was pointed out that the application of IHL is difficult even in terrestrial matters. One could argue that a commercial satellite is a valid target in a conflict situation if it supports military operations. While it is very difficult to generalize definitively, one could easily construct an argument to support the view that such civilian assets could become legitimate targets given the activities in which they engage. Additionally, it must be kept in mind that IHL is judged by reasonableness. Even if such an argument were judged to be invalid later, if it was taken on reasonable grounds at the time, it would pass *jus in bello* conditions.

31. A participant asked if there were other legal regimes from which the realm of space security could draw lessons. Is the norms-based approach recommended for other difficult negotiations? One lesson learned from the nuclear regime is that even though legally binding instruments are preferable, they are extremely difficult to ratify in the United States of America. Arguably, one should not press for a binding treaty that will never be ratified or enter into force. Conversely, though not officially ratified, the Comprehensive Nuclear-Test-Ban Treaty seems to have developed into a norm in the United States of America that constrains nuclear testing. In that sense, the absence of a treaty does not preclude norm-building and norm-building might be a more practical and successful way forward.

32. Another participant suggested that some national ambitions for space dominance were at odds with the pursuit of norms. Nevertheless, norms are inherently equitable. If a state is trying to establish dominance and norms at the same time, it will not work. Norms require that all states follow the same rules—equality of action even where there is inequality of capacity.

33. Lastly, it was pointed out that a consensus seemed to exist for taking further measures, but not on what those should be. The discussion suggested that one could move from norms to customary practice to binding arrangements. Though a legally binding treaty may be the ultimate goal, it is not currently possible to move directly to such negotiations. However, in looking at the historical record, it is typical in dynamic and difficult domains to gradually move from norm-building to codes of conduct to UN resolutions and,



eventually, to a treaty. It is possible to imagine such a process, especially if the international community approaches each arrangement as an interim step, not a final position. It should be recognized that, at the very least, the international community has reached a consensus that the time for multilateral action in the realm of space security has come. The devil is in the details, but at least every state agrees it is in their best interest to pursue a multilateral solution.

#### **Panel 4**

##### **The verification challenge □ the art of the possible**

34. The fourth panel began with a presentation on “The Basic Elements of a Successful Verification Regime” from Mr. Larry MacFaul, a Senior Researcher with the Verification, Research, Training and Information Center (VERTIC). He started with the basic definition of verification, which aims to gather, interpret and analyse information in order to make a judgment about a member’s compliance under a binding agreement. Verification is closely related to monitoring and in some cases they are almost the same. In some ways verification could be interpreted more loosely. It is used throughout business, commerce and in both international and national contexts. It can be used for both binding and non-binding arrangements.

35. Ms. Laurence Nardon (Doctor), Senior Research Fellow at l’Institut français des relations internationales (IFRI), presented on the topic of “TCBMs as Steps toward Verification”. She pointed out that her presentation was sandwiched between two much more concrete presentations on what verification measures should be and which verification systems are currently, or may soon be, available. In order to complement these presentations, Ms. Nardon focused on the political context surrounding TCBMs and verification measures and, more precisely, on the relationship between the two. She noted that the title of her presentation reflected a widespread belief that TCBMs are a weaker version of verification measures; that TCBMs are agreed upon when verification is not possible; essentially, that TCBMs remain a “Plan B” solution. The title also presumes that progress would eventually be made towards the adoption of formal verification measures and that those would be an improvement on the previous TCBMs. Ultimately, the entire topic is a judgment about the order of measures that disarmament proponents should pursue. In her presentation, Ms. Nardon sought to question this underlying assumption.

36. Mr. Dave Finkleman (Doctor) delivered the last presentation of the fourth panel on “Current and Potential Verification Capabilities”. He aimed to demonstrate that existing technology could enable sufficient verification of existing and potential space treaties. Mr. Finkleman began by emphasizing that no international agreement can be unequivocally verified. In fact, most multilateral agreements lack verification mechanisms altogether since many parties are unable to verify anything on their own and because the consequences of violation are so harsh that explicit verification is unnecessary. Given these realities, one must determine what level of verification is sufficient for the purpose at hand. In the case of space verification, Mr. Finkleman argued that almost all states are capable of contributing to achieve a sufficient level.

#### *Discussion segment*

37. The question and answer portion of the panel began with a statement that the distinction between TCBMs and verification is not always so black and white, as Mr. Nardon’s presentation suggested. In fact, there were collaborative and cooperative aspects to the earliest iterations of national technical means. It was then asked if consultative mechanisms could play a role in the process towards a binding treaty. It was pointed out that there is already a consultative mechanism in the OST, but it requires

consultations on the part of states about to engage in an act that might affect other actors. Recent experience exposes the problem of such wording because, in some cases, such an event will occur without any prior consultations. Perhaps a future agreement could incorporate retroactive consultations as part of its mechanisms. It was agreed that while these consultative mechanisms can serve a beneficial purpose, they need to be worded very carefully in order to be fully operational.

38. A participant asked whether any existing verification regimes are able to successfully verify intent. It was recognized that intent is one of the most difficult aspects of verification, especially given the dual-use nature of many technologies and the possibility of accidents. Usually, it depends on whether technology exists that can prove attribution and malice. In addition, some regimes have incorporated complicated judicial processes for determining intent where evidence is gathered and presented. It really depends on how much time parties wish to devote to uncovering and proving intent.

39. Next, it was asked what measures could be used to verify that weapons are not placed in outer space, which is currently the only verifiable provision of the proposed PPWT. It was reiterated that nothing can be verified unequivocally. It is virtually impossible to determine if something is a space weapon until it is used. The only other way to verify this provision would be through invasive, on-site inspections of launches and payloads—and even that may be insufficient. Not all states would support such intrusiveness. It took decades for the United States of America and the Soviet Union to allow inspections of their nuclear facilities. Unfortunately, any robust arms control treaty will require effective verification and this is often only achieved through such intrusive measures.

## **Panel 5**

### **Cross-institutional cooperation □ linking and learning**

40. Mr. Yvon Henri, Chief of the Space Services Department at the International Telecommunication Union (ITU), opened the fifth panel with his presentation on “The ITU’s Role in Promoting Space Security: Non-Interference as a Norm”. He began by stating that the ITU’s role is to regulate the radio-frequency spectrum. The Union was established by a binding international agreement, but still faces challenges in implementation and enforcement. Additionally, engineers authored the founding document, which further complicates its interpretation.

41. Next, Mr. Dumitru-Dorin Prunariu (Doctor), Current Chair of COPUOS, presented on “Space Sustainability: Setting a Technical Baseline for New Regimes”. He began by highlighting the importance of space sustainability, stating that it was a matter of concern for both spacefaring states and commercial satellite operators. If outer space is not safe, secure or peaceful, the ability to use it for national security purposes, Earth observation, telecommunications, financial transactions, navigation, scientific exploration and economic development would be hindered and even denied. The growing number of space actors, both governmental and private, the harmful effects of space weather, the proliferation of space debris and the development of private human spaceflight all call into question the ability to continue operating in a safe space environment. If the international community addresses space sustainability now, it could ensure humanity’s access to and use of space for the long term. In order to promote sustainable operations, all spacefaring parties must have access to complete, accurate and timely SSA. This requires international monitoring, communication and coordination.

42. Ms. Annalisa Giannella, EU Director for Non-Proliferation and Disarmament, presented on “A Multilateral Code of Conduct as a First Step Toward Building Consensus”,

which specifically examined the European Union's proposed International Code of Conduct for Outer Space Activities. She began by emphasizing the danger posed by the growing risk of collision and debris in outer space. For the European Union, this danger stresses the importance of establishing rules of the road for space activities. In response, the European Union put together a proposal for a politically, not legally, binding instrument whose purpose is to ensure safety, security and predictability of space operations. Two underlying principles are found throughout the proposed Code of Conduct: the right of all to access space for peaceful uses and the right of all to self-defence, either individual or collective.

*Discussion segment*

43. A participant asked if there were any way to strengthen ITU regulations. For example, in the event of non-compliance, could the ITU take away the violating party's rights? Many states have agreed on the need to strengthen the ITU's enforcement mechanisms. However, it is a consensus-based organization and will likely face resistance in trying to establish tougher mechanisms. Another participant pointed out that because the ITU lacks monitoring, verification and enforcement mechanisms, it is really no more than a code of conduct. In response, another participant explained that the ITU's monitoring capacity is growing, but it is very difficult to prove attribution when non-compliance occurs, even if monitoring shows from where the non-compliance is coming. However, in many cases, treaty non-compliance is solved via political means regardless of whether or not the treaty has formal enforcement mechanisms. The beauty of a well-designed treaty, though, is that states have a "Plan B" when political solutions cannot be found.

44. Another participant pointed out that the "bottom-up approach" endorsed by Mr. Prunariu could take decades. In the case of an urgent need, such as for space traffic management, this process may take too long. Has COPUOS considered pursuing a top-down approach for urgent issues? Space traffic management itself is not specifically mentioned on the COPUOS agenda, but long-term space sustainability is a broad enough framework that it could include such an issue. It does take years to solve problems within COPUOS, especially since the main input to the body is political. Several states must agree on the need to discuss an issue before it gets placed on the agenda. Even in cases where there is agreement, last-minute problems can interfere with finding a solution. It is not clear how something like space traffic management could get on the COPUOS agenda in the immediate future, but if a related crisis were to occur, it could prioritize the issue as was seen with space debris.

45. One participant pointed out that the Code of Conduct is superior to TCBMs because it takes TCBMs and embeds them in norms. Some had pointed to the commonalities between the Code of Conduct and the GGE's objectives. If the Code of Conduct were discussed within the GGE, it might provide further impetus to norm-building. However, if the Code were to become part of the GGE mandate, it would become wrapped up in the PAROS debate. The European Union feels this would delay progress on the Code of Conduct, which EU officials see as an urgent issue. This is why the European Union chose a less formal, less ambitious approach.

46. Another question was posed on jurisdictional tension between COPUOS and the CD. The mandate of both bodies is clearly delineated. While some matters overlap, COPUOS is not meant to discuss security issues and certain member states ensure that this remains the case.

47. Some questions specific to the Code of Conduct were raised, seeking clarification on its call for a central point of contact, its assurance of the right to self-defence and its consultation mechanisms. Section 11 of the Code calls for the nomination of a central point of contact. Typically, such nominations are followed by an official appointment, election or approval process. How would this be carried out and would the point of contact be

permanent? This is not yet defined and the European Union is open to discussing this issue further with interested states. Perhaps this point of contact could be linked somehow to the UN Secretariat. In article 4, paragraph 2, the Code of Conduct states when and how the right to self-defence is activated. On the Code's consultation mechanism, if an impacted state calls for a consultation, who assesses the allegations and makes a judgment that it is actually needed? Since the Code does not establish a supranational body to make such judgments, the trigger for consultations must come from a subscribing state. However, the other state must also be a subscriber and willing to engage in consultations. That is why the consultation mechanism is a TCBM because, by signing the Code, a state agrees to be open to bilateral consultations. No third party would reach a decision based on those meetings, they are purely meant to foster communication.

## **Panel 6**

### **Engaging critical actors**

48. Mr. John Sheldon, Assistant Professor of Space and Cyber Strategic Studies at the USA Air Force School of Advanced Air and Space Studies, began the panel with a presentation on "Reducing Military Tensions, Building Trust", which looked at how military-to-military relationships might reduce tensions and build trust on issues of space security.

49. Ms. Victoria Samson, Washington Office Director for Secure World Foundation, presented on the topic of "Industry Inputs: From TCBMs to Verification". She began by highlighting the importance of the commercial sector in space. Satellite communications are usually provided by international companies. In fact, about 75% of the USA Department of Defense's satellite bandwidth is purchased from international consortia. Given the international nature of satellite operators and their growing role in government operations, they will likely need to be involved in deciding norms of responsible behaviour in space. Ms. Samson emphasized the importance of SSA. The number and types of actors participating in space activities is rising, making the space environment even more crowded. Sharing SSA data is one basic area where international cooperation should be enhanced. This need is currently met through SpaceTrack.org, an initiative of the USA military. While this database is useful, the information it provides is relatively limited since private companies often know more about the location of their space assets.

50. Ms. Beatrice Fihn, Project Associate at Reaching Critical Will, presented on "The Role of Civil Society in Building Awareness" and provided an overview of the roles civil society and non-governmental organizations (NGOs) can play in promoting and enhancing space security. She began by explaining that states remain the principal actors in the security arena. While NGOs and civil society have penetrated other international issue areas (such as human rights and the environment) rather successfully, they remain relatively uninvolved in disarmament and security initiatives. The importance of national security in these issues has made formal involvement more difficult, even though NGOs have a potentially significant role to play in fostering understanding, political will, awareness and a better environment in which to discuss security issues.

#### *Discussion segment*

51. The question and answer session began with a participant positing the possibility of micro-loans to developing states that were interested in becoming involved in space. These States could then provide data over minimally covered areas in the southern hemisphere. This was considered a good idea, especially because space can provide human and environmental security benefits to these developing countries. Additionally, COPUOS

already engages in capacity-building for developing states. It is one of COPUOS' main goals and NGOs, including Secure World Foundation, help to achieve it.

52. Another participant pointed out that because many States, including developing States, are joining the space community, this highlights the need for norms of responsible behaviour. Actions by any space actor can harm all others. These actions need not be intentional or hostile; they could be accidents. Capacity-building should also focus on educating these new space actors about responsible space behaviour.

53. A participant raised the issue of multiple sectors within a government needing to cooperate and coordinate policymaking for space issues. They felt that civil society could also play an important role in building awareness and facilitating cooperation among agencies within a state. Unfortunately, raising awareness can be difficult and sometimes a crisis or dramatic event is needed to motivate interagency or international cooperation and coordination.

54. The issue of industry and private sector self-regulation came up next. If industry is allowed to completely self-regulate, there would be no export control and space might be even more crowded. However, government and international legal approaches can take decades. Could a balance be found between the two? In some cases, industry initiatives demonstrate interesting possibilities. And in the event that profit-driven industry initiatives threaten space sustainability, political leadership could step in to ensure that efforts are guided towards the long-term use of space.

### **Closing remarks**

55. Mr. Ben Baseley-Walker, Advisor on Security Policy and International Law for Secure World Foundation, concluded the conference by emphasizing that timing is crucial. Extensive diplomatic discussion of PAROS in formal multilateral settings is easy to undertake in principle, he said, but the activities and initiatives of industry and other relevant space actors demonstrate that if the CD waits too long to take action, it will be too late to influence the outcome. He added that the past two days of the conference had been productive and showed a definite shift in tone towards progress compared to previous years. The international community has clearly prioritized space security issues and the USA delegation has rejoined CD discussions, both demonstrating a renewed negotiation climate based on a shared understanding of common goals.

56. Mr. Baseley-Walker highlighted that the conference placed an emphasis on building foundations together. A lack of shared understanding of the foundations that underpin space security discussions has hindered previous efforts to move forward. This conference showed that the CD is much closer than ever before to reaching a mutual understanding of fundamental concepts. A Code of Conduct or TCBMs will be key steps for moving forward, Mr. Baseley-Walker stated, and though they may not lead to binding treaties, these panel discussions have shown that the CD has a clearer understanding of what the path forward may be from both a diplomatic and political perspective.

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# Conference on Disarmament

13 September 2011

Original: English

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## **Nigeria on behalf of member States of G-21**

### **Working paper**

#### **Prevention of an Arms Race in Outer Space**

1. The Group believes that the role of space technology in our day to day life has become pervasive. Never before have information, communication, banking, economic transactions, navigation, and even political and strategic decision-making been so dependent on spacebased technologies, which are themselves witnessing rapid growth.
2. The Group reiterates that outer space and other celestial bodies are the common heritage of mankind and must be used, explored and utilized for the benefit and interest of all mankind in a spirit of cooperation. The Group reaffirms that the exploration and use of outer space and other celestial bodies shall be for peaceful purposes and shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development.
3. The Group stresses that the growing use of outer space increases the need for greater transparency, confidence building measures and better information on the part of the international community. The Group believes that all States, with major space capabilities, have special responsibility to contribute actively to the objective of the peaceful use of outer space and of the prevention of an arms race in outer space and to refrain from actions contrary to that objective and to the relevant existing treaties in the interest of maintaining international peace and security and promoting international cooperation.
4. The Group recognizes that prevention of an arms race in outer space would avert a grave danger for international peace and security. The Group emphasizes the necessity of further measures with appropriate and effective provision for verification to prevent an arms race in outer space in all its aspects.
5. The Group emphasizes the importance and urgency of preventing an arms race in outer space. In this regard, the Group is deeply concerned over the negative implications of the development and deployment of anti-ballistic-missile defense systems and the pursuit of advanced military technologies capable of being deployed in outer space which have, inter alia, contributed to the further erosion of an international climate conducive to the promotion of disarmament and strengthening of international security.
6. The Group of 21 stresses that all countries bear a responsibility to refrain from activities that could jeopardize the collective goal of maintaining outer space free from

weapons of mass destruction and all other forms of weaponization so as to ensure that its benefits are available to all.

7. The Group considers that the multilateral disarmament agreements provide the mechanism for States parties to consult one another and to cooperate in solving any problems which may arise in relation to the objective of, or in the application of, the provision of the agreements, and that such consultations and cooperation may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with the Charter.

8. The prevention of an arms race in outer space has assumed greater urgency because of legitimate concerns that existing legal instruments are inadequate to deter further militarization of outer space, or prevent its weaponization. The Group further reaffirms its recognition that the legal regime applicable to outer space does not in and of itself guarantee the prevention of an arms race in outer space. For that purpose, the Group stresses the need to consolidate and reinforce that regime and enhance its effectiveness.

9. In this regard, the Group reaffirms that the Conference on Disarmament is the sole multilateral disarmament negotiation forum of the international community, which has the primary role in substantive negotiations on priority questions of disarmament. The Group considers that it is time to start negotiation in the Conference on Disarmament on matters related to the "Prevention of an arms race in outer space".

10. In addition, the United Nations General Assembly resolution 65/44 on "Prevention of an arms race in outer space" further made the following observations with regard to the Conference on Disarmament:

(a) The CD has the primary role in the negotiation of a multilateral agreement or agreements on the prevention of an arms race in outer space in all its aspects.

(b) The CD should establish a working group under its agenda item entitled "Prevention of an arms race in outer space" as early as possible during its 2012 session.

11. The Group takes note of the United Nations General Assembly resolution 65/68 on "Transparency and confidence-building measures in outer space activities.", which requests the Secretary-General to establish a group of governmental experts to conduct a study, commencing in 2012, on outer space transparency and confidence-building measures. The Group, while stressing the priority of negotiation of legally binding instruments on strengthening the international legal regime on Outer Space, recognizes that global and inclusive transparency and confidence building measures, arrived at through broad international consultations, could be important complementary measures.

12. In this regard, the Group welcomes the joint Russian-Chinese initiative of a draft treaty on the "Prevention of the placement of weapons in outer space, the threat or use of force against outer space objects" (PPWT) presented by the Minister of Foreign Affairs of Russian Federation in the Conference on Disarmament on 12 February 2008. This initiative is a constructive contribution to the work of the Conference, and is a good basis for further discussion toward adopting an international binding instrument.

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**PERMANENT COURT OF ARBITRATION**

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**OPTIONAL RULES  
FOR ARBITRATION OF DISPUTES  
RELATING TO OUTER SPACE ACTIVITIES**

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*Effective December 6, 2011*

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## Introduction

These Rules are based on the 2010 UNCITRAL Arbitration Rules with changes in order to:

- (i) reflect the particular characteristics of disputes having an outer space component involving the use of outer space by States, international organizations and private entities;
- (ii) reflect the public international law element that pertains to disputes that may involve States and the use of outer space, and international practice appropriate to such disputes;
- (iii) indicate the role of the Secretary-General and the International Bureau of the Permanent Court of Arbitration (PCA) at The Hague;
- (iv) provide freedom for the parties to choose to have an arbitral tribunal of one, three or five persons;
- (v) provide for establishment of a specialized list of arbitrators mentioned in article 10 and a list of scientific and technical experts mentioned in article 29 of these Rules; and
- (vi) provide suggestions for establishing procedures aimed at ensuring confidentiality.

The Rules are optional and emphasize flexibility and party autonomy. For example:

- (i) The Rules, and the services of the Secretary-General and the International Bureau of the PCA, are available to States, international organizations, and private parties; and
- (ii) The Rules may be used, *inter alia*, in relation to disputes between two or more States parties to a multilateral agreement relating to the use of or access to outer space concerning the interpretation or application of that agreement.

Where arbitrations deal with technical questions, provision is made in article 27 for the submission to the arbitral tribunal of a document agreed to by the parties, summarizing and providing background to any scientific or technical issues that the parties may wish to raise in their memorials or at oral hearings.

A model clause that parties may consider inserting in treaties or other agreements to provide for arbitration of future disputes, and a model clause for arbitration of existing disputes are set forth in the annex to these Rules.

## **Section I. Introductory rules**

### **Scope of application\***

#### **Article 1**

1. Where parties have agreed that disputes between them in respect of a defined legal relationship, whether contractual or not, shall be referred to arbitration under the Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Outer Space Activities, then such disputes shall be settled in accordance with these Rules subject to such modification as the parties may agree. The characterization of the dispute as relating to outer space is not necessary for jurisdiction where parties have agreed to settle a specific dispute under these Rules.
2. Agreement by a party to arbitration under these Rules constitutes a waiver of any right of immunity from jurisdiction, in respect of the dispute in question, to which such party might otherwise be entitled. A waiver of immunity relating to the execution of an arbitral award must be explicitly expressed.
3. The International Bureau of the Permanent Court of Arbitration (the 'International Bureau') shall serve as registry for the proceedings and provide secretariat services.

\* A model arbitration clause for contracts can be found in the annex to the Rules.

### **Notice and calculation of periods of time**

#### **Article 2**

1. A notice, including a notification, communication or proposal, may be transmitted by any means of communication that provides or allows for a record of its transmission.
2. If an address has been designated by a party specifically for this purpose or authorized by the arbitral tribunal any notice shall be delivered to that party at that address and if so delivered shall be deemed to have been received. Delivery by electronic means such as facsimile or email may only be made to an address so designated or authorized.
3. In the absence of such designation or authorization, a notice is:
  - (a) received if it is physically delivered to the addressee; or
  - (b) deemed to have been received if it is delivered at the place of business, habitual residence or mailing address of the addressee.
4. If, after reasonable efforts, delivery cannot be effected in accordance with paragraphs 2 or 3, a notice is deemed to have been received if it is sent to the addressee's last-known place of business, habitual residence or mailing address by registered letter or any other means that provides a record of delivery or of attempted delivery.
5. A notice shall be deemed to have been received on the day it is delivered in accordance with paragraphs 2, 3 or 4, or attempted to be delivered in accordance with paragraph 4. A notice transmitted by electronic means is deemed to have been received on the day it is sent, except that a

notice of arbitration so transmitted is only deemed to have been received on the day when it reaches the addressee's electronic address.

6. For the purpose of calculating a period of time under these Rules, such period shall begin to run on the day following the day when a notice is received. If the last day of such period is an official holiday or a non-business day at the residence or place of business of the addressee, the period is extended until the first business day which follows. Official holidays or non-business days occurring during the running of the period of time are included in calculating the period.

## **Notice of arbitration**

### **Article 3**

1. The party or parties initiating recourse to arbitration (hereinafter called the "claimant") shall communicate to the other party or parties (hereinafter called the "respondent") and the International Bureau a notice of arbitration.
2. Arbitral proceedings shall be deemed to commence on the date on which the notice of arbitration is received by the respondent.
3. The notice of arbitration shall include the following:
  - (a) A demand that the dispute be referred to arbitration;
  - (b) The names and contact details of the parties;
  - (c) Identification of the arbitration agreement that is invoked;
  - (d) Identification of any rule, decision, agreement, contract, convention, treaty, constituent instrument of an organization or agency, or relationship out of, or in relation to which, the dispute arises;
  - (e) A brief description of the claim and an indication of the amount involved, if any;
  - (f) The relief or remedy sought;
  - (g) A proposal as to the number of arbitrators, language and place of arbitration, if the parties have not previously agreed thereon.
4. The notice of arbitration may also include:
  - (a) A proposal for the appointment of a sole arbitrator referred to in article 8, paragraph 1;
  - (b) Notification of the appointment of an arbitrator referred to in articles 9 or 10.
5. The constitution of the arbitral tribunal shall not be hindered by any controversy with respect to the sufficiency of the notice of arbitration, which shall be finally resolved by the arbitral tribunal.

## **Response to the notice of arbitration**

### **Article 4**

1. Within 30 days of the receipt of the notice of arbitration, the respondent shall communicate to the claimant and the International Bureau a response to the notice of arbitration, which shall include:
  - (a) The name and contact details of each respondent;
  - (b) A response to the information set forth in the notice of arbitration, pursuant to article 3, paragraphs 3 (c) to (g).
2. The response to the notice of arbitration may also include:
  - (a) Any plea that an arbitral tribunal to be constituted under these Rules lacks jurisdiction;
  - (b) A proposal for the appointment of a sole arbitrator referred to in article 8, paragraph 1;
  - (c) Notification of the appointment of an arbitrator referred to in articles 9 or 10;
  - (d) A brief description of counterclaims or claims for the purpose of a set-off, if any, including where relevant, an indication of the amounts involved, and the relief or remedy sought;
  - (e) A notice of arbitration in accordance with article 3 in case the respondent formulates a claim against a party to the arbitration agreement other than the claimant.
3. The constitution of the arbitral tribunal shall not be hindered by any controversy with respect to the respondent's failure to communicate a response to the notice of arbitration, or an incomplete or late response to the notice of arbitration, which shall be finally resolved by the arbitral tribunal.

## **Representation and assistance**

### **Article 5**

Each party may be represented or assisted by persons chosen by it. The names and addresses of such persons must be communicated to all parties, to the International Bureau and to the arbitral tribunal. Such communication must specify whether the appointment is being made for purposes of representation or assistance. Where a person is to act as a representative of a party, the arbitral tribunal, on its own initiative or at the request of any party, may at any time require proof of authority granted to the representative in such a form as the arbitral tribunal may determine.

## **Appointing authority**

### **Article 6**

1. The Secretary-General of the PCA shall serve as appointing authority.
2. In exercising its functions under these Rules, the appointing authority may require from any party and the arbitrators the information it deems necessary and it shall give the parties and, where appropriate, the arbitrators, an opportunity to present their views in any manner it considers

appropriate. All such communications to and from the appointing authority shall also be provided by the sender to all other parties.

3. The appointing authority shall have regard to such considerations as are likely to secure the appointment of an independent and impartial arbitrator and shall take into account the advisability of appointing an arbitrator of a nationality other than the nationalities of the parties.

## **Section II. Composition of the arbitral tribunal**

### **Number of arbitrators**

#### **Article 7**

1. If the parties have not previously agreed on the number of arbitrators, and if within 30 days after the receipt by the respondent of the notice of arbitration the parties have not agreed that there shall be only one arbitrator, three arbitrators shall be appointed.
2. Notwithstanding paragraph 1, if no other parties have responded to a party's proposal to appoint a sole arbitrator within the time limit provided for in paragraph 1 and the party or parties concerned have failed to appoint a second arbitrator in accordance with articles 9 or 10, the appointing authority may, at the request of a party, appoint a sole arbitrator pursuant to the procedure provided for in article 8, paragraph 2 if it determines that, in view of the circumstances of the case, this is more appropriate.

### **Appointment of arbitrators (articles 8 to 10)**

#### **Article 8**

1. If the parties have agreed that a sole arbitrator is to be appointed and if within 30 days after receipt by all other parties of a proposal for the appointment of a sole arbitrator the parties have not reached agreement thereon, a sole arbitrator shall, at the request of a party, be appointed by the appointing authority.
2. The appointing authority shall appoint the sole arbitrator as promptly as possible. In making the appointment, the appointing authority shall use the following list-procedure, unless the parties agree that the list-procedure should not be used or unless the appointing authority determines in its discretion that the use of the list-procedure is not appropriate for the case:
  - (a) The appointing authority shall communicate to each of the parties an identical list containing at least three names;
  - (b) Within 15 days after the receipt of this list, each party may return the list to the appointing authority after having deleted the name or names to which it objects and numbered the remaining names on the list in the order of its preference;
  - (c) After the expiration of the above period of time the appointing authority shall appoint the sole arbitrator from among the names approved on the lists returned to it and in accordance with the order of preference indicated by the parties;
  - (d) If for any reason the appointment cannot be made according to this procedure, the appointing authority may exercise its discretion in appointing the sole arbitrator.



## **Article 9**

1. If three arbitrators are to be appointed, each party shall appoint one arbitrator. The two arbitrators thus appointed shall choose the third arbitrator who will act as the presiding arbitrator of the arbitral tribunal. If five arbitrators are to be appointed, the two party-appointed arbitrators shall choose the remaining three arbitrators and designate one of those three as the presiding arbitrator of the tribunal.
2. If within 30 days after the receipt of a party's notification of the appointment of an arbitrator the other party has not notified the first party of the arbitrator it has appointed, the first party may request the appointing authority to appoint the second arbitrator.
3. If within 30 days after the appointment of the second arbitrator the two arbitrators have not agreed on the choice of the remaining arbitrators and/or the presiding arbitrator, the remaining arbitrators and/or the presiding arbitrator shall be appointed by the appointing authority in the same way as a sole arbitrator would be appointed under article 8.

## **Article 10**

1. For the purposes of article 9, paragraph 1, where three or five arbitrators are to be appointed and there are multiple parties as claimant or as respondent, unless the parties have agreed to another method of appointment of arbitrators, the multiple parties jointly, whether as claimant or as respondent, shall appoint an arbitrator.
2. If the parties have agreed that the arbitral tribunal is to be composed of a number of arbitrators other than one, three, or five, the arbitrators shall be appointed according to the method agreed upon by the parties.
3. In the event of any failure to constitute the arbitral tribunal under these Rules, the appointing authority shall, at the request of any party, constitute the arbitral tribunal and, in doing so, may revoke any appointment already made and appoint or reappoint each of the arbitrators and designate one of them as the presiding arbitrator.
4. In appointing arbitrators pursuant to these Rules, the parties and the appointing authority are free to designate persons who are not Members of the Permanent Court of Arbitration at The Hague. For the purpose of assisting the parties the Secretary-General will make available a list of persons considered to have expertise in the subject matters of the dispute at hand for which these Rules have been designed.

## **Disclosures by and challenge of arbitrators\*\* (articles 11 to 13)**

### **Article 11**

When a person is approached in connection with his or her possible appointment as an arbitrator, he or she shall disclose any circumstances likely to give rise to justifiable doubts as to his or her impartiality or independence. An arbitrator, from the time of his or her appointment and throughout the arbitral proceedings, shall without delay disclose any such circumstances to the parties and the other arbitrators unless they have already been informed by him or her of these circumstances.

\*\* Model statements of independence pursuant to article 11 can be found in the annex to the Rules.

## Article 12

1. Any arbitrator may be challenged if circumstances exist that give rise to justifiable doubts as to the arbitrator's impartiality or independence or if he or she does not have the qualifications agreed by the parties in their arbitration agreement.
2. A party may challenge the arbitrator appointed by it only for reasons of which it becomes aware after the appointment has been made.
3. In the event that an arbitrator fails to act or in the event of the *de jure* or *de facto* impossibility of his or her performing his or her functions, the procedure in respect of the challenge of an arbitrator as provided in article 13 shall apply.
4. If an arbitrator on a three- or five-person tribunal fails to participate in the arbitration, the other arbitrators shall, unless the parties agree otherwise, have the power in their sole discretion to continue the arbitration and to make any decision, ruling or award, notwithstanding the failure of one arbitrator to participate. In determining whether to continue the arbitration or to render any decision, ruling or award without the participation of an arbitrator, the other arbitrators shall take into account the stage of the arbitration, the reason, if any, expressed by the arbitrator for such non-participation, and such other matters as they consider appropriate in the circumstances of the case. In the event that the other arbitrators determine not to continue the arbitration without the non-participating arbitrator, the arbitral tribunal shall declare the office vacant, and, subject to article 14(2), a substitute arbitrator shall be appointed pursuant to the provisions of articles 8 to 11.

## Article 13

1. A party that intends to challenge an arbitrator shall send notice of its challenge within 30 days after it has been notified of the appointment of the challenged arbitrator, or within 30 days after the circumstances mentioned in articles 11 and 12 became known to that party.
2. The notice of challenge shall be communicated to all other parties, to the arbitrator who is challenged and to the other arbitrators. The notice of challenge shall state the reasons for the challenge.
3. When an arbitrator has been challenged by a party, all parties may agree to the challenge. The arbitrator may also, after the challenge, withdraw from his or her office. In neither case does this imply acceptance of the validity of the grounds for the challenge.
4. If, within 15 days from the date of the notice of challenge, all parties do not agree to the challenge or the challenged arbitrator does not withdraw, the party making the challenge may elect to pursue it. In that case, within 30 days from the date of the notice of challenge, it shall seek a decision on the challenge by the appointing authority.

## **Replacement of an arbitrator**

### **Article 14**

1. Subject to paragraph 2, in any event where an arbitrator has to be replaced during the course of the arbitral proceedings, a substitute arbitrator shall be appointed or chosen pursuant to the procedure provided for in articles 8 to 11 that was applicable to the appointment or choice of the arbitrator being replaced. This procedure shall apply even if during the process of appointing the arbitrator to be replaced, a party had failed to exercise its right to appoint or to participate in the appointment.
2. If, at the request of a party, the appointing authority determines that, in view of the exceptional circumstances of the case, it would be justified for a party to be deprived of its right to appoint a substitute arbitrator, the appointing authority may, after giving an opportunity to the parties and the remaining arbitrators to express their views, appoint the substitute arbitrator.

## **Repetition of hearings in the event of the replacement of an arbitrator**

### **Article 15**

If an arbitrator is replaced, the proceedings shall resume at the stage where the arbitrator who was replaced ceased to perform his or her functions, unless the arbitral tribunal decides otherwise.

## **Exclusion of liability**

### **Article 16**

The parties waive, to the fullest extent permitted under the applicable law, any claim against the arbitrators and any person appointed by the arbitral tribunal based on any act or omission in connection with the arbitration.

## **Section III. Arbitral proceedings**

### **General provisions**

### **Article 17**

1. Subject to these Rules, the arbitral tribunal may conduct the arbitration in such manner as it considers appropriate, provided that the parties are treated with equality and that at an appropriate stage of the proceedings each party is given a reasonable opportunity of presenting its case. The arbitral tribunal, in exercising its discretion, shall conduct the proceedings so as to avoid unnecessary delay and expense and to provide a fair and efficient process for resolving the parties' dispute.
2. As soon as practicable after its constitution and after inviting the parties to express their views, the arbitral tribunal shall establish the provisional timetable of the arbitration. The arbitral tribunal may, at any time, after inviting the parties to express their views, extend or abridge any period of time prescribed under these Rules or agreed by the parties.
3. If at an appropriate stage of the proceedings any party so requests, the arbitral tribunal shall hold hearings for the presentation of evidence by witnesses, including expert witnesses, or for oral argument. In the absence of such a request, the arbitral tribunal shall decide whether to hold such

hearings or whether the proceedings shall be conducted on the basis of documents and other materials.

4. All communications to the arbitral tribunal by one party shall be communicated by that party to all other parties and the International Bureau. Such communications shall be made at the same time, except as otherwise permitted by the arbitral tribunal if it may do so under applicable law.
5. The arbitral tribunal may, at the request of any party, allow one or more third persons to be joined in the arbitration as a party provided such person is a party to the arbitration agreement, unless the arbitral tribunal finds, after giving all parties, including the person or persons to be joined, the opportunity to be heard, that joinder should not be permitted because of prejudice to any of those parties. The arbitral tribunal may make a single award or several awards in respect of all parties so involved in the arbitration.
6. A party invoking the confidentiality of any information it wishes or is required to submit in the arbitration, including to an expert appointed by the arbitral tribunal, shall make an application to have the information classified as confidential by notice containing the reasons for which it considers the information confidential to the arbitral tribunal, with a copy to the other party and the International Bureau.
7. The arbitral tribunal shall determine whether the information is to be classified as confidential and of such a nature that the absence of special measures of protection in the proceedings would be likely to cause serious harm to the party or parties invoking its confidentiality. If the arbitral tribunal so determines, it shall decide and communicate in writing to the parties and the International Bureau under what conditions and to whom the confidential information may in part or in whole be disclosed and shall require any person to whom the confidential information is to be disclosed to sign an appropriate confidentiality undertaking.
8. The arbitral tribunal may also, at the request of a party or on its own motion, appoint a confidentiality adviser as an expert in accordance with article 29 in order to report to it on the basis of the confidential information on specific issues designated by the arbitral tribunal without disclosing the confidential information either to the party from whom the confidential information does not originate or to the arbitral tribunal.

## **Place of arbitration**

### **Article 18**

1. If the parties have not previously agreed on the place of arbitration, the place of arbitration shall be determined by the arbitral tribunal having regard to the circumstances of the case. The award shall be deemed to have been made at the place of arbitration.
2. The arbitral tribunal may meet at any location it considers appropriate for deliberations. Unless otherwise agreed by the parties, the arbitral tribunal may also meet at any location it considers appropriate for any other purpose, including hearings.

## **Language**

### **Article 19**

1. Subject to an agreement by the parties, the arbitral tribunal shall, promptly after its appointment, determine the language or languages to be used in the proceedings. This determination shall apply to the statement of claim, the statement of defence, and any further written statements and, if oral hearings take place, to the language or languages to be used in such hearings.
2. The arbitral tribunal may order that any documents annexed to the statement of claim or statement of defence, and any supplementary documents or exhibits submitted in the course of the proceedings, delivered in their original language, shall be accompanied by a translation into the language or languages agreed upon by the parties or determined by the arbitral tribunal.

## **Statement of claim**

### **Article 20**

1. The claimant shall communicate its statement of claim in writing to the respondent, to the International Bureau, and to each of the arbitrators within a period of time to be determined by the arbitral tribunal. The claimant may elect to treat its notice of arbitration referred to in article 3 as a statement of claim, provided that the notice of arbitration also complies with the requirements of paragraphs 2 to 4 of this article.
2. The statement of claim shall include the following particulars:
  - (a) The names and contact details of the parties;
  - (b) A statement of the facts supporting the claim;
  - (c) The points at issue;
  - (d) The relief or remedy sought;
  - (e) The legal grounds or arguments supporting the claim.
3. A copy of any rule, decision, agreement, contract, convention, treaty, constituent instrument of an organization or agency, or relationship out of, or in relation to which, the dispute arises and of the arbitration agreement shall be annexed to the statement of claim.
4. The statement of claim should, as far as possible, be accompanied by all documents and other evidence relied upon by the claimant, or contain references to them.

## **Statement of defence**

### **Article 21**

1. The respondent shall communicate its statement of defence in writing to the claimant, to the International Bureau, and to each of the arbitrators within a period of time to be determined by the arbitral tribunal. The respondent may elect to treat its response to the notice of arbitration referred to

in article 4 as a statement of defence, provided that the response to the notice of arbitration also complies with the requirements of paragraph 2 of this article.

2. The statement of defence shall reply to the particulars (b) to (e) of the statement of claim (article 20, paragraph 2). The statement of defence should, as far as possible, be accompanied by all documents and other evidence relied upon by the respondent, or contain references to them.
3. In its statement of defence, or at a later stage in the arbitral proceedings if the arbitral tribunal decides that the delay was justified under the circumstances, the respondent may make a counterclaim or rely on a claim for the purpose of a set-off provided that the arbitral tribunal has jurisdiction over it.
4. The provisions of article 20, paragraphs 2 to 4 shall apply to a counterclaim, a claim under article 4, paragraph (2)(e) and a claim relied on for the purpose of a set-off.

### **Amendments to the claim or defence**

#### **Article 22**

During the course of the arbitral proceedings, a party may amend or supplement its claim or defence, including a counterclaim or a claim for the purpose of a set-off, unless the arbitral tribunal considers it inappropriate to allow such amendment or supplement having regard to the delay in making it or prejudice to other parties or any other circumstances. However, a claim or defence, including a counterclaim or a claim for the purpose of a set-off, may not be amended or supplemented in such a manner that the amended or supplemented claim or defence falls outside the jurisdiction of the arbitral tribunal.

### **Pleas as to the jurisdiction of the arbitral tribunal**

#### **Article 23**

1. The arbitral tribunal shall have the power to rule on its own jurisdiction, including any objections with respect to the existence or validity of the arbitration agreement. For that purpose, an arbitration clause that forms part of a contract shall be treated as an agreement independent of the other terms of the contract. A decision by the arbitral tribunal that the contract is null shall not entail automatically the invalidity of the arbitration clause.
2. A plea that the arbitral tribunal does not have jurisdiction shall be raised no later than in the statement of defence or, with respect to a counterclaim or a claim for the purpose of a set-off, in the reply to the counterclaim or to the claim for the purpose of a set-off. A party is not precluded from raising such a plea by the fact that it has appointed, or participated in the appointment of, an arbitrator. A plea that the arbitral tribunal is exceeding the scope of its authority shall be raised as soon as the matter alleged to be beyond the scope of its authority is raised during the arbitral proceedings. The arbitral tribunal may, in either case, admit a later plea if it considers the delay justified.
3. The arbitral tribunal may rule on a plea referred to in paragraph 2 either as a preliminary question or in an award on the merits. The arbitral tribunal may continue the arbitral proceedings and make an award, notwithstanding any pending challenge to its jurisdiction before a court.

## **Further written statements**

### **Article 24**

The arbitral tribunal shall decide which further written statements, in addition to the statement of claim and the statement of defence, shall be required from the parties or may be presented by them and shall fix the periods of time for communicating such statements.

## **Periods of time**

### **Article 25**

The periods of time fixed by the arbitral tribunal for the communication of written statements (including the statement of claim and statement of defence) should not exceed 45 days. However, the arbitral tribunal may extend the time limits if it concludes that an extension is justified.

## **Interim measures**

### **Article 26**

1. The arbitral tribunal may, at the request of a party, grant interim measures.
2. An interim measure is any temporary measure by which, at any time prior to the issuance of the award by which the dispute is finally decided, the arbitral tribunal orders a party, for example and without limitation, to:
  - (a) Maintain or restore the status quo pending determination of the dispute;
  - (b) Take action that would prevent, or refrain from taking action that is likely to cause, (i) current or imminent harm or (ii) prejudice to the arbitral process itself;
  - (c) Provide a means of preserving assets out of which a subsequent award may be satisfied; or
  - (d) Preserve evidence that may be relevant and material to the resolution of the dispute.
3. The party requesting an interim measure under paragraphs 2 (a) to (c) shall satisfy the arbitral tribunal that:
  - (a) Harm not adequately reparable by an award of damages is likely to result if the measure is not ordered, and such harm substantially outweighs the harm that is likely to result to the party against whom the measure is directed if the measure is granted; and
  - (b) There is a reasonable possibility that the requesting party will succeed on the merits of the claim. The determination on this possibility shall not affect the discretion of the arbitral tribunal in making any subsequent determination.
4. With regard to a request for an interim measure under paragraph 2 (d), the requirements in paragraphs 3 (a) and (b) shall apply only to the extent the arbitral tribunal considers appropriate.

5. The arbitral tribunal may modify, suspend or terminate an interim measure it has granted, upon application of any party or, in exceptional circumstances and upon prior notice to the parties, on the arbitral tribunal's own initiative.
6. The arbitral tribunal may require the party requesting an interim measure to provide appropriate security in connection with the measure.
7. The arbitral tribunal may require any party promptly to disclose any material change in the circumstances on the basis of which the interim measure was requested or granted.
8. The party requesting an interim measure may be liable for any costs and damages caused by the measure to any party if the arbitral tribunal later determines that, in the circumstances then prevailing, the measure should not have been granted. The arbitral tribunal may award such costs and damages at any point during the proceedings.
9. A request for interim measures addressed by any party to a judicial authority shall not be deemed incompatible with the agreement to arbitrate, or as a waiver of that agreement.

## **Evidence**

### **Article 27**

1. Each party shall have the burden of proving the facts relied on to support its claim or defence.
2. Witnesses, including expert witnesses, who are presented by the parties to testify to the arbitral tribunal on any issue of fact or expertise may be any individual, notwithstanding that the individual is a party to the arbitration or in any way related to a party. Unless otherwise directed by the arbitral tribunal, statements by witnesses, including expert witnesses, may be presented in writing and signed by them.
3. At any time during the arbitral proceedings the arbitral tribunal may require the parties to produce documents, exhibits or other evidence within such a period of time as the arbitral tribunal shall determine.
4. The arbitral tribunal may request the parties jointly or separately to provide a non-technical document summarizing and explaining the background to any scientific, technical or other specialized information which the arbitral tribunal considers to be necessary to understand fully the matters in dispute.
5. The arbitral tribunal shall determine the admissibility, relevance, materiality and weight of the evidence offered.

## **Hearings**

### **Article 28**

1. In the event of an oral hearing, the arbitral tribunal shall give the parties adequate advance notice of the date, time and place thereof.
2. Witnesses, including expert witnesses, may be heard under the conditions and examined in the manner set by the arbitral tribunal.



3. Hearings shall be held *in camera* unless the parties agree otherwise. The arbitral tribunal may require the retirement of any witness or witnesses, including expert witnesses, during the testimony of such other witnesses, except that a witness, including an expert witness, who is a party to the arbitration shall not, in principle, be asked to retire.
4. The arbitral tribunal may direct that witnesses, including expert witnesses, be examined through means of telecommunication that do not require their physical presence at the hearing (such as videoconference).

### **Experts appointed by the arbitral tribunal**

#### **Article 29**

1. After consultation with the parties, the arbitral tribunal may appoint one or more independent experts to report to it, in writing, on specific issues to be determined by the arbitral tribunal. A copy of the expert's terms of reference, established by the arbitral tribunal, shall be communicated to the parties.
2. The expert shall, in principle before accepting appointment, submit to the arbitral tribunal and to the parties a description of his or her qualifications and a statement of his or her impartiality and independence. Within the time ordered by the arbitral tribunal, the parties shall inform the arbitral tribunal whether they have any objections as to the expert's qualifications, impartiality or independence. The arbitral tribunal shall decide promptly whether to accept any such objections.
3. After an expert's appointment, a party may object to the expert's qualifications, impartiality or independence only if the objection is for reasons of which the party becomes aware after the appointment has been made. The arbitral tribunal shall decide promptly what, if any, action to take.
4. The parties shall give the expert any relevant information or produce for his or her inspection any relevant documents or goods that he or she may require of them, subject to the provisions for confidentiality in article 17, paragraphs 6 to 8. Any dispute between a party and such expert as to the relevance of the required information or production shall be referred to the arbitral tribunal for decision.
5. Upon receipt of the expert's report, the arbitral tribunal shall communicate a copy of the report to the parties, which shall be given the opportunity to express, in writing, their opinion on the report. A party shall be entitled to examine any document on which the expert has relied in his or her report, subject to the provisions for confidentiality in article 17, paragraphs 6 and 7.
6. At the request of any party, the expert, after delivery of the report, may be heard at a hearing where the parties shall have the opportunity to be present and to interrogate the expert. At this hearing, any party may present expert witnesses in order to testify on the points at issue. The provisions of article 28 shall be applicable to such proceedings.
7. The Secretary-General will provide an indicative list of persons considered to have expertise in the scientific or technical matters in respect of which these Rules might be relied upon. In appointing one or more experts pursuant to paragraph 1 above, the arbitral tribunal shall not be limited in its choice to any person or persons appearing on the indicative list of experts.

## **Default**

### **Article 30**

1. If, within the period of time fixed by these Rules or the arbitral tribunal, without showing sufficient cause:
  - (a) The claimant has failed to communicate its statement of claim, the arbitral tribunal shall issue an order for the termination of the arbitral proceedings, unless there are remaining matters that may need to be decided and the arbitral tribunal considers it appropriate to do so;
  - (b) The respondent has failed to communicate its response to the notice of arbitration or its statement of defence, the arbitral tribunal shall order that the proceedings continue, without treating such failure in itself as an admission of the claimant's allegations; the provisions of this subparagraph also apply to a claimant's failure to submit a defence to a counterclaim or to a claim for the purpose of a set-off.
2. If a party, duly notified under these Rules, fails to appear at a hearing, without showing sufficient cause for such failure, the arbitral tribunal may proceed with the arbitration.
3. If a party, duly invited by the arbitral tribunal to produce documents, exhibits or other evidence, fails to do so within the established period of time, without showing sufficient cause for such failure, the arbitral tribunal may make the award on the evidence before it.

## **Closure of hearings**

### **Article 31**

1. The arbitral tribunal may inquire of the parties if they have any further proof to offer or witnesses to be heard or submissions to make and, if there are none, it may declare the hearings closed.
2. The arbitral tribunal may, if it considers it necessary owing to exceptional circumstances, decide, on its own initiative or upon application of a party, to reopen the hearings at any time before the award is made.

## **Waiver of right to object**

### **Article 32**

A failure by any party to object promptly to any noncompliance with these Rules or with any requirement of the arbitration agreement shall be deemed to be a waiver of the right of such party to make such an objection, unless such party can show that, under the circumstances, its failure to object was justified.

## **Section IV. The award**

## **Decisions**

### **Article 33**

1. When there is more than one arbitrator, any award or other decision of the arbitral tribunal shall be made by a majority of the arbitrators.
2. In the case of questions of procedure, when there is no majority or when the arbitral tribunal so authorizes, the presiding arbitrator may decide alone, subject to revision, if any, by the arbitral tribunal.

## **Form and effect of the award**

### **Article 34**

1. The arbitral tribunal may make separate awards on different issues at different times.
2. All awards shall be made in writing and shall be final and binding on the parties. The parties shall carry out all awards without delay.
3. The arbitral tribunal shall state the reasons upon which the award is based, unless the parties have agreed that no reasons are to be given.
4. An award shall be signed by the arbitrators and it shall contain the date on which the award was made and indicate the place of arbitration. Where there is more than one arbitrator and any of them fails to sign, the award shall state the reason for the absence of the signature.
5. An award may be made public with the consent of all parties or where and to the extent disclosure is required of a party by legal duty, to protect or pursue a legal right or in relation to legal proceedings before a court or other competent authority.
6. Copies of the award signed by the arbitrators shall be communicated to the parties by the International Bureau.
7. Separate or dissenting opinions (if any) shall be in writing and signed by the dissenting arbitrator or arbitrators.

## **Applicable law, *amiable compositeur***

### **Article 35**

1. In resolving the dispute, the arbitral tribunal shall apply the law or rules of law designated by the parties as applicable to the substance of the dispute. Failing such designation by the parties, the arbitral tribunal shall apply the national and/or international law and rules of law it determines to be appropriate.
2. The arbitral tribunal shall decide as *amiable compositeur* or *ex aequo et bono* only if the parties have expressly authorized the arbitral tribunal to do so.

3. In all cases, the arbitral tribunal shall decide in accordance with the terms of the contract, if any, and shall take into account any usage of trade applicable to the transaction.

### **Settlement or other grounds for termination**

#### **Article 36**

1. If, before the award is made, the parties agree on a settlement of the dispute, the arbitral tribunal shall either issue an order for the termination of the arbitral proceedings or, if requested by the parties and accepted by the arbitral tribunal, record the settlement in the form of an arbitral award on agreed terms. The arbitral tribunal is not obliged to give reasons for such an award.
2. If, before the award is made, the continuation of the arbitral proceedings becomes unnecessary or impossible for any reason not mentioned in paragraph 1, the arbitral tribunal shall inform the parties of its intention to issue an order for the termination of the proceedings. The arbitral tribunal shall have the power to issue such an order unless there are remaining matters that may need to be decided and the arbitral tribunal considers it appropriate to do so.
3. Copies of the order for termination of the arbitral proceedings or of the arbitral award on agreed terms, signed by the arbitrators, shall be communicated by the arbitral tribunal to the parties. Where an arbitral award on agreed terms is made, the provisions of article 34, paragraphs 2, 4 and 5 shall apply.

### **Interpretation of the award**

#### **Article 37**

1. Within 30 days after the receipt of the award, a party, with notice to the other parties and the International Bureau, may request that the arbitral tribunal give an interpretation of the award.
2. The interpretation shall be given in writing within 45 days after the receipt of the request. The interpretation shall form part of the award and the provisions of article 34, paragraphs 2 to 6, shall apply.

### **Correction of the award**

#### **Article 38**

1. Within 30 days after the receipt of the award, a party, with notice to the other parties and the International Bureau, may request the arbitral tribunal to correct in the award any error in computation, any clerical or typographical error, or any error or omission of a similar nature. If the arbitral tribunal considers that the request is justified, it shall make the correction within 45 days of receipt of the request.
2. The arbitral tribunal may within 30 days after the communication of the award make such corrections on its own initiative.
3. Such corrections shall be in writing and shall form part of the award. The provisions of article 34, paragraphs 2 to 6, shall apply.

## **Additional award**

### **Article 39**

1. Within 30 days after the receipt of the termination order or the award, a party, with notice to the other parties and the International Bureau, may request the arbitral tribunal to make an award or an additional award as to claims presented in the arbitral proceedings but not decided by the arbitral tribunal.
2. If the arbitral tribunal considers the request for an award or additional award to be justified, it shall render or complete its award within 60 days after the receipt of the request. The arbitral tribunal may extend, if necessary, the period of time within which it shall make the award.
3. When such an award or additional award is made, the provisions of article 34, paragraphs 2 to 6, shall apply.

## **Definition of costs**

### **Article 40**

1. The arbitral tribunal shall fix the costs of arbitration in the final award and, if it deems appropriate, in another decision.
2. The term “costs” includes only:
  - (a) The fees of the arbitral tribunal to be stated separately as to each arbitrator and to be fixed by the tribunal itself in accordance with article 41;
  - (b) The reasonable travel and other expenses incurred by the arbitrators;
  - (c) The reasonable costs of expert advice and of other assistance required by the arbitral tribunal;
  - (d) The reasonable travel and other expenses of witnesses to the extent such expenses are approved by the arbitral tribunal;
  - (e) The legal and other costs incurred by the parties in relation to the arbitration to the extent that the arbitral tribunal determines that the amount of such costs is reasonable;
  - (f) The fees and expenses of the International Bureau, including the fees and expenses of the appointing authority.
3. In relation to interpretation, correction or completion of any award under articles 37 to 39, the arbitral tribunal may charge the costs referred to in paragraphs 2 (b) to (f), but no additional fees.

## **Fees and expenses of arbitrators**

### **Article 41**

1. The fees and expenses of the arbitrators shall be reasonable in amount, taking into account the amount in dispute, the complexity of the subject matter, the time spent by the arbitrators and any other relevant circumstances of the case.
2. Promptly after its constitution, the arbitral tribunal shall inform the parties as to how it proposes to determine its fees and expenses, including any rates it intends to apply. Within 15 days of receiving that proposal, any party may refer the proposal to the appointing authority for review. If, within 45 days of receipt of such a referral, the appointing authority finds that the proposal of the arbitral tribunal is inconsistent with paragraph 1, it shall make any necessary adjustments thereto, which shall be binding upon the arbitral tribunal.
3.
  - (a) When informing the parties of the arbitrators' fees and expenses that have been fixed pursuant to article 40, paragraphs 2 (a) and (b), the arbitral tribunal shall also explain the manner in which the corresponding amounts have been calculated;
  - (b) Within 15 days of receiving the arbitral tribunal's determination of fees and expenses, any party may refer for review such determination to the appointing authority;
  - (c) If the appointing authority finds that the arbitral tribunal's determination is inconsistent with the arbitral tribunal's proposal (and any adjustment thereto) under paragraph 2 or is otherwise manifestly excessive, it shall, within 45 days of receiving such a referral, make any adjustments to the arbitral tribunal's determination that are necessary to satisfy the criteria in paragraph 1. Any such adjustments shall be binding upon the arbitral tribunal;
  - (d) Any such adjustments shall either be included by the arbitral tribunal in its award or, if the award has already been issued, be implemented in a correction to the award, to which the procedure of article 38, paragraph 3 shall apply.
4. Throughout the procedure under paragraphs 2 and 3, the arbitral tribunal shall proceed with the arbitration, in accordance with article 17, paragraph 1.
5. A referral under paragraph 3 shall not affect any determination in the award other than the arbitral tribunal's fees and expenses; nor shall it delay the recognition and enforcement of all parts of the award other than those relating to the determination of the arbitral tribunal's fees and expenses.

## **Allocation of costs**

### **Article 42**

1. The costs of the arbitration shall in principle be borne by the unsuccessful party or parties. However, the arbitral tribunal may apportion each of such costs between the parties if it determines that apportionment is reasonable, taking into account the circumstances of the case.

2. The arbitral tribunal shall in the final award or, if it deems appropriate, in any other award, determine any amount that a party may have to pay to another party as a result of the decision on allocation of costs.

### **Deposit of costs**

### **Article 43**

1. The International Bureau, following the commencement of the arbitration, may request the parties to deposit an equal amount as an advance for the costs referred to in article 40, paragraphs 2(a), (b), (c), and (f). All amounts deposited by the parties pursuant to this paragraph 1 and paragraph 2 of this article shall be directed to the International Bureau, and disbursed by it for such costs, including, *inter alia*, fees to the arbitrators, the appointing authority, and the International Bureau.
2. Security for the costs of interim measures shall be directed to the International Bureau and disbursed by it upon order from the arbitral tribunal.
3. During the course of the arbitral proceedings the International Bureau may request supplementary deposits from the parties.
4. If the requested deposits are not paid in full within 60 days after the receipt of the request, the International Bureau shall so inform the parties in order that one or more of them may make the required payment. If such payment is not made, the arbitral tribunal may order the suspension or termination of the arbitral proceedings.
5. After a termination order or final award has been made, the International Bureau shall render an accounting to the parties of the deposits received and return any unexpended balance to the parties.

## **Annex**

### **Model arbitration clause for contracts**

Any dispute, controversy or claim arising out of or relating to this contract, or the breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the PCA Optional Rules for Arbitration of Disputes Relating to Outer Space Activities.

*Note — Parties should consider adding:*

- (a) The number of arbitrators shall be ... (one, three or five);
- (b) The place of arbitration shall be ... (town and country);
- (c) The language to be used in the arbitral proceedings shall be ... .

### **Possible waiver statement**

*Note — If the parties wish to exclude recourse against the arbitral award that may be available under the applicable law, they may consider adding a provision to that effect as suggested below, considering, however, that the effectiveness and conditions of such an exclusion depend on the applicable law.*

Waiver: The parties hereby waive their right to any form of recourse against an award to any court or other competent authority, insofar as such waiver can validly be made under the applicable law.

### **Model statements of independence pursuant to article 11 of the Rules**

No circumstances to disclose: I am impartial and independent of each of the parties and intend to remain so. To the best of my knowledge, there are no circumstances, past or present, likely to give rise to justifiable doubts as to my impartiality or independence. I shall promptly notify the parties and the other arbitrators of any such circumstances that may subsequently come to my attention during this arbitration.

Circumstances to disclose: I am impartial and independent of each of the parties and intend to remain so. Attached is a statement made pursuant to article 11 of the PCA Optional Rules for Arbitration of Disputes Relating to Outer Space Activities of (a) my past and present professional, business and other relationships with the parties and (b) any other relevant circumstances. [Include statement] I confirm that those circumstances do not affect my independence and impartiality. I shall promptly notify the parties and the other arbitrators of any such further relationships or circumstances that may subsequently come to my attention during this arbitration.

*Note — Any party may consider requesting from the arbitrator the following addition to the statement of independence:*

I confirm, on the basis of the information presently available to me, that I can devote the time necessary to conduct this arbitration diligently, efficiently and in accordance with the time limits in the Rules.





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## Committee on the Peaceful

## Uses of Outer Space

### Legal Subcommittee

### Fiftieth session

Vienna, 28 March-8 April 2011

Item 5 of the provisional agenda\*

**Information on the activities of international  
intergovernmental and non-governmental organizations  
relating to space law**

## **Information on the activities of international intergovernmental and non-governmental organizations relating to space law**

### **Note by the Secretariat**

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\* A/AC.105/C.2/L.280.

V.11-80290 (E)



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## **I. Introduction**

The present document was prepared by the secretariat on the basis of information received by 17 January 2011 from the following international organizations: the International Institute for the Unification of Private Law (Unidroit), the International Organization of Space Communications (Intersputnik), the International Telecommunications Satellite Organization (ITSO), and the Committee on Space Research (COSPAR).

## **II. Replies received from international intergovernmental and non-governmental organizations**

### **International Institute for the Unification of Private Law**

[Original: English]

[15 December 2010]

#### **Update on activities in the space law field**

In 2010, humankind became increasingly active in outer space, an environment that is still uncharted territory in many respects, but particularly in legal terms. With an ever-growing number of players, notably commercial ones, in outer space, it is becoming all the more important for legal regimes to address the relevant issues. For this reason, the International Institute for the Unification of Private Law (Unidroit) has, over the past year, been deploying its best efforts to finalize the preliminary draft protocol to the Convention on International Interests in Mobile Equipment on matters specific to space assets and has begun preliminary studies into the issue of third-party liability for global navigation satellite systems.

#### **A. The space protocol**

The space protocol is the latest in a series of protocols to the Convention on International Interests in Mobile Equipment opened for signature in Cape Town on 16 November 2001. The Cape Town Convention is designed to facilitate asset-based financing by protecting secured creditors, conditional sellers and lessors of high-value mobile equipment that moves across or — in the case of satellites and other space assets — beyond international boundaries in the normal course of business by providing basic default remedies and an electronic international registry where international interests in such equipment may be registered. While the Cape Town Convention provides the overall framework for this regime, the protocols provide the equipment-specific rules adapting the framework for each category of asset covered by the Convention and, in the event of inconsistencies between a protocol and the Convention, the protocol will prevail. Thus, once adopted, the Space Protocol will provide the rules necessary for the Cape Town Convention to be applied to outer space assets.

The fourth session of the Unidroit Committee of governmental experts for the preparation of a draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets was held in Rome from

3 to 7 May 2010. The session was attended by 94 representatives of 37 Governments; including Governments of Unidroit member States and member States of the Committee on the Peaceful Uses of Outer Space; five intergovernmental organizations; five international non-governmental organizations; and representatives of the commercial space and financial communities. The cross-section of participants was crucial for the Committee's discussions, the goal of which was to develop an instrument that would be suitably responsive to market needs, while at the same time being in line with the United Nations treaties on outer space and instruments of the International Telecommunication Union (ITU). While significant progress was made at that session, it was agreed by the Unidroit Governing Council at its 89th session, held in Rome from 10 to 12 May 2010, that one more session of the Committee would be needed in order to find solutions to the outstanding issues. That session will be held in Rome from 21 to 25 February 2011.

In order to facilitate the reaching of consensus on these issues at the next session, the Committee at its fourth session decided that informal consultations should be held between representatives of the commercial space and financial communities and representatives of Governments serving on the Committee, with a view to addressing the concerns that had been expressed by certain representatives of those communities. The Committee also agreed that the session should also include meetings of its informal working groups on default remedies in relation to components and on limitations on remedies.

The consultations with representatives of the commercial space and financial communities, held in Rome on 18 October 2010, provided an open forum for the exchange of ideas on the best means of advancing the project and for Government representatives to be given further insight into the concerns of certain parts of the commercial space sector. The consultations were attended by representatives of the Governments serving on the informal working groups and representatives of Crédit Agricole SA, Eads, the European Satellite Operators' Association, the German Space Agency, the Satellite Industry Association of the United States of America, and Thales Alenia Space. The consultations led to a number of important steps forward in the understanding of what is needed to achieve a commercially viable end product. On the basis of the conclusions reached at these consultations, the informal working groups set to work over the following days on identifying appropriate solutions to outstanding issues.

In addition to the issue indicated in its title, the informal working group on default remedies in relation to components looked at the issue of the definition of space assets. Its meeting was attended by representatives of the Governments that had attended the consultations and three observers from the commercial space and financial communities, as well as two representatives of Aviareto, the Registrar of the International Registry for aircraft objects, who participated by telephone. Proposed new solutions on both issues emerged from the discussions; that on the definition of space assets was recommended as the basis of the Committee's future discussions on the subject and that on default remedies in relation to components was recommended as a tentative solution for consideration by the Committee.

The informal working group on limitations on remedies looked at the issue of public service at a meeting attended by the same Government representatives and observers that had participated in the other informal working group meeting.

Significant progress was made, as evidenced by the proposed new alternative solution that the informal working group came up with. The group felt that this proposed solution had a better chance of achieving consensus at the next session of the Committee than the existing alternatives and, accordingly, recommended it as the basis of the Committee's future discussions on the subject.

#### **B. Global navigation satellite systems**

Following a proposal submitted at its 85th session, held in Rome from 8 to 10 May 2006, the Unidroit Governing Council discussed the desirability and feasibility of a new project being added to the Unidroit Work Programme on third-party liability for global navigation satellite systems (GNSS). Given that a GNSS failure or malfunction could result in significant civil liability issues — such as jurisdiction, identification of the relevant parties, effective compensatory mechanisms and coordination with existing regimes — that might inhibit the growth and dissemination of this new system that many sectors have come to depend on, it has been suggested that Unidroit might consider developing an international instrument designed to resolve such issues.

At its 89th session, the Governing Council, having taken note of studies on the subject of possible future work by Unidroit on third-party liability for GNSS services prepared by two Council members, an outside expert and the secretariat, recommended its inclusion in the triennial Unidroit Work Programme. The Council, however, invited the secretariat to first hold informal consultations with the Governments and other organizations concerned, with a view to ascertaining the feasibility of the project.

These consultations were initiated by the secretariat with an informal meeting held in Rome on 22 October 2010. Although the representatives of Governments, organizations and the commercial space and financial communities who met to discuss the feasibility of Unidroit preparing such an international instrument expressed divergent views on the topic, notably by reason of the legal and political complexities involved, they conveyed their general interest in the project.

At its 67th session, held in Rome on 1 December 2010, the Unidroit General Assembly confirmed the conclusions reached by the Governing Council at its 89th session. The secretariat is, therefore, continuing its consultations.

### **International Organization of Space Communications**

[Original: English]

[8 December 2010]

#### **A. General information**

Founded on 15 November 1971 under the Agreement on the establishment of the "Intersputnik" international system and Organization of Space Communications, Intersputnik is an international intergovernmental organization headquartered in Moscow.

The mission of Intersputnik is to contribute to the consolidation and expansion of economic, scientific, technological and cultural relations using satellite telecommunications, video, and audio broadcasting and to support cooperation and coordination among member States in designing, procuring, operating and expanding an international satellite telecommunications system.

The Government of any State that shares the principles of the activities of Intersputnik can join the organization. Today, Intersputnik has 25 member States. The Governments of the Intersputnik member States appointed 21 signatories of Intersputnik from among national telecommunications organizations and/or telecommunications administrations.

## **B. Orbit and frequency resource**

Under the ITU Radio Regulations, frequency assignments of satellite networks can be filed on behalf of a group of administrations; one administration acts as a notifying administration and takes steps for the purpose of filing the assignments on behalf and in the interests of the whole group. This is also applicable to a group of administrations that are members of an international organization.

In accordance with these Radio Regulations, Intersputnik, through the notifying administration appointed by its member States, filed a number of frequencies to satellite networks in geostationary orbit to ITU between 1993 and 1998. Within the framework of its technological policy, Intersputnik secures international legal protection and analyses the utilization prospects of its orbit and frequency resources. With its own orbit and frequency resources, Intersputnik is able to participate in international and domestic satellite projects together with its members and signatories for manufacturing, launching and operating telecommunication satellites in its orbital slots.

## **C. Notifying administration**

In March 2009, Intersputnik reported to the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space, at its forty-ninth session, that the notifying administration that had been performing such functions for the administrations of the Intersputnik member States and in the interests of Intersputnik since 1993 had refused to continue performing its functions with respect to all but three satellite networks filed in the interests of Intersputnik.

The reason for this was that the notifying administration and Intersputnik had started disputing over the status of the three above-mentioned satellite networks. In the opinion of the notifying administration, the networks had a national status, while Intersputnik believed that they had been filed in the interests of all the administrations of Intersputnik member States and hence had an international status.

The opinion of Intersputnik that the three satellite networks had an international status was confirmed by the governing bodies of Intersputnik, which made a decision that Intersputnik had an exclusive right to these satellite networks. That decision was binding on all Intersputnik members and signatories.

Nevertheless, in 2009 and 2010, the notifying administration made several requests to the ITU Radiocommunication Bureau to recognize its exclusive rights to the three networks in question or to cancel and/or suspend their use. The Bureau

requested the administration to confirm that it had claimed that such recognition or cancellation/suspension should be done on behalf of the group of administrations of the member States of Intersputnik. The notifying administration failed to confirm that and the Bureau did not comply with the notifying administration's request. If the Bureau had formally complied with the request, it would have seriously affected the lawful interests of other administrations of the Intersputnik member States and would have caused considerable material damage to the administrations of the Intersputnik member States that used the satellite networks in question to establish branched terrestrial satellite telecommunications networks and numerous telecommunications and broadcasting channels.

Despite the fact that in an official letter dated 15 May 2009, the Radiocommunication Bureau confirmed that the satellite networks had been filed by the notifying administration on behalf of Intersputnik and in the interests of Intersputnik, in June 2010 the notifying administration in question requested the ITU Radio Regulatory Board to recognize an exclusive national right to one of the three satellite networks; suspend the use of the frequency assignments of two of the networks; and modify the ITU database by specifying that the entity responsible for the operation of the allegedly national satellite network was the notifying administration, and not Intersputnik. Having thoroughly studied the request, the Board unanimously rejected all of the notifying administration's claims.

The submission of the notifying administration was reviewed at the ITU Radio Regulatory Board meeting, where an official letter from the Chair of the Intersputnik Board was also presented to the effect that, at its session in April 2010, the Intersputnik Board resolved to terminate the performance by the telecommunications administration in question of the functions of the notifying administration acting on behalf of a group of administrations of Intersputnik member States and to assign such functions to the administration of the Russian Federation, which had been acting as the Intersputnik notifying administration with respect to the vast majority of the Intersputnik satellite networks for more than a year and a half.

While considering the above request by the Chair of the Intersputnik Board, the ITU Radiocommunication Bureau noted that, according to established practice, it was required to receive two official notices in order to modify the database by replacing the notifying administration, namely, one notice from the administration wishing to cease performing the functions of the notifying administration and the other from the new administration, confirming its willingness to perform such functions.

In the case of Intersputnik, no such notice was received from the telecommunications administration performing the functions of the notifying administration and the Bureau did not modify the database. When commenting on that, the Bureau and the Radio Regulatory Board supported the opinion that the Board should not take any steps on the instructions of an intergovernmental organization that should settle the issue of its notifying administration on its own and inform the Bureau of its decision through official channels.

**D. No mechanisms for legal control**

The ITU Radiocommunication Bureau has come across a specific situation concerning the relations between a group of administrations that are members of an intergovernmental organization and a notifying administration appointed by the group. It has also admitted that it does not have, at present, effective rules of procedure and that the Radio Regulations lack the tools to enable it to settle such situations on its own.

The procedure for appointing a notifying administration to act on behalf of a group of administrations is clearly defined in the Radio Regulations: the notifying administration chosen by the group only needs to specify in new filings that the networks concerned are filed on behalf of the group. All future requests concerning registration of the filing should be treated by the Bureau as if they are sent by the whole group, unless any information exists to the contrary.

At the same time, administrations that are members of the group of an intergovernmental organization are unable to implement their agreed decision to replace the notifying administration because the Bureau's practice only allows a notifying administration to be replaced if the administration being replaced voluntarily gives notice to the Bureau of the cessation of the performance of its functions.

However, both the choice and the replacement of a notifying administration acting on behalf of a group of administrations is the prerogative of that group.

As the case of Intersputnik showed, if an administration continues to perform the functions of a notifying administration on behalf of a group against the explicit will of that group's members, it can not only threaten the lawful interests of the group because the administrations that are members of the group have equal rights with respect to the satellite networks in question, but also affect the interests of third-party administrations.

**E. The rules of procedure of the Radiocommunication Bureau of the International Telecommunication Union need to be updated**

The fact that the Bureau lacks a mechanism to duly take into account the opinion of a large group of administrations means that it has no appropriate tools to deal with a situation affecting the lawful interests of a large group of administrations and ultimately impedes the efficient use of the orbit and frequency resource by the administrations on whose behalf the resource was filed.

In this connection, Intersputnik believes that the time is right to consider updating the Rules of Procedure and the Radio Regulations to define mechanisms that would enable a group of telecommunications administrations to exercise their right to appoint or replace the notifying administration acting on behalf and in the interests of the group.

When trying to improve these legal control mechanics and fill the legal vacuum, it is extremely important to consider the issue from various viewpoints in order not to infringe upon the lawful rights or interests of other groups of telecommunications administrations, including those that are members of international organizations.

## International Telecommunications Satellite Organization

[Original: English]

[10 November 2010]

### Annual report 2009

#### 1. Restructuring the organization

##### (a) Background

The International Telecommunications Satellite Organization (ITSO), formerly INTELSAT, is the continuation of the 148-member intergovernmental organization established by the Agreement relating to the International Telecommunications Satellite Organization “INTELSAT” in 1973. On 18 July 2001, the satellite fleet, customer contracts and other operational assets held by INTELSAT were transferred to Intelsat, Ltd. (sometimes referred to as Intelsat or “the company”), a new private company registered in Bermuda.

On 25 November 2009, Intelsat, Ltd. filed pro forma transfer of control applications with the United States Federal Communications Commission (FCC) for each of its five FCC licensee entities, reflecting the company’s intention to migrate the jurisdictions of organization of Intelsat, Ltd. and some of its parent holding companies and subsidiaries from Bermuda to Luxembourg. On 3 December 2009, FCC granted those applications.<sup>1</sup>

ITSO orbital locations are today under the jurisdiction of two notifying administrations: the United States of America, with respect to orbital locations utilizing frequency assignments in the C- and Ku-bands; and the United Kingdom of Great Britain and Northern Ireland, with respect to orbital locations utilizing frequency assignments in the Ka- and V-bands. In turn, these orbital locations and associated frequency assignments, referred to as the common heritage of the ITSO member States (parties), were licensed to Intelsat, Ltd. by the two notifying administrations. In addition, ITSO parties transferred landing licences to Intelsat, Ltd., usually without charge, to maintain continuity of telecommunications services to all parties.

As part of the 2001 privatization of the operating assets of INTELSAT, ITSO became the continuation of INTELSAT, in accordance with amendments to the 1973 Agreement.<sup>2</sup> The mission of ITSO is to ensure that, post-privatization, Intelsat provides international telecommunications services pursuant to the terms of a public services agreement formally entered into between ITSO and Intelsat, Ltd. The agreement establishes the following core principles that govern the provision of services by Intelsat:

(a) Maintaining global connectivity and global coverage for any country or territory that desires to connect with any other country or territory within and

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<sup>1</sup> This migration was largely completed on 15 December 2009. From this point forward, Intelsat, Ltd. is referred to as Intelsat SA. For activities or events prior to 15 December 2009, any references in this annual report to the company would continue to be to Intelsat, Ltd.

<sup>2</sup> Amendments to what from that point forward would be referred to as the ITSO Agreement entered into force on 30 November 2004, in accordance with article XVII, paragraph (e).



between the five regions of Africa, America, Asia, Eastern Europe and Western Europe;

(b) Providing public telecommunications services, including capacity and price protection guarantees, to customers identified as, and connecting with, lifeline connectivity obligation customers;

(c) Providing domestic public telecommunications services between areas separated by geographic areas not under the jurisdiction of the State concerned, between areas separated by high seas, or between areas that are not linked by any terrestrial facilities and are separated by natural barriers of such an exceptional nature that they impede the establishment of terrestrial facilities;

(d) Ensuring non-discriminatory access to the Intelsat, Ltd. communications system.

Adherence to these core principles was of such fundamental importance to the privatization of the satellite assets of ITSO that the transfer of operating assets to Intelsat was subject to Intelsat's ongoing adherence to the public services agreement. The agreement stipulates that the performance by Intelsat, Ltd. of these obligations, which incorporate the core principles, is the condition for the transfer of assets by ITSO to Intelsat, Ltd. and for its right to use the parties' common heritage orbital locations and associated frequency assignments.

#### **(b) Parties' common heritage**

The amended ITSO Agreement defines parties' common heritage as "those frequency assignments associated with orbital locations in the process of advanced publication, coordination or registered on behalf of the parties with the International Telecommunication Union (ITU) which are transferred to a party or parties pursuant to Article XII." In accordance with the ITSO Agreement, the Director General, on behalf of ITSO, considers all issues arising from the parties' common heritage assets and is responsible for communicating the views of the parties to the United States and the United Kingdom as the selected notifying administrations.

The 31st meeting of the Assembly of Parties, held in March 2007, approved an amendment of the ITSO Agreement (article XII, paragraph (c) (ii)) in order to protect the parties' common heritage orbital locations and associated frequency assignments. Under the terms of this amendment, the parties' interests in the common heritage would be protected in the event that the current licensed user of these frequency assignments, Intelsat, Ltd., waived such frequency assignments; used such frequency assignments in ways other than those set forth in the ITSO Agreement; or declared bankruptcy. Specifically, the amendment enables other satellite operator or operators, in case of the events cited above, to use these frequency assignments once they have signed a public services agreement with ITSO. During 2009, the process of ratification of this amendment by the parties continued, although to date the formal ratification process has not been completed.

The 32nd meeting of the ITSO Assembly of Parties, held in October 2008, took key decisions on the parties' common heritage assets. In view of the desirability of distinguishing the former INTELSAT filings from the other networks/assignments of the notifying administrations in the ITU Radiocommunication Bureau databases, and believing that such differentiation

would contribute in a significant way to safeguarding this common heritage, the meeting decided “to request the notifying administrations, in coordination with the Director General, to promptly undertake the necessary actions at ITU to amend the label of the parties’ common heritage orbital locations and associated frequency assignments in the ITU Registry to more clearly reflect their status as part of the parties’ common heritage.” During 2009, further actions were taken to implement this decision.

The 33rd meeting of the ITSO Assembly of Parties, held in July 2009, established a procedure for the notifying administrations to follow to supplement the implementation of their obligations under article XII (e) (iv) of the ITSO Agreement.

**(c) Ensuring the ability of Intelsat to fulfil its public service obligations in the long term**

On 10 July 2006, and as requested by its parties, ITSO petitioned FCC under section 316 of the United States Communications Act to modify the satellite licences of Intelsat LLC<sup>3</sup> for use of the orbital locations and associated frequency assignments that constitute the parties’ common heritage. The series of past leverage buy-outs by private equity funds had resulted in a dramatic increase in the debt of Intelsat, Ltd., which could limit its capacity to renew its ageing fleet, thereby jeopardizing its ability to fulfil, in the long term, its public service obligations in case of a market downturn or financial distress.<sup>4</sup>

The licence modifications requested by ITSO were intended to assure adherence by Intelsat, or any successor or subsequent satellite operator using the parties’ common heritage assets, to the core principles established by the ITSO Agreement. By filing this petition, ITSO requested that FCC, in accordance with the role of the United States as one of the primary notifying administrations and licensing jurisdictions for the parties’ common heritage assets, impose various conditions on the relevant licences, including:

(a) Ensuring that FCC licences granted to Intelsat LLC are linked to the core principles;

(b) Ensuring that any successor to Intelsat LLC or other satellite operator that uses the parties’ common heritage assets is bound by the core principles of the ITSO Agreement through the execution of a public services agreement with ITSO.

On 21 February 2008, FCC issued an order of modification to the licences of Intelsat LLC. This order implemented the two conditions referred to above, both of which had been endorsed by the United States Department of State, and clarified that, as part of routine processing, FCC would include such conditions in all future

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<sup>3</sup> Intelsat LLC is the licensee in the United States for satellites operated by Intelsat, Ltd., which uses the parties’ common heritage orbital allocations that were the subject of that petition.

<sup>4</sup> Since its acquisition by private equity funds in 2005, the successive recapitalizations of Intelsat, Ltd. have increased its debt to approximately 16 billion United States dollars, which currently exceeds its operating margin by a factor of 10. Under certain circumstances, this situation could imperil its ability to secure the necessary investments to renew its fleet and to fulfil the requirement of lifetime connectivity obligation customers for essential satellite capacity on a timely basis.

authorizations issued to Intelsat LLC in connection with any grant of authority to launch or operate a satellite in one of the parties' common heritage orbital locations.

**(d) Thirty-third Assembly of Parties**

The Assembly of Parties held its 33rd meeting in Rome in July 2009. The meeting, which was an extraordinary meeting, was chaired by Jose Saraiva Mendes, Special Representative of the Minister of Public Works, Transport and Communications of Portugal, and was attended by representatives of 97 parties.

The Assembly agreed on a set of procedures to be followed by the United Kingdom and the United States in their capacity as notifying administrations when discharging their obligations of notifying and consulting with the Director General on ITU satellite coordinations involving the parties' common heritage orbital locations and associated frequency assignments. The Assembly also decided to establish a frequency working party made up of one expert from each of the five ITU regions to assist the Director General on this matter.

**(e) Director General**

In July 2009, José Toscano, a citizen of Portugal, began his four-year term as Director General and Chief Executive Officer.

**2. Current network of Intelsat**

As of the end of 2009, the Intelsat SA global communications network included 51 satellites in orbit, leased capacity on one additional satellite owned by other operators, and ground facilities related to the operation and control of Intelsat's satellites. Intelsat's network also included ground network assets consisting of eight owned teleports, over 50 points of presence, and fibre connectivity in locations around the world that it uses to provide integrated and end-to-end services. The company's current fleet investment programme is the largest in its history.<sup>5</sup>

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<sup>5</sup> Intelsat is in the process of procuring 11 satellites that are expected to be launched over the next three years, including the New Dawn joint venture satellite. The company expected that 2009 total capital expenditure would range from approximately \$625 million to \$675 million, however, several delayed 2009 contract milestones could result in some of that expenditure being deferred into 2010. The 2009 capital expenditure estimate excluded capital expenditures related to the New Dawn satellite, for which the company's cash contributions in 2009 were minimal, and the purchase of the ProtoStar I satellite, for which all of the \$210 million consideration was paid in 2009. The company indicated that changes in the overall satellite launch market could result in increases to expected launch costs in the future. Other satellites within the current fleet investment programme include:

(a) The Intelsat 20 satellite, to be located at 68.5° E, which will serve Asia and the Pacific. The Intelsat 20 satellite will replace the Intelsat 10 and Intelsat 7 satellites, which are currently co-located at that location.

(b) The Intelsat 17 satellite, to be located at 66° E, which will provide higher performing capacity across Asia, Europe, the Middle East and the Russian Federation, and will expand Intelsat's C-band video distribution community in the Indian Ocean region. The Intelsat 17 satellite will replace the Intelsat 702 satellite.

(c) The Intelsat 18 satellite, to be located at 180° E, which will provide continuity and enhanced performance in C- and Ku-band for network, voice and video services to the Pacific

**(a) Recent agreements and acquisitions of new satellites**

On 9 December 2008, Intelsat announced its New Dawn satellite project, a joint venture between Intelsat and a South African investor group led by Convergence Partners. The purpose of this project is to build and launch a new satellite into the 33° E orbital location to deliver wireless backhaul and broadband, among other services, to the Africa region. The New Dawn satellite is expected to be launched in the fourth quarter of 2010 and to enter into service in early 2011.

On 27 April 2009, Intelsat announced its plan to add the Intelsat 22 satellite to its fleet. This satellite is expected to be launched in the first quarter of 2012, and will serve at the 72° E longitude orbital location over the Indian Ocean region.

On 30 October 2009, Intelsat announced that it had been selected as the successful bidder in public auction for the ProtoStar 1 satellite. Upon conclusion of the transaction, the satellite will be renamed Intelsat 25 and will join its global fleet, serving with the company's other assets in the Atlantic Ocean region and providing incremental satellite capacity to central Africa and other regions.

**(b) Launch of new satellites**

On 23 November 2009, Intelsat launched the Intelsat 14 satellite. This satellite will provide high-powered data services through its C- and Ku-band payload to the company's customers throughout Latin America, Europe and Africa. Once Intelsat 14 is operational, it will replace Intelsat's 1R satellite at 315° E, providing customers with capacity that has a useful life expected to last for the next 16 years.

On 30 November 2009, Intelsat launched the Intelsat 15 satellite. This satellite will operate from 85° E, replacing the Intelsat 709 satellite. Intelsat 15 will provide video and data services through its Ku-band payload, and will cover the majority of the Middle East, the Indian Ocean region and Russia.

## **Committee on Space Research**

[Original: English]

[10 December 2010]

### **Committee on Space Research Panel on Planetary Protection: actions relating to space law as of 20 July 2010, Bremen, Germany**

The Panel on Planetary Protection held its biannual business meeting in Bremen in conjunction with the 38th Committee on Space Research (COSPAR) Scientific Assembly.

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Islands and offer connectivity to the western United States. The Intelsat 18 satellite will replace the Intelsat 701 satellite.

(d) The Intelsat 19 satellite, to be located at 166° E, which will feature increased Ku-band capacity optimized for direct-to-home and network services applications in Australia. The satellite's C-band capacity will provide enhanced performance capacity for distribution of international video content throughout Asia and the Pacific, with reach to the western United States. The Ku-band payload will also support demand for mobility and enterprise network applications across the region. The Intelsat 19 satellite will replace the Intelsat 8 satellite.

**A. Clarification of provisions of the Planetary Protection Policy of the Committee on Space Research**

At that meeting, a resolution on technical changes to the COSPAR Planetary Protection Policy of July 2008 was developed, to include provisions to clarify the precise definition of planetary protection categories II, III, and IV, as developed at the Vienna Workshop on Planetary Protection for Outer Planet Satellites and Small Solar System Bodies and the Pasadena Workshop on Planetary Protection for Titan and Ganymede, both held in 2009. Also included were guidelines on the preparation of an organic inventory for missions to bodies where such an inventory is required; a clarification of the trajectory biasing requirement for Mars, to include a time frame for the requirement; and a simplification/correction of the category IV (b) requirement for Mars and the requirement for containment of unsterilized samples returned from Mars to Earth. In addition, an amplification of the reporting requirement recommended that COSPAR members inform COSPAR when establishing planetary protection requirements for planetary missions. This resolution will be considered by the COSPAR Bureau in March 2011.

**B. Resolutions for future consideration**

A number of resolutions related to the COSPAR Workshop on Ethical Considerations for Planetary Protection in Space Exploration (held in Princeton, United States, in 2010) were reviewed, but not taken for action during the business meeting. Further discussion and development of those resolutions is planned. They include the following concepts:

(a) The establishment of a framework for environmental stewardship in space;

(b) COSPAR (through both the Panel on Planetary Protection and the Panel on Exploration) should elaborate management guidelines and draft guidelines/requirements/regulations in cooperation with other organizations such as the International Institute of Space Law, the Committee on the Peaceful Uses of Outer Space and others;

(c) Such a framework should be in addition to the accepted regulations for preventing harmful planetary contamination of a biological or organic chemical nature;

(d) Such a framework could eventually include the establishment of an intergovernmental mechanism/convention to regulate space exploration and use and the path to be followed could be similar to the development and adoption of the Space Debris Mitigation Guidelines by the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space. The guidelines adopted by the Subcommittee were subsequently endorsed by the Committee and the General Assembly.

**C. Proposals for Committee on Space Research meetings prior to the 39th Committee on Space Research Scientific Assembly**

Two meetings for further development of the COSPAR Planetary Protection Policy were proposed and accepted by the COSPAR Bureau:

(a) A workshop on Development of Foundational Ethical Principles Applicable to Planetary Protection and Space Exploration, chaired by Margaret S. Race, to take place in 2011;

(b) A colloquium on establishing risk levels for a Mars sample return mission, chaired by John D. Rummel, to take place in 2012.

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# General Assembly

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## Committee on the Peaceful

## Uses of Outer Space

### Legal Subcommittee

### Fiftieth session

Vienna, 28 March-8 April 2011

Item 5 of the provisional agenda\*

**Information on the activities of international  
intergovernmental and non-governmental organizations  
relating to space law**

## **Information on the activities of international intergovernmental and non-governmental organizations relating to space law**

### **Note by the Secretariat**

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## **I. Introduction**

The present document was prepared by the Secretariat on the basis of information received by 17 January 2011 from international organizations.

## **II. Replies received from international intergovernmental and non-governmental organizations**

### **European Centre for Space Law**

[Original: English]

[17 January 2011]

#### **A. Background information**

The European Centre for Space Law (ECSL) was established in 1989, on the initiative and under the auspices of the European Space Agency (ESA), with the support of a number of pioneers in the field. It functions under a charter, amended in October 2009, which defines its missions, structure and objectives. The current Chairman of ECSL is Sergio Marchisio, of Sapienza University (Rome).

The main objective of ECSL is to build up and spread, in Europe and elsewhere, an understanding of the legal framework relevant to space activities. Information exchange among interested stakeholders and improving and promoting the teaching of space law are the two major tools for reaching that goal.

#### **A flexible and open structure**

The Centre brings together professionals, lawyers, academics and students and encourages interdisciplinary exchanges. The ECSL General Assembly, open to all members, meets every three years and elects the ECSL Board, ensuring that different professional stakeholders and geographical zones are equitably represented. The Executive Secretariat is in charge of the management and growth of the Centre's activities.

#### **Management**

Members of the ECSL Board, which is responsible for the management of the Centre, are elected by the triennial General Assembly for a period of three years. Board members have outstanding backgrounds and experience in space law and commit themselves to actively promoting the objectives of ECSL at the national and international levels.

#### **Membership and network**

Membership, open to natural or legal persons from ESA members or associated States, is a prerequisite for voting at the General Assembly and receiving ECSL publications, such as the ECSL Newsletter and the Summer Course Proceedings.



### **National points of contact**

To facilitate its contacts with members, the spread of information and organization of activities, ECSL has encouraged the establishment of national points of contact who act as an interface between ECSL and its members. Points of contact have been already set up in 12 ESA member States.

ECSL is working to increase the presence of new national points of contact in ESA member States such as Hungary.

## **B. Summary of past activities**

### **Summer Course on Space Law and Policy**

The nineteenth ECSL Summer Course on Space Law and Policy was organized in September 2010 by ECSL and the University of Jaén, Spain. It was attended by 38 students from 15 countries throughout the world. The students were given lectures on space law and policy issues by speakers who were either academics or practitioners specialized in the space field and they also successfully tackled a case study entitled “Satellite applications for the benefit of Euro-Mediterranean cooperation”.

### **Manfred Lachs Space Law Moot Court Competition**

The European round of the Manfred Lachs Space Law Moot Court Competition took place at the Faculty of Law of the University of Győr, Hungary, in April 2010. Nine teams were registered and there were 21 participants from several European universities.

The students resolved a hypothetical dispute entitled “Case concerning suborbital tourism, definition of outer space and liability”, which sought to explore international law considerations and the various outer space treaties.

The University of Cologne, Germany, was the winner of the European round and represented Europe at the world final of the competition, which took place during the 61st International Astronautical Congress (IAC) in Prague in September 2010. The George Washington University (United States of America) won the final, which was judged by three members of the International Court of Justice.

### **Colloquiums, conferences and international cooperation**

In March 2010, the International Institute of Space Law (IISL) and ECSL organized a symposium during the forty-ninth session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space. The event was coordinated by Tanja Masson-Zwaan, from IISL, and Sergio Marchisio, the ECSL Chairman.

The symposium included reports of national and international space law institutions on the theme “National space legislation — crafting legal engines for the growth of space activities”. (Presentations and details can be found on the website of the Office for Outer Space Affairs ([www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2010/symposium.html](http://www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2010/symposium.html)).)

**Annual Practitioners' Forum**

The Practitioners' Forum was held on 19 March 2010 at ESA headquarters in Paris and focused on the theme "Galileo: Current legal issues". It was a great success and was attended by a large number of participants.

**International Workshop on Space Law and Space Applications**

The fourth International Workshop on Space Law and Space Applications was held in Rabat on 3 and 4 June 2010. More than 50 local students and professionals participated in the Workshop.

The Workshop was organized by the African Regional Centre of Sciences and Space Technology, the Royal Centre for Remote Sensing and ECSL.

**Documentation and publications***(a) Legal database*

The ECSL legal database has recently been updated with new topics. The site is also intended to promote the work carried out by the ECSL national points of contact, space law institutes, universities, research centres, the Committee on the Peaceful Uses of Outer Space and other organizations, as well as national space agencies, in order to create a network among all institutions, educational centres and research facilities working in the area of space law.

*(b) Space law teaching in Europe*

The booklet "Space law teaching in Europe" is an ECSL initiative, first issued in 1991 and revised in 1993. The booklet includes a list of space law teaching institutions, universities and educational centres in Europe. It also provides detailed information on teaching staff, credits, tuition fees and the duration of the different courses, together with illustrations of the institutions listed. The fifth edition will be published in June 2011.

*(c) Newsletter*

The ECSL newsletter features articles on legal issues and others topics of interest to the space community. All the newsletters are available on the ECSL website. The next newsletter will be published in March 2011.

**C. Major events and projects planned for 2011****Board meetings**

The last ECSL Board was held on 5 November 2010 and the next meeting is to be held at ESA headquarters in Paris on 28 January 2011.

**Annual Practitioners' Forum**

The next Practitioners' Forum will be held at ESA headquarters in Paris on 18 March 2011 and will focus on the theme "Commercialization of human space-flight".

### **Space Law Symposium**

The next IISL/ECSL Space Law Symposium will be held on 28 March 2011, during the fiftieth session of the Legal Subcommittee, and will be entitled “A fresh look on the delimitation of airspace and outer space”.

### **Manfred Lachs Space Law Moot Court Competition**

The European round of the nineteenth Manfred Lachs Space Law Moot Court Competition will be held at the Faculty of Law of Saint-Petersburg State University, Russian Federation, on 28 and 29 April 2011.

The “Case concerning Environmental Contamination and Harmful Interference in Space Activities” can be found on the ECSL website ([www.esa.int/SPECIALS/ECSL](http://www.esa.int/SPECIALS/ECSL)).

The world semi-finals and finals of the Manfred Lachs Space Law Moot Court Competition will take place in Cape Town, South Africa, in October 2011, during the 62nd IAC.

### **Summer Course on Space Law and Policy**

The twentieth ECSL Summer Course on Space Law and Policy will be held in Malta in September 2011. The exact date is yet to be decided.

## **International Institute of Space Law**

[Original: English]

[10 January 2011]

### **A. Introduction**

Information on developments and activities of the International Institute of Space Law (IISL) in 2010 is provided below.

Founded in 1960, IISL is an independent non-governmental organization dedicated to fostering the development of space law in partnership with various international and national institutions. IISL members are individuals and institutions from more than 40 countries. They have been elected on the basis of their contributions to the field of space law or other social sciences related to space activities.

IISL holds its annual colloquium on current issues in space law at the International Astronautical Congress. During the annual colloquiums, IISL strives to address topics that are of real interest to all space actors. IISL also organizes annual scientific and legal round tables with the International Academy of Astronautics (IAA), the twenty-fifth of which was held in 2010.

IISL is a permanent observer to the Committee on the Peaceful Uses of Outer Space. It is represented at the sessions of the Committee, where a report on IISL activities is presented each year. IISL, together with the European Centre for Space Law, also organizes an annual symposium for Committee delegates. Since

2001, IISL has organized space law conferences in several countries, including China, India, Singapore, Thailand and the United States of America. It has also organized the annual Eilene M. Galloway Symposium on “Critical issues in space law” in Washington, D.C., since 2006. The IISL proceedings are published each year by the American Institute of Aeronautics and Astronautics. IISL issues statements that inform the debate on the most pressing issues in the field of space law.

Since 1990, IISL has organized the Manfred Lachs Space Law Moot Court Competition. The competition is based on a hypothetical space law case written by IISL members and student teams from Asia and the Pacific, Europe and North America. Preliminary competitions are held each spring in the different regions. The regional champions then compete at the world finals, which take place each year at IAC and are judged by members of the International Court of Justice.

## **B. General information**

### **1. Fiftieth anniversary celebrations**

In 2010, IISL celebrated its fiftieth anniversary. Several events marked this celebration:

(a) The first IISL/IAA Symposium on Space Law and Policy in May 2010 and re-publication of a 1972 book by former IISL President Manfred Lachs (*The Law of Outer Space: An Experience in Contemporary Law-making*) in September 2010;

(b) Fiftieth anniversary celebration and young scholar poster exhibition on 28 September 2010 (with the support of ESA);

(c) Book publication containing the young scholars’ papers (forthcoming, 2011);

(d) “A History of the IAA/IISL Round Tables”, a publication celebrating the twenty-fifth anniversary of the round tables, in cooperation with IAA (forthcoming);

(e) Publication of the book “Some Pioneers of Space Law” (planned);

(f) A champagne reception in Prague, with the support of ESA.

### **2. Elections**

At the Institute’s General Assembly in Prague in September 2010, six directors and officers were re-elected: Tanja Masson-Zwaan (President), Corinne Jorgenson (Executive Secretary), Ram Jakhu (Canada), Francis Lyall (United Kingdom of Great Britain and Northern Ireland), Sergio Marchisio (Italy) and Kai-Uwe Schrogl (Germany). Steven Freeland (Australia) was newly elected. In 2010, 22 individual members were elected to IISL.

### **3. IISL awards**

The Institute presented several awards to distinguished members of the space law community during the annual IISL dinner on 30 September 2010. Vladimir Kopal (Czech Republic) received the IISL Lifetime Achievement Award for his long

and outstanding career in space law as, among others, Chief of the secretariat of the Office for Outer Space Affairs, Chair of the Legal Subcommittee and General Counsel for IAF and IAA. In addition, he has taught space law for many years, first at the Charles University of Prague, then at the University of Plzen. He is also a longstanding Director and Vice-President of IISL and has published work on many issues of space law.

Sylvia Ospina (United States) was awarded the Distinguished Service Award for her many contributions to the work of IISL, including the *Highlights in Space* reports, published by the Office for Outer Space Affairs, and the Manfred Lachs Moot Court Competition. She is also a Director of IISL, and a well-known author of many articles in the field. Jean-Michel Contant (France) received the Certificate of Appreciation. He serves as Secretary General of IAA and, in that capacity, has contributed greatly to the successful cooperation of IAA and IISL, in particular with the IAA/IISL scientific and legal round tables since the 1970s, and also through many joint IAA/IISL conferences and encouraging legal commentary in appropriate IAA meetings. He also guided and supported the granting of permanent observer status by the Committee on the Peaceful Uses of Outer Space.

The Diederiks-Verschoor Award for the best paper by a young author at the IISL Colloquium was awarded to Philip de Man of the University of Leuven (Belgium) for his paper entitled “The commercial exploitation of outer space and celestial bodies — a functional solution to the natural resource challenge”.

#### **4. Committees**

In order to more actively engage members and Board members, the Executive Secretary initiated a review of current committees and the creation of new ones. Current committees include the Membership Committee, Awards Committee, Diederiks-Verschoor Award Committee, Moot Court Committee, Publications Committee, Sponsorship Committee, United Nations Highlights in Space Committee, Audit Committee, Directorate of Studies, Standing Committee on the status of the space treaties, and Nominating Committee.

In addition, several programme committees were created: the Committee on the Peaceful Uses of Outer Space Symposium Programme Committee, the Eilene M. Galloway Symposium Programme Committee and the IISL/IAA Symposium on Space Law and Policy Programme Committee.

#### **5. Strategy meetings**

The year in which IISL celebrated its fiftieth anniversary was an appropriate time for the IISL Board to conduct a strategy meeting, initiated by the Executive Secretary, so that the IISL leaders could address short-, medium- and long-term goals as well as their vision for the Institute. The first strategy meeting, held on 25 March, focused on analysis of internal strengths and weaknesses and external opportunities and threats. A follow-up strategy meeting was held in Prague to develop initiatives to build on the Institute’s strengths and opportunities and counter its weaknesses and threats.

## **6. Institutional relations**

IISL maintains close relations with various organizations, including the Committee on Space Research, ECSL, the European Space Policy Institute (ESPI), IAA, IAF, the International Law Association (ILA) and the Committee on the Peaceful Uses of Outer Space.

## **7. Website and public relations**

The IISL website has been expanded to include a member database, where members can verify and correct their personal data and register for IISL events. The new tool was launched just prior to the 53rd IISL Colloquium and is expected to facilitate management of events and provide an up-to-date database.

Biographies and photographs of Board members have been added to the website, and recent updates about space law-related developments or IISL activities have been posted in the news section.

A new Manfred Lachs Space Law Moot Court Competition web page has been created on the IISL site, with the relevant e-mail addresses for the competition.

Several press releases have been sent out, and a new brochure is being prepared.

## **C. Activities in 2010**

### **1. Meetings of the Committee on the Peaceful Uses of Outer Space**

On 22 March 2010, during the forty-ninth session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space, on the Institute, along with ECSL, at the request of the Subcommittee, organized a symposium for members of the Subcommittee on the topic “National space legislation — crafting legal engines for the growth of space activities”. The symposium was coordinated by Board member Kai-Uwe Schrogl and the Executive Secretary of the Institute, Corinne Jorgenson, and was chaired by IISL President Tanja Masson-Zwaan and Board member and ECSL Chairman Sergio Marchisio. (The programme and a link to the presentations are available on the website of the Office for Outer Space Affairs ([www.unoosa.org/oosa/COPUOS/Legal/2010/symposium.html](http://www.unoosa.org/oosa/COPUOS/Legal/2010/symposium.html)).)

IISL was represented by several of its members in the delegation to the Legal Subcommittee at its forty-ninth session and to the Committee on the Peaceful Uses of Outer Space, at its fifty-third session, both held in 2010.

### **2. Conference on current legal issues for satellite Earth observation**

IISL, together with the International Society for Photogrammetry and Remote Sensing (ISPRS), ESPI and IAA, co-hosted the conference on current legal issues for satellite Earth observation, held in Vienna on 8 and 9 April 2010. The programme focused on Earth observation data and included several speakers and panellists such as Kai-Uwe Schrogl, Frans von der Dunk, IAA colleagues, the IISL President and representatives from ISPRS. The discussion focused on two issues: privacy; and Earth observation data for treaty monitoring. An extensive report has been published by ESPI.

### 3. Symposium on space law and policy

The symposium on space law and policy was held in Washington, D.C., on 11 May 2010 by IISL and IAA, in partnership with the Secure World Foundation, Arianespace and ESPI, to begin the commemoration of the fiftieth anniversary of both IISL and IAA. The symposium examined the breadth and reach of space regulations on international and United States activities in the civil, commercial and governmental fields. A report has been published in *Space Policy* and is available on the IISL website ([www.iislweb.org](http://www.iislweb.org)).

### 4. Global Lunar Conference

The IAF Global Lunar Conference was held in Beijing in May and June 2010. IISL assisted in selecting abstracts for the legal session, which its President chaired.

### 5. Colloquium on the Law of Outer Space

The 53rd IISL Colloquium on the Law of Outer Space was held in Prague from 27 September to 1 October. IISL received about 90 abstracts and over 30 abstracts in the young scholars session, some of which were presented as posters. The papers from that session will be published in a separate publication. The following topics were addressed in the Colloquium: (a) the Nandasiri Jasentuliyana keynote lecture on space law and first young scholars session; (b) 30 years of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies perspectives; (c) legal aspects of space security; (d) current status of the rule of law with regard to space activities; and (e) recent developments in space law.

In addition, the twenty-fifth scientific and legal round table was held on the theme “Assessing commercial human spaceflight”, and IISL also organized a joint session with IAF on the theme “Legal framework for collaborative human space missions”.

The annual IISL dinner for members and invited guests was held following the Manfred Lachs Space Law Moot Court Competition at the Na Spilce Restaurant in Plzen, Czech Republic.

### 6. Manfred Lachs Space Law Moot Court Competition

The nineteenth Manfred Lachs Space Law Moot Court Competition was held during the 53rd IISL Colloquium. The “Case concerning suborbital tourism, definition of outer space and liability (*Aspirantia v. Republica*)” was written by Peter van Fenema. Preliminary rounds were held at the regional level in Europe (9 teams), North America (10 teams) and Asia and the Pacific (29 teams).

Three members of the International Court of Justice judged the finals: Abdul Koroma, Peter Tomka and Leonid Skotnikov.

The winner of the final round was the George Washington University (United States). The National University of Singapore (Singapore) was the runner-up, and the University of Cologne (Germany) was the second runner-up.

The organizations that supported the world finals were: Univerzita Karlova v Praze, ECSL/ESA, the Japan Aerospace Exploration Agency (JAXA), the Secure

World Foundation, Martinus Nijhoff Publishers, IAF, CSA Czech Airlines, and Kocián Šolc Balaštik.

The institutions that supported the winners of the three regional rounds, allowing the students to come to IAC to compete in the world finals, were: ECSL/ESA, JAXA and the Secure World Foundation. IISL is fortunate to benefit from their continued support, which has enabled many students over the years to take part in this exceptional competition, the only one of its kind to be judged by sitting members of the International Court of Justice.

#### **7. Eilene M. Galloway Symposium on Critical Issues in Space Law**

The fifth Eilene M. Galloway Symposium on Critical Issues in Space Law was organized at the Cosmos Club in Washington, D.C., on 2 December 2010 by the National Centre for Remote Sensing, Air and Space Law of the University of Mississippi, and IISL. The symposium was entitled “Article IX of the Outer Space Treaty and peaceful purposes: issues and implementation”. The event involved lawyers, scientists, space agency representatives and industry. Some of the papers will be published in the IISL Proceedings. The next Eilene M. Galloway Symposium on Critical Issues in Space Law will be held in Washington, D.C., in December 2011.

### **D. Activities in 2011**

#### **1. Symposium for the Legal Subcommittee**

IISL and ECSL will organize a symposium entitled “A fresh look on the delimitation of airspace and outer space”. It will be held on 28 March 2011.

#### **2. Space Law Conference**

On 1 and 2 June, the Space Law Conference will be organized in Jakarta by IISL and the Indonesian Society of International Law, in conjunction with the Asian and Pacific regional round of the Manfred Lachs Space Law Moot Court Competition.

#### **3. Colloquium on the Law of Outer Space**

The 54th IISL Colloquium on the Law of Outer Space will be held in Cape Town, South Africa, from 3 to 7 October 2011. The following topics will be discussed:

(a) Nandasiri Jasentuliyana keynote lecture on space law and first young scholars session. In the first part of the session, IISL will invite a prominent speaker to address members of the Institute and other Colloquium attendants on a highly topical issue of broad interest. The second part of the session will be dedicated to the space lawyers of the future and young scholars (under 35 years old) are invited to present a paper either entitled “Space law: future challenges and potential solutions” or on another topic to be agreed with IISL;

(b) Legal issues of commercial human spaceflight. It seems likely that the first proper suborbital spaceflights for tourists will soon take off, possibly being



offered by various operators from a number of places around the globe within a few years. This session will deal with legal and regulatory issues of commercial spaceflight, both on an international and national level. Such issues could include liability, certification and safety requirements, as well as issues related to the spaceflight services that private operators may start offering to the public;

(c) Africa: space law and applications — past, present, and future. Africa is an emerging spacefaring continent. The session will address Africa's past and current activities in remote sensing, telecommunications, launch and global positioning systems (GPS)/global navigation satellite systems (GNSS), and the law and regulations on such activities. Among these will be remote sensing in Morocco and Nigeria; launches in Algeria, Kenya and South Africa; and telecommunications across the continent. This session will also look to the future and consider the role of space law in developing countries;

(d) Environmental aspects of space law and of space activities. It is well known that the international legal order for space activities came into existence before international environmental law began to develop. Therefore, it seems useful to take stock of existing international space law with regard to environmental protection for space as well as for space activities. The session aims at investigating the existing *lex lata* of environmental protection for space activities and making proposals *de lege ferenda*, taking into account the interaction between space law and general international law;

(e) Recent developments in space law. Papers for this session will focus on developments in space law since March 2010. In addition, papers are invited to address two special issues: the legal aspects of GNSS; and articles 6 and 7 of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies;

(f) A scientific-legal round table will be held in Cape Town on the topic "Space debris environment remediation", and will reflect the results of the completed IAA Cosmic Study.

#### 4. Manfred Lachs Space Law Moot Court Competition

A new website has been created for the Manfred Lachs Space Law Moot Court Competition ([www.iislweb.org/lachsmoot](http://www.iislweb.org/lachsmoot)). The former website address and its current content are no longer managed by or related to IISL.

New co-chairs of the moot court committee and a new regional organizer for the competition in Asia and the Pacific were appointed; their details can be found on the website.

The semi-finals and finals of the twentieth Manfred Lachs Space Law Moot Court Competition will be held during the 54th IISL Colloquium, to be held in Cape Town, South Africa, in October 2011. Three judges from the International Court of Justice will be invited to judge the finals. Regional rounds will be held in Europe, North America and Asia and the Pacific.

It is planned to organize a preliminary African round prior to the Colloquium, with a view to hosting a new African round from 2012 onwards.

Similarly, universities from Colombia and possibly some other Latin American countries have been invited to participate in the North American round, with a view to hosting a new Latin American round in the future.

The Asian and Pacific round will be held in Jakarta for the first time, in cooperation with the Indonesian Society of International Law. In conjunction with this round, a space law conference will be held in Jakarta on 2 and 3 June, hosted by the Universitas Pelita Harapan.

## **E. Publications**

The proceedings of the 51st Colloquium on the Law of Outer Space, held in Daejeon, Republic of Korea, were published by the American Institute of Aeronautics and Astronautics.

The proceedings of the 52nd Colloquium on the Law of Outer Space, held in Prague, will be published by the American Institute of Aeronautics and Astronautics.

The Report of the Standing Committee on the Status of International Agreements Relating to Activities in Outer Space has, as usual, been prepared by Andrei Terekhov and will be published in the IISL proceedings.

IISL is currently working on a book entitled "Pioneers of Space Law".

On the occasion of its fiftieth anniversary, the Institute republished the 1972 book by Manfred Lachs entitled, *The Law of Outer Space: An Experience in Contemporary Law-making* (edited by Tanja Masson-Zwaan and Stephan Hobe).

A book with the papers of the 2010 young scholars session is being prepared and will be published with the support of the Indian Space Research Organization.

Under contract with the United Nations, IISL prepared material for the annual review of developments in international cooperation and space law entitled *Highlights in Space*.

IISL submits annual reports on its activities to the Committee on the Peaceful Uses of Outer Space.

## **F. Concluding remarks**

IISL is honoured to cooperate with the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies in the further development of space law. In particular, IISL is prepared to assist, as appropriate, in carrying out background studies needed by the Committee for consideration and information. IISL recognizes that certain areas that may require legal regulation include technical issues and may need preparatory work that it may be able to carry out for the consideration of the Committee.

## International Law Association

[Original: English]

[9 January 2011]

### A. Background information

ILA was founded in 1873 in Brussels and its headquarters are in London. Lord Mance, Justice of the United Kingdom Supreme Court is the Chair of the Executive Council and Nico Schrijver (the Netherlands) is currently the President. Christine Chinkin (United Kingdom) is the Director of Studies.

The objectives of ILA, in accordance with its statutes, are the study, clarification and development of international law, both public and private, and the furtherance of understanding and respect for international law. The focal point of its activities is the international committees that work permanently between the biennial conferences, of which 74 have been held to date. Plans are being made to hold the seventy-fifth ILA Conference in Sofia in August 2012.

The ILA Space Law Committee was set up in New York in 1958. The ILA Committee has been a permanent observer to the Committee on the Peaceful Uses of Outer Space and both its Subcommittees since 1990 and reports annually thereto.

### B. Activities of the International Law Association Space Law Committee during 2010

#### 1. Forty-ninth session of the Legal Subcommittee

The ILA Space Law Committee was represented by its Chair, General Rapporteur, Conference Session Reporter and some of its members at the forty-ninth session of the Legal Subcommittee. A written report was submitted to the session by the Chair of the ILA Committee, reflecting the activities of the Committee during 2009 and progress on the different topics addressed, having in mind the seventy-fourth Conference of the ILA planned for August 2010 at The Hague (see A/AC.105/C.2/L.278). The report was followed by an oral presentation by the Committee Chair to which the General Rapporteur added his views on the preparation of a model law on national space legislation.

#### 2. Third United Nations Expert Meeting on Promoting Education in Space Law

ILA experts participated in the third United Nations Expert Meeting on Promoting Education in Space Law, held in Vienna on 23 March 2010, to consider the education curriculum on space law currently being developed. Further comments were made on this occasion and a draft version by the Office for Outer Space Affairs followed.

**3. Forty-seventh session of the Scientific and Technical Subcommittee**

ILA Committee members, including the Chair and General Rapporteur, were asked to form part of the International Advisory Board of a project conducted by the University of Nebraska-Lincoln with the support of the Secure World Foundation on the topic “Legal aspects of the near-Earth object threat: response and related international issues”. A final presentation of this project, including recommendations on the various issues involved and their possible legal treatment, was made by ILA Committee member Steven Freeland during the forty-seventh session of the Scientific and Technical Subcommittee, on 15 February 2010.

**4. Permanent Court of Arbitration**

A number of members of the ILA Space Law Committee were invited by the Permanent Court of Arbitration to be part of an advisory group on dispute settlement in space law, chaired by Fausto Pocar, with a view to ascertaining the need for optional rules for arbitration of disputes arising from space activities and, subsequently, their elaboration. The group has been working without interruption and a first draft is currently being considered.

**5. International Law Commission of the United Nations**

The ILA Study Group on Responsibility of International Organizations has continued to work in close cooperation on this subject with the International Law Commission (ILC) and its Study Group which, in 2011, will complete the final and second reading of its draft articles. The ILA Group, of which both the Chair and Rapporteur of the Space Law Committee are members, is currently preparing a report to be sent to the ILC Special Rapporteur on the matter, Giorgio Gaja, on the concerns of ILA on questions of substance included in current ILC draft articles.

**6. Other activities**

As customary, the ILA Space Law Committee has joined in the work and activities of, inter alia, IISL, IAA, ESPI and ECSL. It has been in touch with some national space agencies as well.

In October 2010, the Chair and a number of ILA Committee members were invited, in different capacities, to make presentations on the topic “Evidence from Space” at a workshop organized in London by the London Institute of Space Policy and Law, under the auspices of ESA. The main topic, namely the value of satellite data in international litigation, has been a matter of concern to ILA for some years.

**7. International Law Association Conference**

The seventy-fourth Conference of the International Law Association was held in The Hague, the Netherlands, from 15 to 20 August 2010. The major topics underlying the fourth report of the ILA Space Law Committee submitted to the Conference, and ensuing working sessions, will be the central part of this presentation.

Under the heading “Legal aspects of the privatization and commercialization of space activities”, the fourth report addressed remote sensing and the value of satellite data in court, national space legislation, registration issues, space debris,

dispute settlement and recent developments suggested for the future work of the Committee.

The fifth and final report on these subjects is expected to be submitted to the seventy-fifth ILA Conference in Sofia in 2012. Having in mind the width and scope of its mandate, the Committee will continue its traditional practice, i.e. the Chair will remain responsible for part I of the report (addressing remote sensing and satellite data, space debris, registration, dispute settlement and possible new topics) and the Rapporteur will cover part II, on national space legislation, including a draft proposal for a model law.

The suggestions and conclusions arising from the seventy-fourth ILA Conference are provided below.

(a) *Remote sensing, the value of satellite data in court and the effectiveness of Earth observation satellites for monitoring compliance with international agreements*

Two outstanding and practical questions relating to the use of remote-sensing technologies were the value of satellite data in court and the effectiveness of Earth observation satellites (EOS) for monitoring compliance with international agreements, especially in the field of environmental law. The United Nations Framework Convention on Climate Change and the international rules applicable to the protection of the ozone layer were cited as an illustrative example. Likewise, the recent experience of ILA Committee member Ray Purdy in the United Kingdom and, more recently, in Australia, as part of a project on the use of satellite information (with special reference to perceptions and impact) was considered. (For more information, see [www.ucl.ac.uk/laws/environment/satellites](http://www.ucl.ac.uk/laws/environment/satellites).) In fact, a few members of the ILA Space Law Committee were on the advisory board of this international project (in 2009 and 2010), the objectives of which coincide to a great extent with topics being studied by the Committee.

ILA Committee members considered that practical solutions were needed to encourage the use of satellite data in court in fields where precision was essential, such as boundary disputes. The main problem is the wide margin of interpretation by experts. Unlike aerial photographs, where changes are relatively easy to ascertain, satellite data may be manipulated with no possibility of detecting ex post facto changes. Indeed, the current lack of agreed international standards (examples of which may be found at the regional but not the international level) is a major obstacle to the use of these technologies in court at the moment.

The problem is aggravated when it comes to delimitation of land and waters on international fronts and when thorny issues involving sovereignty are involved. A number of cases decided in recent years by the International Court of Justice and other international arbitrations are clear examples of the underlying difficulties.

The prevailing opinion is that strict control over all the phases of data collection — from the collection of raw data to the moment the final product is used — is indispensable for the transparency of this technology. The possibilities of keeping “sealed data”, or of storing primary data in archives, were also mentioned at The Hague. The general opinion within ILA is that international standards or guidelines for the authentication of satellite data and reliable mechanisms for the production of satellite imagery in court, at the stage of evidence, are essential. Authentication and capacity-building are therefore required.

On the validity of the Principles relating to Remote Sensing of the Earth from Outer Space, a question entrusted by the ILA Council to its Space Law Committee since the 2004 ILA Conference in Berlin, it was observed that the current international context has changed; commercial activities in space are constantly gaining momentum. Developing countries which, at the time of adoption of the Principles, were only “sensed States” are now increasingly engaged in space activities and accessing the new technologies. Therefore, they are now “sensing States” as well.

It may be anticipated that, all in all, the use of EOS has been faring well in different scenarios and groups of countries and that the guidelines for interpretation of the above-mentioned principles are stemming from State practice, both from the industrialized and developing worlds.

*(b) National space legislation — a model law*

Part II of the fourth report included a draft model law (non-binding) on national space legislation, which was prepared by the General Rapporteur and discussed at the Committee’s working session.

On this topic, the ILA Space Law Committee has been cooperating with the working group on national space legislation, operating in the framework of the Legal Subcommittee and chaired by ILA Committee member Irmgard Marboe, whose mandate comes to an end in 2011.

A draft, to which ESPI and other ILA Committee members also contributed, shall be circulated as a conference room paper during the fiftieth session of the Legal Subcommittee. The final text will be part of the fifth report of the ILA Space Law Committee to the seventy-fifth ILA Conference in 2012.

*(c) Space debris in a new light following its inclusion on the agenda of the Legal Subcommittee as a single item for discussion*

The Committee Chair is currently evaluating the answers received from States in conformity with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space concerning domestic measures implemented by States to that effect.

Likewise, the ILA International Instrument on the Protection of the Environment from Damage caused by Space Debris, adopted in 1994 at the sixty-sixth Conference, held in Buenos Aires, and introduced to the Legal Subcommittee in 1995, continues to be studied by the ILA Committee.

Article 1 of that Instrument contains definitions or, rather, descriptions, of what should be understood by space debris. It is being revised at the moment by technical experts to determine its consistency with the advances of science and technology.

National institutions in different countries have also responded to these questions by conducting research projects on the legal aspects of space debris. In this sense, the University of Cologne, Germany, and McGill University, Canada, are undertaking an interdisciplinary study on space debris. Between 26 and 30 April, a meeting on the subject was organized in Cologne, conducted by the General Rapporteur of the ILA Space Law Committee, with Ram Jakhu as co-chair. At the

end of the meeting, a declaration was adopted recommending, inter alia, that States adopt and implement, as national space legislation, the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space and cooperate to bring about increased awareness, by conducting their space activities with transparency.

Similarly, the National Council of Scientific and Technical Research (CONICET) of Argentina is working on a project on the subject, with a special focus on space debris and EOS. Participants are working in cooperation with the National Commission of Space Activities (CONAE) of Argentina and the Universities of Buenos Aires and Belgrano, both in Argentina, and other relevant international institutions.

Among other examples, the University of Mississippi, and its National Center for Remote Sensing, Air and Space Law, is giving special attention to this problem. These projects, and a number of others around the world, have a strong interdisciplinary nature.

*(d) Registration issues*

The ILA Space Law Committee is currently following the development and impact upon States and international organizations of General Assembly resolution 62/101 on the registration of space objects.

*(e) Dispute settlement*

Apart from the ILA Space Law Committee keeping the ILA draft convention on the settlement of disputes related to space activities under permanent review, some of its members, including the Chair and Rapporteur, have taken up new responsibilities within the Permanent Court of Arbitration and are part of an international advisory group on the elaboration of optional rules for arbitration of disputes arising from space activities.

This new experience is proving useful for viewing matters in a different light, particularly with regard to the fact that the ILA draft convention included, from its initial stages, a section on the participation of private entities in space activities and the possibility of availing themselves of the mechanisms laid down by the draft convention that are applicable to disputes between sovereign States.

## **C. New topics for future work of the International Law Association Space Law Committee**

### **Review of the Moon Agreement**

The ILA Space Law Committee believes that a review of the Moon Agreement, with emphasis on the regime applicable to the exploration and exploitation of its natural resources, is appropriate. There are aspects of this text that need reviewing to take into account new technologies that are being developed.

The Committee was involved in such a review in New Delhi at the seventieth ILA Conference in 2002.

It now seems advisable to start a fresh discussion on some controversial aspects of the Moon Agreement, considering the low number of ratifications it has achieved so far. A great many changes have taken place in the international and regional settings since its adoption in 1979; indeed, the Moon Agreement and its unresolved questions are back in the limelight.

#### **Legal aspects of near-Earth objects**

ILA concurs with the importance of looking at legal aspects of near-Earth objects, which is strongly linked to space security and has for some time been under discussion by the Scientific and Technical Subcommittee. The time appears right for ILA to start thinking of the major legal and political aspects in this area of far-reaching humanitarian connotations.

### **D. Conclusion**

The fifth (and final) report of the Space Law Committee to the seventy-fifth ILA Conference in 2012 will address the following topics:

- (a) Remote sensing: minor adjustments to the 2004 ILA Berlin Conclusions and special reference to satellite data in international litigation and draft international standards; and the effectiveness of remote sensing to monitor compliance with international law;
- (b) National space legislation, focusing on the adoption of a model law on the basis of the working session of the Committee at The Hague and its follow-up;
- (c) Space debris mitigation in the light of General Assembly resolution 62/217, in which the Assembly endorsed the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space. Review of the ILA Instrument on the Protection of the Environment from Damage Caused by Space Debris adopted by the sixty-sixth ILA Conference, held in Buenos Aires in 1994 (a topic under permanent review by the Committee);
- (d) Dispute settlement related to space activities. Review of the ILA draft convention on the settlement of disputes related to space activities, which is under permanent review by the ILA Space Law Committee. Recent drafting experience of its officers and members in the framework of the Permanent Court of Arbitration;
- (e) Initial views for further study of new topics by the ILA Committee, with emphasis on a revision of the Moon Agreement to determine its relevancy today; and the legal and political aspects of near-Earth objects such as comets and asteroids.

As a permanent observer to the Committee on the Peaceful Uses of Outer Space since the early 1990s, it has been a pleasure for ILA to report to the Legal Subcommittee on the progress and results of its work. ILA would be honoured to look into any other topic the Legal Subcommittee may wish to entrust to it.



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# General Assembly

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## Committee on the Peaceful Uses of Outer Space

### **Report on the United Nations/Thailand Workshop on Space Law on the theme “Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks” (Bangkok, 16-19 November 2010)**

#### **I. Introduction**

##### **A. Background and objectives**

1. International and regional cooperation for the peaceful uses of outer space helps to bring the benefits of space technology applications to a wide circle of stakeholders, both governmental and non-governmental, and to intensify and diversify national space programmes. Policy and regulatory frameworks at the national, regional and international levels are of paramount importance in providing the necessary basis for States, developing countries in particular, to meet development goals and address challenges of sustainable development. As part of that process, it is necessary to continue to strengthen the linkages between international space law and the conduct of space activities.

2. Each year, the General Assembly adopts a resolution on international cooperation in the peaceful uses of outer space. In its resolution 64/86 of 10 December 2009, the Assembly reaffirmed the importance of international cooperation in developing the rule of law, including relevant norms of space law, and urged States that had not yet become parties to the international treaties governing the uses of outer space to give consideration to ratifying or acceding to those treaties, as well as incorporating them into their national legislation.

3. National space laws and other regulatory frameworks are necessary for States to implement their obligations under the United Nations treaties and to meet their specific national requirements.

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4. Given the growing number of benefits derived from space science and technology applications, the number of space activities conducted by States, intergovernmental and non-governmental entities and the private sector continues to grow. In developing international and regional space cooperation, States should ensure that all actors conducting space activities comply with the requirements of international space law and that this branch of public international law properly reflects the needs of contemporary space activities.

5. The successful implementation and application of the international legal framework governing space activities depend on the understanding and acceptance of that framework by policymakers and decision makers. The presence of suitable professionals, particularly in developing countries, who are able to provide legal advice and disseminate information and knowledge relating to space law is therefore dependent on adequate opportunities for education in space law and policy.

6. In order to promote adherence to the five United Nations treaties on outer space and to assist States in building their capacity in space law, the United Nations, together with the Government of Thailand and the Geo-Informatics and Space Technology Development Agency (GISTDA), with the support of the European Space Agency (ESA) and the Asia-Pacific Space Cooperation Organization (APSCO), organized the Workshop on Space Law on the theme “Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks”. The Workshop was held in Bangkok from 16 to 19 November 2010.

7. The Workshop provided an overview of the legal regime governing the peaceful uses of outer space, examined and compared various aspects of existing national space legislation and considered the current state of university-level studies and programmes in space law and ways of enhancing the availability and development of such studies and programmes. The main objectives of the Workshop were:

(a) To promote understanding, acceptance and implementation of the United Nations treaties and principles on outer space;

(b) To promote exchange of information on national space legislation and policies for the benefit of professionals involved in national space activities;

(c) To consider trends and challenges in international space law, such as the commercialization of space activities and the increasing number of actors involved in them;

(d) To consider the development of space law studies and programmes at the university level, with a view to promoting national expertise and capability in that field;

(e) To consider mechanisms for increasing regional cooperation in the peaceful uses of outer space.

8. The Workshop was the seventh in a series of workshops organized by the Office for Outer Space Affairs of the Secretariat to build capacity in space law.

## B. Attendance

9. The Workshop was attended by approximately 130 legislators, Government officials, practitioners and educators working in Government departments and representatives of space agencies, international organizations, national universities, research institutions and the private sector, as well as university students.

10. Invited speakers and participants from the following countries contributed to the Workshop: Austria, Bangladesh, China, Czech Republic, France, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Lao People's Democratic Republic, Malaysia, Myanmar, Nigeria, Pakistan, Philippines, Republic of Korea, Singapore, Thailand, United Kingdom of Great Britain and Northern Ireland, United States of America and Viet Nam.

11. The following were also represented: the European Space Agency, the Asia Pacific Space Cooperation Organization, the International Institute for the Unification of Private Law (Unidroit), the Economic and Social Commission for Asia and the Pacific, and the Office for Outer Space Affairs. Representatives of the Secure World Foundation also attended the Workshop.

12. Funds provided by the United Nations and the Government of Thailand were used to cover the travel and living costs of 22 participants selected on the basis of their experience and potential to influence the development of space law and policy, build capacity and promote education in space law in their countries.

## C. Programme

13. Representatives of the Ministry of Science and Technology of Thailand, GISTDA, ESA, APSCO and the Office for Outer Space Affairs opened the Workshop with introductory and welcoming statements.

14. The first session of the Workshop focused on the international legal framework governing space activities. Participants were provided with a comprehensive overview of the United Nations treaties and principles on outer space and other legal frameworks applicable to space activities. They discussed and identified the benefits of States becoming parties to the treaties and conducting their space activities in accordance with the United Nations principles on outer space. The following presentations were given:

- (a) Work of the Committee on the Peaceful Uses of Outer Space and its Legal Subcommittee;
- (b) Overview of international space law;
- (c) Benefits of becoming a party to the United Nations treaties on outer space;
- (d) Regional and international cooperation: the role of bilateral and multilateral agreements;
- (e) Preliminary draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.

15. During the second session, dedicated to national legal and policy frameworks, participants considered how national space laws and policies were developed in countries of the region. Special attention was paid to regulating national space activities and implementing provisions of the United Nations treaties on outer space. Aspects related to the relationship between international space law and national space legislation were also discussed. Participants considered ways of developing a national regulatory framework in various countries, taking into account the specific nature of their national space activities. The session comprised the following presentations:

- (a) Work of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space on the general exchange of information on national legislation relevant to the peaceful exploration and use of outer space;
- (b) National jurisdiction for regulating the space activities of governmental and non-governmental entities;
- (c) Liability, indemnification and insurance;
- (d) Register of Objects Launched into Outer Space maintained by the United Nations;
- (e) Impact of new developments in space activities on international space law;
- (f) Remote sensing;
- (g) Global navigation satellite systems.

The Workshop also heard presentations on examples of national regulatory and policy frameworks relating to the peaceful exploration and use of outer space by the following States: China, India, Japan, Republic of Korea, Thailand and United States. In addition, a presentation on the national space-related legislation of ESA member States was given, which included information on the draft code of conduct for outer space activities being developed by the Council of the European Union.

16. The third session focused on mechanisms for international and regional cooperation in the exploration and use of outer space. The following presentations were delivered:

- (a) APSCO;
- (b) Observation and proposal for coordinating space-related activities and institution-building in Asia and the Pacific;
- (c) Asia-Pacific Regional Space Agency Forum;
- (d) Space organization for the Association of Southeast Asian Nations (ASEAN).

17. The fourth session focused on specific considerations and needs for capacity-building and education in space law. Participants examined the experience of educators in promoting education and developing courses in space law, considered mechanisms for overcoming regional challenges and discussed the core elements to be included in curricula on space law. Presentations were made on: (a) current opportunities for education in space law in the region; and (b) programme on capacity-building in space law of the Office for Outer Space Affairs. The session

ended with a round-table discussion on ways and means of promoting education in space law.

## II. Recommendations, observations and conclusions

18. Workshop participants expressed their appreciation to the Government of Thailand, GISTDA, ESA, APSCO and the Office for Outer Space Affairs for organizing the Workshop.

19. It was noted that the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space and the fiftieth anniversary of human space flight would be celebrated in 2011, as the first meeting of the Committee on the Peaceful Uses of Outer Space had been convened on 27 November 1961. In setting out the future scope of its work at its first meeting, the Committee had facilitated discussion by the First Committee of the General Assembly on the text that would become Assembly resolutions 1721 A to E (XVI) of 20 December 1961. Those important resolutions had served as the origin of international space law. In its resolution 1721 (XVI) A, the Assembly had invited the Committee to study and report on the legal problems which might arise from the exploration and use of outer space. In its resolution 1721 (XVI) B, the Assembly had expressed its belief that the United Nations should provide a focal point for international cooperation in the peaceful exploration and use of outer space; had called upon States launching objects into orbit or beyond to furnish information promptly to the Committee, through the Secretary-General, for the registration of launchings; and had requested the Secretary-General to maintain a public registry of that information. Assembly resolution 1721 (XVI) B still provided the basis for the registration of space objects by States not parties to the Convention on Registration of Objects Launched into Outer Space.

20. The Workshop observed that, over the past 50 years, the Committee and its Legal Subcommittee had been instrumental in the creation of the international legal regime governing the activities of States in the exploration and use of outer space.

21. The Workshop also observed that constant development in space science and technology and their applications, such as Earth observation, communication and navigation, timing and positioning and new exploration efforts, in addition to increased commercial and private activities in the space sector, generated demands for regulative approaches to meet the needs of new actors and beneficiaries, among both space-faring nations and emerging space-faring nations.

22. The Workshop recognized that, in that sense, the Committee and its two Subcommittees demonstrated the will of its members to advance their role in international cooperation in the peaceful uses of outer space by making important and effective decisions in terms of protecting the Earth and space environment; enhancing the capacity of all States in promoting economic, social and cultural development, disaster management and environmental protection; and enhancing understanding of regulatory frameworks and mechanisms to that effect.

23. The Workshop noted other fields of regulative interest, such as protection of interests in space assets, commercial human space transportation and space traffic management.

24. The Workshop underscored the efforts of the Committee and its Legal Subcommittee to further advance the application of the legal regime of outer space, in particular through the adoption of General Assembly resolution 59/115 on application of the concept of the “launching State” and Assembly resolution 62/101 on recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects. The Workshop also recognized the efforts of the Committee and the Subcommittee to promote capacity-building in space law, for which the series of United Nations workshops on space law played an important role.

25. The Workshop recognized the conclusion, by the Committee and its Scientific and Technical Subcommittee, of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space (A/62/20, annex) and the Safety Framework for Nuclear Power Source Applications in Outer Space (A/AC.105/934), which provided important technical frameworks at the international level.

26. The Workshop emphasized the need to continue promoting universal acceptance of, and compliance with, the United Nations treaties on outer space. In that regard, the Workshop recalled the document developed by the Legal Subcommittee at its forty-third session, in 2004, containing information on the benefits to, rights and obligations of parties to the United Nations treaties on outer space (A/AC.105/826, annex I, appendix I).

27. The Workshop agreed that, through the regular exchange of information and experiences in regulating national space activities, States would be able to draw mutual benefit from examining new developments and identifying common principles, norms and procedures.

28. The Workshop noted that States would be able to offer legal certainty and transparency to entities involved in space activities by developing and publishing national space laws and regulatory frameworks, as well as bilateral and multilateral agreements, including at the regional level, particularly in the context of the increasing commercialization and privatization of space activities. The Workshop therefore welcomed the work being undertaken by the Legal Subcommittee, through its Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space, to finalize its report, building on findings from its work over the past several years.

29. The Workshop agreed that the United Nations treaties on outer space provided an established legal regime for the orderly use of outer space and contributed to the strengthening of the rule of law. By becoming parties to those treaties, States could better protect their legitimate rights and interests in the peaceful exploration and use of outer space.

30. The Workshop recognized the different approaches taken by States in dealing with various aspects of national space activities, namely by means of unified acts or a combination of national legal instruments, and noted that States had adapted their national legal frameworks according to their specific needs and practical considerations. The Workshop observed that some States had instituted national policy frameworks and that the establishment of national regulatory frameworks was being considered.



31. The Workshop noted that common ground for national legislation included the need to fulfil obligations under treaties to which a State had become a party, the need to achieve consistency and predictability in the conduct of space activities under the jurisdiction of the State, and the need to provide a practical regulatory system for private sector and commercial involvement. The need for improved national coordination and the integration of a wider range of national activities had also provided an incentive for regulatory frameworks at the national level.

32. Against that background, the Workshop observed that the following elements could serve as core categories for consideration by States when enacting national space legislation:

(a) *Scope of application*: this should reflect international obligations and commitments while paying due regard to national security and foreign policy interests, take into account the role of a “launching State” under the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the Registration Convention and the Convention on International Liability for Damage Caused by Space Objects, and determine national jurisdiction over space activities carried out from the national territory and space activities carried out elsewhere by nationals, both natural and legal persons;

(b) *Procedures for authorizing and licensing national space activities, including those conducted by non-governmental entities*: such procedures should ensure that applicants fulfil appropriate professional, technological and financial criteria, address change of status, modification, suspension and revocation of licences, and establish conditions connected to registration, liability and safety, thus establishing a predictable and reliable authorization regime;

(c) *Procedures to ensure supervision and control of space activities carried out under national jurisdiction*: such procedures should include the role and competencies of supervising authorities and should establish requirements for the fulfilment of obligations under a licence, including administrative measures or a sanctions regime, as appropriate;

(d) *Procedures to ensure the registration of objects launched into outer space*: these should cover the establishment of a national registry, the obligation for operators to submit information to the competent national authority, and the submission of required data to the United Nations, including additional information on any change in the main characteristics of space objects, in particular those that have become non-functional;

(e) *Establishment of a national liability regime for space activities*: this should be in addition to general tort law and a specific liability regime (such as for environmental liability) and should include liability and indemnification procedures for seeking recourse from operators, insurance coverage and limitation of liability, as appropriate;

(f) *Provisions to ensure the safe conduct of space activities*: such provisions should include the avoidance of harmful interference with activities in the peaceful exploration and use of outer space, design and technological requirements, safety assessments, risk analysis and responses to emergency situations, and the protection of the space environment through, inter alia, avoidance of harmful contamination of

outer space and adverse changes to the Earth and space environment and implementation of space debris mitigation measures;

(g) *Provisions to deal with the transfer of ownership or control of space objects in orbit*: these should include requiring a permit for selling satellites, and procedures for the submission of information on the change in status of the operation of a space object.

33. The Workshop noted that different perspectives on public and private international law and space-related regulative activities in various intergovernmental bodies had led to increasing demand for capacity-building, education and training.

34. The Workshop acknowledged the contributions by APSCO, the Asia-Pacific Regional Space Agency Forum and other regional mechanisms for capacity-building in space law and space technology and recognized the important role that regional cooperation and coordination mechanisms could play in supporting efforts aimed at strengthening regulatory and policy frameworks, promoting education in space law and space-related legal disciplines, enhancing training opportunities for professionals in the public and private space sectors, and fostering educational programmes.

35. The Workshop encouraged closer cooperation and dialogue between universities and institutions with established space law programmes and those wishing to develop such programmes, for the benefit of students and professionals. The Workshop noted that such cooperation could help to overcome the hurdles of cost and limited access to materials.

36. The Workshop noted with appreciation the publication of the 2010 edition of the directory on education opportunities in space law by the Office for Outer Space Affairs and welcomed the development of a curriculum on space law that would be integrated into the existing educational framework of the regional centres for space science and technology education affiliated to the United Nations. The Workshop noted that, with the addition of a basic course on space law, the regional centres would be able to offer scholars with scientific and technical skills an introduction to the legal basis required for conducting space activities.

37. The Workshop encouraged the Office for Outer Space Affairs to continue to facilitate regional and interregional dialogue on space law.

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**Committee on the Peaceful  
Uses of Outer Space**  
Fifty-fourth session  
Vienna, 1-10 June 2011

## **Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space**

**Working paper submitted by the Chair of the Committee on the  
Peaceful Uses of Outer Space**

### **I. Background**

1. At the forty-eighth session of the Scientific and Technical Subcommittee, the Working Group of the Whole considered the preparations for the commemorations to be held during the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space.
2. The Working Group of the Whole noted the decision taken by the Committee at its fifty-third session, in 2010, that the events on 1 June 2011 would include a high-level segment, open to all States Members of the United Nations. Those events would enjoy the participation of representatives at the ministerial level, heads of agencies, astronauts and other dignitaries and would address the achievements of the Committee over the course of 50 years, the 50 years of human space flight and the future of humanity in outer space.
3. The Working Group of the Whole agreed that a draft document should be prepared with the objective of having a declaration of the Committee on the Peaceful Uses of Outer Space adopted at the high-level segment and that the draft document should be further negotiated among States members of the Committee and finalized before the fifty-fourth session of the Committee. The Working Group noted in that regard that consultations had been held during the forty-eighth session of the Scientific and Technical Subcommittee under the leadership of the Chair of the Committee, on the basis of a non-paper prepared by the Secretariat and circulated among permanent missions in Vienna, and agreed that the Chair of the Committee, in close consultation with the Secretariat, should prepare a working

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paper of the Chair, to be issued in the six official languages of the United Nations, for further consideration by the Legal Subcommittee at its fiftieth session.

4. The following draft declaration has been submitted by the Chair of the Committee on the Peaceful Uses of Outer Space, for consideration by States members of the Committee:

We, the States participating in the high-level segment of the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space, held at Vienna on 1 June 2011, in commemorating the fiftieth anniversary of human space flight and the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space,

1. *Recall* the launch into outer space of the first human-made Earth satellite, Sputnik I, on 4 October 1957, thus opening the way for space exploration;

2. *Also recall* that on 12 April 1961, Yuri Gagarin became the first human to orbit the Earth, opening a new chapter of human endeavour in outer space;

3. *Further recall* the amazing history of human presence in outer space and the remarkable achievements since the first human spaceflight, in particular Valentina Tereshkova becoming the first woman to orbit the Earth on 16 June 1963, Neil Armstrong becoming the first human to set foot upon the surface of the Moon on 20 July 1969, and the docking of the Apollo and Soyuz spacecrafts on 17 July 1975, being the first international human mission in space, and recall that for the past decade humanity has maintained a multinational permanent human presence in outer space aboard the International Space Station;

4. *Respectfully recall* that the human exploration of outer space has not been without sacrifice, and solemnly remember the men and women who have lost their lives in the pursuit of expanding humanity's frontiers;

5. *Emphasize* the significant progress in the development of space science and technology and their applications that has enabled humans to explore the universe, and the extraordinary achievements made over the past fifty years in space exploration efforts, including deepening the understanding of the planetary system and the Sun and the Earth itself, in the use of space science and technology for the benefit of all humankind and in the development of the international legal regime governing space activities;

6. *Recall* the entry into force of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) on 10 October 1967;<sup>1</sup>

7. *Also recall* the first meeting of the permanent Committee on the Peaceful Uses of Outer Space, convened on 27 November 1961, which facilitated the adoption of General Assembly resolutions 1721 A to E (XVI) of 20 December 1961, including resolution 1721 B (XVI), in which the Assembly

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<sup>1</sup> United Nations, *Treaty Series*, vol. 610, No. 8843.

expressed its belief that the United Nations should provide a focal point for international cooperation in the peaceful exploration and use of outer space;

8. *Recognize* that the Committee on the Peaceful Uses of Outer Space, assisted by the Office for Outer Space Affairs of the Secretariat, has for the past fifty years served as a unique platform at the global level for international cooperation in space activities and that the Committee and its subsidiary bodies stand at the forefront in bringing the world together in using space science and technology to preserve the Earth and the space environment and ensure the future of human civilization;

9. *Acknowledge* that significant changes have occurred in the structure and content of the space endeavour, as reflected in the emergence of new technologies and the increasing number of actors at all levels, and therefore note with satisfaction the progress made in strengthening international cooperation in the peaceful uses of outer space by enhancing the capacity of States for economic, social and cultural development and by strengthening the regulatory frameworks and mechanisms to that effect;

10. *Reaffirm* the importance of international cooperation in developing the rule of law, including the relevant norms of international space law, and of the widest possible adherence to the international treaties that promote the peaceful uses of outer space;

11. *Express our firm conviction* that space science and technology and their applications, such as satellite communications, Earth observation systems and satellite navigation technologies, provide indispensable tools for viable long-term solutions for sustainable development and can contribute more effectively to efforts to promote the development of all countries and regions of the world, to improve people's lives, to conserve natural resources in a world with a growing population that places an increasing strain on all ecosystems, and to enhance the preparedness for and mitigation of the consequences of disasters;

12. *Express our deep concern* about the fragility of the space environment and the challenges to the long-term sustainability of outer space activities, in particular the impact of space debris;

13. *Stress* the need to look more closely into how advanced space research and exploration systems and technologies could further contribute to meeting challenges, in particular that of global climate change, and to food security and global health, and endeavour to examine how the outcomes and spin-offs of scientific research in human space flight could increase the benefits, in particular for developing countries;

14. *Emphasize* that regional and interregional cooperation in the field of space activities is essential to strengthen the peaceful uses of outer space, assist States in the development of their space capabilities and contribute to the achievement of the goals of the United Nations Millennium Declaration;<sup>2</sup>

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<sup>2</sup> General Assembly resolution 55/2.

15. *Agree* on the need for closer coordination between the Committee on the Peaceful Uses of Outer Space and other intergovernmental bodies involved in the global development agenda of the United Nations, including with respect to the major United Nations conferences and summits for economic, social and cultural development;

16. *Call upon* all States to take measures at the national, regional, interregional and global levels to engage in the common efforts to use space science and technology and their applications to preserve planet Earth and its space environment for future generations.

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## **Committee on the Peaceful Uses of Outer Space**

**Legal Subcommittee**

**Fiftieth session**

Vienna, 28 March-8 April 2011

Agenda item 6 (a)

**Matters relating to the definition and  
delimitation of outer space**

### **Draft report of the Chair of the Working Group on the Definition and Delimitation of Outer Space**

1. At its 820th meeting, on 28 March 2011, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space reconvened its Working Group on the Definition and Delimitation of Outer Space under the chairmanship of José Monserrat Filho (Brazil).
2. The Chair drew the attention of the Working Group to the fact that, pursuant to General Assembly resolution 65/97, the Working Group had been convened to consider only matters relating to the definition and delimitation of outer space.
3. The Working Group had before it the following:
  - (a) Note by the Secretariat entitled “National legislation and practice relating to the definition and delimitation of outer space” (A/AC.105/865 and Add.8-10);
  - (b) Note by the Secretariat entitled “Questions on the definition and delimitation of outer space: replies from Member States” (A/AC.105/889/Add.7-9);
  - (c) Conference room paper entitled “Questions on the definition and delimitation of outer space: replies from Member States”, containing the replies of Austria and El Salvador (A/AC.105/C.2/2011/CRP.10).
4. The Working Group heard a presentation by Olavo Bittencourt (Brazil), summarizing the main ideas and proposals delivered at the symposium on the theme “A new look at the delimitation of airspace and outer space”, organized by the International Institute of Space Law (IISL) and the European Centre for Space

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Law (ECSL) on the margins of the current session of the Subcommittee. The Working Group expressed its appreciation to IISL and ECSL.

5. Some delegations were of the view that it was important to define and delimit outer space at the international level and that that would create certainty in the application of air law and space law, as well as in the sovereignty of States over their airspace.

6. The view was expressed that solutions with regard to the definition and delimitation of outer space could be found at the national level and that they would not necessarily diverge from those, if any, established at the international level.

7. The view was expressed that the definition and delimitation of outer space would also enable the effective application of the principles of the freedom of use of outer space and of non-appropriation of outer space.

8. The view was expressed that it was important to begin thorough discussions on the definition and delimitation of outer space, even at the theoretical level, in order to have certain mechanisms in place before real problems occurred.

9. The view was expressed that States should continue to operate under the current framework, which had functioned well, and that, at the present time, any attempt to define or delimit outer space would be a theoretical and academic exercise that could complicate existing activities and that might not be able to anticipate future technological developments.

10. Some delegations were of the view that alternative approaches to the definition and delimitation of outer space should be given serious consideration.

11. The view was expressed that the problem of the definition and delimitation of outer space was a problem of defining the scope of validity and application of air law and space law and that that legal problem should be resolved by giving consideration to various criteria, in particular to the definition of a stable orbit of a space object.

12. The view was expressed that the final decision on the matter of the definition and delimitation of outer space would be taken on a basis that would suit the interests of all States and that the decision would not necessarily be similar to the current positions taken by States.

13. On the basis of its discussions, the Working Group agreed:

(a) To continue to invite States members of the Committee on the Peaceful Uses of Outer Space to submit information on national legislation or any national practices that might exist or were being developed that related directly or indirectly to the definition and/or delimitation of outer space and airspace, taking into account the current and foreseeable level of development of space and aviation technologies;

(b) To continue to address to the Governments of Member States, through the Secretariat, the following questions:

(i) Does your Government consider it necessary to define outer space and/or to delimit airspace and outer space, given the current level of space and aviation activities and technological development in space and aviation technologies? Please provide a justification for the answer;



(ii) Does your Government consider another approach to solving this issue? Please provide a justification for the answer;

(iii) Does your Government give consideration to the possibility of defining a lower limit of outer space and/or an upper limit of airspace, recognizing at the same time the possibility of enacting special international or national legislation relating to a mission carried out by an object in both airspace and outer space?

14. The Working Group noted that the Chair planned to present to the Legal Subcommittee at its fifty-first session, in 2012, a proposal on possible ways of finding a solution to the matters relating to the definition and delimitation of outer space. The Working Group also noted that the proposal would be based on ideas expressed during the IISL/ECSL symposium at the current session of the Subcommittee and would take into account various positions taken by States and representatives of academia over the past few decades.

15. Some delegations were of the view that the definition and delimitation of outer space remained a topical and important issue that should continue to be considered by the Working Group.

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## **Committee on the Peaceful Uses of Outer Space**

**Legal Subcommittee**

**Fiftieth session**

Vienna, 28 March-8 April 2011

Agenda item 4

**Status and application of the five United Nations treaties  
on outer space**

### **Draft report of the Chair of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space**

1. At its 820th meeting, on 28 March 2011, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space reconvened its Working Group on the Status and Application of the Five United Nations Treaties on Outer Space under the chairmanship of Jean François Mayence (Belgium).
2. The Working Group held [...] meetings, from [...] to [...] 2011. At the opening meeting of the Working Group, on 28 March, the Chair recalled the mandate of the Working Group to consider, in 2011, specific themes and issues related to the status, application and/or implementation of the United Nations treaties on outer space (A/AC.105/942, annex I, para. 6).
3. The Chair also recalled the agreement during the forty-ninth session of the Subcommittee that the discussion within the Working Group should continue to include issues related to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies and that it should reflect the actual needs of States conducting activities in outer space vis-à-vis the provisions of the relevant United Nations Treaties (A/AC.105/942, annex I, para. 4).
4. The Chair recalled that the Subcommittee, at its forty-ninth session, had agreed to review at its current session the need to extend the mandate of the Working Group beyond the current session of the Subcommittee (A/AC.105/942, para. 40).
5. The Chair had prepared a questionnaire (A/AC.105/C.2/2011/CRP.12), with the intention of initiating and fostering the discussion, within the mandate of the

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Working Group, on relevant matters relating to the status and the application of the five United Nations treaties on outer space.

6. The Working Group welcomed the questionnaire as a good basis for discussion, as it focused on essential questions of practical relevance and served to organize and rationalize the work of the Working Group.

7. The Working Group agreed that States members of the Committee should be invited to provide comments and responses to the questions in the questionnaire prepared by the Chair. The questionnaire would be made available on the website of the Office for Outer Space Affairs of the Secretariat, and any replies received by the Secretariat would be made available in a conference room paper. The Working Group also agreed that the questions presented in the questionnaire were not exhaustive and that they should not limit the discussion of the Working Group during the fifty-first session of the Subcommittee.

8. Some delegations reiterated the view that the Working Group should take a practical rather than a theoretical approach in discussing the provisions of the treaties.

9. Some delegations recalled the validity of the joint statement on the benefits of adherence to the Moon Agreement by some States parties to the Agreement (A/AC.105/C.2/L.272, annex) as a useful contribution for further discussion.

10. The view was expressed that a conceptual discussion of the Moon Agreement would be useful, with a view to examining in particular issues related to the exploitation of natural resources on the Moon.

11. The view was expressed that the notion of “fault” could not be applied in the case of non-compliance by a State with a voluntary instrument adopted by the General Assembly, such as guidelines, because such instruments did not create a legal obligation and were neither obligatory nor recommendatory in nature.

12. The view was expressed that the analysis of the issue of transfer of ownership of objects in outer space was of the utmost importance and deserved in-depth study, given the current and often complex scenarios of transfer of ownership of satellites orbiting in outer space, for example the transfer between co-launching States or the transfer between non-launching States.

13. The Working Group recommended that the Subcommittee at its fifty-first session, in 2012, reconvene the Working Group and review the need to extend the mandate of the Working Group beyond that session.



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## Committee on the Peaceful Uses of Outer Space

### International cooperation in the peaceful uses of outer space: activities of Member States

#### Note by the Secretariat

#### Addendum

## II. Replies received from Member States

### Russian Federation

[Original: Russian]

[13 December 2010]

#### 1. Introduction

The national activities of the Russian Federation in 2010 in the use of outer space for peaceful purposes were carried out by the Russian Federal Space Agency (Roskosmos) under the Russian Federal Space Programme, the Global Navigation Satellite System (GLONASS) special federal programme and other special programmes, in cooperation with the Russian Academy of Sciences, the Ministry of Defence of the Russian Federation and other clients and users of space information and services.

As at 1 October 2010, the Russian Federation had carried out 23 carrier rocket launches. A total of 30 space objects (20 Russian and 10 belonging to other countries) were launched.

The following Russian space objects were launched:

- (a) 2 manned Soyuz TMA spacecraft (Soyuz TMA-18 and Soyuz TMA-19);
- (b) 4 unmanned Progress-M cargo vehicles (Progress M-04M, M-05M, M-06M and M-07M);

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- (c) 1 communications satellite (Gonets-M);
- (d) 1 Tekos experimental satellite;
- (e) 6 GLONASS-M satellites;
- (f) 1 Globus-1 communications satellite;
- (g) 5 Cosmos satellites (Cosmos-2462, Cosmos-2463, Cosmos-2467, Cosmos-2468 and Cosmos-24xx).

The following space objects were launched on behalf of foreign clients: Intelsat 16, EchoStar 14 (United States of America), CryoSat-2 (European Space Agency (ESA)), AMC-4R (SES-1) (United States), SERVIS-2 (Japan), Arabsat 4B, Prisma (Switzerland), Picard (France), TanDEM (Germany) and EchoStar 15 (United States).

A total of 20 space objects were launched by 16 carrier rockets from the Baikonur launch site. Seven space objects were launched by five carrier rockets from the Plesetsk launch site. Three space objects were launched in two launches from the launch silo at the Dombrovsky launch base (Orenburg region). A Russian module of the International Space Station (ISS) (Mini-Research Module 1 — Rassvet (“Dawn”)) was launched aboard United States space shuttle Atlantis STS-132, a reusable space transportation system, in May 2010.

## **2. Main results**

### **(a) Manned flight programme**

In 2010, the Russian Federation, in accordance with its international obligations regarding the development and operation of ISS, launched two manned Soyuz TMA spacecraft and four unmanned Progress-M cargo spacecraft, controlled and tracked the flight of the Russian segment of ISS and implemented a planned programme of research and experiments.

### **(b) Programmes on space technology applications**

#### *Space communications, television transmission and navigation*

The orbital network for space communications, television transmission and navigation includes the following space objects: Ekspress-A, Ekspress-AM, Ekspress-MD1, Yamal-100, Yamal-200 (communications, television), Ekran-M, Bonum-1 (television channel NTV), Gonets-D1, Gonets-M (communications), GLONASS and GLONASS-M. In 2010, work continued within the framework of the GLONASS special federal programme to support, develop and use the GLONASS system, including the construction of new-generation satellites with improved performance characteristics. As at 1 October, there were 21 GLONASS satellites in the orbital network, on three orbital planes. The system provides coverage of 98 per cent in the Russian Federation and 87 per cent globally.

It is expected that by the end of 2010, no fewer than 24 satellites will be operating on a continual basis in the GLONASS network and test flights of the new-generation GLONASS-K satellite with additional new navigation signals will begin.

Within the framework of the activities of the International Committee on Global Navigation Satellite Systems, established at the initiative of the United

Nations, and of cooperation with experts from other countries, work is being undertaken to define the principles governing the compatibility and complementarity of all existing and emerging satellite navigation systems. The results of this work are being taken into account in determining how best to modernize GLONASS in order to ensure global access for all users.

*Remote sensing of the Earth, meteorological observations, environmental monitoring and natural disaster management*

In the Russian Federation, hydrometeorological and natural-resource satellites are used in environmental monitoring, research and socio-economic applications. The Russian Federation's two-tier hydrometeorological system for remote sensing of the Earth involves the use of Meteor and Elektro hydrometeorological satellites.

Currently, the satellites Resurs-DK1, Monitor-E and Meteor-M1 are in orbit. Work is nearing completion on the development of new-generation hydrometeorological satellites (Elektro-L1 geostationary satellites).

The Resurs-DK1 satellite obtains remote sensing data for the purposes of:

- (a) Creating records of land resources;
- (b) Thematic mapping of land;
- (c) Monitoring of emergency situations and assessment of their consequences;
- (d) Geological mapping and mineral exploration;
- (e) Monitoring and control of the state of forests and agricultural crops and harvest forecasts;
- (f) Monitoring and control of land development and irrigation;
- (g) Monitoring and control of ice and snow cover over inland water bodies;
- (h) Environmental monitoring.

In order to achieve the most comprehensive possible monitoring of the environment, work is under way to establish and build up a system of specially designed space facilities for that purpose within the framework of the Federal Space Programme (FKP-2015). The following will shortly become operational:

- (a) Geostationary meteorological satellites (Elektro-L) for the observation of large-scale processes in the atmosphere and on the Earth's surface in the tropics;
- (b) Polar-orbiting meteorological satellites (Meteor-M) at relatively low altitudes (800-1,000 km) for the global integrated observation of the atmosphere and the Earth's surface;
- (c) Real-time optico-electronic observation satellites (Resurs-P and Resurs-PM);
- (d) Satellites for oceanographic monitoring (Meteor-M3);
- (e) Observation satellites using high-precision radiolocation for all-weather surveying of the Earth (Arkon-2M);

(f) Satellites for the monitoring of disasters and the investigation of potential earthquake precursors (Kanopus-V);

(g) High-precision observation satellites for cartographic purposes.

Work is in progress to set up the multi-purpose space system Arktika, which will include radiolocation observation satellites and hydrometeorological satellites for observation of the Arctic region.

In 2010, work continued on developing the main Earth remote sensing information centre. New stations for receiving, processing and storing data are being set up, and a data collection system for Eurasia has been launched.

#### *Natural disaster management using space technology*

One of the priority areas of the space activities of the Russian Federation involving Earth remote sensing is the development of space technologies and information support for natural disaster management, including:

(a) The forecasting, continuous and near-continuous monitoring, detection and tracking of hazardous phenomena in the atmosphere and at sea (such as hurricanes, gales, typhoons and ice formations) using data obtained in various regions of the optical and radio (ultra-high-frequency) ranges of the electromagnetic wave spectrum from Meteor and Elektro satellites;

(b) The monitoring, detection and tracking of floods using data from Meteor and Resurs-DK1 satellites (new space technologies for the provision of information to facilitate natural disaster management are to be developed and applied);

(c) The detection and tracking of forest fires that cover an area of more than 40 hectares, using the smoke plume and data from Meteor-M and Resurs-DK1 satellites obtained in the visible and infrared ranges of the electromagnetic wave spectrum.

#### **(c) Space research programmes**

During 2010, the Russian space sector participated successfully in foreign projects in the area of basic space research. The main results of space research were obtained during observation programmes conducted on board the International Gamma-Ray Astrophysics Laboratory (INTEGRAL) of ESA.

Research continued on cosmic rays and corpuscular flows within the framework of the Russian-Italian Mission (RIM) Payload for Antimatter Matter Exploration and Light-nuclei Astrophysics (PAMELA) project. The recorded number of antiprotons and positrons exceeds by an order of magnitude any other figure established by global statistics in that area to date.

In the field of planetology, studies of Mars and Venus were continued using Russian instruments (the Planetary Fourier Spectrometer (PFS), the Ultraviolet and Infrared Atmospheric Spectrometer (SPICAM), OMEGA Visible and Infrared Mineralogical Mapping Spectrometer, Analyser of Space Plasma and Energetic Atoms (ASPERA), High Resolution Stereo Camera (HRSC) and Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS) Altimeter) on board the European spacecraft Mars Express and Venus Express. Further research of the



planets' surface and atmosphere was carried out, and the data obtained are being processed and analysed.

Work continued on board the American Mars Odyssey spacecraft to detect and locate subsurface aqueous ice on Mars using the High Energy Neutron Detector (HEND) instrument complex, which the Russian Federation helped to develop (HEND makes it possible to register fast neutron flows from the surface of Mars caused by the action of solar winds). It is planned to continue the research during further experiments on board the Lunar Reconnaissance Orbiter of the National Aeronautics and Space Administration (NASA) of the United States, using the Lunar Exploration Neutron Detector (LEND).

In 2010, Russian and European experts continued to process the results of the scientific experiments carried out during the flight of the Russian unmanned spacecraft Foton-M3.

A major programme of research on zero-gravity physics, space materials science, space biotechnology and space biology was carried out.

**(d) International cooperation**

In 2010, Roskosmos contributed to the following main areas of international cooperation in the study and use of outer space for peaceful purposes:

- (a) The launch of foreign payloads using Russian facilities;
- (b) The construction of launch facilities and adaptation of Soyuz-ST carrier rockets for launch from the Guiana Space Centre, in cooperation with ESA, France and a number of European space enterprises;
- (c) Cooperation in constructing advanced facilities for the future launch of heavy payloads (Ural project);
- (d) Partnership in the construction and operation of ISS and in scientific research on board the Station;
- (e) Cooperation in the development of new materials, bioproducts and other substances under microgravity conditions (using Foton-M satellites; the next launch of a Foton-M spacecraft is planned for 2013);
- (f) Establishment of a Spektr-R X-ray observatory, with the extensive cooperation of foreign partners (ESA, the German Aerospace Center (DLR) and NASA);
- (g) Fulfilment of the Russian Federation's commitments to the International Satellite System for Search and Rescue (COSPAS-SARSAT) (Sterkh spacecraft; one satellite is currently undergoing test flights; the second is being prepared for launch in the near future).

In order to foster international cooperation, inter alia, within the framework of facilitating implementation of the resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development", adopted by the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), the Russian Federation proposes the following activities:

(a) Carrying of payloads manufactured by other countries on Russian Meteor and Resurs satellites;

(b) Carrying of Russian scientific instruments on board foreign satellites within the framework of such projects as the NASA Lunar Reconnaissance Orbiter (LEND instrument) and the Mars Science Laboratory (Dynamic Albedo of Neutrons (DAN));

(c) Participation of the Russian Federation in the Global Monitoring for Environment and Security (GMES) programme and that of the Group on Earth Observations (GEO) (global monitoring of conditions in near-Earth space, the atmosphere, the Earth's land surface and water resources, and forecasting and monitoring of natural and man-made disasters, including monitoring of forest fires and forecasting of earthquakes and other emergency situations, using Meteor-M, Resurs-DK and other satellites);

(d) Participation of the Russian Federation in the implementation of the Global Earth Observation System of Systems (GEOSS) 10-Year Implementation Plan;

(e) Participation in the work of the International Committee on Global Navigation Satellite Systems (ICG), which was set up as an unofficial body to promote cooperation on matters of mutual interest related to civilian satellite-based positioning, navigation and timing services, commercial services and the compatibility and interoperability of ICG systems.

Proposals have been drawn up for the Russian Federation to join the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters), which provides for the coordination of Earth observation and the exchange of data and information in the event of natural or man-made disasters.

Operation of ISS as a permanently manned facility continued in 2010. Since 2009, the Station's international crew has increased to six persons. The Russian Federation, in addition to enhancing its segment of the Station and conducting a variety of scientific experiments aboard that segment while at the same time fulfilling its international obligations, uses manned Soyuz spacecraft and Progress cargo spacecraft to maintain and service ISS and ensure the safety of the crew in the event of emergency situations.

A plan for the further development of the Russian segment of ISS is under implementation. In 2009 and 2010, two mini research modules were put into operation. A multi-purpose laboratory module is to be launched in 2011. In the light of the decision taken by the heads of ISS partner agencies to extend the operation of the Station until 2020, Roskosmos invites all interested partners in space activities to take part in conducting research and experiments aboard the Russian segment of ISS.

The Russian Federation has the necessary range of facilities of proven reliability for the launch, at various inclinations, of payloads weighing from several hundred kilograms to 20 tons into near-Earth orbits. The Soyuz (Soyuz-2) and Proton (Proton-M) carrier rockets have been upgraded, and work is under way to develop future launch vehicles, including the Angara family of carrier rockets. For

light satellite launches, Dnepr carrier rockets, and in some cases Sterkh and Rokot carrier rockets, are used.

To date, the Russian Federation has concluded numerous international agreements on cooperation in the exploration and use of outer space, including 42 inter-agency agreements signed by Roskosmos on joint space projects, launching methods and other areas.

**(e) Space debris**

Work on resolving the problems of space debris is included in several sections of the Federal Space Programme of the Russian Federation for the period 2006-2015.

Russian developers and operators of spacecraft and launch vehicles are subject to the requirements of the National Standard of the Russian Federation GOST R 52925-2008, entitled "Space technology: general requirements for space facilities to mitigate the man-made pollution of near-Earth space". The Standard has been brought into line with the provisions of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space.

The principal measures to mitigate space debris applied to Russian carrier rocket stages, boosters and satellites in 2010 included the following:

- (a) Full elimination of the possibility of structural components, parts and fragments from Breeze-M, DM-2 and three-stage Soyuz-2 carrier rockets being discarded in space;
- (b) Selection of justified design features for the structural components of spacecraft and installation of meteorite shields on high-pressure units in order to prevent their rupture and destruction (Monitor-E, Resurs-DK1, Resurs-P, Spekr, Elektro-L, Bion-M and Breeze-M);
- (c) Replacement, aboard the Ekran satellite, of batteries that use silver-cadmium accumulators — which are vulnerable to destruction as a result of explosion caused by the gases that they produce — with nickel hydrogen batteries;
- (d) Elimination of intentional break-ups on all carrier rockets, boosters and satellites commissioned by Roskosmos;
- (e) Depressurization of the fuel tanks of boosters following their transfer to a disposal orbit;
- (f) Burning off of fuel remnants from the propulsion unit of the launch system following separation of the space object and the discharging of on-board accumulator batteries, and removal of reaction wheels, gyroscopes and other mechanical devices;
- (g) Removal of fuel remnants under high pressure and discharging of chemical power sources on Ekspress-AM and Gonets satellites;
- (h) Following completion of the flight mission of the Fregat booster, removal of the booster from orbit with subsequent splashdown in a predetermined location in the Pacific Ocean;

(i) Movement of Earth remote sensing satellites of the “Monitor” series following completion of mission from operational orbit to a lower orbit that ensures deceleration of the space object and burn-up in the atmosphere;

(j) The design features of the Sterkh satellites ensure less time in orbit owing to modification of the configuration of solar panels and other moving surfaces.

In the Russian Federation, work is being carried out to define the parameters of the space debris model (space debris prediction analysis) more precisely using compiled experimental data, to forecast man-made pollution of near-Earth space by establishing possible future scenarios of such pollution during the period 2025-2030, and in the longer term up to 2110, and to compare the results obtained with the corresponding results obtained by foreign models.

An important factor for dealing with the problem of space debris is the establishment of an inventory of the objects polluting near-Earth space within the geostationary orbit. To that end, the Keldysh Institute of Applied Mathematics of the Russian Academy of Sciences has organized an international network of observatories — the International Scientific Optical Observation Network (ISON) — to make astrometric and photometric observations, as a result of which it has been possible to record objects throughout the geostationary orbit. By the beginning of 2010, ISON facilities were tracking 1,467 objects in geostationary orbit (compared to the 1,016 objects on which data is provided by the space surveillance systems of the United States), including 892 satellites (391 operational and 501 non-operational), 250 carrier-rocket stages, boosters and apogee kick motors.

At the Keldysh Institute, a system for the prediction of near-collisions in the geostationary orbit using ISON measurements has entered into pilot operation, and the first forecasts have been issued at the Mission Control Centre of the Central Engineering Research Institute.

**(f) Near-Earth objects**

The main activities carried out as part of research on the problem of preventing collisions of asteroids and comets with the Earth include:

(a) Timely detection and monitoring of the movement of potentially dangerous celestial bodies;

(b) Determination of the characteristics of such bodies and timely risk assessment;

(c) Selection of methods and measures for actively influencing near-Earth objects, or development and implementation of other measures to reduce the risk to the population.

In order to ensure that the above-mentioned tasks are carried out, a space segment comprising facilities for the detection and tracking of dangerous objects may be created, the work of which would ensure improved quality of forecasts; advanced unmanned spacecraft may be used to study dangerous small celestial bodies at close range and to install beacons aboard spacecraft located in companion orbits near celestial bodies or on their surface. In addition, measures have been

taken to actively influence celestial bodies that pose a threat to the Earth and to reduce the risk of their collision with the Earth.

Any measures to mitigate such threats would require the coordination of international efforts and expansion of the base of knowledge of the properties of near-Earth objects through the use of spectrographic analysis and near-Earth object fly-bys and landings.

The Russian Federation supports and is participating in the implementation of the recommendations of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space regarding the continuation of work in this area under the workplan for 2011, which envisages the expansion of joint activities to observe and analyse near-Earth objects at the national and international levels, the improved coordination of observations, the development of mechanisms for international cooperation and interaction in conducting observations and the establishment of a methodology for the development of procedures relating to the prevention of the threat at the international level.

Two international conferences on the threat to Earth posed by asteroids and comets have been held in the Russian Federation, organized by the Institute of Astronomy (Kazan, 21-25 August 2009) and the Institute of Applied Astronomy (Saint Petersburg, 21-25 September 2009) of the Russian Academy of Sciences. The results of research conducted in the above-mentioned areas were discussed at the two conferences.

Roskosmos has drawn up proposals for the use of space telescopes to observe asteroids and comets in space.

Roskosmos agencies are currently examining the scientific and environmental aspects of implementation of the following proposals:

(a) The mission of a Russian spacecraft similar to Phobos-Grunt to the asteroid Apophis with the aim of increasing the precision of predictions of the asteroid's "close encounters" with the Earth in 2036 and subsequent years, and research on the asteroid's physical and chemical characteristics;

(b) The construction of space telescopes capable of guaranteeing the detection and high-precision definition of the trajectory parameters of small (similar in size to the Tunguska meteorite) hazardous celestial bodies that cannot be detected using ground-based telescopes, and also for the high-precision calculation of the orbit of Apophis.

**(g) Space weather**

The Russian Federation has more than 20 years of experience in conducting observations of and research on space weather phenomena. The Applied Geophysics Institute of the Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet) is both the main national centre for space weather forecasts and the European regional centre for reporting on space weather. Instruments for the observation of space weather operate on Russian Resurs-DK satellites and on the hydrometeorological satellite Meteor-3M, which was launched in 2009. In addition, a geophysical system of instruments is being installed on advanced Elektro satellites and in the Arktika space system.

Work has been stepped up in the Russian Federation to establish a system for monitoring the heliosphere and the Earth's atmosphere, consisting of ground-based and space-based segments.

The space-based segment comprises five satellites aboard which, inter alia, the following equipment is to be installed: radiophysical systems that use a wide range of frequencies (ionosondes) for monitoring the state of the ionosphere; equipment for the measurement of ionizing radiation; a system to monitor magnetic and wave activity; a dual-frequency transmitter of radio signals at frequencies of 150 to 400 MHz; global positioning system (GPS) receivers; and a diagnostics system to monitor solar activity.

The new system will include a ground-based complex for receiving, processing and distributing information. The deployment of the system will make it possible to perform tasks relating to the monitoring of and response to natural and anthropogenic effects on the upper atmosphere, the ionosphere and near-Earth space. The incorporation of the system in existing ground-based networks of measuring instruments will significantly increase the effectiveness of the overall system for the monitoring and forecasting of space weather.

**(h) Nuclear power sources in outer space**

Work in the Russian Federation to ensure the safe use of nuclear power sources in space is currently being carried out in the context of a project to construct a transport energy module with a megawatt-class nuclear propulsion system, implementation of that project having begun in 2010. The following international documents are being used in connection with that work as the main guidelines for ensuring safety:

- (a) Principles Relevant to the Use of Nuclear Power Sources in Outer Space;
- (b) Safety Framework for Nuclear Power Source Applications in Outer Space.

The transport energy module, which contains a nuclear power facility and an electrically powered cruise propulsion system fed by that facility and is intended to propel the space object and supply power to all its systems, is being developed in full conformity with the relevant United Nations documents.

In connection with the development of the transport energy module and in accordance with the provisions of the relevant international documents, national regulatory documents such as the General Regulations Governing the Safety of Nuclear Propulsion Systems, the Regulations Governing the Nuclear Safety of Nuclear Power Reactor Facilities aboard Unmanned Spacecraft and the Regulations Governing the Radiation Safety of Nuclear Power Sources in Space are currently being prepared in the Russian Federation with due regard to the provision of the Safety Framework for Nuclear Power Source Applications in Outer Space that states that activities occurring during the terrestrial phase of space nuclear power source applications, such as development, testing, manufacturing, handling and transportation, are addressed in national and international standards relating to terrestrial nuclear installations and activities.

Organizations that use nuclear power sources in space strive to achieve the fundamental goal of ensuring safety by complying fully with the relevant

governmental and intergovernmental directives, requirements and procedures. The measures necessary to ensure such compliance in carrying out the transport energy module project have been implemented, including the establishment of a working group on regulatory documents relating to the nuclear and radiation safety of megawatt-class nuclear propulsion systems, the group comprising experts in that subject from all agencies participating in the project. The design and development processes thus ensure the highest possible level of safety. Information is provided to the public in a timely manner through the mass media.

The recommendation to ensure the highest level of safety that can reasonably be achieved, as contained in the Safety Framework for Nuclear Power Source Applications in Outer Space, is reflected in the selection of the altitude of the initial orbit for the transport energy module, aboard which the nuclear reactor is being installed. As is known, the lower the initial orbit, the more effective the use of nuclear power sources. According to the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, the use of nuclear power sources in low-Earth orbits is permitted provided that those sources are stored in sufficiently high orbits after the operational part of their mission. In such cases, a very reliable operating system should be used to ensure the effective and controlled removal of the reactor to the sufficiently high orbit. However, the use of such a system reduces the level of safety. For that reason, at the current stage of design of the transport energy module, a sufficiently high orbit has been chosen as the initial orbit and as the orbit to which the transport energy module may return when operating in orbital transfer mode. Thus, safety has been given priority over effectiveness.

Following completion of the mission or in the event of an emergency situation, the reactor of the nuclear propulsion system will be brought to a subcritical state using the corresponding system, in line with the requirement set out in the Principles Relevant to the Use of Nuclear Power Sources in Outer Space that safety systems should be designed, constructed and operated in accordance with the general principle of defence in depth. Pursuant to that concept, foreseeable safety-related failures or malfunctions must be capable of being corrected or counteracted by an action or a procedure, possibly automatic. The reliability of systems important for safety is ensured, inter alia, by redundancy, physical separation, functional isolation and adequate independence of their components. The construction of the reactor for the nuclear propulsion system of the transport energy module complies fully with these principles.

The requirement established in the Principles Relevant to the Use of Nuclear Power Sources in Outer Space that the sufficiently high orbit must be such that the risk of collision with other space objects is kept to a minimum will also be met. In addition, the construction design of the reactor facility of the transport energy module will be selected on the basis of its resistance to damage caused by micro-meteorites and fine fragments of space debris.

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## Committee on the Peaceful

## Uses of Outer Space

### Fifty-fourth session

Vienna, 1-10 June 2011

## Report of the Legal Subcommittee on its fiftieth session, held in Vienna from 28 March to 8 April 2011

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## **I. Introduction**

### **A. Opening of the session**

1. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space held its fiftieth session at the United Nations Office at Vienna from 28 March to 8 April 2011 under the chairmanship of Ahmad Talebzadeh (Islamic Republic of Iran).
2. The Subcommittee held a total of 19 meetings. The views expressed at those meetings are contained in unedited verbatim transcripts (COPUOS/Legal/T.820-838).

### **B. Adoption of the agenda**

3. At its 820th meeting, on 28 March, the Subcommittee adopted the following agenda:
  1. Adoption of the agenda.
  2. Statement by the Chair.
  3. General exchange of views.
  4. Status and application of the five United Nations treaties on outer space.
  5. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
  6. Matters relating to:
    - (a) The definition and delimitation of outer space;
    - (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.
  7. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
  8. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.
  9. Capacity-building in space law.
  10. General exchange of information on national mechanisms relating to space debris mitigation measures.
  11. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.
  12. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-first session.

## C. Attendance

4. Representatives of the following 54 member States of the Committee attended the session: Algeria, Argentina, Australia, Austria, Belgium, Bolivia (Plurinational State of), Brazil, Bulgaria, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Malaysia, Mexico, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sweden, Thailand, Tunisia, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.

5. At its 820th meeting, on 28 March, the Subcommittee decided to invite, at their request, observers for Azerbaijan, Costa Rica, the Dominican Republic, Israel, the United Arab Emirates and Yemen to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that doing so would not involve any decision of the Subcommittee concerning status.

6. The session was attended by observers for the following intergovernmental organizations having permanent observer status with the Committee: Asia-Pacific Space Cooperation Organization, European Telecommunications Satellite Organization, European Organisation for the Exploitation of Meteorological Satellites, European Space Agency, International Mobile Satellite Organization, International Institute for the Unification of Private Law (Unidroit), International Organization of Space Communications (Intersputnik) and Regional Centre for Remote Sensing of the North African States. The session was attended by observers for the following non-governmental organizations having permanent observer status with the Committee: European Space Policy Institute, International Academy of Astronautics, International Astronautical Federation, International Law Association, International Institute of Space Law, National Space Society, Secure World Foundation and Space Generation Advisory Council.

7. The Subcommittee noted the application of Azerbaijan for membership in the Committee (A/AC.105/C.2/2011/CRP.15).

8. The Subcommittee had before it information concerning the application of the Association of Remote Sensing Centres in the Arab World for permanent observer status with the Committee (A/AC.105/C.2/2011/CRP.11).

9. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in document A/AC.105/C.2/2011/INF/43.

## D. Symposium

10. On 28 March, the International Institute of Space Law (IISL) and the European Centre for Space Law (ECSL) held a symposium on the theme “A new look at the delimitation of airspace and outer space”, which was chaired by Tanja Masson-Zwaan of IISL and Sergio Marchisio of ECSL. The Subcommittee heard the

following presentations during the symposium: “A short look back at a long debate”, by Catherine Doldirina; “An engineering look at delimitation in light of technological changes”, by Luboš Perek; “Are there indications for upper and lower limits for air space and outer space in air law, space law and national legislation?”, by Marco Pedrazzi; “Legal implications for delimitation of airspace and outer space”, by Joanne Gabrynowicz; “Delimitation and the commercial use of outer space”, by Sang-Myon Rhee; and “Delimitation as an element for rules of the road: a space traffic management regime”, by Jean-François Mayence. Concluding remarks were made by the Chair of the Subcommittee and by the Chair of the Working Group on the Definition and Delimitation of Outer Space. The papers and presentations delivered during the symposium were made available on the website of the Office for Outer Space Affairs of the Secretariat ([www.unoosa.org/oosa/COPUOS/Legal/2011/symposium.html](http://www.unoosa.org/oosa/COPUOS/Legal/2011/symposium.html)).

11. The Subcommittee noted with appreciation that the symposium had constituted a valuable contribution to its work.

### **E. Adoption of the report of the Legal Subcommittee**

12. At its 838th meeting, on 8 April, the Subcommittee adopted the present report and concluded the work of its fiftieth session.

## **II. General exchange of views**

13. Statements were made by representatives of the following States members of the Subcommittee during the general exchange of views: Algeria, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, France, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Kazakhstan, Kenya, Malaysia, Morocco, Philippines, Poland, Romania, Russian Federation, Saudi Arabia, South Africa, Spain, Thailand, Tunisia, Ukraine, United States and Venezuela (Bolivarian Republic of). Statements were made by Colombia on behalf of the Group of Latin American and Caribbean States and Iran (Islamic Republic of) on behalf of the Group of 77 and China. The observers for the International Astronautical Federation, IISL, the National Space Society and the Secure World Foundation also made statements.

14. At the 820th meeting, on 28 March, the Chair made a statement in which he highlighted the celebration of the fiftieth session of the Subcommittee and the commemorations in 2011 — the fiftieth anniversary of the first human spaceflight and the fiftieth anniversary of the first session of the Committee on the Peaceful Uses of Outer Space. The statement is contained in an unedited verbatim transcript (COPUOS/Legal/T.820).

15. At the same meeting, the Director of the Office for Outer Space Affairs made a statement reviewing the role and work of the Office relating to space law and the role of the Office in discharging the responsibilities of the Secretary-General under the United Nations treaties on outer space, including the maintenance of the Register of Objects Launched into Outer Space.

16. The Subcommittee noted with satisfaction that the year 2011 marked the fifteenth anniversary of the adoption by the General Assembly of the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries (Assembly resolution 51/122).

17. The Subcommittee expressed its condolences to and solidarity with the Governments of Japan, Myanmar, New Zealand, Pakistan, Saudi Arabia and the Sudan with regard to the recent natural disasters that had taken so many lives and caused so much damage in those countries.

18. Some delegations expressed the view that strengthening the security of the growing number of activities in outer space was an important objective.

19. Some delegations expressed the view that the use of outer space for peaceful purposes could be threatened unless more importance was placed on the long-term sustainability of outer space activities.

20. Some delegations expressed concern about an arms race in outer space and were of the view that present gaps in the legal regime on outer space required a more comprehensive legal regime to prevent militarization in outer space.

21. Some delegations reiterated their commitment to the peaceful use and exploration of outer space. Those delegations emphasized the following principles: equal and non-discriminatory access to outer space and equal conditions for all States, irrespective of their level of scientific, technical and economic development; non-appropriation of outer space, including the Moon and other celestial bodies, by claim of sovereignty, use, occupation or any other means; non-militarization of outer space and its exploitation strictly for the improvement of living conditions and peace on the planet; and regional cooperation to promote space activities, as established by the General Assembly and other international forums.

22. Some delegations expressed the view that the heightened pace of technological advancement in activities in outer space and the increased participation of States, international organizations and the non-governmental sector required continued reflection by the Subcommittee to enable further strengthening of the legal regime on outer space so as to preserve outer space for future generations.

23. The view was expressed that the process of universal adherence to the United Nations treaties on outer space was slower than in other areas of international law.

24. Some delegations expressed the view that the international legal framework should be further developed to avoid measures that would limit access to space by States with emerging space capabilities and should refrain from setting up overly high standards or thresholds for space activities in a way that might hinder the enhancement of capacity-building in developing countries.

25. Some delegations expressed the view that further development of the international legal regime and structuring of the work of the Subcommittee in a manner that allowed all nations, whether advanced space-faring nations or nations with emerging space capabilities, to benefit from space activities in an equitable manner would contribute to socio-economic prosperity and sustainable development, in particular in developing countries.

26. Some delegations were of the view that the Legal Subcommittee should cooperate more closely with the Scientific and Technical Subcommittee in order to address legal aspects of scientific and technological developments.

27. The view was expressed that the Legal Subcommittee should be commended for its role in establishing the core treaties on outer space and for its distinguished history of working through consensus to develop space law in a manner that promoted, rather than hindered, the exploration and use of outer space for peaceful purposes, and that such success was a result of the ability of the Subcommittee to focus on practical problems and to address such problems through a consensus-based, result-oriented process.

28. The Subcommittee noted the following events taking place during its current session: (a) the screening of a documentary entitled *Yuri Gagarin: Chosen by Stars* and an exhibition organized by the Government of the Russian Federation to mark the fiftieth anniversary of the first human space flight by Russian cosmonaut Yuri Gagarin; (b) a joint event organized by the delegation of the Russian Federation and the European Space Policy Institute entitled “Fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space and its Legal Subcommittee: perspectives for space law”; (c) an exhibition entitled “Space. About a dream”, supported by the Government of Austria; and (d) a conference on the theme “‘Soft law’ in outer space: the function of non-binding norms in international space law”, co-organized by the University of Vienna and the national point of contact for Austria of ECSL. The Subcommittee expressed its gratitude to the hosts and organizers of those events.

### **III. Status and application of the five United Nations treaties on outer space**

29. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 4, entitled “Status and application of the five United Nations treaties on outer space”, as a regular item of its agenda.

30. The representatives of Austria, China, South Africa, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 4. During the general exchange of views, statements relating to that item were also made by representatives of other member States, the representative of Colombia on behalf of the Group of Latin American and Caribbean States and the representative of the Islamic Republic of Iran on behalf of the Group of 77 and China.

31. At its 820th meeting, on 28 March, the Subcommittee reconvened its Working Group on the Status and Application of the Five United Nations Treaties on Outer Space under the chairmanship of Jean-François Mayence (Belgium). The Working Group held five meetings. At its 836th meeting, on 7 April, the Subcommittee endorsed the report of the Working Group, contained in annex I to the present report.

32. The Subcommittee noted that, as at 1 January 2011, the status of the five United Nations treaties on outer space was as follows:

(a) The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,<sup>1</sup> had 101 States parties and had been signed by 26 additional States;

(b) The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space<sup>2</sup> had 91 States parties and had been signed by 24 additional States; and 2 international intergovernmental organizations had declared their acceptance of the rights and obligations established under the Agreement;

(c) The Convention on International Liability for Damage Caused by Space Objects<sup>3</sup> had 88 States parties and had been signed by 23 additional States; and 3 international intergovernmental organizations had declared their acceptance of the rights and obligations established under the Convention;

(d) The Convention on Registration of Objects Launched into Outer Space<sup>4</sup> had 55 States parties and had been signed by 4 additional States; and 2 international intergovernmental organizations had declared their acceptance of the rights and obligations established under the Convention;

(e) The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies<sup>5</sup> had 13 States parties and had been signed by 4 additional States.

33. The Subcommittee welcomed reports from Member States regarding their progress towards becoming parties to the five United Nations treaties on outer space, in developing national space laws and in concluding bilateral and multilateral agreements on space cooperation. The Subcommittee noted that the activities of the Office for Outer Space Affairs were contributing to that progress.

34. The Subcommittee recalled that the Rescue Agreement, the Liability Convention, the Registration Convention and the Moon Agreement contained mechanisms permitting international intergovernmental organizations conducting space activities to declare their acceptance of the rights and obligations established under those treaties. The Subcommittee recommended that those international intergovernmental organizations that had not yet made such declarations should consider taking steps to encourage their members to adhere to the United Nations treaties on outer space, thereby enabling their acceptance of the rights and obligations under those treaties.

35. Some delegations were of the view that the United Nations treaties on outer space represented a solid legal structure, crucial for supporting the increasing scale of space activities and strengthening international cooperation in the peaceful uses of outer space. Those delegations welcomed further adherence to the treaties and

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<sup>1</sup> United Nations, *Treaty Series*, vol. 610, No. 8843.

<sup>2</sup> *Ibid.*, vol. 672, No. 9574.

<sup>3</sup> *Ibid.*, vol. 961, No. 13810.

<sup>4</sup> *Ibid.*, vol. 1023, No. 15020.

<sup>5</sup> *Ibid.*, vol. 1363, No. 23002.



hoped that those States that had not yet ratified or acceded to the treaties would consider becoming parties to them.

36. The view was expressed that the law-making process undertaken by the Subcommittee should be supported in order to further promote adherence to the United Nations treaties on outer space. The delegation that expressed that view stated that the adoption of non-binding instruments was a realistic solution that would further encourage States to adhere to and comply with the legal regime governing activities in outer space.

37. Some delegations were of the view that, although the United Nations treaties on outer space played an important role, those instruments were no longer sufficient for addressing legal issues arising from technological development, the expansion of space activities and the increasing participation of the non-governmental sector. Those delegations were also of the view that it was important to determine how to strengthen international and national legal systems in order to effectively address those issues.

38. Some delegations expressed the view that, under the legal framework of the United Nations treaties on outer space, the use of space by nations, international organizations and private entities had flourished. As a result, space technology and services were contributing immeasurably to economic growth and improvements in the quality of life throughout the world.

39. The view was expressed that the placement of conventional weapons in outer space was not sufficiently prohibited by the Outer Space Treaty and that it was imperative to adopt adequate and efficient measures to prevent any possibility of an arms race in outer space.

40. Some delegations expressed the view that a universal comprehensive convention on outer space should be developed, with the aim of finding solutions for existing issues, assuming full respect for the fundamental principles incorporated in the existing United Nations treaties on outer space.

41. The view was expressed that both subcommittees should cooperate in developing binding norms relating to space debris and the use of nuclear power sources in outer space.

42. The Legal Subcommittee endorsed the recommendation that the mandate of the Working Group be extended for one additional year. It was agreed that the Subcommittee, at its fifty-first session, in 2012, would review the need to extend the mandate of the Working Group beyond that period.

43. The full text of the statements made during the discussion on this agenda item is contained in unedited verbatim transcripts (COPUOS/Legal/T.822-825 and 836).

#### **IV. Information on the activities of international intergovernmental and non-governmental organizations relating to space law**

44. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 5 entitled "Information on the activities of international

intergovernmental and non-governmental organizations relating to space law”, as a regular item of its agenda.

45. Statements were made by the observers for the European Space Agency (ESA), the International Law Association (ILA) and Intersputnik under agenda item 5. During the general exchange of views, statements relating to that item were also made by the observers for the International Astronautical Federation, IISL, the National Space Society and the Secure World Foundation.

46. The Subcommittee noted with satisfaction that international intergovernmental organizations played a significant role in the strengthening and development of international space law by applying its norms throughout their activities and promoting it among their Member States.

47. For its consideration of the item, the Subcommittee had before it a note by the Secretariat containing information on activities relating to space law received from the Committee on Space Research (COSPAR), ECSL, Unidroit, IISL, ILA, Intersputnik and the International Telecommunications Satellite Organization (A/AC.105/C.2/L.281 and Add.1).

48. The Subcommittee noted that the activities of international intergovernmental and non-governmental organizations relating to space law had continued to contribute significantly to the development of space law and that those organizations had continued to organize numerous conferences and symposiums, prepare publications and reports and organize training seminars for practitioners and students, all of which were intended to broaden and advance the knowledge of space law.

49. The Subcommittee expressed its gratitude to the Asia-Pacific Space Cooperation Organization, ESA, ECSL, IISL and ILA for their continuous contribution to the United Nations workshops on space law.

50. The Subcommittee invited ILA to inform the Subcommittee at its fifty-first session about the activities of that organization in relation to the work of the advisory group on dispute settlement relating to private activities in outer space of the Permanent Court of Arbitration.

51. The Subcommittee agreed that it was important to continue the exchange of information on recent developments in the area of space law between the Subcommittee and international intergovernmental and non-governmental organizations.

52. The Subcommittee agreed that international intergovernmental and non-governmental organizations should again be invited to report to it at its fifty-first session on their activities relating to space law.

53. The full text of the statements made during the discussion on this agenda item is contained in unedited verbatim transcripts (COPUOS/Legal/T.822-825).

## **V. Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union**

54. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 6, entitled “Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union”, as a regular item of its agenda.

55. The representatives of Brazil, Indonesia, Morocco, the Russian Federation, Saudi Arabia, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 6. Statements were also made by the representative of Peru on behalf of the Group of Latin American and Caribbean States and the representative of Indonesia on behalf of the Group of 77 and China. During the general exchange of views, statements relating to that item were made by representatives of other member States.

56. At its 820th meeting, on 28 March, the Subcommittee reconvened its Working Group on the Definition and Delimitation of Outer Space under the chairmanship of José Monserrat Filho (Brazil). In accordance with the agreement reached by the Subcommittee at its thirty-ninth session and endorsed by the Committee at its forty-third session, the Working Group was convened to consider only matters relating to the definition and delimitation of outer space.

57. The Working Group held three meetings. The Subcommittee, at its 836th meeting, on 7 April, endorsed the report of the Working Group, contained in annex II to the present report.

58. For its consideration of the item, the Subcommittee had before it the following:

(a) Note by the Secretariat entitled “National legislation and practice relating to the definition and delimitation of outer space” (A/AC.105/865 and Add.8-10);

(b) Note by the Secretariat entitled “Questions on the definition and delimitation of outer space: replies from Member States” (A/AC.105/889/Add.7-9);

(c) Conference room paper entitled “Questions on the definition and delimitation of outer space: replies from Member States”, containing the replies of Austria and El Salvador (A/AC.105/C.2/2011/CRP.10).

59. Some delegations expressed the view that scientific and technological progress, the commercialization of outer space, the participation of the private sector, emerging legal questions and the increasing use of outer space in general had made it necessary for the Subcommittee to consider the question of the definition and delimitation of outer space.

60. Some delegations expressed the view that the lack of a definition or delimitation of outer space created legal uncertainty concerning the applicability of space law and air law and that matters concerning State sovereignty and the boundary between airspace and outer space needed to be clarified in order to reduce the possibility of disputes among States.

61. The view was expressed that the definition and delimitation of outer space would ensure the effective implementation of the principle of freedom of use of outer space for peaceful purposes.

62. The view was expressed that the definition and delimitation of outer space was important in relation to the issue of the liability of States and other entities engaging in space activities. That issue had become particularly topical in the light of the current intensification and diversification of space activities.

63. The view was expressed that current and foreseeable civil aviation operations would not exceed altitudes of 100-130 kilometres, where there was a potential danger of collision with numerous spacecraft. The delegation expressing that view proposed that the boundary between airspace and outer space be established in that range.

64. The view was expressed that States should continue to operate under the current framework, which presented no practical difficulties, until such time as there was a demonstrated need and a practical basis for developing a definition or delimitation of outer space. The delegation expressing that view was also of the view that at the present time any attempt to define and delimit outer space would be a theoretical exercise that could complicate existing activities and that might not be able to anticipate future technological developments.

65. The view was expressed that the discussion on the definition and delimitation of outer space had not only a legal but also a political character.

66. The view was expressed that the Legal Subcommittee, when considering matters relating to the definition and delimitation of outer space, should take into account recent and future technological developments and that the Scientific and Technical Subcommittee should also consider that subject.

67. Some delegations were of the view that the geostationary orbit — a limited natural resource clearly in danger of saturation — must be used rationally and should be made available to all States, irrespective of their current technical capacities. That would provide States with the possibility of having access to the orbit under equitable conditions, bearing in mind, in particular, the needs and interests of developing countries, as well as the geographical position of certain countries, and taking into account the processes of the International Telecommunication Union (ITU) and relevant norms and decisions of the United Nations.

68. The view was expressed that the geostationary orbit should be used rationally, efficiently and economically.

69. Some delegations expressed the view that in using the geostationary orbit it was important to give priority to the contributions of space activities to sustainable development and the achievement of the Millennium Development Goals.

70. Some delegations were of the view that the geostationary orbit was part of outer space, was not subject to national appropriation by claim of sovereignty, by means of use or occupation or by any other means, including by means of use or repeated use, and that its utilization was governed by the Outer Space Treaty and ITU treaties.

71. The view was expressed that the utilization by States of the geostationary orbit on the basis of “first come, first served” was unacceptable and that therefore the Subcommittee should develop a legal regime guaranteeing equitable access to orbital positions for States, in accordance with the principles of peaceful use and non-appropriation of outer space.

72. The view was expressed that the geostationary orbit could not be appropriated by States or by international intergovernmental or non-governmental organizations. The delegation expressing that view also stated that coordination between the Committee, its subcommittees and ITU should be established in order to facilitate the access of developing States to orbits.

73. The full text of the statements made during the discussion on agenda item 6 is contained in unedited verbatim transcripts (COPUOS/Legal/T.824-829 and 836).

## **VI. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space**

74. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 7, entitled “Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space”, as a single issue/item for discussion.

75. The representatives of Brazil, Chile, China, the Republic of Korea, the Russian Federation, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 7. Statements were also made by the representative of Colombia on behalf of the Group of Latin American and Caribbean States and the representative of Venezuela (Bolivarian Republic of) on behalf of the Group of 77 and China. During the general exchange of views, statements relating to that item were made by representatives of other member States.

76. The Legal Subcommittee noted with satisfaction that the adoption of the Safety Framework for Nuclear Power Source Applications in Outer Space (A/AC.105/934) by the Scientific and Technical Subcommittee at its forty-sixth session and the endorsement of the Safety Framework by the Committee on the Peaceful Uses of Outer Space at its fifty-second session, in 2009, constituted an important step in the efforts of progressive development of international space law and significantly advanced international cooperation in ensuring the safe use of nuclear power sources in outer space.

77. The Legal Subcommittee noted with satisfaction the workshop organized by the Working Group on the Use of Nuclear Power Sources in Outer Space during the forty-eighth session of the Scientific and Technical Subcommittee, in accordance with the multi-year workplan and objectives adopted by the Scientific and Technical Subcommittee at its forty-seventh session (A/AC.105/958, annex II, paras. 7 and 8).

78. The view was expressed that strict implementation of the Safety Framework by all actors involved in the development of nuclear power source systems for use in outer space was required in view of the seriousness of the safety concerns and the implications with regard to accidents.

79. Some delegations expressed the view that more consideration should be given to the use of nuclear power sources in outer space, specifically in the geostationary orbit and low-Earth orbits, in order to address the legal aspects of the problem of potential collisions of nuclear-powered space objects in orbit and the incidents or emergencies that might be created by the accidental re-entry of such objects into the Earth's atmosphere, as well as the impact of such a re-entry on the Earth's surface, human life and health and the ecosystem.

80. Some delegations were of the view that it was exclusively States, irrespective of their level of social, economic, scientific or technical development, that had an obligation to engage in regulatory activity associated with the use of nuclear power sources in outer space and that the matter concerned all of humanity. Those delegations were also of the view that Governments bore international responsibility for national activities involving the use of nuclear power sources in outer space conducted by governmental and non-governmental organizations and that such activities must be beneficial and not detrimental to humanity. In that context, those delegations called on the Legal Subcommittee to undertake a review of the Safety Framework and to promote binding standards with a view to ensuring that any activity conducted in outer space was governed by the principles of preservation of life and maintenance of peace.

81. Some delegations expressed the view that the use of nuclear power source systems in outer space was inevitable, in particular for deep space missions, and that proper measures should be taken to ensure the reliability and safety of the use of such technology in outer space activities.

82. Some delegations expressed the view that the risks and benefits associated with the use of nuclear power sources in outer space should be thoroughly assessed and that efforts should be made to predict and reduce such risks.

83. The view was expressed that nuclear power sources should be used in outer space exclusively as a last resort and preferably at great distance from Earth.

84. Some delegations expressed the view that recommendations from the Safety Framework should be considered in further detail in terms of the possibility of their implementation in the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (General Assembly resolution 47/68).

85. Some delegations were of the view that a revision of the Principles was not warranted.

86. The view was expressed that a revision of the Principles would represent an obstacle to research and development with regard to outer space activities.

87. Some delegations expressed the view that there should be greater coordination and interaction between the Scientific and Technical Subcommittee and the Legal Subcommittee in order to develop legal instruments to define the responsibility of States in the use of nuclear power sources in outer space and to undertake research

on the ways and means of optimizing or substituting the use of nuclear energy in outer space activities.

88. The Legal Subcommittee agreed that it was necessary to continue examining the issue and that the item should remain on its agenda.

89. The full text of the statements made during the discussions on agenda item 7 is contained in unedited verbatim transcripts (COPUOS/Legal/T.834-836).

## **VII. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment**

90. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 8, entitled “Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment”, as a single issue/item for discussion.

91. The representatives of Canada, China, the Czech Republic, Germany, Indonesia, Italy, Japan, Saudi Arabia and the United States made statements under agenda item 8. During the general exchange of views, statements related to that item were made by representatives of other member States.

92. At its 830th meeting, on 4 April, the Subcommittee heard a statement by the observer for Unidroit on developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.

93. The Subcommittee noted with satisfaction the progress in the preparation of a draft protocol on space assets achieved by the Unidroit committee of governmental experts, which had held its fourth session from 3 to 7 May 2010 and its fifth session from 21 to 25 February 2011, both in Rome. In that connection, the Subcommittee noted that the Unidroit committee had agreed on a new definition of the term “space asset”, a new public service rule and a rule specifying the criteria for the identification of space assets for registration purposes. The Unidroit committee of governmental experts had also agreed on alternatives with regard to a default remedy in relation to components for which consensus had not been reached.

94. The Subcommittee also noted that the Unidroit committee of governmental experts had recommended to the Unidroit Governing Council that it authorize the transmission of the preliminary draft protocol, as amended, for adoption by a diplomatic conference and that the Council would consider that matter at its ninetieth session, to be held in Rome from 9 to 11 May 2011.

95. Some delegations were of the view that the future protocol on space assets would promote new space applications, serve the interests of developing countries, facilitate the expansion of the commercial space sector and enlarge the number of States able to conduct space activities.

96. The view was expressed that the future protocol on space assets should correspond with the United Nations treaties and principles on outer space and that it should balance the interests of governmental and non-governmental entities, as well

as protect the interests of developing countries, in particular by providing for their continuous access to the public services delivered by space assets.

97. Some delegations were of the view that the future protocol on space assets would not be aimed at affecting the rights and obligations of States parties to the United Nations treaties on outer space and to the instruments of ITU and that it would be aimed at addressing only the distinct issue of private international law related to financing commercial space assets.

98. The view was expressed that the current draft protocol kept a proper balance between the continuation of public service and the interests of the creditor, that the new definition of space assets provided flexibility that would allow room for, in particular, new space vehicles that would be developed in the future, and that provisions of draft article I, paragraph 3, would improve the applicability of the draft protocol.

99. Some delegations were of the view that, while they continued to support the originally stated objectives of the draft protocol on space assets, and recognized the recent improvements in the text of the draft protocol, unless the provisions of the draft protocol on space assets could be further improved to produce economic benefits and gain sufficient support among users, it was not clear that those objectives would be met or that that type of treaty framework would be able to meet, under the present circumstances, the needs of commercial finance in the space sector.

100. The view was expressed that the Legal Subcommittee could renew its consideration of the concept “launching State” to determine if a financing State should be qualified as a “launching State”.

101. The view was expressed that it was important that the application of the future protocol on space assets ensured the continuous use of outer space for peaceful purposes.

102. The Subcommittee agreed that the item should remain on its agenda.

103. The full text of the statements made during the discussion on agenda item 8 is contained in unedited verbatim transcripts (COPUOS/Legal/T.830-833).

## **VIII. Capacity-building in space law**

104. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 9, entitled “Capacity-building in space law”, as a single issue/item for discussion.

105. The representatives of Austria, Brazil, Canada, China, the Czech Republic, Germany, Japan, Saudi Arabia, South Africa, Spain and the United Kingdom made statements under agenda item 9. Statements were also made by the representative of Colombia on behalf of the Group of Latin American and Caribbean States, the representative of Venezuela (Bolivarian Republic of) on behalf of the Group of 77 and China. During the general exchange of views, statements relating to that item were made by representatives of other member States. The observer for ESA also made a statement under that item.



106. The Subcommittee had before it the following:

(a) Report on the United Nations/Thailand Workshop on Space Law on the theme “Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks”, held in Bangkok from 16 to 19 November 2010 (A/AC.105/989);

(b) Conference room paper containing a directory of educational opportunities in space law (A/AC.105/C.2/2011/CRP.3);

(c) Conference room paper containing the draft Education Curriculum on Space Law (A/AC.105/C.2/2011/CRP.5);

(d) Conference room paper containing information submitted by Austria, Japan, Ukraine and the United Kingdom on actions and initiatives to build capacity in space law (A/AC.105/C.2/2011/CRP.6);

(e) Conference room paper containing information submitted by the Netherlands on actions and initiatives to build capacity in space law (A/AC.105/C.2/2011/CRP.14);

(f) Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks — proceedings of the United Nations/Thailand Workshop on Space Law (ST/SPACE/54).

107. The Subcommittee agreed that capacity-building, training and education in space law were of paramount importance to national, regional and international efforts to further develop the practical aspects of space science and technology and to increase knowledge of the legal framework within which space activities were carried out. It was emphasized that the Subcommittee had an important role in that regard.

108. The view was expressed that adequate support, through the provision of both expertise and material and financial resources, was necessary to enable institutions to effectively conduct courses on space law.

109. The Subcommittee noted with appreciation that a number of national, regional and international efforts to build capacity in space law were being undertaken by governmental and non-governmental entities. Those efforts included encouraging universities to offer modules on space law; providing fellowships for graduate and postgraduate education in space law; assisting in the development of national space legislation and policy frameworks; organizing workshops, seminars and other specialized activities to promote greater understanding of space law; providing financial and technical support for legal research; preparing dedicated studies, papers and publications on space law; supporting space law moot court competitions; supporting the participation of young professionals in regional and international meetings relating to space law; providing for training and other opportunities to build experience; and supporting entities dedicated to the study of and research relating to space law.

110. The Subcommittee noted that some member States provided financial assistance to young students for ensuring the attendance at the Manfred Lachs Space Law Moot Court, held each year during the meetings of the International Astronautical Congress.

111. Some delegations expressed the view that cooperation agreements with public and private educational institutions and with interregional organizations for the promotion of capacity-building programmes related to space law were needed to enable the exchange of knowledge and capacity-building in space law at the national and regional levels for the benefit of developing countries.

112. Some delegations expressed the view that more effective efforts were needed to increase awareness of the importance of space law and the legal framework governing outer space activities and that greater support was needed to promote North-South and South-South cooperation to facilitate the sharing of knowledge with respect to space law among countries, particularly for the benefit of developing countries.

113. The view was expressed that consideration should be given to compiling a list of internship opportunities in space law available around the world, as publicizing such opportunities would not only make future space lawyers more aware of training opportunities but also deepen mutual understanding among countries engaged in space activities.

114. The Subcommittee noted with appreciation the holding of the seventh United Nations workshop on space law, entitled “Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks”. The workshop, held in Bangkok from 16 to 19 November 2010, had been hosted by the Government of Thailand and organized jointly by the Office for Outer Space Affairs and the Geo-Informatics and Space Technology Development Agency, with the support of ESA and the Asia-Pacific Space Cooperation Organization.

115. The Subcommittee noted the plans of the Office for Outer Space Affairs to organize, jointly with the Government of Kenya and ESA, a session on space law on the margins of the Fourth African Leadership Conference on Space Science and Technology for Sustainable Development, to be held in Mombasa, Kenya, from 26 to 28 September 2011.

116. The Subcommittee noted with appreciation the work being carried out by the Office for Outer Space Affairs, along with space law educators and representatives of the regional centres for space science and technology education, affiliated to the United Nations, to develop the curriculum on space law and welcomed the updated draft of the curriculum circulated at the current session (A/AC.105/C.1/2011/CRP.5).

117. The Subcommittee noted with satisfaction that the Office for Outer Space Affairs had updated the directory of educational opportunities in space law (A/AC.105/C.2/2011/CRP.3), including information on available fellowships and scholarships, and agreed that the Office should continue to update the directory. In that connection, the Subcommittee invited member States to encourage contributions at the national level to the future updating of the directory.

118. The view was expressed that capacity-building initiatives should include a variety of options, including online courses at a reasonable cost, in order to reach a wider audience.

119. The Subcommittee recommended that member States and permanent observers of the Committee inform the Subcommittee, at its fifty-first session, of any action

taken or planned at the national, regional or international level to build capacity in space law.

120. The full text of the statements made during the discussion on agenda item 9 is contained in unedited verbatim transcripts (COPUOS/Legal/T.830-833).

## **IX. General exchange of information on national mechanisms relating to space debris mitigation measures**

121. Pursuant to General Assembly resolution 65/97, the Subcommittee considered agenda item 10, entitled “General exchange of information on national mechanisms relating to space debris mitigation measures”, as a single issue/item for discussion.

122. The representatives of Belgium, Brazil, China, the Czech Republic, Germany, India, Italy, Japan, the Netherlands, Portugal, Saudi Arabia, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 10. Statements were also made by the representative of Colombia on behalf of the Group of Latin American and Caribbean States and the representative of Indonesia on behalf of the Group of 77 and China. During the general exchange of views, statements related to that item were made by representatives of other member States.

123. The Subcommittee noted that the general exchange of information under agenda item 10 would assist States in understanding the different approaches, including development of national regulatory frameworks, that States had taken to mitigate and prevent the increase in space debris.

124. The Subcommittee expressed concern over the increasing amount of space debris and noted that the future of space activities largely depended on space debris mitigation.

125. Some delegations expressed the view that the issue of mitigation of space debris should continue to be treated as a priority, with a view to further increasing research in the areas of technology for space debris observation, space debris environmental modelling and technologies to protect space systems from space debris and to limit substantially the creation of additional space debris.

126. The Subcommittee noted with satisfaction that the endorsement by the General Assembly, in its resolution 62/217, of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space was a key step in providing all space-faring nations with guidance on how to mitigate the problem of space debris.

127. The Subcommittee noted with satisfaction that some States were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee and/or the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines and that other States had developed their own space debris mitigation standards based on those guidelines. The Subcommittee also noted that some States were using the IADC Guidelines, the European Code of Conduct for Space Debris Mitigation and International Organization for Standardization (ISO) standard 24113 (Space systems: space debris mitigation requirements) as references in the regulatory framework established for national space activities.

128. The Subcommittee noted that some States had strengthened their national mechanisms governing space debris mitigation through the nomination of governmental supervisory authorities, the involvement of academia and industry and the development of new legislative norms, instructions, standards and frameworks.

129. Some delegations expressed the view that the Legal Subcommittee should undertake a review of the effectiveness of the Space Debris Mitigation Guidelines of the Committee.

130. Some delegations expressed the view that a legal review and an analysis of the Space Debris Mitigation Guidelines of the Committee were also required.

131. Some delegations were of the view that the Scientific and Technical Subcommittee and the Legal Subcommittee should cooperate with the aim of developing legally binding rules relating to space debris.

132. Some delegations expressed the view that technical research should be carried out with a view to improving the Space Debris Mitigation Guidelines of the Committee and keeping them up to date with new technologies and capabilities of detection and reduction of space debris, in accordance with General Assembly resolution 62/217.

133. Some delegations were of the view that there was a need for a review of the legal aspects of the Space Debris Mitigation Guidelines of the Committee, with a view to transforming the Guidelines into a set of principles to be adopted by the General Assembly.

134. The view was expressed that the review of the Space Debris Mitigation Guidelines of the Committee should focus on the legal and regulatory aspects of the Guidelines and that the content of the technical norms of the Guidelines should not be reviewed.

135. The view was expressed that, although the technical aspects of space debris had been discussed in the Scientific and Technical Subcommittee, the Legal Subcommittee should also thoroughly examine the issue of space debris.

136. The view was expressed that duplication in the work of the Scientific and Technical Subcommittee and its Working Group on the Long-term Sustainability of Outer Space Activities and the Legal Subcommittee should be avoided.

137. Some delegations expressed the view that member States should report to the Legal Subcommittee and disseminate information on action taken to reduce the generation of space debris.

138. The view was expressed that the exchange of timely, actionable information on space debris was a key part of maintaining the long-term sustainability of outer space activities.

139. The view was expressed that the involvement of all stakeholders, including academia, industry and the authorities concerned, was necessary for the development of standards and criteria aimed at the development of common guidelines to be applied by all States.

140. The Subcommittee urged States and organizations to continue to implement the Space Debris Mitigation Guidelines of the Committee and to study the

experience of States that had already established national mechanisms governing space debris mitigation.

141. The Subcommittee took note of a proposal made by the Czech Republic (A/AC.105/C.2/L.283). (For a summary of the views expressed on the proposal see paragraphs 163-169 below.)

142. The full text of the statements made during the discussion on agenda item 10 is contained in unedited verbatim transcripts (COPUOS/Legal/T.826-829).

## **X. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space**

143. Pursuant to General Assembly resolution 65/97, agenda item 11, entitled “General exchange of information on national legislation relevant to the peaceful exploration and use of outer space”, was considered in accordance with the multi-year workplan for the period 2008-2011 adopted by the Committee on the Peaceful Uses of Outer Space at its fiftieth session (A/62/20, para. 219).

144. The representatives of China, Germany, the Russian Federation, Spain and the United States made statements under agenda item 11. During the general exchange of views, statements relating to that item were made by representatives of other member States.

145. At its 820th meeting, on 28 March, the Subcommittee reconvened the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space under the chairmanship of Irmgard Marboe (Austria). The Working Group held seven meetings. The Subcommittee, at its 838th meeting, on 8 April, endorsed the report of the Working Group contained in annex III to the present report.

146. For its consideration of the item, the Subcommittee had before it the following:

(a) Note by the Secretariat containing information received from the Czech Republic and Spain on national legislation relevant to the peaceful exploration and use of outer space (A/AC.105/957/Add.1);

(b) Conference room paper containing the draft report of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space (A/AC.105/C.2/2011/CRP.4);

(c) Conference room paper containing information received from Italy and Ukraine on national legislation relevant to the peaceful exploration and use of outer space (A/AC.105/C.2/2011/CRP.7);

(d) Conference room paper containing a schematic overview of national regulatory frameworks for space activities (A/AC.105/C.2/2011/CRP.9);

(e) Conference room paper containing information received from El Salvador on national legislation relevant to the peaceful exploration and use of outer space (A/AC.105/C.2/2011/CRP.13).

147. The Subcommittee heard the following presentations:

(a) “Centre national d’études spatiales (CNES) presentation: space debris activities; registration issues”, by the representative of France;

(b) “Federal Aviation Administration and delimitation”, by the representative of the United States.

148. The Subcommittee agreed that the general exchange of information on national legislation relevant to the peaceful exploration and use of outer space had provided States with a comprehensive overview of the current status of national space laws and regulations and assisted States in understanding the different approaches taken at the national level for the development of national space-related regulatory frameworks.

149. The Subcommittee noted with satisfaction the increasing number of space-related international cooperation programmes and projects. In that connection, the Subcommittee noted the importance of the development of space legislation by States, as that legislation played a significant role in regulating and promoting such cooperation activities.

150. The Subcommittee noted that States continued to undertake efforts aimed at the development of new or the improvement of existing national space-related regulatory frameworks. The Subcommittee also noted that, in developing national space-related instruments, States paid attention to their obligations with regard to the United Nations treaties on outer space.

151. The Subcommittee noted that the discussion of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space had allowed member States to gain an understanding of existing national regulatory frameworks and that the work being conducted under agenda item 11 was already yielding concrete results, including the sharing of valuable insight with regard to the experiences of States in the development of their national space legislation.

152. The Subcommittee noted with appreciation that the Office for Outer Space Affairs continued to update the database on national space legislation and multilateral and bilateral agreements related to the peaceful exploration and use of outer space (see [www.unoosa.org](http://www.unoosa.org)). In that regard, the Subcommittee encouraged States to continue to submit to the Office, for inclusion in the database, the texts of laws and regulations, bilateral and multilateral agreements and policy and other legal documents related to space activities.

153. The full text of the statements made during the discussion on agenda item 11 is contained in unedited verbatim transcripts (COPUOS/Legal/T.830-835 and 838).

## **XI. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-first session**

154. Pursuant to General Assembly resolution 65/97, the Legal Subcommittee considered agenda item 12, entitled “Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Subcommittee at its

fifty-first session”, as a regular item of its agenda. Under that item the Subcommittee also considered matters related to the organization of work of the Subcommittee and the preparations for the commemorative segment of the fifty-fourth session of the Committee, to be held on 1 June 2011.

155. The representatives of Argentina, Austria, Brazil, Chile, China, Colombia, the Czech Republic, France, Germany, Greece, Indonesia, Iran (Islamic Republic of), Italy, Japan, Morocco, the Netherlands, Portugal, Romania, the Russian Federation, Saudi Arabia, Spain, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 12. A statement was also made by the representative of Colombia on behalf of the Group of Latin American and Caribbean States. During the general exchange of views, statements related to that item were made by representatives of other member States.

#### **A. Proposals to the Committee for new items to be considered by the Legal Subcommittee at its fifty-first session**

156. The Legal Subcommittee recalled that the General Assembly, in its resolution 65/97, had agreed that the Subcommittee, at its fiftieth session, would submit its proposals to the Committee for new items to be considered by the Subcommittee at its fifty-first session, in 2012.

157. The Chair invited member States to propose or reiterate existing proposals for new items to be included in the agenda of the Legal Subcommittee, as contained in the report of the Subcommittee on its forty-ninth session (A/AC.105/942, para. 170).

158. The Subcommittee agreed to retain all the single issues/items for discussion currently on the agenda for consideration at its fifty-first session.

159. The Subcommittee agreed on the following items to be proposed to the Committee for inclusion in the agenda of the Subcommittee at its fifty-first session:

##### *Regular items*

1. Opening of the session, election of the Chair and adoption of the agenda.
2. Statement by the Chair.
3. General exchange of views.
4. Status and application of the five United Nations treaties on outer space.
5. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
6. Matters relating to:
  - (a) The definition and delimitation of outer space;
  - (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

*Single issues/items for discussion*

7. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
8. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.
9. Capacity-building in space law.
10. General exchange of information on national mechanisms relating to space debris mitigation measures.

*Items considered under workplans*

11. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.  
2012: Finalization, by a working group, of a report to the Legal Subcommittee.

*New items*

12. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-second session.

160. The Subcommittee also agreed that the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, the Working Group on Matters Relating to the Definition and Delimitation of Outer Space and the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space should be reconvened at its fifty-first session.

161. The Subcommittee further agreed to review, at its fifty-first session, the need to extend beyond that session the mandate of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space.

162. The Subcommittee agreed that IISL and ECSL should again be invited to organize a symposium, to be held during its fifty-first session.

163. The Subcommittee had before it a working paper submitted by the Czech Republic (A/AC.105/C.2/L.283), in which it was proposed that the Subcommittee should include on its agenda a new item entitled "Review of the legal aspects of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, with a view to transforming the Guidelines into a set of principles to be adopted by the General Assembly".

164. Some delegations expressed the view that the initiative by the Czech Republic was timely in view of the importance of the issue of space debris to all States and the absence of relevant firm legal mechanisms to address that issue. In that connection, those delegations also expressed their support for the proposal.

165. Some delegations expressed the view that the title of the new agenda item proposed in the working paper (A/AC.105/C.2/L.283) could be shortened to include only a review of the legal aspects of the Space Debris Mitigation Guidelines of the



Committee and should not include the matter of transforming the Guidelines into a set of principles.

166. Some delegations expressed the view that matters relating to the review of legal aspects of space debris at the international level could be considered jointly with the item currently on the agenda of the Subcommittee entitled “General exchange of information on national mechanisms relating to space debris mitigation measures”.

167. Some delegations expressed the view that, while the Subcommittee could begin its consideration of matters related to space debris at the international level, it was important to ensure that the exercise was not going to impose a prejudged outcome.

168. The view was expressed that the legal analysis of the Space Debris Mitigations Guidelines of the Committee should be undertaken by the Legal Subcommittee at the earliest stage, as it would contribute to efforts to ensure the success of long-term space missions. The delegation expressing that view stated that initiatives leading to a substantive discussion on that issue in the Subcommittee should be encouraged in order to address the concerns of all States, including those States elaborating national legislation on space debris mitigation.

169. Some delegations expressed the view that the introduction of a new legal instrument on space debris at the international level was premature, owing to the fact that States were still continuing to implement the Space Debris Mitigation Guidelines of the Committee at the national level.

170. Some delegations expressed the view that it would be productive to revisit the proposal following the results of the work of the Working Group on the Long-Term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee.

171. The view was expressed that the Legal Subcommittee should begin to consider at its fifty-first session the forming of a list of topical problems and issues related to the legal aspects of space activities. Such activity by the Subcommittee could help define future directions and optimize the work of the Subcommittee.

172. The view was expressed that the Subcommittee should consider legal aspects related to climate change.

173. The Subcommittee noted that the sponsors of the following proposals for new items to be included on its agenda intended to retain their proposals for possible discussion at its subsequent sessions:

(a) Review of the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting, with a view to transforming the text into a treaty in the future (proposed by Greece);

(b) Review of the Principles Relating to Remote Sensing of the Earth from Outer Space, with a view to transforming them into a treaty in the future (proposed by Greece);

(c) The appropriateness and desirability of drafting a universal comprehensive convention on international space law (proposed by the Russian Federation);

(d) Regulation of the dissemination of Earth observation satellite images through the World Wide Web (proposed by Saudi Arabia);

(e) Review of the legal aspects of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space with a view to transforming the Guidelines into a set of principles on space debris to be elaborated by the Legal Subcommittee and adopted by the General Assembly (proposed by the Czech Republic).

174. The Subcommittee noted that proposals for new items that had not been retained on that list could be included on the list at a later time, as appropriate.

175. The Subcommittee noted that its fifty-first session had been tentatively scheduled to be held from 19 to 30 March 2012.

## **B. Organizational matters**

176. Some delegations expressed the view that the sessions of the Legal Subcommittee should be shortened. Those delegations proposed that the savings in time could be allocated to the sessions of the Committee or the Scientific and Technical Subcommittee, in particular its Working Group on the Long-term Sustainability of Outer Space Activities.

177. Some delegations expressed the view that the Legal Subcommittee was the only international forum in which developing countries could engage in a discussion of the legal aspects of outer space activities. Those delegations were of the view that the rationalization and optimization of the time allocated to the Subcommittee should be done by including on the agenda substantive items for discussion with the aim of strengthening the international legal framework and that the sessions of the Subcommittee should be kept at their current length so that the legal aspects of outer space activities could continue to be considered.

178. The Subcommittee noted with satisfaction the clarifications made by the Conference Management Service and the Financial Resources Management Service related to the organization of sessions and the administration of documentation for the Subcommittee.

179. Some delegations expressed the view that, according to the data recorded by the Conference Management Service at the United Nations Office at Vienna, the actual average duration of the first 14 plenary meetings of the Subcommittee at its current session had been 1 hour and 20 minutes. Thus, only 7 meetings would have been required, instead of the 14 meetings scheduled, and three full session days could have been saved. The necessity of sending experts to Vienna for meetings in which only 45 per cent of the available time was actually used therefore represented a heavy financial burden on member States, in particular developing countries.

180. Some delegations expressed the view that the time allocated to the plenary was not fully utilized in view of the lack of substantive issues on its agenda and that the role of the Subcommittee should be strengthened in order to demonstrate the operational relevance and importance of the Subcommittee. Those delegations were of the view that the issue of substance was political, in view of the lack of consensus in developing space law.

181. Some delegations expressed the view that the work of the Legal Subcommittee should be closely coordinated with the work of the Scientific and Technical Subcommittee, as well as the work of intergovernmental bodies other than the Committee. Those delegations were of the view that the sessions of the two subcommittees could be organized consecutively, with one or two days of joint meetings so that greater benefits could be derived from the participation of experts from both subcommittees.

182. Some delegations expressed the view that the reallocation of meeting time from the Legal Subcommittee to the Committee was possible, with the understanding that that time could be reallocated back to the Subcommittee, when necessary.

183. The view was expressed that the nature of the sessions of the Legal Subcommittee was different from those of the Committee, as the issues discussed at the Subcommittee level required extensive technical consideration by experts, and that therefore the current duration of its sessions should be kept. The delegation that expressed that view was also of the view that the Committee remained the platform for the exchange of views on broad political matters and thus the duration of its sessions could be decreased to five days in order to allow both subcommittees to have more time for consideration of their agenda items.

184. The view was expressed that, as substantial progress had not been made on certain issues, some items could be included on the agenda of the Legal Subcommittee every two years.

185. Some delegations expressed the view that meetings of the working groups of the Legal Subcommittee could be held in parallel with the plenary meetings.

186. Other delegations expressed the view that the parallel organization of meetings would not allow simultaneous interpretation, which was fundamental to the discussion of technical issues, and could also preclude small delegations from full representation at all meetings.

187. Some delegations were of the view that items on the agenda of the Legal Subcommittee should be streamlined in order to improve the effectiveness of discussions and allow the cost-effective participation of delegations in the work of the Subcommittee.

188. Some delegations expressed the view that the work of the Subcommittee must be optimized, streamlined and rationalized and that the efficiency of that work and working discipline should be enhanced.

189. The view was expressed that, in the scheduling of work, it was important to maintain a certain concentration of interest and avoid any fractionalization in the consideration of agenda items.

190. Some delegations were of the view that sessions of the Subcommittee could be broadcast via the World Wide Web and that the Secretariat could explore the financial implications of webcasting.

191. Some delegations were of the view that the contents and length of Subcommittee reports could be optimized by avoiding the repetitive reflection of views and making them more streamlined and action-oriented.

192. The view was expressed that in optimizing the report of the Legal Subcommittee, the content and length of the report should not be substantially reduced, as it was important for the views of member States to be duly reflected and that would be conducive to delegates attending future sessions.

193. Some delegations expressed the view that the agenda item on proposals to the Committee for new items to be considered by the Subcommittee did not allow sufficient room for the consideration of organizational matters and proposed that the title "Other matters" should be used, in line with the practice of the Committee.

194. The Subcommittee agreed that maximum flexibility should be applied in the scheduling of agenda items, in particular those under which working groups would be convened.

195. The Subcommittee agreed that informal consultations should be held among interested delegations on the margins of the fifty-fourth session of the Committee to continue the discussions on organizational matters.

196. The Subcommittee requested the Secretariat to prepare for its fifty-first session a conference room paper containing information on good practices used by other comparable United Nations entities on the structure of reports of intergovernmental bodies and agreed that the bulletin of the Director-General and Executive Director on standards for the preparation and submission of manuscripts of United Nations documents and publications dated 4 March 2010 (UNOV/DGB.22-UNODC/EDB.22) should be attached to that paper for further study.

197. The Subcommittee requested the Secretariat to prepare for its fifty-first session, in 2012, a conference room paper in which it examined the financial and other implications of webcasting the sessions of the Subcommittee.

198. In accordance with the request made by the Committee at its fifty-third session, in 2010, the Subcommittee considered a proposal made by the Secretariat to discontinue the use of unedited transcripts (A/AC.105/C.2/L.282) and recommended that the use of unedited transcripts should be discontinued, starting from its fifty-first session, in 2012, in accordance with that proposal.

### **C. Preparations for the commemorative segment of the fifty-fourth session of the Committee, to be held on 1 June 2011**

199. The Subcommittee noted that informal consultations had been held during the session, under the leadership of the Chair of the Committee on the Peaceful Uses of Outer Space, on the preparations for the commemorative segment of the fifty-fourth session of the Committee and on the preparation of a declaration to be adopted on 1 June 2011, as contained in a working paper submitted by the Chair of the Committee entitled "Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space" (A/AC.105/L.283).

200. The Subcommittee agreed on the text of the draft declaration contained in document A/AC.105/L.283, as amended, and noted that the revised draft declaration would be submitted to the Committee at its fifty-fourth session, during the commemorative segment, on 1 June 2011.

201. The Subcommittee also noted that the Secretariat would communicate to all permanent missions to the United Nations (Vienna) in the coming weeks information on the schedule of the commemorative segment.

202. The full text of the statements made during the discussion on agenda item 12 is contained in unedited verbatim transcripts (COPUOS/Legal/T.828-837).

## Annex I

### **Report of the Chair of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space**

1. At its 820th meeting, on 28 March 2011, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space reconvened its Working Group on the Status and Application of the Five United Nations Treaties on Outer Space under the chairmanship of Jean-François Mayence (Belgium).
2. The Working Group held five meetings, from 29 March to 7 April 2011. At the opening meeting of the Working Group, on 28 March, the Chair recalled the mandate of the Working Group to consider, in 2011, specific themes and issues related to the status, application and/or implementation of the United Nations treaties on outer space (A/AC.105/942, annex I, para. 6).
3. The Chair also recalled the agreement during the forty-ninth session of the Subcommittee that the discussion within the Working Group should continue to include issues related to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies and that it should reflect the actual needs of States conducting activities in outer space vis-à-vis the provisions of the relevant United Nations treaties (A/AC.105/942, annex I, para. 4).
4. The Chair recalled that the Subcommittee, at its forty-ninth session, had agreed to review at its current session the need to extend the mandate of the Working Group beyond the current session of the Subcommittee (A/AC.105/942, para. 40).
5. The Chair had prepared a questionnaire (A/AC.105/C.2/2011/CRP.12), with the intention of initiating and fostering the discussion, within the mandate of the Working Group, on relevant matters relating to the status and the application of the five United Nations treaties on outer space.
6. The Working Group welcomed the questionnaire as a good basis for discussion, as it focused on essential questions of practical relevance and served to organize and rationalize the work of the Working Group.
7. The Working Group agreed that States members of the Committee should be invited to provide comments and responses to the questions in the questionnaire prepared by the Chair. The questionnaire would be made available on the website of the Office for Outer Space Affairs of the Secretariat, and any replies received by the Secretariat would be made available in a conference room paper. The Working Group also agreed that the questions presented in the questionnaire were not exhaustive and that they should not limit the discussion of the Working Group during the fifty-first session of the Subcommittee.
8. Some delegations reiterated the view that the Working Group should take a practical rather than a theoretical approach in discussing the provisions of the treaties.

9. Some delegations recalled the validity of the joint statement on the benefits of adherence to the Moon Agreement by some States parties to the Agreement (A/AC.105/C.2/L.272, annex) as a useful contribution for further discussion.
10. The Working Group requested the Secretariat to prepare, for the fifty-first session of the Subcommittee, in 2012, an updated version of its note on activities being carried out or to be carried out on the Moon and other celestial bodies (A/AC.105/C.2/L.271 and Corr.1), which had been considered by the Working Group at its meeting held during the forty-seventh session of the Subcommittee, in 2008.
11. The view was expressed that a conceptual discussion would be useful with respect to issues related to the exploitation of natural resources on the Moon, under the Moon Agreement.
12. The view was expressed that the notion of “fault” could not be applied in the case of non-compliance by a State with a voluntary instrument adopted by the General Assembly, such as guidelines, because such instruments did not create a legal obligation and were neither obligatory nor recommendatory in nature.
13. The view was expressed that the analysis of the issue of transfer of ownership of objects in outer space was of the utmost importance and deserved in-depth study, given the current and often complex scenarios of transfer of ownership of satellites orbiting in outer space, for example the issue of transfer between co-launching States or the transfer from non-launching States to launching States.
14. The Working Group recommended that the Subcommittee at its fifty-first session, in 2012, reconvene the Working Group and review the need to extend the mandate of the Working Group beyond that session.

## Annex II

### **Report of the Chair of the Working Group on the Definition and Delimitation of Outer Space**

1. At its 820th meeting, on 28 March 2011, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space reconvened its Working Group on the Definition and Delimitation of Outer Space under the chairmanship of José Monserrat Filho (Brazil).
2. The Chair drew the attention of the Working Group to the fact that, pursuant to General Assembly resolution 65/97, the Working Group had been convened to consider only matters relating to the definition and delimitation of outer space.
3. The Working Group had before it the following:
  - (a) Note by the Secretariat entitled “National legislation and practice relating to the definition and delimitation of outer space” (A/AC.105/865 and Add.8-10);
  - (b) Note by the Secretariat entitled “Questions on the definition and delimitation of outer space: replies from Member States” (A/AC.105/889/Add.7-9);
  - (c) Conference room paper entitled “Questions on the definition and delimitation of outer space: replies from Member States”, containing the replies of Austria and El Salvador (A/AC.105/C.2/2011/CRP.10).
4. The Working Group heard a presentation by Olavo Bittencourt (Brazil), summarizing the main ideas and proposals delivered at the symposium on the theme “A new look at the delimitation of airspace and outer space”, organized by the International Institute of Space Law (IISL) and the European Centre for Space Law (ECSL) on the margins of the current session of the Subcommittee. The Working Group expressed its appreciation to IISL and ECSL.
5. Some delegations were of the view that it was important to define and delimit outer space at the international level and that that would create certainty in the application of air law and space law, as well as in the sovereignty of States over their airspace.
6. The view was expressed that solutions with regard to the definition and delimitation of outer space could be found at the national level and that they would not necessarily diverge from those, if any, established at the international level.
7. The view was expressed that the definition and delimitation of outer space would also enable the effective application of the principles of the freedom of use of outer space and of non-appropriation of outer space.
8. The view was expressed that it was important to begin thorough discussions on the definition and delimitation of outer space, even at the theoretical level, in order to have certain mechanisms in place before real problems occurred.
9. The view was expressed that States should continue to operate under the current framework, which had functioned well, and that, at the present time, any attempt to define or delimit outer space would be a theoretical and academic



exercise that could complicate existing activities and that might not be able to anticipate future technological developments.

10. Some delegations were of the view that alternative approaches to the definition and delimitation of outer space should be given serious consideration.

11. The view was expressed that the problem of the definition and delimitation of outer space was a problem of defining the scope of validity and application of air law and space law and that that legal problem should be resolved by giving consideration to various criteria, in particular to the definition of a stable orbit of a space object.

12. The view was expressed that the final decision on the matter of the definition and delimitation of outer space would be taken on a basis that would suit the interests of all States and that the decision would not necessarily be similar to the current positions taken by States.

13. On the basis of its discussions, the Working Group agreed:

(a) To continue to invite States members of the Committee on the Peaceful Uses of Outer Space to submit information on national legislation or any national practices that might exist or were being developed that related directly or indirectly to the definition and/or delimitation of outer space and airspace, taking into account the current and foreseeable level of development of space and aviation technologies;

(b) To continue to address to the Governments of Member States, through the Secretariat, the following questions:

(i) Does your Government consider it necessary to define outer space and/or to delimit airspace and outer space, given the current level of space and aviation activities and technological development in space and aviation technologies? Please provide a justification for the answer;

(ii) Does your Government consider another approach to solving this issue? Please provide a justification for the answer;

(iii) Does your Government give consideration to the possibility of defining a lower limit of outer space and/or an upper limit of airspace, recognizing at the same time the possibility of enacting special international or national legislation relating to a mission carried out by an object in both airspace and outer space?

14. The Working Group noted that the Chair planned to present to the Legal Subcommittee at its fifty-first session, in 2012, a proposal on possible ways of finding a solution to the matters relating to the definition and delimitation of outer space. The Working Group also noted that the proposal would be based on ideas expressed during the IISL/ECSL symposium at the current session of the Subcommittee and would take into account various positions taken by States and representatives of academia over the past few decades.

15. Some delegations were of the view that the definition and delimitation of outer space remained a topical and important issue that should continue to be considered by the Working Group.

## Annex III

### **Report of the Chair of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space**

1. At its 820th meeting, on 28 March 2011, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space reconvened its Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space under the chairmanship of Irmgard Marboe (Austria).
2. The Working Group held seven meetings, from 4 to 8 April 2011. At the opening meeting, the Chair recalled the workplan adopted by the Committee on the Peaceful Uses of Outer Space at its fiftieth session.
3. The Working Group had before it the following:
  - (a) Note by the Secretariat containing information submitted by the Czech Republic and Spain on national legislation relevant to the peaceful exploration and use of outer space (A/AC.105/957/Add.1);
  - (b) Conference room paper entitled “Draft report of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space (A/AC.105/C.2/2011/CRP.4);
  - (c) Conference room paper entitled “Information on national legislation relevant to the peaceful exploration and use of outer space”, containing replies received from Italy and Ukraine (A/AC.105/C.2/2011/CRP.7);
  - (d) Conference room paper entitled “Schematic overview of national regulatory frameworks for space activities” (A/AC.105/C.2/2011/CRP.9);
  - (e) Conference room paper entitled “Information on national legislation relevant to the peaceful exploration and use of outer space”, containing a reply received from El Salvador (A/AC.105/C.2/2011/CRP.13).
4. The Working Group also had before it the report on the United Nations/Thailand Workshop on Space Law on the theme “Activities of States in outer space in the light of new developments: meeting international responsibilities and establishing national legal and policy frameworks”, held in Bangkok from 16 to 19 November 2010 (A/AC.105/989).
5. The Working Group noted with satisfaction that the Chair, in consultation with the Secretariat, had prepared a draft report of the Working Group (A/AC.105/C.2/2011/CRP.4) for its consideration and that that report provided the necessary basis for finalizing the report of the Working Group under its workplan.
6. The Working Group conducted a detailed review of the draft report by assessing the structure and validity of the overview of national space legislation contained in chapter II, conducting a thorough analysis of the draft set of conclusions in chapter IV and determining the process of finalizing the report of the Working Group.

7. The Working Group agreed that the recommendations and observations of the report of the Space Law Workshop, referred to in paragraph 4 above, should also be taken into account in the drafting of the revised version of the draft report of the Working Group.

8. The Working Group made the following observations on the draft report:

(a) Chapter I should be updated accordingly, taking into account the work done at the present session;

(b) Chapter II should be revised with a view to obtaining consistency in the methodology used for summarizing national space legislation. It was important to carefully harmonize the information provided in the schematic overview of national space legislation (A/AC.105/C.2/2011/CRP.9) with the elements to be used in that chapter. The Working Group agreed that it would benefit from further information on how States had regulated the establishment and conduct of national space agencies and other governmental authorities supervising national space activities, so as to provide an understanding of the relationship between public entities and the operators of space activities, either governmental or non-governmental. The summaries of national space legislation in that chapter should be carefully harmonized with the updated schematic overview of national space legislation;

(c) Chapter III should be revised, as appropriate, to carefully reflect the findings made by the Working Group under its workplan;

(d) The elements of conclusion under chapter IV should be further analysed and compared with the findings of the Working Group, including with regard to the harmonization of terminology;

(e) In some cases, in particular with respect to the elements relating to scope of application, there was a need for further consideration of more general and less constraining language. An assessment should be made on avoiding duplicate requirements for the authorization and licensing of space activities when more than one State was involved. The provisions in article VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, should also be reflected more explicitly;

(f) The conditions for authorization and licensing should be expounded more explicitly, better reflecting the findings of the Working Group in chapter III of the draft report and of the Space Law Workshop referred to in paragraph 4 above;

(g) The elements pertaining to the registration of space objects should be carefully analysed in order to obtain clarity and avoid conflicting language. The recommendations in General Assembly resolution 62/101 and other international instruments pertinent to registration should be appropriately reflected;

(h) Under the element of liability and insurance, the term “right of recourse” needed further clarification. The role of different liability regimes at the national level should also be reflected;

(i) It was deemed necessary to carefully review the terminology and scope of the elements on safety, in particular regarding the extent of the application and implementation of space debris mitigation guidelines;

(j) The element on transfer of ownership or control of a space object in orbit needed further analysis in order to find the right balance between different ways of applying adequate requirements at the national level for such transfer;

(k) Annex I should be reviewed for consistency with chapter IV. A reference to article XI of the Outer Space Treaty should be included under the category of registration. The following terminology should be used: “appropriate registry at the national level” under the category of registration; and “adequate requirements for transferring of satellites” under the category of transfer of ownership or control of space objects in orbit. An overall review of the examples of corresponding international legal instruments should be made.

9. The Working Group reviewed the revised schematic overview of national regulatory frameworks for space activities (A/AC.105/C.2/2011/CRP.9) and agreed that that table already served as an important source of information on how States regulated their national space activities. Further revision was regarded as necessary in order to secure correct analysis of national legislative frameworks.

10. To that end, the Working Group agreed that corrections to and additional information for the table in the schematic overview could be provided informally to the Secretariat until the end of June 2011. Member States should thereafter be officially invited to provide to the Secretariat information for the updating of the table.

11. The Working Group requested the Chair, in consultation with the Secretariat, to present to the Working Group at its next meeting a revised draft report in the form of a conference room paper for finalization by the Working Group. The revised chapter IV on conclusions should be made available in all official languages of the United Nations for adoption by the Working Group. That would enable further consideration of the revised chapter IV on conclusions, including the discussion on the possible development of recommendations of the Legal Subcommittee, the Committee on the Peaceful Uses of Outer Space or the General Assembly.

12. The Working Group agreed that its mandate should be extended for one more year to allow the Working Group to finalize its final report. The current mandate, ending in 2011, should therefore be extended to 2012.

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# General Assembly

Distr.: General  
12 January 2012

Sixty-sixth session  
Agenda item 96

## Resolution adopted by the General Assembly

[on the report of the First Committee (A/66/410)]

### 66/27. Prevention of an arms race in outer space

*The General Assembly,*

*Recognizing* the common interest of all mankind in the exploration and use of outer space for peaceful purposes,

*Reaffirming* the will of all States that the exploration and use of outer space, including the Moon and other celestial bodies, shall be for peaceful purposes and shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development,

*Reaffirming also* the provisions of articles III and IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,<sup>1</sup>

*Recalling* the obligation of all States to observe the provisions of the Charter of the United Nations regarding the use or threat of use of force in their international relations, including in their space activities,

*Reaffirming* paragraph 80 of the Final Document of the Tenth Special Session of the General Assembly,<sup>2</sup> in which it is stated that in order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held in accordance with the spirit of the Treaty,

*Recalling* its previous resolutions on this issue, and taking note of the proposals submitted to the General Assembly at its tenth special session and at its regular sessions, and of the recommendations made to the competent organs of the United Nations and to the Conference on Disarmament,

*Recognizing* that prevention of an arms race in outer space would avert a grave danger for international peace and security,

*Emphasizing* the paramount importance of strict compliance with existing arms limitation and disarmament agreements relevant to outer space, including

<sup>1</sup> United Nations, *Treaty Series*, vol. 610, No. 8843.

<sup>2</sup> Resolution S-10/2.



bilateral agreements, and with the existing legal regime concerning the use of outer space,

*Considering* that wide participation in the legal regime applicable to outer space could contribute to enhancing its effectiveness,

*Noting* that the Ad Hoc Committee on the Prevention of an Arms Race in Outer Space, taking into account its previous efforts since its establishment in 1985 and seeking to enhance its functioning in qualitative terms, continued the examination and identification of various issues, existing agreements and existing proposals, as well as future initiatives relevant to the prevention of an arms race in outer space,<sup>3</sup> and that this contributed to a better understanding of a number of problems and to a clearer perception of the various positions,

*Noting also* that there were no objections in principle in the Conference on Disarmament to the re-establishment of the Ad Hoc Committee, subject to re-examination of the mandate contained in the decision of the Conference on Disarmament of 13 February 1992,<sup>4</sup>

*Emphasizing* the mutually complementary nature of bilateral and multilateral efforts for the prevention of an arms race in outer space, and hoping that concrete results will emerge from those efforts as soon as possible,

*Convinced* that further measures should be examined in the search for effective and verifiable bilateral and multilateral agreements in order to prevent an arms race in outer space, including the weaponization of outer space,

*Stressing* that the growing use of outer space increases the need for greater transparency and better information on the part of the international community,

*Recalling*, in this context, its previous resolutions, in particular resolutions 45/55 B of 4 December 1990, 47/51 of 9 December 1992 and 48/74 A of 16 December 1993, in which, inter alia, it reaffirmed the importance of confidence-building measures as a means conducive to ensuring the attainment of the objective of the prevention of an arms race in outer space,

*Conscious* of the benefits of confidence- and security-building measures in the military field,

*Recognizing* that negotiations for the conclusion of an international agreement or agreements to prevent an arms race in outer space remain a priority task of the Conference on Disarmament and that the concrete proposals on confidence-building measures could form an integral part of such agreements,

*Noting with satisfaction* the constructive, structured and focused debate on the prevention of an arms race in outer space at the Conference on Disarmament in 2009, 2010 and 2011,

*Taking note* of the introduction by China and the Russian Federation at the Conference on Disarmament of the draft treaty on the prevention of the placement of weapons in outer space and of the threat or use of force against outer space objects,<sup>5</sup>

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<sup>3</sup> *Official Records of the General Assembly, Forty-ninth Session, Supplement No. 27 (A/49/27), sect. III.D (para. 5 of the quoted text).*

<sup>4</sup> CD/1125.

<sup>5</sup> See CD/1839.

*Taking note also* of the decision of the Conference on Disarmament to establish for its 2009 session a working group to discuss, substantially, without limitation, all issues related to the prevention of an arms race in outer space,

1. *Reaffirms* the importance and urgency of preventing an arms race in outer space and the readiness of all States to contribute to that common objective, in conformity with the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies;<sup>1</sup>

2. *Reaffirms its recognition*, as stated in the report of the Ad Hoc Committee on the Prevention of an Arms Race in Outer Space, that the legal regime applicable to outer space does not in and of itself guarantee the prevention of an arms race in outer space, that the regime plays a significant role in the prevention of an arms race in that environment, that there is a need to consolidate and reinforce that regime and enhance its effectiveness and that it is important to comply strictly with existing agreements, both bilateral and multilateral;<sup>6</sup>

3. *Emphasizes* the necessity of further measures with appropriate and effective provisions for verification to prevent an arms race in outer space;

4. *Calls upon* all States, in particular those with major space capabilities, to contribute actively to the objective of the peaceful use of outer space and of the prevention of an arms race in outer space and to refrain from actions contrary to that objective and to the relevant existing treaties in the interest of maintaining international peace and security and promoting international cooperation;

5. *Reiterates* that the Conference on Disarmament, as the sole multilateral disarmament negotiating forum, has the primary role in the negotiation of a multilateral agreement or agreements, as appropriate, on the prevention of an arms race in outer space in all its aspects;

6. *Invites* the Conference on Disarmament to establish a working group under its agenda item entitled "Prevention of an arms race in outer space" as early as possible during its 2012 session;

7. *Recognizes*, in this respect, the growing convergence of views on the elaboration of measures designed to strengthen transparency, confidence and security in the peaceful uses of outer space;

8. *Urges* States conducting activities in outer space, as well as States interested in conducting such activities, to keep the Conference on Disarmament informed of the progress of bilateral and multilateral negotiations on the matter, if any, so as to facilitate its work;

9. *Decides* to include in the provisional agenda of its sixty-seventh session the item entitled "Prevention of an arms race in outer space".

*71st plenary meeting  
2 December 2011*

<sup>6</sup> See *Official Records of the General Assembly, Forty-fifth Session, Supplement No. 27 (A/45/27)*, para. 118 (para. 63 of the quoted text).

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# General Assembly

Distr.: General  
12 January 2012

Sixty-sixth session  
Agenda item 51

## Resolution adopted by the General Assembly

[on the report of the Special Political and Decolonization Committee  
(Fourth Committee) (A/66/425)]

### 66/71. International cooperation in the peaceful uses of outer space

*The General Assembly,*

*Recalling* its resolutions 51/122 of 13 December 1996, 54/68 of 6 December 1999, 59/2 of 20 October 2004, 61/110 and 61/111 of 14 December 2006, 62/101 of 17 December 2007, 62/217 of 22 December 2007, 65/97 of 10 December 2010 and 65/271 of 7 April 2011,

*Recognizing* the extraordinary achievements made over the past fifty years in human space flight and space exploration for peaceful purposes, and recalling the unique platform at the global level for international cooperation in space activities represented by the Committee on the Peaceful Uses of Outer Space,

*Deeply convinced* of the common interest of mankind in promoting and expanding the exploration and use of outer space, as the province of all mankind, for peaceful purposes and in continuing efforts to extend to all States the benefits derived therefrom, and also of the importance of international cooperation in this field, for which the United Nations should continue to provide a focal point,

*Reaffirming* the importance of international cooperation in developing the rule of law, including the relevant norms of space law and their important role in international cooperation for the exploration and use of outer space for peaceful purposes, and of the widest possible adherence to international treaties that promote the peaceful uses of outer space in order to meet emerging new challenges, especially for developing countries,

*Seriously concerned* about the possibility of an arms race in outer space, and bearing in mind the importance of article IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies<sup>1</sup> (Outer Space Treaty),

*Recognizing* that all States, in particular those with major space capabilities, should contribute actively to the goal of preventing an arms race in outer space as

<sup>1</sup> United Nations, *Treaty Series*, vol. 610, No. 8843.



an essential condition for the promotion and strengthening of international cooperation in the exploration and use of outer space for peaceful purposes,

*Recognizing also* that space debris is an issue of concern to all nations,

*Noting* the progress achieved in the further development of peaceful space exploration and applications as well as in various national and cooperative space projects, which contributes to international cooperation, and the importance of further developing the legal framework to strengthen international cooperation in this field,

*Convinced* of the need to promote the use of space technology towards implementing the United Nations Millennium Declaration,<sup>2</sup>

*Seriously concerned* about the devastating impact of disasters,<sup>3</sup>

*Desirous* of enhancing international coordination and cooperation at the global level in disaster management and emergency response through greater access to and use of space-based services for all countries and facilitating capacity-building and institutional strengthening for disaster management, in particular in developing countries,

*Deeply convinced* that the use of space science and technology and their applications in areas such as telehealth, tele-education, disaster management, environmental protection and other Earth observation applications contribute to achieving the objectives of the global conferences of the United Nations that address various aspects of economic, social and cultural development, particularly poverty eradication,

*Taking note*, in that regard, of the fact that the 2005 World Summit recognized the important role that science and technology play in promoting sustainable development,<sup>4</sup>

*Having considered* the report of the Committee on the Peaceful Uses of Outer Space on the work of its fifty-fourth session,<sup>5</sup>

1. *Endorses* the report of the Committee on the Peaceful Uses of Outer Space on the work of its fifty-fourth session;<sup>5</sup>

2. *Agrees* that the Committee on the Peaceful Uses of Outer Space, at its fifty-fifth session, should consider the substantive items recommended by the Committee at its fifty-fourth session,<sup>6</sup> taking into account the concerns of all countries, in particular those of developing countries;

3. *Notes* that, at its fiftieth session, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space continued its work,<sup>7</sup> as mandated by the General Assembly in its resolution 65/97;

4. *Agrees* that the Legal Subcommittee, at its fifty-first session, should consider the substantive items and reconvene the working groups recommended by

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<sup>2</sup> See resolution 55/2.

<sup>3</sup> The term "disasters" refers to natural or technological disasters.

<sup>4</sup> See resolution 60/1, para. 60.

<sup>5</sup> *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*.

<sup>6</sup> *Ibid.*, para. 304.

<sup>7</sup> *Ibid.*, chap. II.D; and A/AC.105/990.

the Committee,<sup>8</sup> taking into account the concerns of all countries, in particular those of developing countries;

5. *Urges* States that have not yet become parties to the international treaties governing the uses of outer space<sup>9</sup> to give consideration to ratifying or acceding to those treaties in accordance with their domestic law, as well as incorporating them in their national legislation;

6. *Notes* that, at its forty-eighth session, the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space continued its work,<sup>10</sup> as mandated by the General Assembly in its resolution 65/97;

7. *Agrees* that the Scientific and Technical Subcommittee, at its forty-ninth session, should consider the substantive items and reconvene the working groups recommended by the Committee,<sup>11</sup> taking into account the concerns of all countries, in particular those of developing countries;

8. *Notes with appreciation* that some States are already implementing space debris mitigation measures on a voluntary basis, through national mechanisms and consistent with the Space Debris Mitigation Guidelines of the Inter-Agency Space Debris Coordination Committee and with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space,<sup>12</sup> endorsed by the General Assembly in its resolution 62/217;

9. *Invites* other States to implement, through relevant national mechanisms, the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space;<sup>12</sup>

10. *Considers* that it is essential that States pay more attention to the problem of collisions of space objects, including those with nuclear power sources, with space debris, and other aspects of space debris, calls for the continuation of national research on this question, for the development of improved technology for the monitoring of space debris and for the compilation and dissemination of data on space debris, also considers that, to the extent possible, information thereon should be provided to the Scientific and Technical Subcommittee, and agrees that international cooperation is needed to expand appropriate and affordable strategies to minimize the impact of space debris on future space missions;

11. *Urges* all States, in particular those with major space capabilities, to contribute actively to the goal of preventing an arms race in outer space as an essential condition for the promotion of international cooperation in the exploration and use of outer space for peaceful purposes;

<sup>8</sup> See *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*, paras. 215–218.

<sup>9</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (United Nations, *Treaty Series*, vol. 610, No. 8843); Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (United Nations, *Treaty Series*, vol. 672, No. 9574); Convention on International Liability for Damage Caused by Space Objects (United Nations, *Treaty Series*, vol. 961, No. 13810); Convention on Registration of Objects Launched into Outer Space (United Nations, *Treaty Series*, vol. 1023, No. 15020); and Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (United Nations, *Treaty Series*, vol. 1363, No. 23002).

<sup>10</sup> *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*, chap. II.C; and A/AC.105/987.

<sup>11</sup> See *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*, paras. 164–167.

<sup>12</sup> *Ibid.*, *Sixty-second Session, Supplement No. 20 (A/62/20)*, paras. 117 and 118, and annex.

12. *Endorses* the United Nations Programme on Space Applications for 2012, as proposed to the Committee by the Expert on Space Applications and endorsed by the Committee;<sup>13</sup>

13. *Welcomes* the continuous progress made by the International Committee on Global Navigation Satellite Systems towards achieving compatibility and interoperability among global and regional space-based positioning, navigation and timing systems and in the promotion of the use of global navigation satellite systems and their integration into national infrastructure, particularly in developing countries, and notes with satisfaction that the International Committee held its sixth meeting in Tokyo from 5 to 9 September 2011;

14. *Notes with satisfaction* the progress made within the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) in the implementation of the workplan of the UN-SPIDER programme for the biennium 2010–2011,<sup>14</sup> and encourages Member States to provide, on a voluntary basis, the programme with the necessary additional resources to ensure that greater support could be provided to Member States by UN-SPIDER and its regional support offices;

15. *Notes with appreciation* that the African regional centres for space science and technology education in the French and English languages, located in Morocco and Nigeria, respectively, as well as the Centre for Space Science and Technology Education in Asia and the Pacific and the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, affiliated to the United Nations, have continued their education programmes in 2011, and agrees that the regional centres should continue to report to the Committee on their activities;

16. *Emphasizes* that regional and interregional cooperation in the field of space activities is essential to strengthen the peaceful uses of outer space, assist States in the development of their space capabilities and contribute to the achievement of the goals of the United Nations Millennium Declaration<sup>2</sup> and to that end requests relevant regional organizations to offer the assistance necessary so that countries can carry out recommendations of regional conferences;

17. *Recognizes*, in this regard, the important role played by conferences and other mechanisms in strengthening regional and international cooperation among States, such as the African Leadership Conference on Space Science and Technology for Sustainable Development, the Asia-Pacific Regional Space Agency Forum, the Asia-Pacific Space Cooperation Organization and the Space Conference of the Americas;

18. *Notes with satisfaction* that the Sixth Space Conference of the Americas was hosted by the Government of Mexico and held in Pachuca, Mexico, from 15 to 19 November 2010, welcomes the adoption of the Pachuca Declaration, and also notes with satisfaction that the Government of Mexico has assumed the pro tempore secretariat of the Conference for the period 2011–2013; that the fourth meeting of the Council of the Asia-Pacific Space Cooperation Organization was held in Pattaya, Thailand, on 26 and 27 January 2011; that the Fourth African Leadership Conference on Space Science and Technology for Sustainable Development was

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<sup>13</sup> Ibid., *Sixty-sixth Session, Supplement No. 20* (A/66/20), para. 80; and A/AC.105/980, sects. II and III and annex III.

<sup>14</sup> See A/AC.105/937.

hosted by the Government of Kenya and held in Mombasa, Kenya, from 26 to 28 September 2011; and that the eighteenth session of the Asia-Pacific Regional Space Agency Forum will be jointly organized by the Singapore Space and Technology Association, the National University of Singapore and the Government of Japan and held in Singapore from 6 to 9 December 2011;

19. *Requests* the Committee to continue to consider, as a matter of priority, ways and means of maintaining outer space for peaceful purposes and to report thereon to the General Assembly at its sixty-seventh session, and agrees that during its consideration of the matter the Committee could continue to consider ways to promote regional and interregional cooperation and the role space technology could play in the implementation of recommendations of the World Summit on Sustainable Development;

20. *Recognizes* that space science and technology and their applications make important contributions to economic, social and cultural development and welfare, as indicated in the resolution entitled “The Space Millennium: Vienna Declaration on Space and Human Development”,<sup>15</sup> and its resolution 59/2, and notes with satisfaction that a number of the recommendations set out in the Plan of Action of the Committee on the Peaceful Uses of Outer Space on the implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)<sup>16</sup> have been implemented and that satisfactory progress is being made in implementing the outstanding recommendations through national and regional activities;

21. *Urges* all Member States to continue to contribute to the Trust Fund for the United Nations Programme on Space Applications to enhance the capacity of the Office for Outer Space Affairs of the Secretariat to provide technical and legal advisory services in accordance with the Plan of Action, while maintaining the priority thematic areas agreed by the Committee;

22. *Emphasizes* the need to increase the benefits of space technology and its applications and to contribute to an orderly growth of space activities favourable to sustained economic growth and sustainable development in all countries, including mitigation of the consequences of disasters, in particular in developing countries;

23. *Reiterates* that the benefits of space technology and its applications should continue to be brought to the attention, in particular, of the major United Nations conferences and summits for economic, social and cultural development and related fields and that the use of space technology should be promoted towards achieving the objectives of those conferences and summits and for implementing the United Nations Millennium Declaration;

24. *Welcomes* the increased efforts to strengthen further the Inter-Agency Meeting on Outer Space Activities and urges entities of the United Nations system, particularly those participating in the Inter-Agency Meeting, to continue to examine, in cooperation with the Committee, how space science and technology and their applications could contribute to implementing the United Nations Millennium Declaration on the development agenda, particularly in the areas relating to, inter alia, food security and increasing opportunities for education;

<sup>15</sup> See *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19–30 July 1999* (United Nations publication, Sales No. E.00.I.3), chap. I, resolution 1.

<sup>16</sup> See A/59/174, sect. VI.B.

25. *Calls upon* the United Nations University and other institutions of the same nature, within the framework of their mandates, to provide training and to carry out research in the areas of international space law and, in particular, matters relating to disasters and emergencies;

26. *Agrees* that the Committee and its subsidiary bodies at their respective sessions in 2012 should elect their officers nominated for the period 2012–2013;<sup>17</sup>

27. *Decides* that Azerbaijan shall become a member of the Committee;<sup>18</sup>

28. *Endorses* the decision of the Committee to grant permanent observer status to the Association of Remote Sensing Centres in the Arab World;<sup>19</sup>

29. *Notes* that each of the regional groups has the responsibility for actively promoting the participation in the work of the Committee and its subsidiary bodies of the States members of the Committee that are also members of the respective regional groups, and agrees that the regional groups should consider this Committee-related matter among their members;

30. *Notes with satisfaction* that a panel discussion was held at United Nations Headquarters on 11 October 2011 on the topic of the contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development,<sup>20</sup> to be held in Rio de Janeiro, Brazil, in 2012, with attention given to the use of space-derived geospatial data for sustainable development and taking into account the previous panel discussions held on climate change, food security, global health and emergencies;

31. *Invites* the Group on Earth Observations to contribute to the preparatory process for the 2012 United Nations Conference on Sustainable Development by addressing issues related to the use of space-derived geospatial data for sustainable development;

32. *Requests* the entities of the United Nations system, other international organizations and the Secretary-General to continue and, where appropriate, to enhance their cooperation with the Committee and to provide it with reports on the issues dealt with in the work of the Committee and its subsidiary bodies, and to address the issues covered by the panel discussions held in conjunction with sessions of the General Assembly;

33. *Recalls* the fact that the General Assembly, by its resolution 65/271, declared 12 April the International Day of Human Space Flight;

34. *Notes with satisfaction* the commemorative segment of the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space on the occasion of the fiftieth anniversary of human space flight and the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space, held at Vienna on 1 June 2011;<sup>21</sup>

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<sup>17</sup> See *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*, para. 286.

<sup>18</sup> *Ibid.*, para. 290.

<sup>19</sup> *Ibid.*, para. 292.

<sup>20</sup> See A/AC.105/993.

<sup>21</sup> See *Official Records of the General Assembly, Sixty-sixth Session, Supplement No. 20 (A/66/20)*, annex I.

35. *Adopts* the Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space, set forth in the annex to the present resolution.

*81st plenary meeting  
9 December 2011*

## **Annex**

### **Declaration on the Fiftieth Anniversary of Human Space Flight and the Fiftieth Anniversary of the Committee on the Peaceful Uses of Outer Space**

We, the States Members of the United Nations, in commemorating the fiftieth anniversary of human space flight and the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space,

1. *Recall* the launch into outer space of the first human-made Earth satellite, Sputnik I, on 4 October 1957, thus opening the way for space exploration;

2. *Also recall* that, on 12 April 1961, Yuri Gagarin became the first human to orbit the Earth, opening a new chapter of human endeavour in outer space;

3. *Further recall* the amazing history of human presence in outer space and the remarkable achievements since the first human spaceflight, in particular Valentina Tereshkova becoming the first woman to orbit the Earth on 16 June 1963, Neil Armstrong becoming the first human to set foot upon the surface of the Moon on 20 July 1969, and the docking of the Apollo and Soyuz spacecrafts on 17 July 1975, being the first international human mission in space, and recall that for the past decade humanity has maintained a multinational permanent human presence in outer space aboard the International Space Station;

4. *Respectfully recall* that the human exploration of outer space has not been without sacrifice, and remember the men and women who have lost their lives in the pursuit of expanding humanity's frontiers;

5. *Emphasize* the significant progress in the development of space science and technology and their applications that has enabled humans to explore the universe, and the extraordinary achievements made over the past fifty years in space exploration efforts, including deepening the understanding of the planetary system and the Sun and the Earth itself, in the use of space science and technology for the benefit of all humankind and in the development of the international legal regime governing space activities;

6. *Recall* the entry into force of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies<sup>1</sup> (Outer Space Treaty) on 10 October 1967, which establishes the fundamental principles of international space law;

7. *Also recall* the first meeting of the permanent Committee on the Peaceful Uses of Outer Space, convened on 27 November 1961, which facilitated the adoption of General Assembly resolutions 1721 A to E (XVI) of 20 December 1961, including resolution 1721 A (XVI), in which the first legal principles were commended to States for their guidance in space activities, and resolution 1721 B (XVI), in which the Assembly expressed its belief that the United Nations

should provide a focal point for international cooperation in the peaceful exploration and use of outer space;

8. *Recognize* that the Committee on the Peaceful Uses of Outer Space, assisted by the Office for Outer Space Affairs of the Secretariat, has for the past fifty years served as a unique platform at the global level for international cooperation in space activities and that the Committee and its subsidiary bodies stand at the forefront in bringing the world together in using space science and technology to preserve the Earth and the space environment and ensure the future of human civilization;

9. *Acknowledge* that significant changes have occurred in the structure and content of the space endeavour, as reflected in the emergence of new technologies and the increasing number of actors at all levels, and therefore note with satisfaction the progress made in strengthening international cooperation in the peaceful uses of outer space by enhancing the capacity of States for economic, social and cultural development and by strengthening the regulatory frameworks and mechanisms to that effect;

10. *Reaffirm* the importance of international cooperation in developing the rule of law, including the relevant norms of space law, and of the widest possible adherence to the international treaties that promote the peaceful uses of outer space;

11. *Express our firm conviction* that space science and technology and their applications, such as satellite communications, Earth observation systems and satellite navigation technologies, provide indispensable tools for viable long-term solutions for sustainable development and can contribute more effectively to efforts to promote the development of all countries and regions of the world, to improve people's lives, to conserve natural resources and to enhance the preparedness for and mitigation of the consequences of disasters;

12. *Express our deep concern* about the fragility of the space environment and the challenges to the long-term sustainability of outer space activities, in particular the impact of space debris;

13. *Stress* the need to look more closely into how advanced space research and exploration systems and technologies could further contribute to meeting challenges, including that of global climate change, and to food security and global health, and endeavour to examine how the outcomes and spin-offs of scientific research in human space flight could increase the benefits, in particular for developing countries;

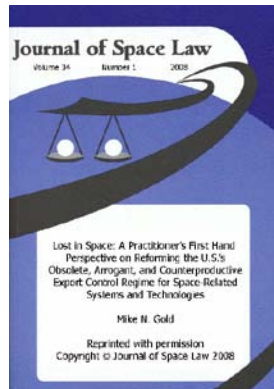
14. *Emphasize* that regional and interregional cooperation in the field of space activities is essential to strengthen the peaceful uses of outer space, assist States in the development of their space capabilities and contribute to the achievement of the goals of the United Nations Millennium Declaration;<sup>2</sup>

15. *Confirm* the need for closer coordination between the Committee on the Peaceful Uses of Outer Space and other intergovernmental bodies involved in the global development agenda of the United Nations, including with respect to the major United Nations conferences and summits for economic, social and cultural development;

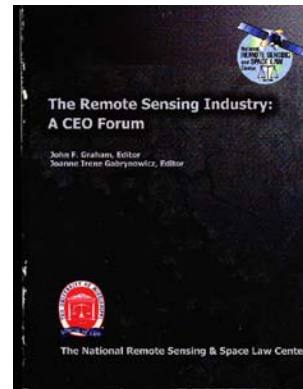
16. *Call upon* all States to take measures at the national, regional, interregional and global levels to engage in the common efforts to use space science and technology and their applications to preserve planet Earth and its space environment for future generations.



The National Center for Remote Sensing, Air, and Space Law has the following books available for purchase. For Book Descriptions and ordering information, please visit our website at:  
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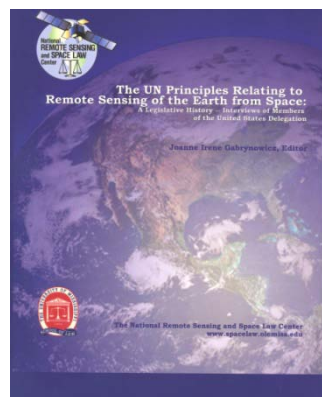
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 International Bibliography, 1930-2007:  
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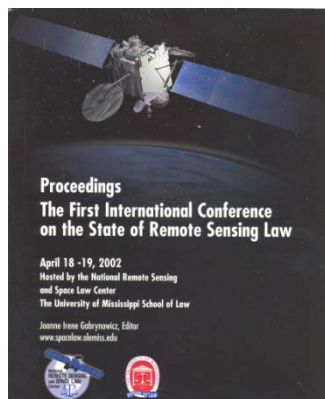
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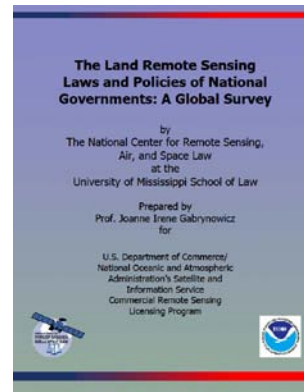
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