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差出人　maeda@serc.kyushu-u.ac.jp

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*　I S W I = International Space Weather Initiative *
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* Publisher: Professor K. Yumoto, SERC, Kyushu University, Japan *
* Editor-in-Chief: Mr. George Maeda, SERC (maeda[at]serc.kyushu-u.ac.jp)*
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Attachment(s):
(1) "i-", 253 KB pdf, 23 pages.
(2) "ii-", 313 KB pdf, 39 pages.
(3) "iii-", 419 KB pdf, 52 pages.
[each is an UN General Assembly document]

Dear ISWI Participant:

I am exceedingly, exceedingly thrilled to provide the following information from the United Nations. With respect to our grand endeavor (Int'l Space Weather Initiative : 2010 through 2012), the attached documents are significant stuff. In short, we are "on the map" at the United Nations. Not only are we doing importance science for mankind and posterity, we are also bringing in developing nations into this fold. The ISWI community truly epitomizes what the UN was created for.

The text between + and & is from Dr Hans Haubold.

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Dear Colleagues, Date: Sat, 28 Aug 2010

Annually, the United Nations is publishing three UN GA [General Assembly] documents that contain information on their deliberations, including basic space science, IHY, and ISWI. Attached please find the three documents for 2010:

(i)
The annual report of the United Nations Space Applications Programme.

(ii)
The report on the session of the Scientific and Technical Subcommittee of UNCOPUOS.

(iii)
The report of UNCOPUOS.

Use the "Find" utility in Acrobat Reader and look for "weather". You will find the place of ISWI in the deliberations of the United Nations.

Sincerely,
Hans Haubold.
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Thank you, Hans. As always, as editor, I always welcome contributions from each and every ISWI participant. If you have not yet done so, please submit an abstract for the ISWI workshop set for Helwan, Egypt, in November. And see you there.

Sincerely and respectfully yours,
George Maeda
The Editor
Fukuoka, Japan.

United Nations A/AC.105/969

General Assembly

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Committee on the Peaceful Uses of Outer Space

Report of the Expert on Space Applications*

Contents

* It was necessary to summarize in the present report each of the activities organized during 2009 under the United Nations Programme on Space Applications, the last of which was concluded on 3 December 2009.

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I. Introduction

1. At its forty-sixth session, in 2009, the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space reviewed the activities of the United Nations Programme on Space Applications. The Subcommittee noted that the activities of the Programme for 2008 had been carried out satisfactorily. On the recommendation of the Committee, the activities of the Programme for 2010 were noted with appreciation by the General Assembly in its resolution 64/86. The Subcommittee recommended to the Committee, for its approval, the activities scheduled for 2010 and noted the other activities of the Programme. All of the activities were to be implemented as part of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) related to space applications,[1] as proposed in the report of the Expert on Space Applications (A/AC.105/925) submitted to the Scientific and Technical Subcommittee at its forty-sixth session, in 2009. Information on the activities carried out within the framework of the Programme in 2009 and those scheduled for implementation in 2010 are presented in annexes I and II.

II. Mandate of the United Nations Programme on Space Applications

2. In its resolution 37/90, the General Assembly expanded the mandate of the United Nations Programme on Space Applications to include, in particular, the following elements:

(a) Promotion of greater exchange of actual experiences with specific applications;

(b) Promotion of greater cooperation in space science and technology between developed and developing countries as well as among developing countries;

(c) Development of a fellowship programme for in-depth training of space technologists and applications specialists;

(d) Organization of seminars on advanced space applications and new system developments for managers and leaders of space application and technology development activities, as well as seminars for users in specific applications;

(e) Stimulation of the growth of indigenous nuclei and an autonomous technological base with the cooperation of other United Nations organizations and/or States Members of the United Nations or members of the specialized agencies;

(f) Dissemination of information on new and advanced technology and applications;

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[1] 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).

(g) Provision or arrangements for provision of technical advisory services on space applications projects, upon request by Member States or any of the specialized agencies.

3. In its resolution 59/2, the General Assembly endorsed the Plan of Action proposed by the Committee on the Peaceful Uses of Outer Space for implementation of the recommendations of UNISPACE III (A/59/174, sect. VI.B), and urged all Governments, entities of the United Nations system and intergovernmental and non-governmental entities conducting space-related activities to carry out the Plan of Action on a priority basis for the further implementation of the recommendations of UNISPACE III, in particular its resolution entitled "The Space Millennium: Vienna Declaration on Space and Human Development".[2]

III. Orientation of the Programme

4. The Programme is aimed at further promoting, through international cooperation, the use of space technologies and data for sustainable economic and social development in developing countries by raising the awareness of decision makers of the cost-effectiveness and additional benefits to be obtained; establishing or strengthening capacity in developing countries to use space technology; and strengthening outreach activities to disseminate awareness of the benefits obtained.

5. The overall strategy of the Programme is to focus on selected areas that are critical for developing countries, defining and working towards objectives achievable in two to five years and built on the results of previous activities. These priority areas of the Programme, as noted by the Committee on the Peaceful Uses of Outer Space at its forty-seventh session[3] are: (a) disaster management; (b) satellite communications for tele-education and telemedicine applications; (c) monitoring and protection of the environment, including the prevention of infectious diseases; (d) management of natural resources; (e) developing capabilities in the use of global navigation and positioning satellite systems; (f) education and capacity-building, including research areas in basic space sciences; and (g) space law.

6. Additional Programme directions include spin-offs of space technology, promoting the participation of youth in space activities, capacity-building in basic space technology development such as small satellite applications and human space technology utilizing the International Space Station, and promoting the participation of private industry in the activities of the Programme.

7. At its forty-fourth session, in 2001, the Committee identified the recommendations of UNISPACE III that had the highest priority, noting that offers had been made by interested member States to exercise leadership in implementing some of those recommendations. The Committee agreed to establish action teams to implement those recommendations under the voluntary leadership of interested

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[2] Ibid., chap. I, resolution 1.

[3] *Official Records of the General Assembly, Fifty-ninth Session, Supplement No. 20* and corrigenda (A/59/20 and Corr.1 and 2), para. 66.

member States.[4] Programme activities have supported those action teams as much as possible.

8. The Programme is implemented by:

(a) Providing support for education and training for capacity-building in developing countries through the regional centres for space science and technology education, affiliated to the United Nations;

(b) Organizing workshops and seminars on advanced space applications and short and medium-term training programmes;

(c) Strengthening its long-term fellowship programme to include support for the implementation of pilot projects;

(d) Supporting or initiating pilot projects as follow-up to activities of the Programme in areas of priority interest to member States;

(e) Providing technical advisory services, upon request, to Member States, bodies and specialized agencies of the United Nations system and relevant national and international organizations;

(f) Enhancing access to space-related data and other information.

IV. Activities of the Programme

A. Training for capacity-building in developing countries

1. Regional centres for space science and technology education, affiliated to the United Nations

9. In its resolution 64/86, the General Assembly noted with appreciation that the African regional centres for space science and technology education, in French language and English language, 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, had continued their education programmes in 2009. The Assembly agreed that the regional centres should continue to report to the Committee on their activities on an annual basis. The Assembly also welcomed the fact that the regional centres would serve as information centres for the International Committee on Global Navigation Satellite Systems (ICG).

10. The governing boards, which are the overall policymaking bodies, of all the regional centres are holding regular meetings.

11. The Programme has invited all the regional centres to submit reports on their educational activities and operational status and on recent developments in their work. Reports and presentations on the activities of the regional centres are available on the website of the Office for Outer Space Affairs of the Secretariat (http://www.unoosa.org/oosa/en/SAP/centres/index.html). A summary of those

[4] Ibid., *Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), paras. 50-55.

reports is contained in *Capacity-Building in Space Science and Technology: Regional Centres for Space Science and Technology Education, Affiliated to the United Nations* (ST/SPACE/41). Based on those reports, the Programme carries out an annual global outreach campaign to raise the awareness of Member States and United Nations Development Programme offices on the activities of the centres.

12. The overall goal of the regional centres remains to develop, through in-depth education, an indigenous capability for research and applications in remote sensing and geographic information systems, satellite meteorology and global climate, satellite communications, and space and atmospheric science. Education curricula for those four disciplines have been developed through expert meetings held under the Programme. Two further model curricula are currently being developed under the auspices of the United Nations in the area of global navigation satellite systems (GNSS) and space law.

13. Highlights of the activities of all regional centres supported under the Programme are included in annex III.

14. At its fourth meeting, held in Saint Petersburg, Russian Federation, from 14 to 18 September 2009, ICG developed further the concept according to which the regional centres would act as ICG information centres.

15. The Programme is carrying out preparatory work to hold the fourth United Nations expert meeting on the regional centres for space science and technology education, in 2010. At that meeting, efforts will be made to revise, update and expand existing education curricula.

16. The centre for space science and technology education in Asia and the Pacific prepared a comprehensive document titled *CSSTEAP Performance Assessment and Outlook for the Future*, which was discussed at the thirteenth and fourteenth meetings of its governing board, held in November 2008 and September 2009, respectively. That document has been made available to all regional centres for space science and technology education, affiliated to the United Nations, and will be made available to the Committee and its subsidiary bodies.

2. Fellowship programmes for training

17. In 2004, the Government of Italy, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Elettrotecnico Nazionale Galileo Ferraris, initiated an offer of 12-month fellowships for postgraduate study on GNSS and related applications for specialists from developing countries. The sixth class of the fellowship programme commenced its studies in September 2009. Four representatives of governmental organizations and research and academic institutions from India and Pakistan were jointly selected by the Programme and the sponsoring organizations for fellowships to study at the Politecnico di Torino in Turin, Italy.

18. In 2007, the Programme and the National Commission on Space Activities (CONAE) of Argentina jointly established the United Nations/Argentina fellowship programme for advanced training in landscape epidemiology, an annual six-week training course held at the Mario Gulich Institute for Higher Space Studies in Córdoba, Argentina. It was established as a follow-up to the United Nations/European Space Agency/Argentina Workshop on the Use of Space

Technology for Human Health for the benefit of the countries in Latin America (A/AC.105/860), held in Argentina in 2005, and in support of the Action Team on Public Health of the Committee.

B. Space science, space technology and their applications

1. Natural resources management and environmental monitoring

19. The United Nations/Peru/Switzerland/European Space Agency Workshop on Integrated Space Technology Applications for Sustainable Development in the Mountain Regions of Andean Countries was held in Lima from 14 to 18 September 2009 (A/AC.105/968). To date, the Programme and host countries have organized four workshops on space technology applications in mountain regions, thus contributing to increasing the awareness of Member States about how satellite technology applications can contribute to the sustainable development of mountain regions. Thirteen projects are in various stages of implementation.

20. The main objective of the Workshop was to facilitate discussion of ways in which remote sensing and other technologies could be used to promote sustainable development in mountain areas and to start developing the following two projects: “Andesat”, which combines elements of agriculture, hydrology, geology, mineralogy and the environment and is the result of the United Nations/Argentina/Switzerland/European Space Agency Workshop on Sustainable Development in Mountain Areas of Andean Countries, held in Mendoza, Argentina, from 26 to 30 November 2007 (A/AC.105/913) and the “Andes in space” project.

21. A major outcome of the Workshop was the further development of a proposal on the use of remote sensing entitled “natural resources environmental management and socio-cultural sustainability in the Andes” and the decision to develop a new module entitled “Andes from space” in the framework of the Eduspace programme, which is led by the European Space Agency (ESA) and CONAE.

22. The United Nations/International Astronautical Federation Workshop on Integrated Space Technologies and Space-based Information for Analysis and Prediction of Climate Change was held in Daejeon, Republic of Korea, from 9 to 11 October 2009, just prior to the 60th International Astronautical Congress, which took place from 12 to 16 October. Participants in the Workshop discussed a wide range of space-related technologies, services and information resources available for analysing and predicting climate change, with the ultimate goal of exploring ways to solve social and economic problems caused by climate change and global warming. The meeting also discussed opportunities for increasing regional and international cooperation in that area.

23. Major critical issues and themes identified in the presentations delivered at the technical sessions were summarized in working groups and further discussed at a round table of leading managers of space agencies and other relevant institutions from both developing and developed countries, as well as from international organizations.

24. The main conclusions drawn from those discussions included the need to develop satellite-derived climate data standards and systems that would be globally available, either free of charge or at a low price, the need to establish regional

facilities that would enable collective access to relevant satellite data and the sharing of regional and global information on climate change, and the importance of improving coordination for sharing climate change-related information for responding to needs defined at regional levels, for providing standard format data and for supporting decision-making processes in the regions. The conclusions of the Workshop and its round table were presented at the International Astronautical Congress event devoted to that topic.

25. The Workshop on Applications of Telehealth to Service Delivery in Public Health and Environment for the benefit of States members of the South Asian Association for Regional Cooperation (SAARC), which was co-organized by the Government of Bhutan and the Government of India and supported by the Programme, was held in Thimphu from 27 to 30 July 2009. The main objective of the Workshop had been defined at the United Nations/India/European Space Agency Regional Workshop on the Use of Space Technology in Tele-epidemiology to Benefit Asia and the Pacific held in Lucknow, India, from 21 to 24 October 2008 (A/AC.105/925, para. 25), was to cost-effectively connect the hospitals of Bhutan and India via a broadband satellite communications channel.

26. As a result of the Workshop, hospitals of excellence in India have been connected with reference hospitals in Bhutan. The use of a prototype mobile health unit developed by India for developing countries was also demonstrated for tele-surgery, off-site radiology services, cardiac monitoring, dermatology, medical consultations, specialist referrals and correctional care.

27. At the 6th European Congress on Tropical Medicine and International Health, held in Verona, Italy, from 6 to 10 September 2009, the United Nations Office for Outer Space Affairs organized a workshop on space technology's contribution to infection surveillance and the health-related Millennium Development Goals. The principal goal of the workshop was to improve awareness among the medical community of the potential of satellite technology for monitoring and predicting the spread of infectious diseases. Information was provided to the 1,200 participants in the Congress on the outcomes of specific pilot projects using satellite data implemented in Asia and the Pacific, Europe and Latin America and the Caribbean.

28. Since UNISPACE III, the Programme has carried out, in cooperation with its partners, 23 activities that have been either partly or fully dedicated to telemedicine, tele-health and tele-epidemiology. Earth-observing satellites provide a transnational picture of vector-borne diseases and space-based data help scientists to combat infectious diseases and even to predict high-risk areas before outbreaks occur.

2. Enabling space technologies

29. The United Nations/United States of America Training Course on Satellite-Aided Search and Rescue, which was organized by the Programme and the National Oceanic and Atmosphere Administration of the United States, was held in Miami, Florida, United States, from 19 to 23 January 2009. The Programme and the Secretariat of the International Satellite System for Search and Rescue (COSPAS-SARSAT) have jointly organized seven training courses on satellite-aided search and rescue. These training courses have improved the coordination between COSPAS-SARSAT member States and those developing countries which avail themselves of the distress alert information provided by COSPAS-SARSAT. Reports

on previous training courses on satellite-aided search and rescue are available at http://www.oosa.unvienna.org/oosa/en/docsidx.html.

30. The training course held in January 2009 was the second organized by the Programme and the United States for participants from Latin America and the Caribbean. The first such training course was conducted in 2004. The 2009 training course has improved formal interaction between distress alert data providers and users in Latin America and the Caribbean and increased the effectiveness with which COSPAS-SARSAT data is used in search and rescue operations, thus enhancing global operation of the system.

31. The United Nations/Azerbaijan/United States of America/European Space Agency Workshop on Applications of Global Navigation Satellite Systems, which was hosted by the Ministry of Communication and Information Technologies on behalf of the Government of Azerbaijan, was held in Baku from 11 to 15 May 2009 (A/AC.105/946). The Workshop was co-sponsored by the United States, through ICG, and ESA. The objectives of the Workshop were to do the following: (a) strengthen regional information and data exchange networks on the use of GNSS technology; (b) identify the specific needs of individual plans and projects on GNSS at the regional and international levels for short, medium and long-term applications; and (c) develop a regional plan of action that would contribute to the wider use of GNSS technology and its applications.

32. Participants established three working groups focusing on capacity-building and institutional strengthening, a geodetic reference network and GNSS applications. In the framework of the various ongoing projects and programmes of relevance to the region, participants agreed on follow-up activities to further strengthen the reference station networks through the European Position Determination System (EUPOS) and agreed that GNSS training courses and workshops should be organized for countries in the region that were not currently operating permanent reference stations. Participants also highlighted the importance of continuing education and training for experts and users and recommended the available online education materials to be used for distance learning or e-learning. A need for a new GNSS policy to promote the interoperability of navigation, positioning and timing systems in adjacent regions was outlined by the workshop participants.

33. Efforts to build capacity in space science and technology are considered a major focus of the Programme and are of specific interest to ICG. Two international training courses on satellite navigation and location-based services were organized jointly by the Programme, the African Regional Centre for Space Science and Technology Education — in French language and the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean. The aim of the training courses was to initiate the development of a curriculum on GNSS. Participants were informed about relevant GNSS technologies in order to help them to gain an in-depth understanding of how those technologies could be used.

34. The United Nations/Austria/European Space Agency Symposium on Small Satellite Programmes for Sustainable Development was held in Graz, Austria, from 8 to 11 September 2009. The Symposium was co-sponsored by the Federal Ministry for European and International Affairs of Austria, the Federal Ministry for Transport, Innovation and Technology of Austria, the State of Styria, the City of

Graz and ESA. The primary objectives of the Symposium were to review the usefulness of small satellites and to harness accumulated experience in small satellite development for the purpose of conceptualizing national small satellite development programmes as well as to contribute to the development of indigenous capabilities in small satellite technology in the participants' institutions.

35. The Symposium consisted of four sessions on the following themes: (a) usefulness of small satellites for capacity-building; (b) establishment of a small satellite programme: policy, planning and implementation; (c) launch opportunities for small satellites and regulatory issues; and (d) hands-on activities for mission design. A technical visit to the ground station and satellite facilities in Graz was organized on the second day. During the Symposium, three working groups were formed to develop small satellite mission plans and proposals in the following application areas selected by the participants: (a) climate change monitoring and education; (b) disaster management; and (c) humanitarian missions. It was suggested that the working groups discuss a mission statement and operational concept, a timeline, budget estimations, possible partners and collaborators, the kind of education and training that would be needed and access to technical facilities. Low costs and a short development and production times, coupled with advances in electronic miniaturization and associated performance capabilities, make small satellite missions extremely attractive for governmental and private entities, as well as for educational institutions in developing countries.

36. The Programme continued cooperating with the International Academy of Astronautics (IAA) and its Committee on Small Satellite Missions in organizing a series of workshops on small satellites. The Tenth United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries was held on 13 October 2009 in Daejeon, Republic of Korea, within the framework of the 60th International Astronautical Congress. The objectives of the Workshop were to introduce small satellite programmes, demonstrate the effectiveness, including the cost-effectiveness of small satellites, and encourage educational and training activities at universities in developing countries.

37. The Workshop, which was an integral part of the Congress, was attended by some 60 participants. Most of the papers presented at the Workshop focused on the contribution that small satellites could make in supporting scientific, Earth observation and telecommunication missions. Particular emphasis was placed on international cooperation, on education and training and on the benefits of such programmes for developing countries. The Workshop was appreciated by participants and members of the IAA Committee on Small Satellite Missions, who suggested that a discussion on how developing countries could benefit more from small satellite projects should be held at the 62nd International Astronautical Congress, to be held in Cape Town, South Africa, from 3 to 7 October 2011, since that event would be attended by the heads of African space agencies.

38. It is expected that efforts will be made, in the framework of the Programme, in support of capacity-building in basic space technology development with a specific focus on small satellites and their applications. The Programme is seeking to develop an education curriculum for basic space technology development and will work with educational institutions worldwide to identify relevant long-term fellowship opportunities. It will build on the recommendations of the series of

United Nations/International Academy of Astronautics workshops on small satellites in the service of developing countries and on the outcome of the United Nations/Austria/European Space Agency Symposium on Small Satellite Programmes for Sustainable Development.

3. Space science and space law

39. Initiated in 1990, the United Nations Basic Space Science Initiative has contributed to the international and regional development of astronomy and space science through annual workshops organized jointly by the United Nations, ESA, the National Aeronautics and Space Administration (NASA) and the Japan Aerospace Exploration Agency (JAXA) in the framework of the International Heliophysical Year 2007 and the International Space Weather Initiative (ISWI). The United Nations Basic Space Science Initiative has led to the establishment of planetariums, astronomical telescopes and International Heliophysical Year/International Space Weather Initiative instrument arrays worldwide, particularly in developing countries. In particular, the following instrument arrays have been developed in the framework of ISWI: the Scintillation Network Decision Aid (SCINDA), the Atmospheric Weather Electromagnetic System of Observation, Modeling and Education (AWESOME), the Sudden Ionospheric Disturbances (SID) monitor, the Remote Equatorial Nighttime Observatory for Ionospheric Regions (RENOIR), the Compound Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory (CALLISTO), the Magnetic Data Acquisition System (MAGDAS) and the African dual frequency GPS network (GPS-Africa). The United Nations Basic Space Science Initiative has also contributed to the extension of mirror sites of the NASA astrophysical data system, the use of virtual observatories and the implementation of the "Tripod" concept, which aimed at comprehensively using instruments, observing programmes and teaching materials at the university level in countries where space science was used as a tool for promoting socio-economic development. The first workshop on ISWI organized jointly by the United Nations, ESA, NASA and JAXA will be held in Luxor, Egypt, from 6 to 10 November 2010. ISWI is part of the programme on GNSS applications that is implemented by the Office for Outer Space Affairs, in its capacity as ICG Executive Secretariat, and that is co-sponsored by ICG.

40. At the United Nations/European Space Agency/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on Basic Space Science and the International Heliophysical Year 2007, held from 21 to 25 September 2009 in Daejeon, Republic of Korea, participants reviewed the basic space science activities that had been carried out in the framework of the International Heliophysical Year 2007 and the projects that had emanated from previous editions of the workshop. Participants in the Workshop focused on solar-terrestrial interaction to understand how the variability of the Sun could affect the Earth's magnetosphere, ionosphere and environment, as well as the impact such interaction could have on space-based systems.

41. The Programme, through the United Nations Basic Space Science Initiative, provided financial support for the eleventh COSPAR capacity-building workshop on data analysis of the Fermi gamma-ray space telescope, to be held in Bangalore, India, from 8 to 19 February 2010. This series of workshops is co-sponsored by the Programme and is the result of the Initiative.

42. The United Nations/Islamic Republic of Iran Workshop on Space Law was held in Tehran from 8 to 11 November 2009 (A/AC.105/956). The main theme of the Workshop was the role of international space law in the development and strengthening of international and regional cooperation in the peaceful exploration and use of outer space. The Workshop was co-organized with the Iranian Space Agency and supported by the Asia Pacific Space Cooperation Organization.

43. The Workshop was the sixth in a series of United Nations space law workshops organized by the Programme together with host countries. The objectives of the workshop were the following: (a) to promote understanding, acceptance and implementation of the United Nations treaties and principles concerning 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 of and challenges to international space law, such as the commercialization of space activities and the increasing number of participants involved in space activities; (d) to consider the development of university-level studies and programmes in space law, with a view to promoting national expertise and capability in this field; and (e) to consider mechanisms for increasing regional cooperation in the peaceful uses of outer space.

44. The Workshop resulted in a set of recommendations, observations and conclusions addressing the implementation and application of the United Nations treaties at the national level; the role of regional cooperation mechanisms in supporting efforts to strengthen regulatory and policy frameworks, promoting education in space law and fostering educational programmes within the respective region; and means for promoting dialogue between educational institutions with established space law programmes and educational institutions wishing to develop such programmes.

45. In conjunction with the Workshop, on 12 to 13 November the Programme organized the second United Nations Expert Meeting on Promoting Education in Space Law. The overall aim of the Meeting was to further develop the education curriculum for a basic course on space law. The curriculum would be integrated into the education programmes of the regional centres for space science and technology education, affiliated to the United Nations. The Meeting resulted in a revised draft of an education curriculum on space law.

C. Technical advisory services and regional cooperation

46. The 2009 edition of the Asia-Pacific Satellite Communications Council Satellite Conference and Exhibition was held in Kuala Lumpur from 29 September to 1 October 2009. A representative of the Programme delivered the keynote speech and agreed to lead an ad hoc session on space technology applications at the 2010 edition of the Conference.

47. The Programme provided advisory assistance and financial support to IAA and to the National Space Research and Development Agency (NASRDA) of Nigeria for organizing the third IAA African Regional Conference, which was held in Abuja from 24 to 26 November 2009. The event was entitled “Space for Africa: Joint Participation, Knowledge Development and Sharing”.

48. The Programme co-organized a workshop on establishing scientific and instrument collaborations for observing the consequences of space weather from Morocco, which was hosted by the Government of Morocco and held in Rabat from 18 to 24 November 2009. At its sixty-fourth session, in 2009, the Committee on the Peaceful Uses of Outer Space noted the importance of continuing to build upon the success of the International Heliophysical Year 2007 and noted with satisfaction the agreement reached by the Scientific and Technical Subcommittee at its forty-sixth session to consider a new agenda item entitled "International Space Weather Initiative" under a three-year workplan with specific focus on the effects of space weather on the Earth. Formal presentations from providers of instruments (CALLISTO, GPS-Africa, MAGDAS, RENOIR, SCINDA, SID and AWESOME) were made to prospective instrument hosts at Moroccan universities. Two MAGDAS magnetometers, two GPS receivers (GPS-Africa and SCINDA) and one radio spectrometer (CALLISTO) was to be transferred to Moroccan observation sites. The African Regional Centre for Space Science and Technology — in French language, which is located in Rabat, will participate in the operation of the two GPS receivers. The Hassan II Academy of Science and Technology and the ISWI Secretariat signed a memorandum of understanding on the development of distributed ionospheric observatories in a number of universities in Morocco.

49. The Programme co-organized, together with the Senate of Berlin, the International EUPOS Steering Committee, ICG and the Office for Outer Space Affairs, the Second International Symposium on Global Navigation Satellite Systems, Space-Based and Ground-Based Augmentation Systems and Applications. The Symposium, which was hosted by the Government of Germany, was held in Berlin from 30 November to 2 December 2009. The symposiums that have been organized in this series were initiated by the establishment of ICG and encouraged by the Programme, in its role as Executive Secretariat of ICG. The Symposium addressed objectives, activities, organization and achievements related to cooperation with EUPOS and with the International Association of Geodesy Reference Frame Sub-Commission for Europe (EUREF). The potential of space-based geodetic techniques, in particular GNSS and differential GNSS reference station networks, was recognized for the use of modern and precise continental reference frames in the Eurasian tectonic plate. Participants in the symposium were provided with information about the status of ICG and about the newly established ISWI. Eurasian countries were encouraged to participate in and contribute to ICG and ISWI.

50. The Programme provided advisory assistance and financial support to professionals from Africa to participate in the following two workshops: a workshop on satellite navigation science and technology for Africa held at the Abdus Salam International Centre for Theoretical Physics, in Trieste, Italy, from 23 March to 9 April 2009 and a workshop on establishment of GNSS permanent stations and data processing held at the Regional Centre for Mapping of Resources for Development, in Nairobi from 24 August to 4 September 2009.

51. Those workshops included formal lectures and hands-on practice on GNSS architecture, signal structure, hardware design, state-of-the-art applications and scientific exploration using GNSS. An on-site computer laboratory gave participants ample opportunities to perform positioning calculations; to use mapping and

surveying software; to plan a precision farming procedure; and to analyse atmospheric and ionospheric data — all from GPS measurements.

D. Summary of activities related to the United Nations Programme on Space Applications

1. Activities of the Programme carried out in 2009

52. In 2009, one symposium and seven workshops were conducted within the framework of the Programme. The list of activities is presented in annex I.

2. Activities of the Programme scheduled for implementation in 2010

53. The meetings, seminars, symposiums, training courses and workshops scheduled for 2010, including their objectives, are listed in annex II.

3. Activities of the regional centres for space science and technology education, affiliated to the United Nations, for the period 2008-2011

54. The nine-month postgraduate courses to be offered by the regional centres for space science and technology education, affiliated to the United Nations, in the period 2008-2011 are listed in annex III.

V. Voluntary contributions

55. The successful implementation of the Programme activities in 2009 benefited from the support and voluntary contributions in cash and in kind from Member States and their institutions, as well as from the assistance and cooperation of regional and international governmental and non-governmental organizations.

56. The following Member States and governmental and non-governmental organizations provided support for the activities of the Programme in 2009:

(a) ESA provided US$ 85,000 in support of those activities of the Programme in 2009 which it co-sponsored (see annex I);

(b) Austria, through its Ministry for European and International Affairs and its Ministry for Transport, Innovation and Technology, the State of Styria and the City of Graz, defrayed the costs of the international air travel of participants, local organization and facilities, and room, board and local transportation of participants in the United Nations/Austria/European Space Agency Symposium on Small Satellite Programmes for Sustainable Development, held in Graz, Austria, from 8 to 11 September 2009 (see annex I);

(c) The Government of Switzerland provided US$ 7,500 in support of the United Nations/Peru/Switzerland/European Space Agency Workshop on Integrated Space Technology Applications for Sustainable Development in the Mountain Regions of Andean Countries, held in Lima from 14 to 18 September 2009;

(d) JAXA provided US$ 10,000 in support of the United Nations/European Space Agency/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on Basic Space Science and the International

Heliophysical Year 2007, held in Daejeon, Republic of Korea, from 21 to 25 September 2009;

(e) The International Astronautical Federation provided €20,000 in support of the United Nations/International Astronautical Federation Workshop on Integrated Space Technologies and Space-based Information for Analysis and Prediction of Climate Change, held in Daejeon, Republic of Korea, from 9 to 11 October 2009. In addition, it provided enough funds for 23 participants in the workshop to attend the 60th International Astronautical Congress;

(f) The United States provided US$ 100,000 in support of the implementation of the ICG workplan, focusing on information dissemination and capacity-building, as well as selected activities related to GNSS applications;

(g) Those host Governments of events held in the framework of the Programme which defrayed the costs of local organization and facilities, and room, board and local transportation for some participants from developing countries (see annex I). The in-kind support given in 2009 by such Governments is estimated to have amounted to US$ 357,712;

(h) Those Member States and their space-related institutions, as well as regional and international organizations, which provided sponsorship for experts to make technical presentations and participate in deliberations on activities of the Programme (see annex I and reports on activities).

VI. Financial provisions and administration of activities in the biennium 2010-2011

57. The activities of the Programme in 2010 covered in the present report will be implemented as follows:

(a) *Financial provisions*. Under the regular budget of the United Nations from the resource allocation for fellowships and grants in the programme budget approved by the General Assembly at its sixty-fourth session for implementing the activities of the Programme during the biennium 2010-2011, an amount of US$ 424,500 will be used to implement the activities of the Programme in 2010. In order to carry out effectively its mandated and expanded activities, in particular those aimed at implementing the recommendations of UNISPACE III, the Programme must solicit additional funds, in the form of voluntary contributions, in support of its activities. Those contributions will be used to supplement the regular budget of the Programme;

(b) *Administration by and contributions and participation of staff*. The Office for Outer Space Affairs will carry out the activities described in the present report. In that connection, travel will be undertaken, as appropriate, by staff of the Office under the provisions of the travel budget of the Office for the biennium and, as may be necessary, from voluntary contributions.

Annex I

United Nations Programme on Space Applications: meetings, seminars, symposiums, training courses and workshops held in 2009

Title of activity and place and date held	*Sponsoring country*	*Sponsoring organization*	*Host institution*	*Funding support*	*Number of countries and entities represented*	*Number of participants*	*Document symbol of report*
United Nations/United States of America Training Course on Satellite-Aided Search and Rescue Miami, Florida, United States of America 19-23 January 2009	United States	United Nations, National Oceanic and Atmospheric Administration (NOAA) of the United States	NOAA	The United Nations provided air travel and local transportation for 17 participants from 13 countries in Latin America and the Caribbean; NOAA provided daily subsistence allowance.	19	30	N/A
United Nations/Azerbaijan/ United States of America/European Space Agency Workshop on the Applications of Global Navigation Satellite Systems Baku 11-15 May 2009	Azerbaijan, United States	European Space Agency (ESA)	Ministry of Communication and Information Technologies of Azerbaijan	The United Nations, the United States of America and ESA provided funds to defray the costs of air travel and living expenses for 17 participants from developing countries	29	80	A/AC.105/946
Workshop on Applications of Tele-health to Service Delivery in Public Health and Environment Thimphu 27-30 July 2009	Bhutan, India	United Nations	Ministry of Health of Bhutan	The United Nations provided funds to cover the cost of air travel and daily subsistence allowance for 10 participants from five countries of the South Asian Association for Regional Cooperation	12	77	N/A

Title of activity and place and date held	*Sponsoring country*	*Sponsoring organization*	*Host institution*	*Funding support*	*Number of countries and entities represented*	*Number of participants*	*Document symbol of report*
United Nations/Austria/European Space Agency Symposium on Small Satellite Programmes for Sustainable Development Graz, Austria 8-11 September 2009	Austria	United Nations, ESA	Austrian Academy of Sciences, Institute of Space Research and Joanneum Research	The United Nations and co-sponsors provided full or partial financial support for 20 participants.	38	60	A/AC.105/966
United Nations/Peru/Switzerland/European Space Agency Workshop on Integrated Space Technology Applications for Sustainable Development in the Mountain Regions of Andean Countries Lima 14-18 September 2009	Peru	United Nations, ESA	National Aerospace Research and Development Commission of Peru	The United Nations and co-sponsors provided full financial support for 26 participants.	20	200	A/AC.105/968

Title of activity and place and date held	*Sponsoring country*	*Sponsoring organization*	*Host institution*	*Funding support*	*Number of countries and entities represented*	*Number of participants*	*Document symbol of report*
United Nations/European Space Agency/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on Basic Space Science and the International Heliophysical Year 2007 Daejeon, Republic of Korea 21-25 September 2009	Republic of Korea	United Nations, ESA, National Aeronautical and Space Administration (NASA), Japan Aerospace Exploration Agency (JAXA)	Korea Astronomy and Space Science Institute (KASI)	The United Nations, ESA, NASA, JAXA and KASI provided funds to defray the cost of air travel and living expenses for 50 participants.	34	201	A/AC.105/964
19th United Nations/International Astronautical Federation Workshop on Integrated Space Technologies and Space-based Information for Analysis and Prediction of Climate Change Daejeon, Republic of Korea 9-11 October 2009	Republic of Korea	United Nations, International Astronautical Federation, ESA	Korea Aerospace Research Institute (KARI)	United Nations and co-sponsors provided full financial support for 22 participants and partial support to one participant. IAF waived the Congress registration fee for 22 participants.	40	80	A/AC.105/970

Title of activity and place and date held	*Sponsoring country*	*Sponsoring organization*	*Host institution*	*Funding support*	*Number of countries and entities represented*	*Number of participants*	*Document symbol of report*
Tenth United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries Daejeon, Republic of Korea 13 October 2009	Republic of Korea	United Nations, International Academy of Astronautics	IAA	N/A	N/A	60	A/AC.105/971
United Nations/Islamic Republic of Iran Workshop on Space Law Tehran 8-11 November 2009	Islamic Republic of Iran	United Nations, Asia-Pacific Space Cooperation Organization	Iranian Space Agency (ISA)	United Nations and ISA provided full financial support for 17 participants. ISA provided conference facilities, local transportation and technical and secretarial support.	19	184	A/AC.105/956

Annex II

United Nations Programme on Space Applications: schedule of meetings, seminars, symposiums, training courses and workshops for implementation in 2010

Activity	*Title*	*Place and date*	*Objective*
	United Nations/Argentina/Saudi Arabia International Conference on the Use of Space Technology in Water Management	Buenos Aires 2010	To follow up on the conference on the same subject held in Riyadh from 12 to 16 April 2008. Participants will continue to discuss how space technology can contribute to improving the way in which water resources are managed, including by combating desertification, ensuring access to safe drinking water and managing water-related emergencies in developing countries.
	United Nations/Moldova/United States of America Workshop on the Applications of Global Navigation Satellite Systems	Chisinau 17-21 May	To introduce global navigation satellite systems (GNSS) technology and its applications to transport and communications, aviation, surveying, mapping and Earth science, management of natural resources, the environment and disasters, and precision agriculture; to promote exchange of experiences with specific applications; to encourage greater cooperation in developing partnerships and GNSS networks, in the framework of the regional reference frames: the European Position Determination System (EUPOS) and the International Association for Geodesy (IAG) Reference Frame Sub-Commission for Europe (EUREF).
	United Nations/ Switzerland/European Space Agency/United Nations Environment Programme Workshop on Space Technology Contribution to Sustainable Development of the Mountain Regions of Andean Countries	La Paz 28 June-2 July 2010	To continue discussing how remote sensing, satellite communications and GNSS technologies to the projects started at the previous workshops in this series (held in Argentina in 2007 and in Peru in 2009) can contribute to sustainable development in the mountain regions of Andean countries; to identify priorities for building capacity in remote sensing for the benefit of those regions.

Activity	*Title*	*Place and date*	*Objective*
	United Nations/ Turkey/European Space Agency Workshop on Space Technology Applications for Socio-economic Benefits	Antalya, Turkey 14-17 September 2010	To identify ways and means to facilitate governmental, institutional and industrial participation in the space arena; to address principles for national, regional and international cooperation in space technology development and its applications; to explore the socio-economic benefits of using satellite remote sensing, satellite meteorology, satellite communications and GNSS; to strengthen regional information and data exchange networks on the use of space science and technology; to initiate pilot projects for joint work at the regional and international level.
	United Nations/ Austria/European Space Agency Symposium on the Use of Small Satellites for Sustainable Development	Graz, Austria 21-24 September 2010	To promote the development and use of basic space technology, in particular small satellites, for sustainable socio-economic development.
	United Nations/ International Astronautical Federation Workshop on Applications of Global Navigation Satellite Systems	Prague 24-26 September 2010	To discuss GNSS technologies, applications and services that contribute to sustainable economic and social development programmes, primarily in developing countries; to increase awareness among decision makers and representatives of the research and academic community about ongoing activities and trends in the use of GNSS technologies, applications and services; to examine GNSS technologies, applications and services available for addressing social and economic issues; to strengthen institutional and human capacity in the area of GNSS technologies, applications and services; and to strengthen international and regional cooperation in GNSS technologies, applications and services.
	Eleventh United Nations/ International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries	Prague 28 September 2010	To introduce small satellite programmes; to demonstrate the effectiveness, including the cost-effectiveness of small satellites; and to encourage educational and training activities at universities in developing countries.
	United Nations/Bangladesh Regional Workshop on the Use of Space Technology for Climate Change Studies	Bangladesh November 2010	To promote the use of space technologies and space-derived information and services for climate change monitoring and prediction, with the ultimate goal of exploring ways to address social and economical problems caused by disasters and environmental hazards induced by climate change, as well as to strengthen international and regional cooperation in this area.

Activity	*Title*	*Place and date*	*Objective*
	United Nations /European Space Agency/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on the International Space Weather Initiative	Luxor, Egypt 6-10 November 2010	To build upon the achievements of past workshops on basic space science and the International Heliophysical Year 2007; to inaugurate the International Space Weather Initiative by utilizing ground-based world-wide International Heliophysical Year/International Space Weather Initiative instrument arrays.
	United Nations/Thailand Workshop on Space Law	Bangkok, November 2010	To build capacity in space law, with particular reference to the United Nations treaties and principles related to outer space.

Annex III

Regional centres for space science and technology education, affiliated to the United Nations: schedule of nine-month postgraduate courses, 2008-2011

1. Regional Centre for Space Science and Technology Education in Asia and the Pacific

Year	*Venue*	*Activity*
2009-2010	Indian Institute of Remote Sensing, Dehra Dun, India	Fourteenth Postgraduate Course on Remote Sensing and Geographic Information Systems (GIS)
2009-2010	Space Applications Centre, Ahmedabad, India	Seventh Postgraduate Course on Satellite Communications
2008-2009	Indian Institute of Remote Sensing, Dehra Dun, India	Thirteenth Postgraduate Course on Remote Sensing and GIS
2008-2009	Space Applications Centre, Ahmedabad, India	Sixth Postgraduate Course on Satellite Meteorology and Global Climate
2008-2009	Physical Research Laboratory, Ahmedabad, India	Sixth Postgraduate Course on Space and Atmospheric Science

2. African Regional Centre for Space Science and Technology — in French language

Year	*Venue*	*Activity*
2008-2009	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Sixth Postgraduate Course on Remote Sensing and GIS
2009-2010	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Third Postgraduate Course on Satellite Meteorology and Global Climate
2010-2011	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Seventh Postgraduate Course on Remote Sensing and GIS
2010-2011	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Fourth Postgraduate Course on Satellite Communications

3. African Regional Centre for Space Science and Technology Education — in English language

Year	*Venue*	*Activity*
2009-2010	Obafemi Awolowo University, Ile-Ife, Nigeria	Seventh Postgraduate Course on Remote Sensing and GIS

4. Regional Centre for Space Science and Technology Education in Latin America and the Caribbean

Year	*Venue*	*Activity*
2009-2010	National Institute for Space Research, Santa Maria, Rio Grande do Sul, Brazil	Seventh Postgraduate Course on Remote Sensing and GIS
2009-2010	National Institute of Astrophysics, Optics and Electronics, Tonantzintla, Puebla, Mexico	Fifth Postgraduate Course on Remote Sensing and GIS
2010-2011	National Institute of Astrophysics, Optics and Electronics, Tonantzintla, Puebla, Mexico	Fourth Postgraduate Course on Satellite Communications

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Report of the Scientific and Technical Subcommittee on its forty-seventh session, held in Vienna from 8 to 19 February 2010

I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its forty-seventh session at the United Nations Office at Vienna from 8 to 19 February 2010, under the chairmanship of Ulrich Huth (Germany).

2. The Subcommittee held 20 meetings.

A. Attendance

3. Representatives of the following 57 member States of the Committee attended the session: Algeria, Argentina, Australia, Austria, Belgium, Bolivia (Plurinational State of), Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mexico, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sweden, Switzerland, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.

4. At its 718th meeting, on 8 February, the Subcommittee decided to invite observers for Azerbaijan, Croatia, the Dominican Republic, Tunisia and the United Arab Emirates, at their request, to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further

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requests of that nature and that it would not involve any decision of the Subcommittee concerning status. The Subcommittee took note of the application by Tunisia for membership in the Committee (A/AC.105/C.1/2010/CRP.4).

5. Observers for the International Atomic Energy Agency (IAEA), the International Telecommunication Union (ITU) and the World Meteorological Organization attended the session.

6. The session was attended by observers for the following intergovernmental organizations having permanent observer status with the Committee: European Organisation for Astronomical Research in the Southern Hemisphere, European Space Agency (ESA), European Telecommunications Satellite Organization, Regional Centre for Remote Sensing of North African States and Asia-Pacific Space Cooperation Organization (APSCO). The European Union was also represented at the session. The session was also attended by observers for the following non-governmental organizations with permanent observer status with the Committee: Association of Space Explorers, European Space Policy Institute, EURISY, International Academy of Astronautics (IAA), International Astronautical Federation (IAF), International Astronomical Union, International Institute for Applied Systems Analysis, International Society for Photogrammetry and Remote Sensing, International Space University, Prince Sultan Bin Abdulaziz International Prize for Water, Secure World Foundation (SWF), Space Generation Advisory Council (SGAC), Planetary Society and World Space Week Association.

7. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in A/AC.105/C.1/2010/INF/39.

B. Adoption of the agenda

8. At its 718th meeting, on 8 February, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.
2. Election of the Chairman.
3. Statement by the Chairman.
4. General exchange of views and introduction of reports submitted on national activities.
5. United Nations Programme on Space Applications.
6. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
7. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
8. Space debris.
9. Space-system-based disaster management support.

10. Recent developments in global navigation satellite systems.

11. Use of nuclear power sources in outer space.

12. Near-Earth objects.

13 International Space Weather Initiative.

14 Long-term sustainability of outer space activities.

15. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.

16. Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee.

17. Report to the Committee on the Peaceful Uses of Outer Space.

C. Election of the Chairman

9. At its 718th meeting, the Subcommittee elected Ulrich Huth (Germany) Chair for the period 2010-2011, pursuant to General Assembly resolution 64/86.

D. General statements

10. The Subcommittee welcomed the election of Ulrich Huth as Chair for a two-year term, starting in 2010. The Subcommittee expressed its appreciation to the outgoing Chair, Aboubekr Seddik Kedjar (Algeria), for his leadership and contribution to furthering the achievements of the Subcommittee during his term of office.

11. Statements were made by representatives of the following member States during the general exchange of views: Algeria, Argentina, Australia, Austria, Brazil, Burkina Faso, Canada, China, Colombia, Cuba, Ecuador, France, Germany, Greece, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kenya, Malaysia, Mexico, Nigeria, Pakistan, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Spain, Switzerland, Syrian Arab Republic, Thailand, Turkey, United Kingdom, United States and Venezuela (Bolivarian Republic of). A statement was also made by the representative of the Bolivarian Republic of Venezuela on behalf of the Group of Latin American and Caribbean States. The observer for Tunisia made a general statement. General statements were also made by APSCO, the Regional Centre for Remote Sensing of North African States, the European Space Policy Institute, IAF, the International Astronomical Union, the International Society for Photogrammetry and Remote Sensing, SGAC and SWF.

12. The Subcommittee welcomed APSCO as the newest permanent observer of the Committee.

13. At the 718th meeting, the Chair made a statement outlining the work of the Subcommittee at its current session and reviewing the global space activities of the previous year, including important advances that had been made as a result of international cooperation.

14. At the 721st meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement reviewing the work programme of the Office and provided information about the strategic framework for the biennium 2010-2011.

15. The Subcommittee conveyed its condolences to Haiti for the suffering caused by the devastating impact of the earthquake of 12 January 2010 and the massive humanitarian crisis that ensued. The Subcommittee noted that loss of life and property could be diminished if better information were made available to improve risk assessment, early warning and monitoring of disasters, and stressed the critical role that space-based systems could play in supporting disaster management by providing accurate and timely information and communication support.

16. The view was expressed that the Subcommittee should review its schedule of meetings and documentation levels with a view to identifying areas where savings might be possible. The view was also expressed that the Committee should consider reviewing the status of non-governmental organizations having permanent observer status with the Committee.

17. Some delegations expressed their support for the Chair of the Committee's initiative contained in a paper entitled "Towards a UN Space Policy" (A/AC.105/2009/CRP.12) and were of the view that the policy could improve coordination among member States and entities within the United Nations system in the use of space science and technology for the benefit of all countries.

18. The Subcommittee heard the following scientific and technical presentations:

(a) "Summary of APRSAF-16", by the representative of Japan;

(b) "The RIM-PAMELA international experiment opens the window into the world of very high energy physics and dark matter", by the representative of the Russian Federation;

(c) "A look at the social and historical aspects of space research" and "Technical aspects of space constructions and bases", by the representatives of Turkey;

(d) "Centre national d'études spatiales: summary of activities", by the representative of France;

(e) "Third African Leadership Conference on Space Science and Technology for Sustainable Development", by the representative of Algeria;

(f) "The United Arab Emirates' space activities", by the representative of the United Arab Emirates;

(g) "APSCO information data service system: preliminary study", by the observer for APSCO;

(h) "Space activities of Tunisia", by the representative of Tunisia.

E. National reports

19. The Subcommittee took note with appreciation of the reports submitted by Member States (A/AC.105/953 and Add.1-2, and A/AC.105/C.1/2010/CRP.7) for its consideration under agenda item 4, "General exchange of views and introduction of reports submitted on national activities". The Subcommittee recommended that the Secretariat continue to invite Member States to submit annual reports on their space activities.

F. Symposium

20. On 8 February, the Office for Outer Space Affairs organized an industry symposium on the theme "Nurturing the development of space technology", which was moderated by the Chair of the Scientific and Technical Subcommittee. The presentations given at the symposium included the following: "An international comparison of space technology nurturing", by Rachel Villain of Euroconsult; "Space technology development: challenges and opportunities", by Ahmad Sabirin Arshad of Astronautic Technology Sdn Bhd; "Critical steps in space science and technology development", by Adigun Ade Abiodun of the National Space Research and Development Agency; "Trend of small EO satellites and their applications", by Hyon Sock Chang of the Satrec Initiative; and "Nurturing the development of space technology: the UNOOSA perspective", by Mazlan Othman, Director of the Office for Outer Space Affairs.

G. Adoption of the report of the Scientific and Technical Subcommittee

21. After considering the items before it, the Subcommittee, at its 737th meeting, on 19 February, adopted its report to the Committee on the Peaceful Uses of Outer Space, containing its views and recommendations, as set out in the paragraphs below.

II. United Nations Programme on Space Applications

22. In accordance with paragraph 8 of General Assembly resolution 64/86, the Subcommittee considered agenda item 5, "United Nations Programme on Space Applications".

23. At the 726th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

24. The representatives of China, Colombia, Greece, India, Japan, Switzerland and the United States made statements under agenda item 5.

25. The Working Group of the Whole was reconvened under the chairmanship of S. K. Shivakumar (India), in accordance with paragraph 9 of General Assembly resolution 64/86. The Working Group of the Whole held six meetings, from 10 to 19 February 2010. At its 736th meeting, on 19 February, the Subcommittee endorsed

the report of the Working Group of the Whole, which is contained in annex I to the present report.

26. The Subcommittee heard a presentation entitled “Aiding basic space science in developing nations: the official development assistance programme of Japan”, by the representative of Japan.

A. Activities of the United Nations Programme on Space Applications

27. The Subcommittee had before it the report of the Expert on Space Applications, outlining the mandate and orientation of the United Nations Programme on Space Applications (A/AC.105/969, paras. 2-8). The Subcommittee noted that the Programme for 2009 had been carried out satisfactorily and commended the work accomplished by the Office under the Programme.

28. The Subcommittee noted with appreciation that, since its previous session, additional resources for 2010 had been provided by various Member States and organizations, as acknowledged in the report of the Expert (A/AC.105/969, paras. 55 and 56).

29. The Subcommittee expressed its concern that the financial resources available for carrying out the Programme remained limited. The Subcommittee appealed to Member States to continue supporting the Programme through voluntary contributions. The Subcommittee was of the view that the limited resources of the United Nations should be focused on activities with the highest priority.

30. The Subcommittee noted that the activities of the Programme in 2010 (see para. 35 below) would place emphasis on the following areas, inter alia: socio-economic benefits of space activities, small satellite technology for sustainable development, space weather, global navigation satellite systems, mountain regions and space law.

31. The Subcommittee noted with appreciation the donation of telescope facilities and a planetarium by the official development assistance programme of Japan, as well as the provision of technical assistance by the National Astronomical Observatory of Japan and the Japan International Cooperation Agency, which had contributed, for more than 20 years, to the development of basic science, especially in support of education and research in developing countries.

1. Year 2009

Meetings, seminars, symposiums, training courses and workshops

32. With regard to the activities of the United Nations Programme on Space Applications carried out in 2009, the Subcommittee expressed its appreciation to the following for co-sponsoring the various workshops, symposiums and training courses that had been held within the framework of the Programme referred to in the report of the Expert on Space Applications (A/AC.105/969, para. 52 and annex I):

(a) The Governments of Austria, Azerbaijan, Bhutan, India, Iran (Islamic Republic of), Peru, the Republic of Korea, Switzerland and the United States;

(b) APSCO, ESA, IAA, IAF, the Japan Aerospace Exploration Agency (JAXA) and the National Aeronautical and Space Administration and the National Oceanic and Atmospheric Administration of the United States.

Long-term fellowships for in-depth training

33. The Subcommittee expressed its appreciation to the Government of Italy, which, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Elettrotecnico Nazionale Galileo Ferraris, had continued to provide four 12-month fellowships for postgraduate studies in global navigation satellite systems (GNSS) and related applications.

Technical advisory services

34. The Subcommittee noted with appreciation the technical advisory services provided under the United Nations Programme on Space Applications in support of activities and projects promoting regional cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/969, paras. 46-51).

2. Year 2010

Meetings, seminars, symposiums, training courses and workshops

35. The Subcommittee recommended the approval of the following programme of meetings, seminars, symposiums, training courses and workshops for 2010:

(a) United Nations/Republic of Moldova/United States of America Workshop on Applications of Global Navigation Satellite Systems, to be held in Chisinau in May;

(b) United Nations/Turkey/European Space Agency Workshop on Space Technology Applications for Socio-economic Benefits, to be held in Istanbul in September;

(c) United Nations/Austria/European Space Agency Symposium on the Use of Small Satellites for Sustainable Development, to be held in Graz, Austria, in September;

(d) United Nations/International Astronautical Federation Workshop on Applications of Global Navigation Satellite Systems, to be held in Prague in September;

(e) Eleventh United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries, to be held in Prague in September;

(f) United Nations/Plurinational State of Bolivia/European Space Agency Workshop on Space Technology's Contribution to Sustainable Development in the Mountain Regions of Andean Countries, to be held in Cochabamba, Plurinational State of Bolivia, in the second half of 2010;

(g) United Nations/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on the International Space Weather Initiative, to be held in Luxor, Egypt, in November;

(h) United Nations/Thailand/European Space Agency Workshop on Space Law, to be held in Bangkok in November.

B. International Space Information Service

36. The Subcommittee noted with satisfaction the publication of *Highlights in Space 2009*, which had been compiled in a CD-ROM from a report prepared in cooperation with IAF and the International Institute of Space Law. The Subcommittee expressed its appreciation to the contributors for their work.

37. The Subcommittee noted with appreciation that the Secretariat had continued to enhance the International Space Information Service and the website of the Office for Outer Space Affairs (www.unoosa.org).

C. Regional and interregional cooperation

38. The Subcommittee noted that the schedule of nine-month postgraduate courses for the period 2008-2011 offered by the regional centres for space science and technology education, affiliated to the United Nations, was included in the report of the Expert on Space Applications (A/AC.105/969, annex III).

39. The Subcommittee noted with appreciation that a publication on performance assessment and the future of the Regional Centre for Space Science and Technology Education in Asia and the Pacific had been made available to the Subcommittee at its current session.

40. The Subcommittee recalled that the General Assembly, in its resolution 64/86, had emphasized that regional and interregional cooperation in the field of space activities was 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[1] and, to that end, fostered interregional dialogue on space matters between Member States.

41. In that regard, the Subcommittee noted that the third African Leadership Conference on Space Science and Technology for Sustainable Development had been held in Algiers from 7 to 9 December 2009 with financial support from the Office for Outer Space Affairs. The Conference had been hosted by the Government of Algeria and organized by the Algerian Space Agency. At the Conference, Algeria, Kenya, Nigeria and South Africa signed an agreement on the African Resource Management constellation. Recommendations were made in several areas of cooperation among African countries, including space-based disaster forecast and management support, Earth observation for monitoring global climate change, water resources management and desertification, and capacity-building in space policy and space law. The fourth African Leadership Conference will be hosted by the Government of Kenya in 2011.

42. The Subcommittee noted that an international symposium, to be organized by IAA and the Government of Nigeria, on the characteristics and attributes of the

[1] General Assembly resolution 55/2.

equatorial plane, would be hosted by Nigeria from 30 November to 2 December 2010.

43. The Subcommittee also noted that the sixteenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF) had been held in Bangkok from 26 to 29 January 2010. The theme of the session was "Space applications: contributions towards human safety and security". At the Forum, participants considered, inter alia, activities related to the Step 2 phase of Sentinel Asia, the APRSAF Satellite Technology for the Asia-Pacific Region (STAR) Programme, the Space Applications for Environment project, GNSS and space education and awareness. The seventeenth session of APRSAF would be jointly organized by the Government of Australia and the Government of Japan, and be hosted by Australia in November 2010.

44. The Subcommittee further noted that APSCO had organized several activities in 2009, including a training course on remote sensing technology and application, held in China, and the first APSCO symposium on space technology and applications, held in Thailand. The workplan of APSCO for 2010 included activities in spatial data sharing, atmospheric research and the development of an Asia-Pacific ground-based optical satellite observation system. A second APSCO symposium on space technology and applications, on the theme of agriculture and food security, will be held in Pakistan in September 2010.

45. The Subcommittee further noted that the Second Hemispheric Encounter on National Mechanisms and Networks for Disaster Risk Reduction, entitled "Encounter of Santa Marta: from Theory to Practice," would be held in Santa Marta, Colombia, from 14 to 16 April 2010. The event would be co-organized by the Government of Colombia through the Ministry of the Interior and of Justice and its Directorate for Risk Management for Disaster Prevention and Relief, the General Secretariat of the Organization of American States through its Department of Sustainable Development, and the secretariat of the International Strategy for Disaster Reduction through its regional office for the Americas. The meeting would be an opportunity to discuss the contribution of space-based information to regional disaster risk management practice.

46. The Subcommittee further noted the preparations being made for the Sixth Space Conference of the Americas, to be hosted by the Government of Mexico in November 2010, with a preparatory meeting to be held in Chile in June 2010. Representatives of Colombia, Ecuador and Mexico, as well as of the pro tempore secretariat of the Fifth Space Conference of the Americas, established by the Government of Ecuador, and the International Group of Experts, met in Quito on 16 and 17 December 2009 with financial support from the Office for Outer Space Affairs. The meeting resulted in a detailed workplan for the remaining preparations in the lead-up to the Sixth Space Conference of the Americas, including activities in the areas of tele-health, sustainable mountain development, disaster management, space policy and space law, and institutional aspects of regional cooperation and coordination.

III. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)

47. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 6, “Implementation of the recommendations of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)”.

48. The representatives of Canada, Iran (Islamic Republic of), Japan, Nigeria and the United States made statements under agenda item 6.

49. The Subcommittee heard the following scientific and technical presentations:

(a) “ASI and bi/multilateral space astronomy facilities”, by the representative of Italy;

(b) “Recent Earth observation/space technology applications for societal benefits in India”, by the representative of India;

(c) “Advances of space medicine and biology research in Russia”, by the representative of the Russian Federation;

(d) “Training experience in Italy under the cooperation agreement between Kenya and Italy”, by the representative of Italy;

(e) “World Space Week in Iran”, by the representative of the Islamic Republic of Iran;

(f) “Opening a new window to other worlds with spectropolarimetry: SEARCH”, by the representative of Austria;

(g) “Action team 6 on improving public health: an overview”, by the representative of Canada;

(h) “Tele-health/telemedicine in Burkina Faso”, by the representative of Burkina Faso;

(i) “The youth space vision for the next decade: looking back to look forward”, by the observer for SGAC.

50. The Subcommittee expressed its appreciation for the flexible approach adopted in implementing the recommendations of UNISPACE III. By making use of multi-year workplans and action teams, the Committee was able to address a wide range of issues, thereby enabling maximum implementation of those recommendations.

51. The Subcommittee noted with satisfaction that further progress had been made in the implementation of the remaining recommendations of UNISPACE III and that a number of activities and initiatives had been undertaken by Member States, United Nations entities and other observers of the Committee in the past year.

52. The Subcommittee noted that the Action Team on Public Health (action team 6) and the Action Team on Near-Earth Objects (action team 14) had held meetings during its forty-seventh session.

53. The Subcommittee noted with appreciation that the Action Team on Public Health, co-chaired by Canada and India, had included in its workplan the use of telecommunications in the context of tele-health and Earth observation applications in the context of tele-epidemiology, with an emphasis on improving public health and infectious disease management. The Subcommittee noted that the action team was pursuing the objectives contained in its workplan for the period 2010-2011 and would present a report at the forty-eighth session of the Subcommittee. The Subcommittee also noted that the action team encouraged Member States to contribute to the team's report by sharing experiences and views on the way forward.

54. The view was expressed that the Subcommittee should consider organizing a fourth United Nations conference on the exploration and peaceful uses of outer space in order to address present and future challenges to humanity, such as climate change.

55. The Working Group of the Whole, reconvened in accordance with General Assembly resolution 64/86, also considered agenda item 6, "Implementation of the recommendations of the United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)". At its 736th meeting, on 19 February, the Subcommittee endorsed the recommendations of the Working Group of the Whole concerning the implementation of the recommendations of UNISPACE III, which are contained in annex I to the present report.

56. The Subcommittee welcomed the decision by the Working Group of the Whole to focus its efforts relating to the implementation of the recommendations of UNISPACE III on the Committee's contribution to the work of the Commission on Sustainable Development.

57. The Subcommittee noted that discussions were ongoing on the establishment of a regional centre for space science and technology education where the working language would be Arabic.

IV. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

58. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 7, "Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment".

59. The representatives of Canada, China, Germany, India, Italy, Japan, Malaysia, the Russian Federation and the United States made statements under agenda item 7.

60. The Subcommittee heard the following scientific and technical presentations:

(a) "CBERS and HJ-1A/1B data applications and international cooperation", by the representative of China;

(b) "Forest and environmental monitoring activities in the climate change process", by the representative of Germany;

(c) “OCEANSAT-2 mission”, by the representative of India;

(d) “Formalizing South Africa’s national space programme”, by the representative of South Africa;

(e) “International cooperation in operational environmental satellites: the US experience”, by the representative of the United States;

(f) “Use of remote sensing to improve water management in Saudi Arabia”, by the observer for the Prince Sultan Bin Abdulaziz International Prize for Water.

61. In the course of the discussions, delegations reviewed national and cooperative programmes on remote sensing. Examples were given of national, bilateral, regional and international programmes to further socio-economic and sustainable development, notably in the following areas: agriculture and fishery; climate change monitoring; detecting illegal crops and opium poppy cultivation; early warning of and response to natural and man-made disasters; geology; humanitarian relief; hydrology; managing ecosystems and natural resources; mapping biodiversity resources, coastal zones, land use, wasteland and wetlands; monitoring air quality, desertification, droughts, food security, deforestation, the ionosphere and weather; oceanography; rural development and urban planning; and search and rescue efforts.

62. The Subcommittee noted with satisfaction that a growing number of developing countries were actively developing and deploying their own remote-sensing satellite systems and utilizing space-based data to advance socio-economic development.

63. The Subcommittee noted that the increased convergence of space-based data, geographic information systems and GNSS technologies was generating valuable information for policy- and decision-making.

64. The Subcommittee recognized the important role played by APRSAF, APSCO, the Committee on Earth Observation Satellites (CEOS), the Group on Earth Observation (GEO), the Global Monitoring for Environment and Security (GMES) and the Integrated Global Observing Strategy Partnership, in promoting international cooperation in the use of remote sensing technology, in particular for the benefit of developing countries.

65. The Subcommittee noted the progress made by GEO in the implementation of the Global Earth Observation System of Systems (GEOSS) and further noted that, at its sixth plenary session, held in Washington, D.C., on 17 and 18 November 2009, GEO had adopted the strategic targets for implementing GEOSS by 2015 and data-sharing implementation guidelines.

66. The Subcommittee noted the increased availability of space-based data at little or no cost, including those provided by the Argentine Earth observation satellite SAC-C, the China-Brazil Earth resources satellites, the Greenhouse Gases Observing Satellite of Japan and the United States Landsat image archive.

V. Space debris

67. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 8, “Space debris”.

68. The representatives of Colombia, Germany, Greece, India, Indonesia, Italy, Japan, the Russian Federation, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 8. The observer for ESA also made a statement.

69. The Subcommittee heard the following scientific and technical presentations:

(a) "IADC Protection Manual and IADC response to COPUOS request on internationally accessible databases of objects in outer space", by the representative of India;

(b) "Space debris activities in India", by the representative of India;

(c) "USA space debris environment and operational updates", by the representative of the United States;

(d) "Cost and benefit of space debris mitigation measures", by the representative of Germany;

(e) "Swiss contributions to a better understanding of the space debris environment", by the representative of Switzerland;

(f) "Recent space debris mitigation activities in France", by the representative of France;

(g) "GEO protected region: ISON informational support for tasks of spacecraft flight safety and space debris removal", by the representative of the Russian Federation.

70. The Subcommittee had before it a note by the Secretariat on national research on space debris, safety of space objects with nuclear power sources on board and problems relating to their collision with space debris, containing replies received from Member States on the issue (A/AC.105/951 and Add.1).

71. The Subcommittee noted with satisfaction that at its current session the Secretariat had made available the text of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space in the form of a publication (ST/SPACE/49).

72. The Subcommittee noted with satisfaction that some States were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space 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 other States were using the IADC Guidelines and the European Code of Conduct for Space Debris Mitigation as references in the regulatory framework established for national space activities.

73. The Subcommittee welcomed the presentation made by the representative of India, in his capacity as Chair of IADC, pursuant to the agreement of the Committee contained in paragraph 116 of its report on its fifty-second session, in 2009.[2] The Subcommittee requested IADC to inform it of any revisions made to the IADC

[2] *Official Records of the General Assembly, Sixty-fourth Session, Supplement No. 20* (A/64/20).

Space Debris Mitigation Guidelines in the light of evolving technologies and debris mitigation practices. The Subcommittee noted that the Space Debris Mitigation Guidelines of the Committee might have to be amended in accordance with such revisions.

74. The Subcommittee noted with appreciation that States had adopted a number of approaches and concrete actions to mitigate space debris, including the reorbiting of satellites, passivation, end-of-life operations and the development of specific software and models for space debris mitigation. The Subcommittee also noted that research was being conducted 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 the creation of additional space debris.

75. The view was expressed that a comprehensive study on the long-term evolution of the space debris environment was needed.

76. The view was expressed that since the future of space exploration would largely depend on the effectiveness of space debris mitigation measures, all States, and in particular space-faring nations, should pay attention to the issue.

77. The view was expressed that the cost of space debris mitigation measures should be shared by all space users equally and that sharing that cost would keep the business environment for space activities fair and competitive.

78. The view was expressed that States without the capability and expertise to fully implement the Space Debris Mitigation Guidelines of the Committee should benefit from the best practices of and training provided by States with relevant experience.

79. The view was expressed that it was essential to harmonize existing approaches related to enhancing the safety, security and sustainability of space activities.

80. The Subcommittee agreed that Member States, in particular space-faring nations, should pay greater attention to the problem of collisions of space objects, including those with nuclear power sources (NPS) on board, with space debris and to other aspects of space debris, including its re-entry into the atmosphere. It noted that the General Assembly, in its resolution 64/86, had called for the continuation of national research on that question, for the development of improved technology for the monitoring of space debris and for the compilation and dissemination of data on space debris and had agreed that international cooperation was needed to expand appropriate and affordable strategies to minimize the impact of space debris on future space missions. The Subcommittee agreed that research on space debris should continue and that Member States should make available to all interested parties the results of that research, including information on practices that had proved effective in minimizing the creation of space debris.

81. The Subcommittee agreed that Member States and space agencies should once again be invited to provide reports on research on space debris, the safety of space objects with NPS on board and problems relating to the collision of such space objects with space debris.

82. Some delegations expressed the view that reports on national research on space debris, safety of space objects with NPS on board and problems relating to their collision with space debris did not contain replies from the States that were

largely responsible for creating space debris, including debris from platforms with NPS.

83. The view was expressed that it was necessary to continue improving the Space Debris Mitigation Guidelines. The lack of clear requirements and the use of phrases such as "in so far as possible" provided a form of protection for those countries that had traditionally used technology without any restrictions or controls and, in some cases, without regard for human life or the environment. In general, those countries insisted on imposing restrictions and controls on other countries that were keen to use technology, as was their right, to consolidate improved conditions of life for their people.

84. The view was expressed that space should be considered a safe, secure and sustainable environment by its users and that States should continue to be diligent in actively pursuing ways and means to limit the amount of space debris in order to sustain the space environment for the long term.

85. The view was expressed that in connection with the problem of space debris States should take into account that the Earth's space environment was a limited resource.

86. The view was expressed that it was important to expeditiously support technical measures for implementing existing and future regulatory frameworks and that progress in that regard could be stimulated by an information platform related to objects in outer space to be established under the auspices of the United Nations, taking due account of potential financial implications and liability issues.

87. The view was expressed that in addition to two-line element data sets, available on the World Wide Web, an international platform on space objects created and maintained on a voluntary basis would preserve transparency and encourage partnerships for ensuring the safety of human space flights and national missions.

88. The view was expressed that the Space Debris Mitigation Guidelines of the Committee should be further developed and that the Scientific and Technical Subcommittee and the Legal Subcommittee of the Committee should cooperate with the aim of developing legally binding rules relating to space debris.

89. The view was expressed that legally binding space debris mitigation measures were not necessary and that States should seek an acknowledgement, by the broadest possible community of nations, that space debris could be controlled and that national implementation of space debris mitigation practices was consistent with mission objectives and principles of cost-effectiveness.

VI. Space-system-based disaster management support

90. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 9, "Space-system-based disaster management support".

91. The representatives of Germany, India, Indonesia, Iran (Islamic Republic of), Japan, Malaysia, Nigeria, the Philippines, the Russian Federation and the United States made statements under agenda item 9.

92. The Subcommittee heard the following scientific and technical presentations:

(a) “Asian Disaster Reduction Centre and its activities”, by the representative of Japan;

(b) “HJ-1 small satellites and application for disaster reduction”, by the representative of China;

(c) “International global monitoring aerospace system: IGMASS”, by the representative of the Russian Federation;

(d) “Cosmo-Sky Med: earthquakes in Haiti and L’Aquila”, by the representative of Italy;

(e) “Technical support for non-technical decision support for approaching the last mile problem”, by the representative of Germany;

(f) “Applications of remote sensing satellites and GNSS for disaster management and Earth environment monitoring in Indonesia”, by the representative of Indonesia;

(g) “Bhuvan Portal for space-based information for decision-making”, by the representative of India;

(h) “Space technology and management of the flooding in Burkina Faso in September 2009: from Charter activation to rapid mapping”, by the representative of Burkina Faso.

93. The Subcommittee had before it the following documents:

(a) Capacity-building strategy of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/947);

(b) Report of the Secretariat on outreach activities carried out in 2009 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/952);

(c) Report on activities carried out in 2009 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/955).

94. At the 728th meeting of the Subcommittee, the Programme Coordinator for the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) made a statement on the activities carried out in 2009 and on the implementation of the activities planned for 2010.

95. The Subcommittee noted with satisfaction the progress made with regard to the activities carried out within the framework of UN-SPIDER in 2009, including the support provided through the programme to the emergency efforts made in response to major disasters worldwide.

96. The Subcommittee noted with satisfaction the voluntary contributions that were being made available by Member States, including cash contributions from Austria, Croatia, Germany and Spain, and encouraged Member States to provide, on a voluntary basis, all support necessary, including financial support, to UN-SPIDER to enable it to carry out its workplan for the biennium 2010-2011.

97. The Subcommittee noted with appreciation that Algeria, Iran (Islamic Republic of), Nigeria and Romania, as well as the Asian Disaster Reduction Centre, were contributing to the implementation of the UN-SPIDER workplan in their capacity as hosts of regional support offices.

98. The Subcommittee welcomed the signature, during its current session, of cooperation agreements for the establishment of regional support offices in Pakistan and Ukraine.

99. The Subcommittee welcomed the offers of the Philippines and South Africa, as well as of the Water Center for the Humid Tropics of Latin America and the Caribbean and the University of the West Indies, to host UN-SPIDER regional support offices.

100. The Subcommittee noted the activities of Member States that were contributing to increasing the availability and use of space-based solutions in support of disaster management, including the following: the Sentinel Asia project, which in its second phase of implementation was also building upon the additional infrastructure being provided by the Korea Aerospace Research Institute and the Geo Informatics and Space Technology Development Agency of Thailand, as well as the Wide-band InterNetworking Engineering Test and Demonstration Satellite; the International Satellite System for Search and Rescue (COSPAS-SARSAT); the Mesoamerican Regional Visualization and Monitoring System (SERVIR), as well as the SERVIR system in Africa, which is being implemented by the Regional Centre for Mapping of Resources for Development; 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); the Famine Early Warning System Network; GEONETCast, which is a nearly global satellite-based data dissemination system; those falling within the framework of APRSAF; and the Services and Applications for Emergency Response (SAFER) project being implemented in the framework of the GMES initiative in Europe.

101. The Subcommittee noted with appreciation the extensive support provided by Member States, international and regional organizations and UN-SPIDER in the provision of space-based information to support relief efforts following the earthquake that struck Haiti on 12 January 2010.

102. The Working Group of the Whole, reconvened in accordance with General Assembly resolution 64/86, also considered agenda item 9, “Space-system-based disaster management support”. At its 736th meeting, on 19 February, the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex I to the present report.

VII. Recent developments in global navigation satellite systems

103. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 10, “Recent developments in global navigation satellite systems”.

104. The representatives of China, Germany, India, Italy, Japan, Nigeria, the Russian Federation and the United States made statements under agenda item 10.

105. The Subcommittee heard the following scientific and technical presentations:

(a) "Introduction of the Quasi-Zenith Satellite System (QZSS)", by the representative of Japan;

(b) "Highlights of the space communications and navigation symposium", by the representative of Austria.

106. The Subcommittee had before it the following documents:

(a) Note by the Secretariat on the Fourth Meeting of the International Committee on Global Navigation Satellite Systems (A/AC.105/948);

(b) Report of the Secretariat on activities carried out in 2009 in the framework of the workplan of the International Committee on Global Navigation Satellite Systems (A/AC.105/950).

107. The Subcommittee reviewed issues related to the International Committee on Global Navigation Satellite Systems (ICG), the latest developments in the field of GNSS science and innovative technology applications, and new GNSS applications.

108. The Subcommittee noted with appreciation that ICG had been established on a voluntary basis as a forum to promote cooperation, as appropriate, on matters of mutual interest to its members related to civil satellite-based positioning, navigation, timing and value-added services, as well as compatibility and interoperability of GNSS, while increasing their use to support sustainable development, particularly in developing countries.

109. The Subcommittee noted with satisfaction that the fourth meeting of ICG was held in Saint Petersburg, Russian Federation, from 14 to 18 September 2009 and that the fifth meeting of ICG would be held in Turin, Italy, from 18 to 22 October 2010 in cooperation with the European Union. The Subcommittee also noted that the sixth meeting of ICG would be hosted by Japan, in 2011, and the seventh meeting would be hosted by China, in 2012.

110. The Subcommittee commended the Office for Outer Space Affairs for the support it continued to provide in its role as the executive secretariat of ICG and its Providers' Forum.

111. The Subcommittee noted the progress made with regard to the ICG workplan and welcomed the adoption of a new principle on transparency for open services.

112. The Subcommittee noted that participants in the Providers' Forum continued to discuss the enhancement of the compatibility and interoperability of current and future regional and global navigation satellite systems, to consider proposals on open service information dissemination and on service performance monitoring, and to exchange views on issues related to the spectrum of radio-navigation satellite services. The Subcommittee also noted that the Providers' Forum had held its fourth meeting in conjunction with the fourth meeting of ICG.

113. The Subcommittee noted that the United States was committed to keeping the global positioning system (GPS) as a central pillar in an emerging international system of GNSS. The Subcommittee also noted that new applications for GPS were constantly being introduced and that in addition to having 30 operational satellites the system would also have the GPS Block III spacecraft, which would be launched during 2010.

114. The Subcommittee noted with appreciation the cash contributions made by the United States, which enabled the Office for Outer Space Affairs to undertake a number of activities relating to GNSS, ICG and the Provider's Forum, including the organization of regional workshops.

115. The Subcommittee noted that the baseline 24-satellite constellation of the Global Navigation Satellite System (GLONASS) of the Russian Federation would be deployed in 2010 and would operate in the framework of the GLONASS federal mission-oriented programme, to be extended through 2020.

116. The Subcommittee noted that Galileo, Europe's future satellite navigation system, was scheduled to become available with as many as 18 of the planned 30 satellites in 2014 and that innovative receiver technologies and Galileo-based application programmes were being developed. The Subcommittee took note of the test beds of Germany's Galileo test and development environment for land mobile applications and for the maritime Galileo test and development environment for nautical navigation solutions and port-oriented traffic guidance systems.

117. The Subcommittee noted that Italy, as one of the founders of the Galileo and the European Geostationary Navigation Overlay Service projects, continued to promote and develop national application projects aimed at fostering the use of satellite navigation, harmonizing them with European projects.

118. The Subcommittee noted that the GPS-aided GEO-Augmented Navigation System, a space-based augmentation system, was being implemented over Indian airspace. The final operational phase of this system had been approved and was expected to be commissioned by 2011. The Indian Regional Navigation Satellite System, capable of providing optimal position accuracy using a stand-alone satellite system, was also going to be implemented and would comprise seven satellites: three in geostationary orbit and four in geosynchronous orbit. That system was expected to be commissioned during the period 2012-2013.

119. The Subcommittee noted that Japan was promoting the Quasi-Zenith Satellite System (QZSS) and the Multi-functional Transport Satellite (MTSAT) Satellite-based Augmentation System (MSAS), both of which were augmentation systems of GPS. While the first QZSS satellite would be launched in 2010, MSAS had been commissioned for air navigation in September 2007 and, since then, had been providing aircraft with high-quality service.

120. The Subcommittee noted that the third satellite in the Compass/BeiDou Navigation Satellite System of China had been successfully launched in January 2010 and that the Compass demonstration system, completed in 2003, had been put to use in a wide variety of fields, such as mapping, telecommunications, water conservation, fishery, transportation and the prevention of forest fires.

121. The Subcommittee noted that Nigeria was establishing 13 continuously operating reference stations as part of the ground segment of a future space-based augmentation system for Africa.

VIII. Use of nuclear power sources in outer space

122. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 11, “Use of nuclear power sources in outer space”.

123. The representatives of the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 11.

124. The Subcommittee had before it a working paper by the Chair of the Working Group on the Use of Nuclear Power Sources entitled “Draft elements of a potential new workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space” (A/AC.105/C.1/L.302).

125. The Subcommittee welcomed the agreement on the Safety Framework for Nuclear Power Sources Applications in Outer Space (A/AC.105/934) reached by the IAEA Commission on Safety Standards at its twenty-fifth meeting, in April 2009.

126. The Subcommittee encouraged Member States to implement the Safety Framework.

127. The Subcommittee expressed its appreciation to the IAEA secretariat for making the joint publication of the Safety Framework available to the Subcommittee in the form of a hard copy and on a CD-ROM.

128. Some delegations expressed the view that the Safety Framework represented a significant advance in the development of safe NPS applications and that the implementation of the Safety Framework by Member States and international intergovernmental organizations would provide assurance to the global public that space NPS applications were being developed, launched and used in a safe manner.

129. The view was expressed 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 NPS in outer space and that the matter concerned all of humanity. That delegation was of the view that Governments bore international responsibility for national activities involving the use of NPS in outer space conducted by governmental and non-governmental organizations and that such activities must be beneficial and not detrimental to humanity.

130. The view was expressed that no justification existed for contemplating the use of NPS in Earth orbits when other sources of energy were available that were much safer and that had proved to be efficient.

131. The view was expressed that the application of NPS to space missions was important because it could help States to further the objectives of space exploration.

132. In accordance with General Assembly resolution 64/86, the Working Group on the Use of Nuclear Power Sources in Outer Space was reconvened under the chairmanship of Sam A. Harbison (United Kingdom). The Working Group held four meetings.

133. The Subcommittee noted with appreciation the intersessional work conducted by the Working Group on a proposal for a new workplan, aimed at assisting the Subcommittee in promoting and facilitating the implementation of the Safety Framework.

134. At its 732nd meeting, on 17 February, the Subcommittee endorsed the report of the Working Group, including the agreement on the Working Group's workplan for the period 2010-2015. The report of the Working Group is contained in annex II to the present report.

135. The view was expressed that NPS applications addressed in the second objective of the workplan should be in conformity with international law, the Charter of the United Nations and United Nations treaties and principles on outer space, in particular with 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).[3]

136. The view was expressed that all Member States should be involved in decision-making and in identifying the issues and challenges associated with the application of NPS and the Safety Framework and that such involvement would ensure the success of the implementation of the workplan.

137. The view was expressed that a closer link should be established between the Scientific and Technical Subcommittee and the Legal Subcommittee with the aim of promoting international norms relevant to matters being considered by the Scientific and Technical Subcommittee under this item, as well as to matters related to space debris and the use of nuclear power sources in outer space.

IX. Near-Earth objects

138. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 12, "Near-Earth objects".

139. The representatives of Germany, Japan, Mexico and the United States made statements under agenda item 12.

140. The Subcommittee heard the following scientific and technical presentations:

(a) "Legal aspects of NEO threat response and related institutional issues", by the representative of Australia;

(b) "The NEO problem: activities in Russia", by the representative of the Russian Federation;

(c) "Near-Earth object observations program", by the representative of the United States;

(d) "Global project on the anti-asteroid protection of the Earth", by the representative of Ukraine;

(e) "On the possible approach to formation of echelon short-term reaction of the international planetary defense system", by the representative of the Russian Federation;

(f) "The Hayabusa mission: challenge to near-Earth asteroid sample return and new insights into solar system origin", by the representative of Japan;

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[3] United Nations, *Treaty Series*, vol. 610, No. 8843.

(g) “Apophis 2029: a unique mission opportunity”, by the representative of France;

(h) “Current status of ESA’s space situational awareness near-Earth object programme”, by the observer for ESA;

(i) “NEO IAWN workshop summary”, by the observer for SWF.

141. The Subcommittee had before it the following documents:

(a) Note by the Secretariat on information on research in the field of near-Earth objects carried out by Member States, international organizations and other entities (A/AC.105/949);

(b) Interim report of the Action Team on Near-Earth Objects (2009-2010) (A/AC.105/C.1/L.301).

142. The Subcommittee noted that near-Earth objects were asteroids and comets with orbits that could cross the orbit of the Earth. The Subcommittee also noted that interest in asteroids was largely fuelled by their scientific value as remnant debris from the formation process of the inner solar system, the potentially devastating consequences of such objects colliding with the Earth and the wide range of natural resources they contained.

143. The Subcommittee noted that early detection and precision tracking were the most effective tools for the management of threats posed by near-Earth objects. The Subcommittee also noted that any measures to mitigate such threats would require coordinated international efforts and increased knowledge of the properties of near-Earth objects.

144. The Subcommittee noted with satisfaction that the Association of Space Explorers and SWF, with support from the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, had organized a workshop on the establishment of a near-Earth object information, analysis and warning network, which had been held in Mexico City, under the auspices of the Government of Mexico, in January 2010.

145. The Subcommittee also noted with satisfaction that the University of Nebraska-Lincoln (United States) had prepared, in order to assist the intersessional work of the Action Team on Near-Earth Objects and the Working Group on Near-Earth Objects, a report entitled “Legal aspects of NEO threat response and related institutional issues”, in which key legal and institutional issues linked to potential future threats posed by near-Earth objects were examined.

146. The Subcommittee noted with appreciation the international projects undertaken by Member States to detect and characterize near-Earth objects, such as the Panoramic Survey Telescope and Rapid Response System, the Large Millimeter Telescope, the Large Synoptic Survey Telescope and the Pulkovskaya Observatory. In that regard, the Subcommittee also noted with satisfaction the progress made in a segment dedicated to the assessment and classification of impact risks of near-Earth objects of the ESA Space Situational Awareness programme.

147. The Subcommittee noted with satisfaction that the Romanian Space Agency would co-organize the IAA Planetary Defence Conference to be held in Romania, in May 2011.

148. The Subcommittee noted that some Member States had implemented or were planning to implement fly-by and exploration missions to near-Earth objects. The Subcommittee welcomed past and upcoming missions investigating near-Earth objects, including the Dawn, Deep Impact and Stardust spacecraft missions of the United States; the Near Earth Object Surveillance Satellite mission of Canada; the Marco Polo near-Earth object sample return mission of ESA and JAXA; the Hayabusa near-Earth object sample return mission of Japan; and the prospective AsteroidFinder spacecraft mission of Germany.

149. The Subcommittee noted the significant progress achieved by the United States in reaching its target of detecting 90 per cent of all near-Earth objects larger than one kilometre in diameter. The Subcommittee noted that the United States had determined that fewer than 150 of the 900 near-Earth objects with a diameter larger than one kilometre could pose a hazard of collision with the Earth.

150. The Subcommittee agreed that efforts to detect, track and characterize near-Earth objects should be continued and expanded at the national and international levels.

151. In accordance with General Assembly resolution 64/86, the Working Group on Near-Earth Objects was reconvened, under the chairmanship of Sergio Camacho (Mexico). The Working Group on Near-Earth Objects held three meetings.

152. At its 735th meeting, on 18 February, the Subcommittee endorsed the report of the Working Group on Near-Earth Objects, which is contained in annex III to the present report.

X. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union

153. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 15, “Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union”, as a single issue/item for discussion.

154. The representatives of Colombia, Saudi Arabia and Venezuela (Bolivarian Republic of) made statements on agenda item 15. The observer for Azerbaijan made a statement. The observer for ITU also made a statement.

155. The Subcommittee welcomed the information provided in the annual report for 2009 of the ITU Radiocommunication Bureau on the use of the geostationary satellite orbit and other orbits (www.itu.int/itu-R/space/snl/report), as well as other

documents referred to in conference room paper A/AC.105/C.1/2010/CRP.9. The Subcommittee invited ITU to continue submitting reports to it.

156. Some delegations expressed interest in the rational, efficient and equitable use of the geostationary orbit and the necessity of finding the means and tools to implement an effective mechanism that would lead to concrete results.

157. Some delegations were of the view that the geostationary orbit was a limited natural resource that risked becoming saturated, that its exploitation should be rationalized and that it should be made available to all States, irrespective of their current technical capabilities, thus giving them the opportunity to have access to the geostationary orbit under equitable conditions, taking into account, in particular, the needs of developing countries.

158. Some delegations expressed the view that the geostationary orbit was a limited natural resource with sui generis characteristics that risked saturation and that, therefore, equitable access to it should be guaranteed for all States, taking particular account of the needs and interests of developing countries and the geographical position of certain countries.

159. The view was expressed that the geostationary orbit provided unique potential for access to communication and information, in particular for assisting developing countries in implementing social programmes and educational projects, and in providing medical assistance.

160. Some delegations were of the view that this item should remain on the agenda of the Subcommittee in order to ensure the use of the geostationary orbit in accordance with international law.

161. Some delegations were of the view that a closer link should be established between the Scientific and Technical Subcommittee and the Legal Subcommittee with the aim of promoting international norms relevant to matters being considered by the Scientific and Technical Subcommittee under this item, as well as to matters related to space debris, use of nuclear power sources in outer space and matters related to delimitation.

XI. International Space Weather Initiative

162. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 13, “International Space Weather Initiative” under the workplan contained in the annex to document A/AC.105/933 (para. 16).

163. The representatives of Canada, China, India, Indonesia, Japan and the United States made statements under agenda item 13. The observer for the World Meteorological Organization also made a statement.

164. The Subcommittee heard the following scientific and technical presentations:

(a) “International experiments of the Russian Academy of Sciences in the framework of the space weather programme”, by the representative of the Russian Federation;

(b) “International Space Weather Initiative”, by the representative of the United States;

(c) “Space weather impact on radio systems”, by the representative of Germany;

(d) “Canadian space weather activities in support of the International Space Weather Initiative”, by the representative of Canada;

(e) “Japan’s contribution to the ISWI”, by the representative of Japan;

(f) “Space debris, near-Earth objects and space weather research and observation in Indonesia”, by the representative of Indonesia.

165. The Subcommittee had before it notes by the Secretariat containing reports on regional and international activities related to the International Space Weather Initiative (A/AC.105/967 and Add.1 and A/AC.105/C.1/2010/CRP.8).

166. The Subcommittee noted that the International Space Weather Initiative would contribute to the observation of space weather through the deployment of instrument arrays and the sharing of observed data among researchers around the world.

167. The Subcommittee noted that the Initiative would explore the solar corona; deepen understanding of the function of the Sun and the effects that the variability of the Sun could have on the Earth’s magnetosphere, environment and climate; explore the ionized environments of planets; and determine the limits of the heliosphere and deepen understanding of its interaction with interstellar space.

168. The Subcommittee welcomed the fact that participation in the Initiative was open to scientists from all countries, as instrument hosts or instrument providers.

169. The Subcommittee noted that the Initiative offered Member States the opportunity to coordinate global monitoring of space weather using space- and ground-based assets, assist in consolidating common knowledge and develop essential forecast capabilities to improve the safety of space-based assets.

170. The Subcommittee noted that events related to space weather were of significant concern to all countries, owing to technological and economic interdependence and the growing dependence on space assets to deliver vital services.

171. The Subcommittee noted with appreciation that information on the ground-based worldwide instrument arrays was being distributed through a newsletter being published by the Space Environment Research Centre of Kyushu University (Japan) and through the website of the International Space Weather Initiative (www.iswi-secretariat.org).

172. The Subcommittee noted with appreciation that the Office for Outer Space Affairs had joined the study of the effect of sudden disturbances on the ionosphere and had installed a sudden ionospheric disturbance monitor at its permanent outer space exhibit. The daily data sets produced by that instrument and recorded by the Office were being transferred to Stanford University (United States) for scientists worldwide to use in their analysis of the complex relationship between the Earth and the Sun.

173. The Subcommittee welcomed the fact that the United Nations Programme on Space Applications had organized the first of a series of United Nations workshops, co-sponsored by ESA, the National Aeronautical and Space Administration and JAXA and held in the Republic of Korea in 2009, to consider the International

Space Weather Initiative, and that the next workshop was scheduled to take place in Egypt in November 2010. The third and fourth workshops in the series would be hosted by Nigeria in 2011 and Ecuador in 2012.

XII. Long-term sustainability of outer space activities

174. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 14, "Long-term sustainability of outer space activities", under the workplan contained in the report of the Committee at its fifty-second session.[4]

175. The representatives of Bolivia (Plurinational State of), Canada, China, Colombia, France, Germany, India, Italy, Japan, Nigeria, the Republic of Korea, Romania, the Russian Federation, Saudi Arabia, the United States and Venezuela (Bolivarian Republic of) made statements on the item.

176. The Subcommittee heard a presentation entitled "Space situational awareness sharing update", by the representative of the United States.

177. The Subcommittee had before it the following:

(a) A working paper submitted by France on the long-term sustainability of outer space activities (A/AC.105/C.1/L.303);

(b) A conference room paper on the long-term sustainability of outer space activities: preliminary reflections (A/AC.105/C.1/2010/CRP.3).

178. The Subcommittee recalled the importance of ensuring the safe and sustainable future use of outer space and noted, in accordance with the workplan related to this item, that a working group should be established to support the preparation of a report on the long-term sustainability of outer space activities, the examination of measures that could enhance the long-term sustainability of such activities and the preparation of a set of best-practice guidelines.

179. The Subcommittee agreed that any best-practice guidelines that may be developed should be implemented on a voluntary basis and be focused on practical and prudent short- and medium-term measures that could be implemented in a timely manner.

180. The Subcommittee recognized that, should such guidelines be developed, adequate provisions should be made to enable the guidelines to be reviewed and updated in the future in the light of experiences gained from their implementation and of new challenges that might emerge from future developments in the use of outer space.

181. At its 735th meeting, on 18 February 2010, the Subcommittee established the Working Group on the Long-term Sustainability of Outer Space Activities.

182. At its 737th meeting, on 19 February 2010, the Subcommittee elected Peter Martinez (South Africa) Chair of the Working Group.

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[4] *Official Records of the General Assembly, Sixty-fourth Session, Supplement No. 20* (A/64/20), para. 161.

183. The Subcommittee recommended to the Committee that, taking into account the importance of the item, the Working Group be allowed to hold one meeting during the fifty-third session of the Committee, in June 2010, with interpretation services into the six languages of the United Nations, with a view to further developing its terms of reference and a method of work.

184. The Subcommittee agreed that the Working Group should examine the long-term sustainability of outer space activities in all its aspects, including its contribution to the achievements of the Millennium Development Goals,[5] taking into account the concerns of all countries, in particular those of developing countries, and consistent with the peaceful uses of outer space. The Subcommittee agreed that the Working Group should avail itself of the progress made within existing entities, including but not limited to commercial entities operating within the space industry, the other working groups of the Subcommittee, the Conference on Disarmament, the International Telecommunication Union, the Inter-Agency Space Debris Coordination Committee, the International Organization for Standardization, the World Meteorological Organization and the International Space Environment Service. The Subcommittee agreed that the Working Group should avoid duplicating the work being done within those international entities and instead identify areas of concern for the long-term sustainability of outer space activities that were not covered by them.

185. The Subcommittee noted that States could contribute to the long-term sustainability of outer space activities by implementing the Space Debris Mitigation Guidelines of the Committee and the Safety Framework for Nuclear Power Source Applications in Outer Space.

186. Some delegations stressed the need to take into consideration the contribution of space-based-systems to sustainable development and avoid any measures that would limit access to space by nations with emerging space capabilities.

187. Some delegations expressed the view that efforts to ensure the long-term sustainability of outer space activities should be considered in the wider context of sustainable development.

188. Some delegations expressed the view that, should an agreement to develop guidelines on safe space operations be reached, such guidelines should take into consideration current policies, principles, procedures, regulations, standard practices and guidelines; maintain or improve the safety of spaceflight operations; and protect the space environment without imposing unacceptable or unreasonable costs.

189. Some delegations stressed that any measures or set of guidelines that may be recommended should be consistent with international law and that the regulation of space activities remained the responsibility of States.

190. The view was expressed that the Subcommittee should not seek to develop new legal regimes, but rather encourage greater adherence to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,[6] the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched

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[5] A/56/326, annex.

[6] United Nations, *Treaty Series*, vol. 610, No. 8843.

into Outer Space,[7] the Convention on International Liability for Damage Caused by Space Objects[8] and the Convention on Registration of Objects Launched into Outer Space.[9]

191. The view was expressed that the Subcommittee should not seek to create a global space traffic management system during its consideration of this agenda item.

192. The view was expressed that it was necessary to recognize, in the context of this agenda item, the concern relating to security guarantees, with a view to providing assurances of continued access to outer space for peaceful purposes.

193. The view was expressed that the scope of the discussion of long-term sustainability of outer space activities should take into account the needs of developing countries, particularly with respect to small satellites.

194. The view was expressed that this item should not serve as a pretext for States that were able to develop their space capabilities without controls, resulting in the challenges faced today, to restrict or impose controls on other States wishing to exercise their legitimate right to use the same technology for their national benefit.

195. The view was expressed that it was necessary to clearly define the purpose and range of the work to be conducted under this item and the expected outcomes, including its relationship to the draft European code of conduct for outer space activities, to the concepts "space traffic management" and "transparency and confidence-building measures" and to the Space Debris Mitigation Guidelines of the Committee.

196. The view was expressed that a coordination mechanism should be established to allow for close interaction with the Presidency of the European Union on the evolution of the draft European code of conduct for outer space activities.

197. The view was expressed that the Subcommittee should identify an appropriate mechanism to cooperate with other entities and organizations.

198. The view was expressed that any mechanism for cooperating with other entities and organizations should be consistent with the established practices of the Committee.

199. The view was expressed that Governments bore international responsibility for national activities and that this responsibility was not transferable.

200. The Subcommittee noted that a potential collision had been successfully avoided in early January 2010 following the provision of information by the United States Joint Space Operations Command to the Government of Nigeria relating to the anticipated collision course of an object catalogued as space debris.

201. The view was expressed that satellite operators should de-orbit their satellites prior to losing control over them in order to prevent collisions with other objects and subsequent proliferation of space debris.

202. The view was expressed that the Working Group on Long-Term Sustainability of Outer Space Activities should address, inter alia, the following topics: best

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[7] Ibid., vol. 672, No. 9574.
[8] Ibid., vol. 961, No. 13810.
[9] Ibid., vol. 1023, No. 15020.

practices by spacecraft operators relating to all kinds of natural or artificial risks in space and all associated tools, including the Two-Line Element data set, and international platforms on space objects.

203. The view was expressed that the results, procedures and lessons learned of the data centre established by the Space Data Association, composed of interested private-sector satellite operators, should be taken into account when considering the long-term sustainability of outer space activities. The data centre was established to serve as an interactive repository for commercial satellite orbit, manoeuvre and payload frequency information to promote the safety of space operations by encouraging coordination and communication among its participating members.

XIII. Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee

204. In accordance with General Assembly resolution 64/86, the Subcommittee considered agenda item 16, "Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee". The Working Group of the Whole, convened pursuant to paragraph 9 of that resolution, considered the draft provisional agenda for the forty-eighth session of the Subcommittee.

205. At its 736th meeting, on 19 February, the Subcommittee endorsed the recommendations of the Working Group of the Whole concerning the draft provisional agenda for the forty-eighth session of the Subcommittee, contained in annex I to the present report.

206. The Subcommittee noted that the Secretariat had scheduled the forty-eighth session of the Subcommittee to be held from 7 to 18 February 2011.

Annex I

Report of the Working Group of the Whole

I. Introduction

1. In accordance with paragraph 9 of General Assembly resolution 64/86, the Scientific and Technical Subcommittee, at its forty-seventh session, reconvened its Working Group of the Whole. The Working Group held six meetings, from 10 to 19 February 2010, under the chairmanship of S. K. Shivakumar (India). The Working Group considered the United Nations Programme on Space Applications, the implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), space-system-based disaster management support and the draft provisional agenda for the forty-eighth session of the Subcommittee, to be held in 2011. At its 6th meeting, on 19 February, the Working Group adopted the present report.

II. United Nations Programme on Space Applications

2. For its consideration of the United Nations Programme on Space Applications, the Working Group of the Whole had before it the report of the Expert on Space Applications (A/AC.105/969). It was noted that the Expert had supplemented the report with a statement.

3. The Working Group of the Whole noted the workshops, seminars, symposiums, training courses and long-term fellowships for in-depth training, as well as technical advisory services, that had been proposed in the report of the Expert on Space Applications (A/AC.105/969, annex II).

III. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)

4. For its consideration of the implementation of the recommendations of UNISPACE III, the Working Group of the Whole had before it the following:

(a) A note by the Secretariat on space benefits for Africa: contribution of the United Nations system (A/AC.105/941);

(b) A note by the Secretariat on the contribution of the Committee on the Peaceful Uses of Outer Space to the work of the Commission on Sustainable Development for the thematic cluster 2010-2011 (A/AC.105/944);

(c) A conference room paper on the status of the implementation of the recommendations of UNISPACE III (A/AC.105/C.1/2010/CRP.5);

(d) A conference room paper on promoting greater participation of young people in space science and technology (A/AC.105/C.1/2010/CRP.6).

5. The Working Group of the Whole considered the way forward in its consideration of the implementation of the recommendations of UNISPACE III and agreed that it should focus its efforts on the preparation of a contribution by the Committee to the work of the Commission on Sustainable Development for the thematic clusters for 2012-2013, 2014-2015 and 2016-2017.

6. In that regard, the Working Group of the Whole recommended that the Committee should contribute to the thematic clusters in which space technology and its applications played a particularly important role; pay attention to the cross-cutting issues identified by the Commission; identify areas where space-based systems could complement terrestrial systems in order to promote integrated solutions; and include, as appropriate and in addition to examples of regional and international cooperation, national success stories that might provide useful examples for the overall contribution of the Committee.

7. The Working Group of the Whole requested the Secretariat to provide, for consideration by the Committee at its fifty-third session, a template for the preparation of its contribution to the work of the Commission for the thematic cluster for 2012-2013.

8. The Working Group of the Whole noted that the recommendations of UNISPACE III that were not considered to have been implemented (see A/AC.105/C.1/2010/CRP.5, annex) related to ongoing activities being carried out by the primary actors. The Working Group therefore agreed that it would suspend consideration of the status of implementation of those recommendations and that it would discontinue the annual reporting.

9. The Working Group of the Whole recommended that the issue of promoting the greater participation of young people in space science and technology be considered under the item “Space and society” of the agenda of the Committee.

IV. Space-system-based disaster management support

10. For its consideration of space-system-based disaster management support, the Working Group of the Whole had before it the documents referred to in paragraph 93 of the report of the Subcommittee at its current session.

11. The Working Group of the Whole noted with satisfaction the progress made in terms of the activities carried out in 2009 within the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER).

12. The Working Group of the Whole requested the Office for Outer Space Affairs of the Secretariat to prepare a proposal to be considered by the Committee at its fifty-third session, in June 2010, on the establishment of a fund for SpaceAid.

13. The Working Group of the Whole took note of a presentation by the Office for Outer Space Affairs explaining that such a fund could enable quick and direct acquisition of satellite imagery to support emergency and humanitarian response in cases when existing mechanisms could not provide the imagery needed, such as when users needed to receive imagery from specific sensors or needed to have

multi-agency licences, as well as for humanitarian response, early recovery and reconstruction.

V. Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee

14. The Working Group of the Whole noted that, in accordance with General Assembly resolution 64/86, the Scientific and Technical Subcommittee would submit to the Committee its proposal on the draft provisional agenda for the forty-eighth session of the Subcommittee, to be held in 2011, and recommended the following draft provisional agenda:

1. General exchange of views and introduction of reports submitted on national activities.
2. United Nations Programme on Space Applications.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
5. Space debris.
6. Space-system-based disaster management support.
7. Recent developments in global navigation satellite systems.
8. Items to be considered under workplans:

   (a) Use of nuclear power sources in outer space;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 8 of annex II to the report of the Scientific and Technical Subcommittee on its forty-seventh session)

   (b) Near-Earth objects;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 11 of annex III to the report of the Scientific and Technical Subcommittee on its forty-fifth session (A/AC.105/911))

   (c) International Space Weather Initiative;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 16 of annex I to the report of the Scientific and Technical Subcommittee on its forty-sixth session (A/AC.105/933))

(d) Long-term sustainability of outer space activities.

(Work for 2011 as reflected in the multi-year workplan in the report of the Committee on the Peaceful Uses of Outer Space on its fifty-second session)[a]

9. Single issue/item for discussion: examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.

10. Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year workplans.

15. The Working Group of the Whole agreed that the topic for the symposium to be organized in 2011 by the Committee on Space Research, in accordance with the agreement reached by the Subcommittee at its forty-fourth session in 2007 (A/AC.105/890, annex I, para. 24), should be "Planetary protection".

16. The Working Group of the Whole requested the Secretariat to ensure that at least two hours will be available during each session of the Subcommittee from 2011 to 2013 for holding the workshops to be organized in accordance with the workplan under the item "Use of nuclear power sources in outer space" (see paragraph 10 (c) of annex II to the report of the Scientific and Technical Subcommittee on its forty-seventh session).

17. The Working Group of the Whole requested the Secretariat to take measures, in close consultation with the Chairman of the Subcommittee, to rationalize and optimize the use of time of the Subcommittee, including on the possible scheduling of the symposium during the second week, as appropriate. To enable the Subcommittee to commence its consideration of all the items of the provisional agenda in a timely and balanced manner, the Working Group agreed that the possibility of scheduling the item entitled "General exchange of views" over a longer period of time during the session, and of limiting the number of slots for statements per meeting, should be explored.

18. The Working Group of the Whole recommended that the reports to be submitted by Member States on their national activities in outer space (see para. 19 of the report of the Scientific and Technical Subcommittee on its forty-seventh session) should comprise a summary of those activities and not exceed three pages.

[a] *Official Records of the General Assembly, Sixty-fourth Session, Supplement No. 20* (A/64/20), para. 161.

Annex II

Report of the Working Group on the Use of Nuclear Power Sources in Outer Space

1. At its 722nd meeting, on 10 February 2010, the Scientific and Technical Subcommittee reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space, under the chairmanship of Sam A. Harbison (United Kingdom of Great Britain and Northern Ireland).

2. The Working Group recalled with satisfaction that at the forty-sixth session of the Subcommittee, in 2009, the Joint Expert Group of the Scientific and Technical Subcommittee and the International Atomic Energy Agency (IAEA), established by the Subcommittee at its forty-fourth session, in 2007, had completed, one year ahead of the schedule contained in its multi-year workplan, preparation of the Safety Framework for Nuclear Power Source Applications in Outer Space and that in 2009 the Safety Framework had been adopted by the Subcommittee at its forty sixth session and endorsed by the Committee on the Peaceful Uses of Outer Space at its fifty-second session.

3. The Working Group noted that, in accordance with the working arrangements agreed to by the Subcommittee and IAEA, the Safety Framework had been considered and agreed to by the IAEA Commission on Safety Standards at its twenty-fifth meeting, in April 2009.

4. The Working Group also noted with satisfaction that the Safety Framework had been made available by the Secretariat in document A/AC.105/934 and by the IAEA secretariat as a joint publication of the Subcommittee and IAEA.

5. The Working Group further noted with appreciation the efficient cooperation with the IAEA secretariat and expressed its gratitude to the IAEA secretariat for making the joint publication available to the Subcommittee in the form of a hard copy and a CD-ROM. The Working Group further noted that free electronic copies of the publication would remain available on the IAEA website (www.iaea.org/Publications/Booklets/Safety/safetyframework1009.pdf).

6. At the first meeting of the Working Group, on 10 February, the Chairman recalled the tasks before the Working Group stemming from its intersessional work during 2009. In this connection, the Chairman also recalled that in June 2009 the Working Group had held an informal meeting at which members discussed ways of promoting and facilitating the implementation of the Safety Framework and providing a sound basis for deciding what, if any, further work should be carried out to support implementation of the Safety Framework. The Chairman further recalled that the main outcome of that meeting had been an agreement on proposing preparation of a new multi-year workplan of the Working Group to be presented for consideration of the Subcommittee.

7. After considering comments on and suggested changes to the draft workplan (A/AC.105/C.1/L.302), the Working Group agreed that the workplan should have the following objectives:

(a) To promote and facilitate the implementation of the Safety Framework by providing information pertinent to challenges faced by member States and international intergovernmental organizations, in particular those considering or initiating involvement in applications of nuclear power sources (NPS) in outer space;

(b) To identify any technical topics for, and establish the objectives, scope and attributes of, any potential additional work by the Working Group to further enhance safety in the development and use of space NPS applications. Any such additional work would require the approval of the Subcommittee and would be developed with due consideration for relevant principles and treaties.

8. The Working Group agreed that it would advance these objectives by conducting the following workplan for the period from 2010 to 2015:

2010 Develop a draft workplan. After its adoption by the Subcommittee, the Working Group will (a) request the Secretariat to invite member States and international intergovernmental organizations to participate in workshops in the period 2011-2013, (b) invite member States and international intergovernmental organizations with experience in space NPS applications to provide information in 2011 and 2012 (at workshops to be held in conjunction with the forty-eighth and forty-ninth sessions of the Subcommittee) on their implementation of the Safety Framework and (c) request the Secretariat to invite member States and international intergovernmental organizations considering or initiating involvement in space NPS applications to make presentations in 2011 and 2012 (at workshops to be held in conjunction with the forty-eighth and forty ninth sessions of the Subcommittee, respectively) summarizing their plans, progress to date and any challenges faced or foreseen in implementing the Safety Framework or specific elements thereof;

2011 Hold a workshop, with simultaneous interpretation, during the forty eighth session of the Subcommittee, with member States and international intergovernmental organizations making presentations pursuant to the invitation extended in 2010. In its report to the Subcommittee, the Working Group will (a) summarize the proceedings of the workshop, (b) identify any significant challenges that should be addressed in the presentations at the workshop to be held in 2012 and (c) request the Secretariat to invite member States and international intergovernmental organizations with experience in space NPS applications to make presentations in 2012 (at a workshop to be held in conjunction with the forty-ninth session of the Subcommittee) providing information pertinent to addressing the challenges in implementing the Safety Framework;

2012 Hold a workshop under the same arrangements as in 2011, with member States and international intergovernmental organizations making presentations pursuant to the invitations extended in 2010 and 2011.

In its report to the Subcommittee, the Working Group will (a) summarize the proceedings of the workshop, (b) identify any significant challenges that should be addressed in the presentations at the workshop to be held in 2013 and (c) request the Secretariat to invite member States and international intergovernmental organizations with experience in space NPS applications to make additional presentations in 2013 (at a workshop to be held under the same arrangements as in 2011) addressing the additional challenges identified in 2012;

2013 Hold a workshop under the same arrangements as in 2011 and 2012, with member States and international intergovernmental organizations making presentations pursuant to the invitation extended in 2012; include in a report of the Working Group to the Subcommittee a summary of the workshop and of its deliberations on the main issues identified during the workshop;

2014 Determine whether the current workplan should be extended; if it is not to be extended, prepare a draft report with recommendations for potential future work to promote and facilitate implementation of the Safety Framework;

2015 If the workplan has not been extended, finalize the report and recommendations.

9. The Working Group requested the Secretariat to invite, in March 2010, member States and international intergovernmental organizations with experience in space NPS applications, and those considering or initiating involvement in space NPS applications, to notify the Secretariat of their plans, if any, to provide workshop presentations in 2011 and 2012, in accordance with the workplan of the Working Group.

10. The Working Group agreed on the following arrangements for the implementation of its new workplan:

(a) Papers for the workshops to be held in the period 2011-2013 should be submitted to the Secretariat by mid-November of the previous year and will be made available, in all official languages of the United Nations, to member States and permanent observers prior to the corresponding sessions of the Subcommittee;

(b) To facilitate meeting the objectives of the workplan, the Working Group may conduct, as necessary, intersessional work to further study and discuss the challenges and issues raised at each of the workshops. A summary of such intersessional work will be made available to the Subcommittee in all official languages of the United Nations;

(c) The Secretariat is requested to ensure that at least two hours will be available during each session of the Subcommittee from 2011 to 2013, for holding the workshops, and to reflect the above arrangement in the provisional agendas of the Subcommittee.

11. The Working Group noted with appreciation the contribution of IAEA as an observer of the Working Group and encouraged its continued participation. In this connection, the Working Group agreed that the Secretariat should continue

maintaining close working relations with IAEA and that each year IAEA should be invited to participate in the work of the Working Group, including the workshops.

12. The Working Group noted with appreciation the contribution of the European Space Agency to the development of the Safety Framework and encouraged that international intergovernmental organization to continue its active participation in future work of the Working Group.

13. The Working Group agreed to hold a teleconference on 11 May 2010 at 1600 hours GMT and, subject to replies received to the invitation referred to in paragraph 9 above, to make a decision on the need to hold an informal meeting from 9 to 11 June, during the fifty-third session of the Committee.

14. The view was expressed that NPS applications addressed in the second objective of the workplan should be in conformity with international law, the Charter of the United Nations and the United Nations treaties and principles on outer space, in particular the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

15. Some delegations were of the view that the objectives of the workplan were appropriately focused on the implementation of the Safety Framework, which had been developed with due consideration of relevant principles and treaties, as noted in the preface to the Safety Framework (A/AC.105/934).

16. The view was expressed that all member States should be involved in the decision-making and in identifying the issues and challenges associated with the application of NPS and the Safety Framework and that that would ensure the success of the implementation of the workplan.

17. At its 4th meeting, on 17 February 2010, the Working Group adopted the present report.

Annex III

Report of the Working Group on Near-Earth Objects

1. Pursuant to paragraph 9 of General Assembly resolution 64/86, the Scientific and Technical Subcommittee, at its forty-seventh session, reconvened its Working Group on Near-Earth Objects.

2. Sergio Camacho (Mexico) was elected Chair of the Working Group on Near-Earth Objects at the 729th meeting of the Subcommittee, on 15 February 2010. The Working Group expressed its appreciation to the outgoing Chair, Richard Crowther (United Kingdom of Great Britain and Northern Ireland), for the excellent manner in which he had led its work and the work of the Action Team on Near-Earth Objects.

3. In accordance with the multi-year workplan under the item on near-Earth objects (A/AC.105/911, annex III, para. 11), the Working Group did the following:

(a) Considered the reports submitted in response to the annual request for information on near-Earth object (NEO) activities and continued intersessional work;

(b) Continued the work begun during the intersessional period on drafting international procedures for handling the NEO threat and sought agreement on those procedures;

(c) Reviewed progress made on international cooperation and collaboration on NEO observations;

(d) Facilitated, for the purpose of NEO threat detection, a more robust international capability for exchanging, processing, archiving and disseminating data;

(e) Prepared an updated interim report of the Action Team on Near-Earth Objects (2009-2010) (A/AC.105/C.1/L.301).

4. The Working Group noted with satisfaction the work of the Action Team on Near-Earth Objects, as reflected in the draft recommendations for an international response to the threat of NEO impact (A/AC.105/C.1/L.301, annex).

5. The Working Group heard a statement from the representative of Australia on the report entitled “Legal aspects of NEO threat response and related institutional issues”, prepared by the University of Nebraska-Lincoln (United States), in which key legal and institutional issues linked to potential future threats posed by NEOs were examined. The Working Group also heard a statement by the observer for the Secure World Foundation (SWF) on a workshop organized jointly by the Association of Space Explorers and SWF, with support from the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, on the establishment of a NEO information, analysis and warning network. The workshop was held in Mexico City from 18 to 20 January 2010, under the auspices of the Government of Mexico. The Working Group agreed that the report of the workshop and the report prepared by the University of Nebraska-Lincoln could be considered by the Action Team on Near-Earth Objects between sessions during 2010 and 2011.

6. The Working Group noted that in 2011 it should do the following, among other things:

(a) Consider the reports submitted in response to the annual request for information on NEO activities and continue intersessional work;

(b) Finalize the agreement on international procedures for handling the NEO threat and engage international stakeholders;

(c) Review progress on international cooperation and collaboration on NEO observations and on capability for exchanging, processing, archiving and disseminating data for the purpose of detecting NEO threats;

(d) Consider the final report of the Action Team on Near-Earth Objects.

7. The Working Group further noted that its intersessional work for the period 2010-2011 could include workshops involving experts in various subjects related to the draft recommendations made by the Action Team (A/AC.105/C.1/L.301, annex). The Working Group agreed that the reports of those workshops could further assist the Action Team in finalizing recommendations for the international response to the threat posed by NEOs.

8. The Working Group agreed that the Action Team should continue its intersessional work, in accordance with the multi-year workplan, to further review draft recommendations for an international response to the threat of NEO impact, for consideration by the Working Group at the forty-eighth session of the Subcommittee, in 2011. The Working Group agreed that the Action Team would meet on the margins of the fifty-third session of the Committee on the Peaceful Uses of Outer Space, to be held in June 2010, to finalize draft recommendations for the international response to the threat of NEO impact. In that context, the Working Group encouraged Member States to participate in the intersessional work on NEOs and submit their contributions to the Chair of the Action Team.

9. At its 3rd meeting, on 18 February 2010, the Working Group adopted the present report.

United Nations

Report of the Committee on the Peaceful Uses of Outer Space

Fifty-third session (9-18 June 2010)

General Assembly

Official Records
Sixty-fifth Session
Supplement No. 20

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Note

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

[8 July 2010]

Contents

Chapter I

Introduction

1. The Committee on the Peaceful Uses of Outer Space held its fifty-third session in Vienna from 9 to 18 June 2010. The officers of the Committee were as follows:

Chair:	Dumitru-Dorin Prunariu (Romania)
First Vice-Chair:	Nomfuneko Majaja (South Africa)
Second Vice-Chair/Rapporteur:	Raimundo González Aninat (Chile)

The unedited verbatim transcripts of the meetings of the Committee are contained in documents COPUOS/T.613-627.

A. Meetings of subsidiary bodies

2. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its forty-seventh session in Vienna from 8 to 19 February 2010, under the chairmanship of Ulrich Huth (Germany). The report of the Subcommittee was before the Committee (A/AC.105/958).

3. The Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space had held its forty-ninth session in Vienna from 22 March to 1 April 2010, under the chairmanship of Ahmad Talebzadeh (Islamic Republic of Iran). The report of the Subcommittee was before the Committee (A/AC.105/942). The unedited verbatim transcripts of the meetings of the Subcommittee are contained in documents COPUOS/Legal/T.803-819.

B. Adoption of the agenda

4. At its opening meeting, the Committee adopted the following agenda:

1. Opening of the session.
2. Adoption of the agenda.
3. Election of officers.
4. Statement by the Chair.
5. General exchange of views.
6. Ways and means of maintaining outer space for peaceful purposes.
7. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
8. Report of the Scientific and Technical Subcommittee on its forty-seventh session.
9. Report of the Legal Subcommittee on its forty-ninth session.

10. Spin-off benefits of space technology: review of current status.

11. Space and society.

12. Space and water.

13. Space and climate change.

14. Use of space technology in the United Nations system.

15. International cooperation in promoting the use of space-derived geospatial data for sustainable development.

16. Other matters.

17. Report of the Committee to the General Assembly.

C. Election of officers

5. At the 613th meeting, on 9 June, Dumitru-Dorin Prunariu (Romania) was elected Chair of the Committee, Nomfuneko Majaja (South Africa) was elected First Vice-Chair and Raimundo González Aninat (Chile) was elected Second Vice-Chair/Rapporteur, each for a two-year term of office.

6. Also at the 613th meeting, the Committee endorsed the election of Ulrich Huth (Germany) as Chair of the Scientific and Technical Subcommittee at its forty-seventh session and Ahmad Talebzadeh (Islamic Republic of Iran) as Chair of the Legal Subcommittee for a two-year term of office, starting with the forty-ninth session.

D. Membership

7. In accordance with General Assembly resolutions 1472 A (XIV), 1721 E (XVI), 3182 (XXVIII), 32/196 B, 35/16, 49/33, 56/51, 57/116, 59/116 and 62/217 and decision 45/315, the Committee on the Peaceful Uses of Outer Space was composed of the following 69 States: Albania, Algeria, Argentina, Australia, Austria, Belgium, Benin, Bolivia (Plurinational State of), Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chad, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Nicaragua, Niger, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Sierra Leone, Slovakia, South Africa, Spain, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of) and Viet Nam.

E. Attendance

8. Representatives of the following States members of the Committee attended the session: Algeria, Argentina, Australia, Austria, Belgium, Bolivia

(Plurinational State of), Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Libyan Arab Jamahiriya, Malaysia, Mexico, Mongolia, Morocco, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom, United States, Venezuela (Bolivarian Republic of) and Viet Nam.

9. At its 613th meeting, the Committee decided to invite, at their request, Azerbaijan, Costa Rica, Côte d'Ivoire, the Dominican Republic, Panama, Tunisia, the United Arab Emirates and Zimbabwe, as well as the Holy See, to send observers to attend its fifty-third session and to address it, as appropriate, on the understanding that doing so would be without prejudice to further requests of that nature and that it would not involve any decision of the Committee concerning status.

10. Observers for the International Atomic Energy Agency, the International Telecommunication Union (ITU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) attended the session.

11. The session was attended by observers for the following intergovernmental organizations with permanent observer status with the Committee: the African Organization of Cartography and Remote Sensing, the Asia-Pacific Space Cooperation Organization (APSCO), the European Organisation for Astronomical Research in the Southern Hemisphere, the European Space Agency (ESA), the European Telecommunications Satellite Organization and the Regional Centre for Remote Sensing of North African States (CRTEAN).

12. The session was also attended by observers for the following non-governmental organizations with permanent observer status with the Committee: the Association of Space Explorers (ASE), EURISY, the European Space Policy Institute (ESPI), the International Institute for Applied Systems Analysis, the International Society for Photogrammetry and Remote Sensing, the International Space University, the International Academy of Astronautics (IAA), the International Astronautical Federation (IAF), the International Astronomical Union, the International Institute of Space Law (IISL), the Prince Sultan bin Abdulaziz International Prize for Water, the Secure World Foundation (SWF) and the Space Generation Advisory Council (SGAC).

13. At its 613th meeting, the Committee decided to invite, at their request, the International Association for the Advancement of Space Safety (IAASS) and the Association of Remote Sensing Centres in the Arab World to send observers to attend its fifty-third session and to address it, as appropriate, on the understanding that doing so would be without prejudice to further requests of that nature and that it would not involve any decision of the Committee concerning status.

14. A list of representatives of States members of the Committee, States not members of the Committee, United Nations entities and other organizations attending the session is contained in A/AC.105/2010/INF/1.

F. General statements

15. Statements were made by representatives of the following States members of the Committee during the general exchange of views: Algeria, Austria, Belgium, Bolivia (Plurinational State of), Brazil, Burkina Faso, Canada, Chile, China, Colombia, Ecuador, France, Germany, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Libyan Arab Jamahiriya, Malaysia, Mexico, Nigeria, Pakistan, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Sudan, Switzerland, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom, United States and Venezuela (Bolivarian Republic of). The representative of Algeria made a statement on behalf of the Group of 77 and China. The representative of Zimbabwe made a statement on behalf of the Group of African States. The representative of Costa Rica made a statement on behalf of the Group of Latin American and Caribbean States. The representative of Spain made a statement on behalf of the European Union. The representative of Egypt made a statement on behalf of the Movement of Non-Aligned Countries. The observers for Tunisia and the United Arab Emirates also made statements. Statements were also made by the observers for APSCO, CRTEAN, ESPI, IAF, SGAC and SWF.

16. The Committee welcomed the election of Dumitru-Dorin Prunariu (Romania) as its Chair, Nomfuneko Majaja (South Africa) as its First Vice-Chair and Raimundo González Aninat (Chile) as its Second Vice-Chair/Rapporteur.

17. The Committee expressed its appreciation to Ciro Arévalo Yepes (Colombia), the outgoing Chair, to Suvit Vibulsresth (Thailand), the outgoing First Vice-Chair, and to Filipe Duarte Santos (Portugal), the outgoing Second Vice-Chair/Rapporteur, for their excellent work and achievements during their terms of office.

18. The outgoing Chair of the Committee made a statement, noting achievements made by the Committee in the previous period, and acknowledged that the Committee had made concrete efforts to promote regional and interregional cooperation and coordination in space activities for the benefit of all countries.

19. At the 613th meeting, on 9 June, the Chair delivered a statement highlighting the role played by the Committee in promoting efforts to further space exploration and bring the benefits of space technology to Earth to ensure sustainable development for all countries. He stressed the fundamental importance of addressing the major challenges to global development by means of developing space science and technology applications.

20. At the 615th meeting, the Director of the Office for Outer Space Affairs of the Secretariat briefed the Committee on the work carried out by the Office during the past year and stressed the importance of the availability of financial and other resources for the successful implementation of the Office's programme of work.

21. The Committee congratulated Japan on the successful return of its unmanned Hayabusa space mission from the near-Earth asteroid Itokawa. It was noted that the Hayabusa round-trip mission marked the first time that a spacecraft had made physical contact with an asteroid before returning to Earth. The hope was expressed that the Hayabusa capsule would contain a sample from the surface of the asteroid.

22. The Committee also congratulated the Russian Federation on the successful launch from the Baikonur cosmodrome of the manned spacecraft Soyuz TMA-19. It

was the twenty-fourth mission of international crew to the International Space Station and the hundredth launch under the ISS programme.

23. The Committee noted with appreciation the establishment of a national space agency by the Government of the Plurinational State of Bolivia.

24. The Committee also noted the establishment of the UK Space Agency by the United Kingdom to replace the British National Space Centre.

25. The Committee heard the following presentations:

(a) "Satellite activities of Tunisia relating to telecommunication networks", by the representative of Tunisia;

(b) "Space activities of the National Cartography and Remote Sensing Centre", by the representative of Tunisia;

(c) "Recent developments in the field of space in Turkey, and the UN/Turkey/ESA Workshop on Space Technology Applications for Socio-Economic Benefits", by the representative of Turkey;

(d) "Global Lunar Conference", by the representative of China.

26. The Committee noted with appreciation the successful completion of the 60th International Astronautical Congress, held in the Republic of Korea in October 2009 and attended by over 4,000 participants from 72 countries. The Committee noted with satisfaction that the International Astronautical Congress would be hosted by the Government of the Czech Republic in 2010 and by the Government of South Africa in 2011.

G. Adoption of the report of the Committee

27. After considering the various items before it, the Committee, at its 627th meeting, on 18 June, adopted its report to the General Assembly containing the recommendations and decisions set out below.

Chapter II

Recommendations and decisions

A. Ways and means of maintaining outer space for peaceful purposes

28. In accordance with paragraph 42 of General Assembly resolution 64/86, the Committee continued its consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes.

29. The representatives of the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements were also made on the item by representatives of other member States. The observer for Costa Rica made a statement on behalf of the Group of Latin American and Caribbean States and the representative of Spain made a statement on behalf of the European Union.

30. The Committee heard the following presentations:

(a) "Space Security Index 2010", by the representative of Canada;

(b) "The Shared Space Situational Awareness Program of the United States", by the representative of the United States.

31. The Committee agreed that, through its work in the scientific, technical and legal fields, it had a fundamental role to play in ensuring that outer space was maintained for peaceful purposes.

32. The Committee noted with satisfaction the agreement of the General Assembly that, during its consideration of the matter, the Committee could continue to consider ways to promote regional and interregional cooperation based on experiences stemming from the Space Conferences of the Americas and the African Leadership Conferences on Space Science and Technology for Sustainable Development, and the role that space technology could play in the implementation of the recommendations of the World Summit on Sustainable Development.[1]

33. The Committee noted with appreciation that representatives of Colombia, Ecuador and Mexico, as well as of the pro tempore secretariat of the Fifth Space Conference of the Americas, the functions of which were exercised by the Government of Ecuador, and the International Group of Experts, had met in Quito on 16 and 17 December 2009 and in Cuenca, Ecuador, on 27 and 28 May 2010. The Committee also noted that the meetings had resulted in detailed plans for the preparations for the Sixth Space Conference of the Americas, to be hosted by the Government of Mexico in November 2010. The Committee noted that a seminar on promoting regional cooperation in matters relating to space law and policy had been held in conjunction with the meeting in May 2010. The Committee noted with appreciation that a preparatory conference for the Sixth Space Conference of the Americas would be hosted by the Government of Chile in July 2010.

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[1] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum).

34. The Committee noted with satisfaction that the Third African Leadership Conference on Space Science and Technology for Sustainable Development had been held in Algiers from 30 November to 2 December 2009, under the patronage of the President of Algeria. In that regard, the Committee noted that, on the occasion of the Conference, Algeria, Kenya, Nigeria and South Africa had signed a cooperation agreement on the African Resource Management satellite constellation. The Committee also noted with appreciation that the Government of Kenya would act as host to the Fourth African Leadership Conference in 2011.

35. The Committee also noted with satisfaction that APSCO had held its second Council Meeting in Beijing on 17 and 18 December 2009 and had commenced the implementation of the long-term development plan and five-year project plan. An APSCO symposium on space technology and applications would be held in Pakistan in September 2010, on the subject of agriculture and food security.

36. The Committee noted with appreciation the holding of the sixteenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF) in Bangkok from 26 to 29 January 2010, with the theme “Space applications: contributions towards human safety and security”. The seventeenth session of APRSAF, to be jointly organized by the Government of Australia and the Government of Japan, would be hosted by Australia in November 2010.

37. The Committee emphasized that regional and interregional cooperation and coordination in the field of space activities were 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 Millennium Development Goals.[2]

38. The Committee noted the project of the European Union to adopt a code of conduct for outer space activities. The draft text had been supported by the Council of the European Union in December 2008 as a basis for consultations with third parties. The draft code of conduct included transparency and confidence-building measures and reflects a comprehensive approach to safety and security in outer space guided by the following principles: freedom of access to space for all for peaceful purposes, preservation of the security and integrity of space objects in orbit and due consideration for the legitimate security and defence interests of States. The Committee also noted that consultations with other States were under way, with a view to reaching consensus on a text that would be acceptable to the greatest possible number of States.

39. Some delegations reiterated their commitment to the peaceful use and exploration of outer space and 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 strict exploitation 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.

40. Some delegations were of the view that the Committee provided a unique opportunity for fostering international and interregional dialogue and cooperation to

[2] A/56/326, annex.

maintain peaceful uses of outer space, and that it served as a valuable forum for encouraging research and information-sharing, exchanging good practices and defining confidence-building measures in the framework of international space law.

41. Some delegations were of the view that all activities in outer space should bring benefits to humankind and that all countries, irrespective of size and capacity, should have the right to use outer space for peaceful purposes.

42. The view was expressed that the Committee played a notable role in advancing space cooperation and provided a unique forum for the exchange of information among States and that there were tangible opportunities to enhance international cooperation, in keeping with the Committee's mandate.

43. Some delegations were of the view that the existing legal regime of outer space was not adequate to prevent the weaponization of outer space and address the issues of the space environment and that the further development of international space law would be important for maintaining outer space for peaceful purposes. Those delegations also expressed their support for a comprehensive legal instrument to maintain outer space for peaceful purposes, without prejudice to the existing legal framework.

44. Some delegations were of the view that provisions of international space law had to be improved to effectively respond to challenges posed by a number of problems involved in space activities, such as the absence of the definition and delimitation of outer space, the use of nuclear power sources in outer space and the threat of space debris. The delegations that expressed that view considered that the improvement of international space law would ensure that outer space was used exclusively for peaceful purposes and that it was necessary to enhance coordination within the United Nations system to promote the creation of international rules and mechanisms that would address effectively the current challenges to outer space activities.

45. The view was expressed that the conclusion 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, which had been presented by China and the Russian Federation to the Conference on Disarmament in 2008, would prevent an arms race in outer space.

46. The view was expressed that, in order to maintain the peaceful nature of space activities and prevent the weaponization of outer space, it was essential for the Committee to enhance its cooperation and coordination with other bodies and mechanisms of the United Nations system, such as the First Committee of the General Assembly and the Conference on Disarmament.

47. The view was expressed that the Committee had been created exclusively to promote international cooperation on the peaceful uses of outer space and that disarmament issues were more appropriately dealt with in other forums, such as the First Committee of the General Assembly and the Conference on Disarmament.

48. The view was expressed that the principle embodied in article I 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,[3] ensured the free exploration

[3] United Nations, *Treaty Series*, vol. 610, No. 8843.

and use of outer space by all States, including the right to uninterrupted operation of the global telecommunication network.

49. The view was expressed that, in order to ensure that developing countries enjoy the benefits of space science and technology, developed countries should share experiences and know-how, as well as provide affordable and timely access to data on a non-discriminatory basis.

50. The view was expressed that activities in outer space, including those related to satellite products, which were making a substantial contribution to the well-being and socio-economic development of humankind, should be carried out in a manner compatible with the sovereign rights of States, including the principle of non-intervention, as enshrined in the relevant United Nations instruments.

51. The Committee recommended that at its fifty-fourth session, in 2011, consideration, on a priority basis, of the item on ways and means of maintaining outer space for peaceful purposes should be continued.

B. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space

52. The Committee considered the agenda item "Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)" in accordance with General Assembly resolution 64/86.

53. The representatives of Canada, Japan, Nigeria, Portugal and the Russian Federation made statements under the item. Representatives of other member States also made statements relating to the item during the general exchange of views and the discussion on the report of the Scientific and Technical Subcommittee on its forty-seventh session.

54. The Committee heard a presentation entitled "Space initiatives at the Center for Strategic and International Studies", by the representative of the United States.

55. The Committee endorsed the recommendations of the Scientific and Technical Subcommittee, submitted to the Subcommittee at its forty-seventh session by its Working Group of the Whole, which had been reconvened under the chairmanship of S. K. Shivakumar (India) to consider, inter alia, the implementation of the recommendations of UNISPACE III (A/AC.105/958, para. 55 and annex I, sect. III).

56. The Committee noted with satisfaction that Member States continued to contribute to the implementation of the recommendations of UNISPACE III through national and regional activities and by supporting and participating in the programmes established in response to those recommendations, and that some States had established policies aimed at maximizing and harmonizing the use of various types of space-based services, such as navigation, meteorology and remote sensing, to respond to societal needs.

57. The Committee noted with appreciation that the Action Team on Public Health, co-chaired by Canada and India, had included in its workplan the use of telecommunications in the context of tele-health and Earth observation applications

in the context of tele-epidemiology, with an emphasis on improving public health and infectious-disease management. The Committee noted that the action team was pursuing the objectives contained in its workplan for the period 2010-2011 and would present a report at the forty-eighth session of the Subcommittee. The Committee also noted that the action team encouraged Member States to contribute to its report by sharing experiences and views on the way forward.

58. The view was expressed that the Committee should give consideration to the possibility of holding a fourth United Nations conference on the exploration and peaceful uses of outer space to address the current major challenges of sustainable development.

59. The Committee had before it the report on the contribution of the Committee on the Peaceful Uses of Outer Space to the work of the Commission on Sustainable Development for the thematic cluster 2010-2011 (A/AC.105/944).

60. The Committee agreed that, in the preparation of its forthcoming contribution to the work of the Commission on Sustainable Development, it should contribute to the thematic clusters in which space technology and its applications played a particularly important role; pay attention to the cross-cutting issues identified by the Commission; identify areas where space-based systems could complement terrestrial systems to promote integrated solutions; and include, as appropriate and in addition to examples of regional and international cooperation, national success stories that might provide useful examples for the overall contribution of the Committee.

61. The Committee requested the Secretariat to provide, for consideration by the Working Group of the Whole at the forty-eighth session of the Scientific and Technical Subcommittee, a draft of the contribution of the Committee to the work of the Commission for the next thematic cluster, bearing in mind the overall review of the implementation of Agenda 21,[4] together with contributions of member States.

62. The Committee agreed that the Director of the Office for Outer Space Affairs should attend the sessions of the Commission with a view to raising awareness and promoting the benefits of space science and technology, in particular in the areas being addressed by the Commission.

63. Some delegations were of the view that the Committee, in its contributions to the work of the Commission on Sustainable Development, should focus on the following interrelated main areas: poverty and development; sustainability of energy systems; food security, water resources and biodiversity; and climate change.

64. The Committee noted with appreciation the publication of the report on the events of World Space Week 2009 (ST/SPACE/48), prepared by the World Space Week Association in cooperation with the Office for Outer Space Affairs.

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[4] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

C. Report of the Scientific and Technical Subcommittee on its forty-seventh session

65. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-seventh session (A/AC.105/958), which contained the results of its deliberations on the agenda items considered by the Subcommittee in accordance with General Assembly resolution 64/86.

66. The Committee expressed its appreciation to the Chair of the Subcommittee, Ulrich Huth (Germany) for his able leadership during its forty-seventh session.

67. The representatives of Belgium, Canada, China, Colombia, Cuba, Germany, India, Indonesia, Japan, Mexico, Nigeria, the Russian Federation, Saudi Arabia, South Africa, the Sudan, Thailand, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to this item were also made by representatives of other member States and by the observer for Costa Rica on behalf of the Group of Latin American and Caribbean States.

68. The Committee heard the following presentations:

(a) "Japanese contribution for disaster management support", by the representative of Japan;

(b) "An introduction to the Space Foundation", by the representative of the United States;

(c) "Use of space-based information for seismic risk management: an Italian Space Agency pilot project", by the representative of Italy;

(d) "NASA today and tomorrow", by the representative of the United States;

(e) "Re-entry of Hayabusa on 13 June 2010", by the representative of Japan;

(f) "Gamma-ray astronomy on the way to uncovering the mystery of dark matter in the universe", by the representative of the Russian Federation;

(g) "Proposing a new radio-quiet zone on the far side of the Moon", by the observer for IAA;

(h) "Space in Chile: past, present, future", by the representative of Chile;

(i) "Volcanic ash layers over Europe: airborne observations with the DLR Falcon research aircraft in April/May 2010", by the representative of Germany.

1. United Nations Programme on Space Applications

(a) Activities of the United Nations Programme on Space Applications

69. The Committee took note of the discussion of the Subcommittee under the item on the United Nations Programme on Space Applications, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 22-46 and annex I, paras. 2-3).

70. The Committee endorsed the decisions and recommendations of the Subcommittee and its Working Group of the Whole, which had been convened under the chairmanship of S. K. Shivakumar (India) to consider this item (A/AC.105/958, paras. 25 and 35).

71. The Committee took note of the activities of the Programme carried out in 2009, as presented in the report of the Scientific and Technical Subcommittee (A/AC.105/958, paras. 32-34) and in the report of the Expert on Space Applications (A/AC.105/969, annex I).

72. The Committee expressed its appreciation to the Office for Outer Space Affairs for the manner in which the activities of the Programme had been implemented. The Committee also expressed its appreciation to the Governments and intergovernmental and non-governmental organizations that had sponsored those activities.

73. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2010, as described in the report of the Subcommittee (A/AC.105/958, para. 35).

74. The Committee noted with satisfaction that the Office for Outer Space Affairs was helping developing countries and countries with economies in transition to participate in and benefit from activities being carried out by the Programme.

75. The Committee noted with concern the limited financial resources available to implement the Programme and appealed to States and organizations to continue supporting the Programme through voluntary contributions.

76. The Committee noted with appreciation the implementation of the Programme's Basic Space Science Initiative and Basic Space Technology Initiative, as well as its preparation of the Human Space Technology Initiative, aimed at enhancing the participation of developing countries in scientific activities at the International Space Station.

(i) Conferences, training courses and workshops of the United Nations Programme on Space Applications

77. The Committee endorsed the workshops, training courses, symposiums and expert meetings planned for the remaining part of 2010, and expressed its appreciation to Austria, Bolivia (Plurinational State of), the Czech Republic, Egypt, the Republic of Moldova, Thailand, Turkey and the United States, as well as to ESA and IAF, for co-sponsoring, hosting and supporting those activities (A/AC.105/969, annex II).

78. The Committee noted with appreciation that the first expert meeting on the Human Space Technology Initiative would be held in Putrajaya, Malaysia, in the fourth quarter of 2010 and expressed its appreciation to the Government of Malaysia, the National Space Agency of Malaysia (ANGKASA) and the National University of Malaysia for acting as host to and supporting that meeting.

79. The Committee endorsed the programme of workshops, training courses, symposiums and expert meetings related to socio-economic benefits of space activities, small satellites, basic space technology, human space technology, space weather, global navigation satellite systems (GNSS) and search and rescue, planned to be held in 2011 for the benefit of developing countries.

80. The Committee noted with appreciation that the host countries of the regional centres for space science and technology education, affiliated to the United Nations, were providing the centres with significant financial and in-kind support.

(ii) Long-term fellowships for in-depth training

81. The Committee expressed its appreciation to the Politecnico di Torino, the Istituto Superiore Mario Boella and the Istituto Elettrotecnico Nazionale Galileo Ferraris for the fellowships they provided for postgraduate studies relating to GNSS and landscape epidemiology.

82. The Committee noted that it was important to increase opportunities for in-depth education in all areas of space science, technology and applications and space law through long-term fellowships and urged Member States to make such opportunities available at their relevant institutions.

(iii) Technical advisory services

83. The Committee noted with appreciation the technical advisory services provided under the United Nations Programme on Space Applications in support of activities and projects promoting regional cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/969, paras. 46-51).

(b) International Space Information Service

84. The Committee noted with satisfaction that the publication entitled *Highlights in Space 2009* had been issued on CD-ROM.

85. The Committee noted with satisfaction that the forthcoming publication on the United Nations Programme on Space Applications would provide information on the orientation and activities of the Programme for the period 2010 and beyond.

86. The Committee noted with satisfaction that the Secretariat had continued to enhance the International Space Information Service and the website of the Office for Outer Space Affairs (www.unoosa.org).

(c) Regional and interregional cooperation

87. The Committee noted with satisfaction that the United Nations Programme on Space Applications continued to emphasize cooperation with Member States at the regional and global levels to support the regional centres for space science and technology education, affiliated to the United Nations. The highlights of the activities of the regional centres supported under the Programme in 2009 and the activities planned for 2010 and 2011 were presented in the report of the Expert on Space Applications (A/AC.105/969, annexes I-III).

(d) International Satellite System for Search and Rescue

88. The Committee recalled that, at its forty-fourth session, it had agreed that a report on the activities of the International Satellite System for Search and Rescue (COSPAS-SARSAT) should be considered annually by the Committee as part of its consideration of the United Nations Programme on Space Applications and that member States should report on their activities relating to COSPAS-SARSAT.

89. The Committee noted with satisfaction that COSPAS-SARSAT currently had 40 member States and two participating organizations and that it had six polar-orbiting and five geostationary satellites that provided worldwide coverage for

emergency beacons. The Committee further noted that since 1982, COSPAS-SARSAT had helped to save thousands of lives every year; in 2009, it helped to save 1,596 lives in 478 search and rescue events worldwide.

90. The Committee further noted that the use of satellites in medium-Earth orbit continued to be explored, with a view to improving international satellite-aided search and rescue operations.

91. The Committee welcomed the continued efforts to enhance the System for Search and Rescue, including testing of Global Positioning System satellites, and improving the capabilities of beacons in the future to best take advantage of medium-Earth orbit satellites.

2. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

92. The Committee took note of the discussion of the Subcommittee under this agenda item, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 58-66).

93. In the course of the discussion, delegations reviewed national and cooperative programmes on remote sensing, providing examples of national programmes and bilateral, regional and international cooperation.

94. The Committee noted with satisfaction that a growing number of developing countries were actively developing and deploying their own remote-sensing satellite systems and utilizing space-based data to advance socio-economic development, and stressed the need to continue enhancing capacities of developing countries in the use of remote-sensing technology.

95. The Committee noted with satisfaction the increasing availability of remote-sensing data and derived information at little or no cost, and underlined the importance of ensuring non-discriminatory access to space-based data at a reasonable cost or free of charge, and in a timely manner.

96. The Committee recognized the important role played by international intergovernmental organizations in promoting international cooperation in the use of remote-sensing technology, in particular for the benefit of developing countries.

97. Some delegations were of the view that the unrestricted and unregulated availability of high-resolution satellite data in the public domain could be detrimental to the safety of people and States. Those delegations proposed that the Committee and its Legal Subcommittee place this item on their agendas for their next sessions in order to establish guidelines for the regulation of the sale, distribution and dissemination of high-resolution satellite data on the Internet.

3. Space debris

98. The Committee took note of the discussion of the Subcommittee under the agenda item on space debris, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 67-89).

99. The Committee endorsed the decisions and recommendations of the Subcommittee on this item (A/AC.105/958, paras. 80 and 81).

100. The Committee noted with satisfaction that at its current session the Secretariat had made available the text of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space in the form of a publication (ST/SPACE/49).

101. The Committee noted with appreciation that some States were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space 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 Committee also noted that other States were using the IADC Guidelines and the European Code of Conduct for Space Debris Mitigation as reference points in their regulatory frameworks established for national space activities.

102. The Committee agreed that more States should implement the Space Debris Mitigation Guidelines of the Committee.

103. The view was expressed that more transparency in the information on space debris, as well as on space activities of States, particularly activities that presented a risk of doing harm, was important for States and that it would enhance the awareness and capability of States in space debris monitoring.

104. The view was expressed that States without the capability and expertise to fully implement the Space Debris Mitigation Guidelines of the Committee should benefit from the best practices of and training provided by States with relevant experience.

105. The view was expressed that the Committee should focus on the development of best practices or guidelines for collision avoidance, which would include such topics as pre-launch, pre-manoeuvre and re-entry notification, a registry of operators, common standards, best practices and guidelines and the establishment of national regulatory regimes.

106. Some delegations expressed the view that the States most responsible for the creation of space debris, including debris from platforms with nuclear power sources, and the States having the capability to take action on space debris mitigation should inform the Committee about their actions to reduce the creation of space debris.

107. Some delegations were of the view that the Space Debris Mitigation Guidelines of the Committee should be further developed and that the Scientific and Technical Subcommittee and the Legal Subcommittee should cooperate with the aim of developing legally binding rules relating to space debris.

4. Space-system-based disaster management support

108. The Committee took note of the discussion of the Subcommittee under the agenda item on space-system-based disaster management support, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 90-102 and annex I, paras. 10-13).

109. The Committee endorsed the decisions and recommendations of the Subcommittee and its Working Group of the Whole, which was convened, inter alia, to consider this item (A/AC.105/958, para. 102 and annex I, para. 1).

110. The Committee noted the progress reflected in the reports on the activities carried out in 2009 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) (A/AC.105/952 and A/AC.105/955).

111. The Committee noted with appreciation the signing of the host country agreement between the Government of China and the Office for Outer Space Affairs, which would lead to the establishment of the UN-SPIDER Beijing office.

112. The Committee noted with appreciation the cash and in-kind contributions made by the Governments of Austria, Croatia, Germany, the Republic of Korea, Spain and Turkey to support the activities of the UN-SPIDER programme in 2009. The Committee also noted that the UN-SPIDER programme would require additional voluntary contributions to carry out all the activities planned for 2010, as well as of senior experts, provided as non-reimbursable loans, and associate experts. The Committee encouraged Member States to provide the necessary support, including financial support, for the UN-SPIDER programme to carry out its work.

113. The Committee noted with satisfaction that the Office for Outer Space Affairs had so far signed cooperation agreements for the establishment of UN-SPIDER regional support offices with Algeria, Iran (Islamic Republic of), Nigeria, Pakistan, Romania and Ukraine, as well as the Asian Disaster Reduction Centre and the Water Center for the Humid Tropics of Latin America and the Caribbean. The Committee noted with appreciation that the Governments of Colombia, Indonesia, the Philippines and South Africa, as well as the Regional Centre for Mapping of Resources for Development and the University of the West Indies, had each made an offer to host a UN-SPIDER regional support office.

114. The Committee noted with satisfaction the increase in the availability of space-based information to support disaster management, particularly emergency response activities, through several existing mechanisms, such as 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), the Sentinel Asia project, and the Global Monitoring for Environment and Security (GMES) Services and Applications for Emergency Response (SAFER) initiative in Europe.

115. The view was expressed that efforts to make Sentinel Asia more effective and user-friendly should be continued so that more Governments and institutions would make use of it. The delegation that expressed that view also considered that the activities of Sentinel Asia, the results of it and the lessons learned could provide useful ideas and a model for disaster management support activities in other regions where no such initiatives had been carried out.

116. The Committee noted the work carried out in the framework of UN-SPIDER SpaceAid, which was supporting interested end-users in having access to and using large amounts of space-based information made available by existing mechanisms and initiatives to support responses to emergency events.

117. The Committee noted that the Office for Outer Space Affairs had established, as outlined in a conference room paper (A/AC.105/2010/CRP.11), the SpaceAid account within the existing Trust Fund for the United Nations Programme on Space Applications. The separate account would be used to receive funds to support the

aims of the SpaceAid framework. The Committee also noted that the Office for Outer Space Affairs would inform member States about the account and invite them to make contributions.

118. The Committee directed the Office for Outer Space Affairs to meet with the International Charter on Space and Major Disasters, Sentinel Asia, the GMES SAFER project, the Mesoamerican Regional Visualization and Monitoring System (SERVIR) project and others with a view to establishing an agreed interface with UN-SPIDER to avoid overlaps and duplication of effort. The Committee requested the Office to report on its efforts to the Scientific and Technical Subcommittee at its forty-eighth session, in 2011.

119. The view was expressed that the use of the SpaceAid account could lead to overlaps in access to and use of existing and readily available resources in responses to disasters. The delegation that expressed that view stressed that the acquisition of imagery by UN-SPIDER could result in the unwillingness of private sector operators of remote-sensing satellites to provide data free of charge to existing initiatives, as many currently do. That delegation stressed that emergency preparedness, response and recovery were the responsibility of each Member State in respect of its population.

5. Recent developments in global navigation satellite systems

120. The Committee took note of the discussion of the Subcommittee under the agenda item on recent developments in GNSS, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 103-121).

121. The Committee noted with appreciation that the International Committee on GNSS (ICG) continued to make significant progress towards the goals of encouraging compatibility and interoperability among global and regional space-based positioning, navigation and timing systems and promoting the use of GNSS and their integration into infrastructures, particularly in developing countries.

122. The Committee noted with appreciation the progress made on the ICG workplan, in particular the adoption of a new principle on transparency in the provision of open services.

123. The Committee noted with appreciation the achievements of the ICG Providers' Forum, as reflected in the publication entitled "Current and planned global and regional navigation satellite systems and satellite-based augmentation systems" (ST/SPACE/50).

124. The Committee noted with appreciation the activities conducted and/or planned in the framework of the ICG workplan focusing on building capacity, specifically in deploying instruments for the International Space Weather Initiative, developing a GNSS education curriculum, utilizing regional reference frames and the application of GNSS in various areas to support sustainable development, as reflected in document A/AC.105/950.

125. Some delegations reiterated their commitment to provide additional funds in the form of voluntary contributions to the Office for Outer Space Affairs in support of the programme on GNSS applications, including the meetings and activities of ICG and its Providers' Forum.

126. The Committee noted with appreciation that the fourth meeting of ICG and the fourth meeting of its Providers' Forum had been held in Saint Petersburg, Russian Federation, in September 2009 (A/AC.105/948).

127. The Committee expressed its appreciation for work undertaken by the Office for Outer Space Affairs in assisting with the planning and organization of the fourth meeting of ICG and for its continued support as executive secretariat for ICG and its Providers' Forum.

128. The Committee noted that the fifth meeting of ICG would be hosted jointly by Italy and the European Commission in Turin, Italy, from 18 to 22 October 2010, and that the sixth meeting would be hosted by Japan in 2011.

6. Use of nuclear power sources in outer space

129. The Committee took note of the discussion of the Subcommittee under the agenda item on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 122-137).

130. The Committee endorsed the decisions and recommendations of the Subcommittee and the Working Group on the Use of Nuclear Power Sources in Outer Space, reconvened under the chairmanship of Sam A. Harbison (United Kingdom) (A/AC.105/958, para. 134 and annex II).

131. The Committee welcomed the endorsement by the Subcommittee at its forty-seventh session of a new multi-year workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space. The Committee noted that the workplan for the period 2010-2015 was aimed at promoting and facilitating the implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space[5] by providing information pertinent to challenges faced by member States and international intergovernmental organizations, in particular those considering or initiating involvement in applications of nuclear power sources in outer space. It was also aimed at identifying technical topics for and establishing the objectives, scope and attributes of any potential additional work by the Working Group to further enhance safety in the development and use of nuclear power source applications in space.

132. Some delegations were of the view that the Safety Framework represented a significant advance in the development of safe nuclear power source applications and that its implementation by Member States and international intergovernmental organizations would provide assurance to the global public that nuclear power source applications would be launched and used in a safe manner.

133. The view was expressed that a closer link should be established between the Scientific and Technical Subcommittee and the Legal Subcommittee with the aim of promoting international norms relevant to matters being considered by the Scientific and Technical Subcommittee under this item, as well as to matters related to space debris.

134. Some delegations expressed 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 the regulatory process associated with the use of

[5] A/AC.105/934.

nuclear power sources in outer space and that the matter concerned all humanity. Those delegations were 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, not detrimental, to humanity.

135. Some delegations were of the view that the use of nuclear power sources in outer space should be as limited as possible and that comprehensive and transparent information on measures taken to ensure safety should be provided to other States. Those delegations were of the view that no justification existed for the use of nuclear power sources in terrestrial orbits, for which other sources of energy were available that were much safer and had been proved to be efficient.

7. Near-Earth objects

136. The Committee took note of the discussion of the Subcommittee under the agenda item on near-Earth objects, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 138-152 and annex III).

137. The Committee endorsed the recommendations of the Subcommittee and its Working Group on Near-Earth Objects, which was convened under the chairmanship of Sergio Camacho (Mexico) (A/AC.105/958, para. 152 and annex III).

138. The Committee noted with satisfaction that ASE and SWF, with support from the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC), had organized a workshop in Mexico City on the establishment of an information, analysis and warning network. The Committee also noted with satisfaction that, with support from ASE and SWF, the University of Nebraska-Lincoln (United States) had prepared a report entitled “Legal aspects of NEO threat response and related institutional issues” in order to assist the intersessional work of the Action Team on Near-Earth Objects and the Working Group on Near-Earth Objects of the Scientific and Technical Subcommittee.

139. The Committee noted that, on the margins of its fifty-third session, the Action Team on Near-Earth Objects had held three meetings to consider, among other things, the executive summaries from the workshop referred to in paragraph 138 above.

140. The Committee noted with satisfaction that the Romanian Space Agency would co-organize the IAA Planetary Defence Conference, to be held in Romania in May 2011.

141. The view was expressed that international projects undertaken by Member States to detect and characterize near-Earth objects, such as the Large Millimeter Telescope, could be usefully employed in future international cooperative endeavours to protect the planet from the impact threat of near-Earth objects.

142. The view was expressed that international cooperation was essential for addressing the issues of observing near-Earth objects on a regular basis, data- and information-sharing, and capacity-building for developing countries.

8. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union

143. The Committee took note of the discussion of the Subcommittee under the agenda item on the examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 153-161).

144. Some delegations expressed the view that the geostationary orbit was a limited natural resource and that it was at risk of becoming saturated. Those delegations were of the view that the exploitation of the geostationary orbit should, with the participation and cooperation of ITU, be rationalized and made available to all States, irrespective of their current technical capabilities, thus giving them the opportunity to have access to the geostationary orbit under equitable conditions, taking into account in particular the needs of developing countries and the geographical position of certain countries. Those delegations considered that the item on the geostationary orbit should remain on the agenda of the Subcommittee for further discussion, with the purpose of continuing to analyse its scientific and technical characteristics.

145. Some delegations were of the view that the geostationary orbit provided unique potential for social programmes, educational projects and medical assistance. In that regard, those delegations were of the view that the geostationary orbit should be made available taking into account the pertinent ITU regulations, the relevant norms and decisions of the United Nations and in particular annex III to the report of the Legal Subcommittee on its thirty-ninth session (A/AC.105/738).

9. International Space Weather Initiative

146. The Committee took note of the discussion of the Subcommittee under the agenda item on the International Space Weather Initiative, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 162-173).

147. The Committee noted that the International Space Weather Initiative would contribute to the observation of space weather through the deployment of instrument arrays and the sharing of observed data among researchers around the world.

148. The Committee welcomed the fact that participation in the International Space Weather Initiative was open to scientists from all countries, as instrument hosts or instrument providers.

149. The Committee noted that the International Space Weather Initiative offered Member States the opportunity to coordinate the global monitoring of space weather using space- and ground-based assets, assist in consolidating common knowledge and develop essential forecast capabilities to improve the safety of space-based assets.

10. Long-term sustainability of outer space activities

150. The Committee took note of the discussion of the Subcommittee under the agenda item on the long-term sustainability of outer space activities, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 174-203).

151. The Committee endorsed the recommendations of the Scientific and Technical Subcommittee on this item (A/AC.105/958, paras. 179-180 and 184).

152. The Committee welcomed the establishment by the Scientific and Technical Subcommittee of the Working Group on the Long-term Sustainability of Outer Space Activities under the chairmanship of Peter Martinez (South Africa) and endorsed the recommendation of the Subcommittee that the Working Group be allowed to meet during the current session of the Committee to further develop its terms of reference and methods of work.

153. The Committee noted with appreciation that a proposal for the terms of reference and methods of work of the Working Group, as contained in document A/AC.105/L.277, had been submitted by the Chair of the Working Group for consideration by the Working Group.

154. At the 620th meeting, the Chairman of the Working Group informed the Committee about the results of the meeting held by the Working Group at the current session of the Committee.

155. The Committee noted that the proposal for the terms of reference and methods of work of the Working Group would be revised to incorporate, to the extent possible, the comments received from member States during the discussions of the Working Group and would be distributed as a revision to document A/AC.105/L.277.

156. The Committee agreed to invite member States to submit their views and comments on the forthcoming revision to A/AC.105/L.277, with specific emphasis on terms of reference, thematic areas, methods of work and workplan.

157. The Committee agreed to invite member States and the permanent observers of the Committee and the entities referred to in the report of the Scientific and Technical Subcommittee (A/AC.105/958, para. 184) to present information on their activities pertaining to the long-term sustainability of outer space activities, for consideration by the Working Group at the forty-eighth session of the Subcommittee.

158. The Committee agreed to invite member States to nominate their points of contact to facilitate further intersessional progress towards developing the terms of reference and methods of work of the Working Group in preparation for the forty-eighth session of the Scientific and Technical Subcommittee.

159. The view was expressed that actions were necessary to prevent a degradation of the space environment, to extend the benefits of space to all, in particular to developing countries, and to maintain access to space for future generations.

160. The view was expressed that although the preservation of space assets, particularly communication and Earth observation satellites, was critical for social and economic development, there was at present no international space traffic management, nor any mechanism for sharing space awareness information among

all States, and it was essential for member States to actively contribute to the work under this item.

161. The view was expressed that issues relating to ensuring the safety and security of all space activities were among the priorities to be addressed under this agenda item, particularly in view of the collisions and near-collisions of objects in outer space in recent years.

162. The view was expressed that it was impossible to ensure the safety and sustainability of activities in outer space without having security in outer space and that it was important to have a constructive engagement within the Conference on Disarmament on space security.

163. Some delegations were of the view that the work on the long-term sustainability of outer space activities should not be limited to the safety and security interests of States with advanced space activities, but should also focus on ensuring equitable and rational access to outer space, which was a limited resource and at risk of saturation.

164. The view was expressed that the consideration of the long-term sustainability of outer space activities should not be used as a pretext for States that had been able to develop their space capabilities without controls, resulting in the challenges faced today, to restrict or impose controls on other States wishing to exercise their legitimate right to use the same technology for their national benefit.

165. The view was expressed that the consideration of the long-term sustainability of outer space activities should not be used as a means to promote commercial activities in outer space to the detriment of the interests of States and that it was necessary to take into account international law, the Charter of the United Nations and treaties on outer space in the consideration of this item.

166. The view was expressed that a joint working group should be established in cooperation with ITU to address matters relating to the achievement of consensus on the sustainable use of outer space.

167. The view was expressed that collision avoidance should be the emphasis of the best-practice guidelines to be developed under this item and that pre-launch, pre-manoeuvre and re-entry notifications, a registry of operators, common standards, best practices and guidelines and, eventually, the establishment of national regulatory regimes should be addressed.

168. The view was expressed that decisions related to this agenda item were under the exclusive responsibility of States members of the Committee.

11. Draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee

169. The Committee took note of the discussion of the Subcommittee on the agenda item on the draft provisional agenda for the forty-eighth session of the Scientific and Technical Subcommittee, as reflected in the report of the Subcommittee (A/AC.105/958, paras. 204-206 and annex I, sect. V).

170. On the basis of the deliberations of the Scientific and Technical Subcommittee at its forty-seventh session, the Committee agreed that the following substantive items should be considered by the Subcommittee at its forty-eighth session:

1. General exchange of views and introduction of reports submitted on national activities.

2. United Nations Programme on Space Applications.

3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).

4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.

5. Space debris.

6. Space-system-based disaster management support.

7. Recent developments in global navigation satellite systems.

8. Items to be considered under workplans:

   (a) Use of nuclear power sources in outer space;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 8 of annex II to the report of the Scientific and Technical Subcommittee on its forty-seventh session (A/AC.105/958))

   (b) Near-Earth objects;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 11 of annex III to the report of the Scientific and Technical Subcommittee on its forty-fifth session (A/AC.105/911))

   (c) International Space Weather Initiative;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 16 of annex I to the report of the Scientific and Technical Subcommittee on its forty-sixth session (A/AC.105/933))

   (d) Long-term sustainability of outer space activities;

   (Work for 2011 as reflected in the multi-year workplan in paragraph 161 of the report of the Committee on the Peaceful Uses of Outer Space on its fifty-second session.)[6]

9. Single issue/item for discussion: Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing

[6] *Official Records of the General Assembly, Sixty-fourth Session*, *Supplement No. 20* (A/64/20), para. 161.

countries, without prejudice to the role of the International Telecommunication Union.

10. Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year workplans.

171. The Committee endorsed the recommendation that the Working Group of the Whole, the Working Group on the Use of Nuclear Power Sources in Outer Space, the Working Group on Near-Earth Objects and the Working Group on the Long-term Sustainability of Outer Space should be reconvened at the forty-eighth session of the Scientific and Technical Subcommittee.

172. The Committee agreed that two hours of each session of the Subcommittee from 2011 to 2013 should be available for holding workshops under the workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space on the item "Use of nuclear power sources in outer space" (A/AC.105/958, annex II, paras. 8 and 10).

173. The Committee welcomed the agreement of the Subcommittee that the topic for the symposium to be organized in 2011 by the Committee on Space Research should be "Planetary protection" (A/AC.105/958, annex I, para. 15).

D. Report of the Legal Subcommittee on its forty-ninth session

174. The Committee took note with appreciation of the report of the Legal Subcommittee on its forty-ninth session (A/AC.105/942), which contained the results of its deliberations on the items considered by the Subcommittee in accordance with General Assembly resolution 64/86.

175. The Committee expressed its appreciation to Ahmad Talebzadeh (Islamic Republic of Iran) for his able leadership during the forty-ninth session of the Subcommittee.

176. The representatives of Austria, Canada, China, the Czech Republic, Japan, Indonesia, Italy, the Russian Federation, Saudi Arabia, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to this item were also made by representatives of other member States and by the observer for Costa Rica on behalf of the Group of Latin American and Caribbean States.

1. Status and application of the five United Nations treaties on outer space

177. The Committee took note of the discussion of the Subcommittee under its agenda item on the status and application of the five United Nations treaties on outer space, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 27-41).

178. The Committee endorsed the decisions and recommendations of the Subcommittee and its Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, which had been reconvened under the chairmanship of Jean François Mayence (Belgium) (A/AC.105/942, paras. 28, 31 and 40 and annex I, paras. 5-8).

179. Some delegations were of the view that the United Nations treaties on outer space represented a solid legal structure that was crucial for supporting the increasing scale of space activities and for strengthening international cooperation in the peaceful uses of outer space. Those delegations welcomed further adherence to the treaties and hoped that those States that had not yet ratified or acceded to the treaties would consider becoming parties to them.

180. Some delegations were of the view that the Committee should review, update and modify the five treaties for the purpose of strengthening the guiding principles of outer space activities, in particular those principles that guarantee its peaceful use, strengthen international cooperation and make space technology available to humanity.

181. Some delegations expressed the view that a comprehensive legal instrument on space could be negotiated and concluded without prejudice to the existing legal framework for space activities.

182. The view was expressed that negotiating a new, comprehensive convention on outer space would be counterproductive and could undermine the existing international legal regime governing outer space activities, particularly the principles contained in articles I and II of the Outer Space Treaty.

183. The view was expressed that the involvement of new spacefaring nations in outer space activities and the expansion of outer space activities made it necessary to have universal adherence to the United Nations treaties on outer space in order to preserve, advance and guarantee the exploration and use of outer space for peaceful purposes.

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

184. The Committee took note of the discussion of the Subcommittee under the item on information on the activities of international intergovernmental and non-governmental organizations relating to space law, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 42-54).

185. The Committee noted the important role of international intergovernmental and non-governmental organizations and their contribution to its endeavours to promote the development of space law.

186. The Committee noted the role played by intergovernmental organizations in providing platforms for strengthening the legal framework applicable to space activities and invited the organizations to consider taking steps to encourage their members to adhere to the outer space treaties.

3. 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

187. The Committee took note of the discussion of the Subcommittee under the agenda item on 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 ITU, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 55-75).

188. The Committee endorsed the recommendations of the Subcommittee and its Working Group on the Definition and Delimitation of Outer Space, reconvened under the chairmanship of José Monserrat Filho (Brazil) (A/AC.105/942, para. 57 and annex II, para. 11).

189. 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.

190. Some delegations were of the view that the 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 this subject.

191. The view was expressed that it was important to establish legal criteria for the definition and delimitation of outer space. The delegation expressing that view drew the attention of the Committee to the proposals made by the Union of Soviet Socialist Republics at the twenty-second and twenty-sixth sessions of the Legal Subcommittee, in 1983 and 1987, regarding the establishment of a border between airspace and outer space at an altitude of 110 km and the right of passage of space objects through the airspace of other States in order to have access to and exit from the near-Earth orbit.

192. Some delegations were of the view that use of the geostationary orbit, which was a limited natural resource, not only should be rational but should be made available to all States, irrespective of their current technical capacities. That would allow States to have 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 ITU and relevant norms and decisions of the United Nations. Those delegations expressed their satisfaction with the agreement reached by the Subcommittee at its thirty-ninth session (see A/AC.105/738, annex III) to the effect that coordination among countries aimed at the utilization of the geostationary orbit should be carried out in a rational and equitable manner and in conformity with the ITU Radio Regulations.

193. Some delegations were of the view that the geostationary orbit, as a limited natural resource clearly in danger of saturation, must be used rationally, efficiently, economically and equitably. That principle was deemed fundamental to safeguarding the interests of developing countries and countries with certain geographical positions, as set out in article 44, paragraph 196.2, of the Constitution of ITU, as amended by the Plenipotentiary Conference held in Minneapolis, United States, in 1998.

194. Some delegations were of the view that access to the geostationary orbit, as a limited natural resource that had sui generis characteristics and that was at risk of saturation, should be guaranteed for all States, taking into account in particular the

needs and interests of developing countries and the geographical position of certain countries.

195. Some delegations were of the view that the principle of "first come, first served" was unacceptable with regard to the utilization of orbital positions and that it discriminated against States that wished to enjoy the benefits of space technology and did not yet have the necessary capabilities.

196. Some delegations were of the view that the geostationary orbit could not be appropriated by States or by international intergovernmental and non-governmental organizations.

197. The view was expressed that the discussion of the geostationary orbit by the Legal Subcommittee should be aimed at finding ways to ensure its utilization for the benefit of all States. The delegation that expressed that view considered that the Committee and the Subcommittee should cooperate and coordinate their work with other related international organizations to ensure equitable access to the geostationary orbit for all States.

4. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space

198. The Committee took note of the discussion of the Subcommittee under the agenda item on the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space,[7] as reflected in the report of the Subcommittee (A/AC.105/942, paras. 76-88).

199. The Committee endorsed the recommendation of the Subcommittee on this item (A/AC.105/942, para. 87).

200. Some delegations expressed the view that close communication should be maintained among the Scientific and Technical Subcommittee, the Legal Subcommittee and other relevant bodies of the United Nations system with the aim of promoting the development of binding international standards that address the use of nuclear power sources in outer space.

201. The view was expressed that the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, as well as the elaboration of a new binding instrument on the use of nuclear power sources in outer space, were not warranted.

202. The view was expressed that the Committee, through its Legal Subcommittee, should undertake a review of the Safety Framework for Nuclear Power Source Applications in Outer Space and 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. The delegation that expressed that view considered that any activities arising as a result of the new workplan for the period 2010-2015 of the Working Group on the use of Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee should be approved by the Legal Subcommittee.

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[7] General Assembly resolution 47/68.

203. The view was expressed that recommendations from the Safety Framework might be considered in further detail for possible implementation in the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, if and when the Principles were reviewed and revised.

5. 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

204. The Committee took note of the discussion of the Subcommittee under the item on the 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 reflected in the report of the Subcommittee (A/AC.105/942, paras. 89-106).

205. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/942, paras. 104 and 105).

206. The Committee noted that the third session of the committee of governmental experts of the International Institute for the Unification of Private Law (Unidroit) had been held in Rome from 7 to 11 December 2009 as a result of the progress made by the steering committee, and that its fourth session had been held in Rome from 3 to 7 May 2010.

207. The view was expressed that input from all major stakeholders, including Governments and the commercial and financial sectors of the space community, should be carefully considered and reflected in the revision of the draft protocol.

6. Capacity-building in space law

208. The Committee took note of the discussion of the Subcommittee under the item on capacity-building in space law, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 107-126).

209. The Committee endorsed the recommendations of the Subcommittee on the agenda item (A/AC.105/942, paras. 117 and 123).

210. The Committee agreed that research, training and education in space law were of paramount importance to national, regional and international efforts to further develop space activities and to increase knowledge of the legal framework within which space activities were carried out.

211. The Committee noted with appreciation that the Government of Thailand and the Geo-Informatics and Space Technology Development Agency of Thailand, together with the Office for Outer Space Affairs, planned to hold the seventh United Nations workshop on space law in Bangkok from 16 to 19 November 2010. The Committee further noted with appreciation that ESA was a co-sponsor of the workshop.

212. The Committee noted that the exchange of views on national and international efforts to promote a wider appreciation of space law and endeavours such as the annual workshops on space law and the development of the curriculum on space law were playing a vital role in building capacity in this area.

213. The view was expressed that the arrangements for the establishment of a regional centre for space science and technology education in Arabic, affiliated to the United Nations, should be made in close cooperation with the Office for Outer Space Affairs.

7. General exchange of information on national mechanisms relating to space debris mitigation measures

214. The Committee took note of the discussion of the Subcommittee under the item on national mechanisms relating to space debris mitigation measures, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 127-148).

215. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/942, para. 147).

216. The Committee 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.

217. The view was expressed that this item provided member States and permanent observers with the opportunity to exchange information on steps taken by States to control the creation and effects of space debris and served as a helpful vehicle to continue the important work of the Committee in the area of space debris mitigation.

218. The view was expressed that space debris posed a serious threat to countries located along the equator.

219. Some delegations were of the view that the Space Debris Mitigation Guidelines of the Committee should be further developed and that the Scientific and Technical Subcommittee and the Legal Subcommittee should cooperate with the aim of developing legally binding rules relating to space debris.

220. The view was expressed that the development of a special convention on space debris, including nuclear power sources, was not warranted.

221. Some delegations were of the view that the Subcommittee should include on its agenda an item to review the legal aspects of the Space Debris Mitigation Guidelines of the Committee with a view to the Subcommittee's transforming them into a set of principles on space debris to be adopted by the General Assembly. Those delegations also considered that the adoption of such principles would enrich the current body of law governing outer space.

222. The view was expressed that the Space Debris Mitigation Guidelines of the Committee required legal review and analysis.

223. The view was expressed that since the adoption of the United Nations treaties on outer space, many space-related issues had emerged that were not envisaged in the treaties. The delegation expressing that view considered that in order to meet the challenges of this changing situation, such as space debris mitigation, the Legal Subcommittee should explore the possibility of developing appropriate new rules, including soft laws.

8. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space

224. The Committee took note of the discussion of the Subcommittee under the item on national legislation relevant to the peaceful exploration and use of outer space, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 149-159).

225. The Committee endorsed the recommendations of the Subcommittee and its Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space, reconvened under the chairmanship of Irmgard Marboe (Austria) (A/AC.105/942, para. 150 and annex III, paras. 19-22).

226. The Committee noted with satisfaction that the discussions of the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space had allowed States to gain an understanding of existing national regulatory frameworks and that the work being conducted under this item was already yielding concrete results, including the sharing of valuable experience of States in the development of their national legislation.

9. Draft provisional agenda for the fiftieth session of the Legal Subcommittee

227. The Committee took note of the discussion of the Subcommittee under the agenda item on the draft provisional agenda for the fiftieth session of the Legal Subcommittee, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 160-172).

228. On the basis of the deliberations of the Legal Subcommittee at its forty-ninth session, the Committee agreed that the following substantive items should be considered by the Subcommittee at its fiftieth session:

Regular items

1. General exchange of views.
2. Status and application of the five United Nations treaties on outer space.
3. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
4. 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

5. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
6. 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.

7. Capacity-building in space law.

8. General exchange of information on national mechanisms relating to space debris mitigation measures.

Items considered under workplans

9. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.

(Work for 2011: as reflected in paragraph 136 of the report of the Legal Subcommittee on its forty-sixth session (A/AC.105/891).)

New items

10. 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.

229. The Committee agreed that the Legal Subcommittee should, at its fiftieth session, reconvene 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.

230. The Committee agreed that the Subcommittee should review, at its fiftieth session, the need to extend the mandate of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space beyond that session of the Subcommittee.

231. The Committee agreed that the International Institute of Space Law and the European Centre for Space Law should be invited to organize a symposium on space law at the fiftieth session of the Subcommittee.

232. The view was expressed that an item on reviewing the Space Debris Mitigation Guidelines of the Committee with a view to transforming them into a set of principles should be included on the agenda of the Legal Subcommittee.

E. Spin-off benefits of space technology: review of current status

233. The Committee considered the agenda item entitled “Spin-off benefits of space technology: review of current status”, in accordance with General Assembly resolution 64/86.

234. The representatives of China, Germany, India, Japan and the United States made statements under the item.

235. The Committee heard the following presentations:

(a) “JAXA industrial collaboration”, by the representative of Japan;

(b) “NASA technologies: for the benefit of all mankind”, by the representative of the United States;

(c) “Fifth Space Conference of the Americas: regional space cooperation for security and human development; perspective for the future”, by the representative of Ecuador.

236. The publication *Spinoff 2009*, submitted by the National Aeronautics and Space Administration of the United States, was made available to the Committee.

237. The Committee took note of the information provided by States on their national practices regarding spin-offs of space technology that had resulted in the introduction of useful innovations in various scientific and practical areas of civil society, such as medicine, biology, chemistry, astronomy, agriculture, aviation, land transport, firefighting, protection of nature and energy.

238. The Committee agreed that spin-offs of space technology constituted a powerful engine for technological innovation and growth in both the industrial and service sectors and could be beneficially applied to achieve social and humanitarian objectives and the development of national communications infrastructure, and in projects aimed at achieving the goal of sustainable development.

239. The Committee agreed that spin-offs of space technology should be promoted because they fostered innovative technologies, thus advancing economies and contributing to the improvement of the quality of life.

240. The Committee noted that Governments of Member States had successfully involved the private sector and academia in various projects in the area of spin-offs of space technology.

241. The Committee agreed to continue its consideration of the item at its fifty-fourth session, in 2011.

F. Space and society

242. The Committee considered the agenda item entitled “Space and society”, in accordance with General Assembly resolution 64/86. The Committee focused its discussions on the theme “Space and education”.

243. The representatives of Canada, China, Colombia, India, Japan, the Libyan Arab Jamahiriya, Nigeria, the Syrian Arab Republic, the United States and Venezuela (Bolivarian Republic of) made statements under the item. Representatives of other member States also made statements relating to this item during the general exchange of views. The observer for UNESCO also made a statement.

244. The Committee heard the following presentations:

(a) “Italian Master in space policy and institutions”, by the representative of Italy;

(b) “Bringing space to Canadian classrooms”, by the representative of Canada;

(c) “Building peace in young minds through space education: contributions of JAXA Space Education Centre to human development”, by the representative of Japan;

(d) “Fifty years of operational environmental satellites: the US experience”, by the representative of the United States;

(e) “Space education: international outreach activities of India”, by the representative of India;

(f) “International Year of Astronomy 2009: achievements, legacy and way forward”, by the observer for UNESCO;

(g) “The Space Generation Congress 2009: perspectives from university students and young professionals in the space sector”, by the observer for SGAC.

245. The Committee noted the information provided by States on their actions and programmes aimed at attracting young people to the field of space by making them aware of the importance and significance of space science, technology and applications.

246. The Committee agreed that it was important for States to ensure that space-related educational programmes remained relevant to youth and that States should collaborate closely in this area so that youth would benefit from understanding the interconnectivity among States and the present and future challenges facing humankind.

247. The Committee noted the beneficial uses of space applications for society and their increasing use by developing countries as tools to achieve development goals in such areas as telemedicine, eradication of illicit crops and land planning.

248. The Committee noted the important role of space education in inspiring students to pursue careers in science, technology, engineering and mathematics, in strengthening national capabilities in science and industry and in enhancing educational opportunities through the use of distance-learning technologies such as tele-education and e-learning.

249. The Committee noted with satisfaction that, at the global level, a large number of outreach activities and programmes for children, young people and the general public were being established by national space and educational organizations and international organizations to promote awareness of the benefits of space science and technology and to encourage children to consider careers in mathematics and science.

250. The Committee noted that World Space Week, observed from 4 to 10 October each year pursuant to General Assembly resolution 54/68, contributed to the development of education and provided an important opportunity to sensitize youth and the general public to the benefits of space science and technology. The Committee recognized the valuable contributions made by member States, the World Space Week Association and other organizations for the observance of World Space Week.

251. The Committee noted that the General Assembly, in its resolution 62/200, had declared 2009 International Year of Astronomy and that a number of States used the Year to highlight the importance of space science and technology and to strengthen international cooperation in space education. A number of successful initiatives were reported, such as dedicated national websites, software programs, special issues of scientific magazines, television broadcasts, stamps, poster contests and

several coordinated initiatives among partners from government, academia and civil society.

252. The Committee noted the activities carried out at the regional level for capacity-building through education and training in space science and technology applications for sustainable development.

253. The Committee noted with appreciation the role of regional centres for space science and technology education, affiliated to the United Nations, in space-related education.

254. The Committee noted the role played by the International Space Station in education and in reaching out to education communities worldwide.

255. The view was expressed that the Committee and its subsidiary bodies continued to play a substantial role in providing a global framework for the systematic exchange of experience and information, as well as in the coordination of capacity-building efforts, as reflected in the Plan of Action of the Committee endorsed by the General Assembly in its resolution 59/2.

256. The view was expressed that, while the exchange of information and experiences on a variety of initiatives relating to space education had been important and should continue, it could also be useful to focus the efforts of the Committee on a few specific priority areas that could have a greater impact on the enhancement of space education, such as sharing challenges that States encountered in expanding and promoting space education activities.

257. The Committee agreed that, as recommended by the Working Group of the Whole at the forty-seventh session of the Scientific and Technical Subcommittee (A/AC.105/958, para. 55 and annex I, para. 9) the issue of promoting the greater participation of young people in space science and technology would be considered by the Committee under the item “Space and society”.

258. The Committee agreed that, in view of the importance of the theme “Space and education”, it would continue to consider the special theme at its fifty-fourth session, in 2011.

G. Space and water

259. The Committee considered the agenda item entitled “Space and water”, in accordance with General Assembly resolution 64/86.

260. The representatives of China, Germany, India, Japan and the Syrian Arab Republic made statements under the item. Representatives of other member States also made statements relating to this item during the general exchange of views.

261. In the course of the discussions, delegations reviewed national and cooperative water-related activities, giving examples of national programmes and bilateral, regional and international cooperation.

262. The Committee noted that many States were confounded by the broad spectrum of serious water-related issues — ranging from lack of water, and the resulting impact on populations and food production, to overabundance of water,

causing floods and destruction — which constituted a significant threat to the sustainable development of human societies.

263. The Committee noted that space-derived data were used extensively in water management and that space technology and applications played an active role in addressing most water-related issues.

264. The Committee noted that space technology and its applications had growing potential to provide useful information for scientific research on water-related issues and to support water management and policy- and decision-making with a view to efficient and sustainable use of water resources.

265. The Committee further noted that space technology could be used in combination with non-space technologies to contribute to the observation of global water cycles and the monitoring and mitigation of the effects of flood, drought and earthquake disasters, and to improve the timeliness and accuracy of forecasts.

266. The Committee agreed to continue its consideration of the item at its fifty-fourth session, in 2011.

H. Space and climate change

267. The Committee considered the agenda item entitled “Space and climate change”, in accordance with General Assembly resolution 64/86.

268. The representatives of Brazil, India, Japan, Malaysia, Mexico, Saudi Arabia and the United States made statements under this item. The representatives of France and Germany made a joint statement. Representatives of other member States also made statements relating to this item during the general exchange of views.

269. The Committee heard the following presentations under this item:

(a) “The application of satellite remote sensing on climate change and food security in Indonesia”, by the representative of Indonesia;

(b) “Mission objectives and current status of GOSAT (IBUKI)”, by the representative of Japan.

270. The Committee noted that the adverse effects of climate change constituted a threat to all humanity and were manifested in a variety of phenomena, such as unusual weather, including droughts in some regions and floods in others; unusual dust storms in the Arabian region; glacial retreat in the Himalayas; and changes in the polar ice sheets.

271. The Committee noted that, because of the global nature of climate change, global observations were required to monitor it more precisely, and that space-based observations, complemented with ground-based observations, were well suited to monitor the different manifestations of climate change and the factors contributing to it.

272. The Committee noted the efforts conducted in various countries regarding the deployment of satellites carrying a variety of instruments to measure some essential climate variables and to monitor different processes related to climate change, such

as emissions of greenhouse gases and aerosols, atmospheric dynamics, deforestation emissions and land degradation.

273. The Committee noted international efforts conducted under the auspices of the United Nations system (in particular, the United Nations Framework Convention on Climate Change and the World Meteorological Organization (WMO)), as well as other international initiatives targeting climate change, such as those of the Committee on Earth Observation Satellites, the Group on Earth Observations, the Global Earth Observation System of Systems, GMES and the Intergovernmental Panel on Climate Change.

274. Some delegations were of the view that the Committee should play a more proactive role in advocating international cooperation in the deployment and use of satellites to observe the effects of climate change, including in terms of disasters.

I. Use of space technology in the United Nations system

275. The Committee continued its consideration of the agenda item entitled "Use of space technology in the United Nations system", in accordance with General Assembly resolution 64/86.

276. The representatives of Colombia, Germany and the United Arab Emirates made statements under the item. Representatives of other member States also made statements relating to this item during the general exchange of views. The observer for ITU made a statement, in his capacity as Chair of the United Nations Inter-Agency Meeting on Outer Space Activities at its thirtieth session, to inform the Committee about the results of that meeting.

277. The Committee had before it the report of the Inter-Agency Meeting on Outer Space Activities on its thirtieth session (A/AC.105/960), which had been held in Geneva from 10 to 12 March 2010, and the report of the Secretary-General on the coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2010-2011 (A/AC.105/961).

278. The Committee noted with appreciation the measures and decisions taken by the Inter-Agency Meeting to further strengthen its role as a central mechanism of the United Nations for the coordination of space-related activities, namely:

(a) The reorientation of the report of the Secretary-General to allow for a stronger emphasis on the United Nations development agenda and a contribution to the work of the Commission on Sustainable Development;

(b) The agreement on the preparation of biennial special reports on selected thematic areas;

(c) The agreement to hold the annual sessions of the Inter-Agency Meeting in Geneva to facilitate greater participation of United Nations entities and programmes.

279. The Committee noted with appreciation that the special report for 2011, to be prepared by WMO in cooperation with the Office for Outer Space Affairs and the United Nations Framework Convention on Climate Change secretariat, would

address climate change and the use of space technology in the United Nations system.

280. The Committee noted that the seventh open informal session for States members and observers of the Committee, on the theme "Space technology for emergency communications" had been held immediately following the thirtieth session of the Inter-Agency Meeting, on 12 March 2010.

281. The Committee noted with satisfaction that the Secretariat continued to maintain a website on the coordination of outer space activities within the United Nations system (www.uncosa.unvienna.org). The presentations made at the thirtieth session of the Inter-Agency Meeting and the subsequent open informal session, as well as other information on the current space-related activities of United Nations entities, are available on that website.

282. The Committee noted that the Office for Outer Space Affairs, as secretariat of the Inter-Agency Meeting, was coordinating with the Office of the United Nations High Commissioner for Refugees (UNHCR) for the hosting of its thirty-first session, in Geneva in 2011, and that the open informal session, open to all members and permanent observers of the Committee, would be held in the afternoon of the last day of the session. The theme would be selected in consultation with UNHCR and other participating United Nations entities.

283. Some delegations welcomed the working paper by the Chair of the Committee for the period 2008-2009 entitled "Towards a United Nations space policy" (A/AC.105/L.278) and noted that the paper proposed a holistic approach for enhancing coordination between member States and the United Nations in applying space science and technology to meet the challenges to development of all countries.

284. Some delegations expressed the view that the working paper deserved further discussion with a view to developing and elaborating on the issues addressed therein.

J. International cooperation in promoting the use of space-derived geospatial data for sustainable development

285. The Committee considered the agenda item entitled "International cooperation in promoting the use of space-derived geospatial data for sustainable development", in accordance with General Assembly resolution 64/86.

286. The representatives of Belgium, Brazil, China, Germany, India, Indonesia, Malaysia, the United Kingdom and the United States made statements under the item. Other member States made statements related to this item during the general exchange of views.

287. The Committee heard the following technical presentations under the item:

(a) "OCEANSAT-2: meeting global demand", by the representative of India;

(b) "Geo-wiki.org: how community remote sensing can help to improve global land cover", by the representative of Austria;

(c) “Utilizing space geospatial data for complex diagnosis of earthquake precursors”, by the representative of the Russian Federation;

(d) “International Global Monitoring Aerospace System: new approach to the disaster management issue”, by the representative of the Russian Federation.

288. In the course of the discussion, delegations reviewed national and cooperative activities in promoting the use of space-derived geospatial data for sustainable development, providing examples of national programmes and bilateral, regional and international cooperation.

289. The Committee noted the importance of remote-sensing applications and spatial data infrastructures for decisions in the areas of socio-economic and environmental management, which relied heavily on the availability of accurate data on natural resources and other geospatial data.

290. The Committee noted that a number of organizations and initiatives at the regional and global levels, such as the Committee on Earth Observation Satellites, the European Umbrella Organisation for Geographic Information and the Group on Earth Observations, contributed to capacity-building and to the coordination and promotion of activities related to the use of space-derived geospatial data, as well as sharing data from current and future satellite systems and opening up access to previously unavailable data sets.

291. The Committee noted the increased availability of space-based data at little or no cost, including those provided by the China-Brazil Earth resources satellites, the Greenhouse Gases Observing Satellite of Japan and the United States Landsat image archive.

292. The Committee noted the activities being carried out by the United Nations Geographic Information Working Group, currently co-chaired by the Office for Outer Space Affairs and the Economic Commission for Africa, which was addressing common geospatial issues in the United Nations system and working towards implementation of the United Nations Spatial Data Infrastructure.

293. The view was expressed that because the Earth was a home shared by all humankind, it was a responsibility of States to promote the use of space-derived geospatial data for sustainable development through extensive international cooperation.

294. The view was expressed that transparency and clarity should be encouraged in mechanisms to guarantee that developing countries have access to geospatial data for the advancement of sustainable development.

295. The Committee noted that, in response to the agreement reached at its fifty-second session, the delegation of Brazil had held informal consultations with all interested members of the Committee to reach consensus on a set of recommendations on ways and means to foster international cooperation with a view to building up national infrastructures for the use of space-derived geospatial data. On the basis of those consultations, the Committee considered a draft report (A/AC.105/2010/CRP.16) and agreed that that text should constitute the final report

of the Committee on international cooperation in promoting the use of space derived geospatial data for sustainable development.[8]

K. Other matters

296. The Committee considered the agenda item entitled "Other matters", in accordance with General Assembly resolution 64/86.

297. The representatives of Algeria, Belgium, Bolivia (Plurinational State of), Canada, Chile, China, Colombia, Cuba, the Czech Republic, Ecuador, France, Germany, Iran (Islamic Republic of), Italy, the Libyan Arab Jamahiriya, Mexico, Nigeria, Pakistan, Saudi Arabia, Slovakia, Spain, the Sudan, Switzerland, the Syrian Arab Republic, the United Kingdom, the United States and Venezuela (Bolivarian Republic of) made statements under the item. The observer for Costa Rica also made a statement.

298. The observers for IAASS and the Association of Remote Sensing Centres in the Arab World also made statements under the item.

1. Proposed strategic framework for the programme on the peaceful uses of outer space for the period 2012-2013

299. The Committee had before it for its consideration the proposed strategic framework for the programme on the peaceful uses of outer space for the period 2012-2013 (A/65/6 (Prog. 5)). The Committee agreed on the proposed strategic framework.

2. Composition of the bureaux of the Committee and its subsidiary bodies for the period 2012-2013

300. In accordance with General Assembly resolution 64/86 and pursuant to the measures relating to the working methods of the Committee and its subsidiary bodies[9] as endorsed by the General Assembly in its resolution 52/56, the Committee considered the composition of the bureaux of the Committee and its subsidiary bodies for the period 2012-2013.

301. The Committee noted that the Group of Asian States had endorsed the candidature of Yasushi Horikawa (Japan) for the office of Chair of the Committee for the period 2012-2013 (A/AC.105/2010/CRP.9).

302. The Committee noted that the Group of Western European and Other States had endorsed the candidature of Filipe Duarte Santos (Portugal) for the office of First Vice-Chair of the Committee for the period 2012-2013 (A/AC.105/2010/CRP.10).

303. The Committee noted that the Group of Latin American and Caribbean States had endorsed the candidature of Félix Clementino Menicocci (Argentina) for the

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[8] To be issued as A/AC.105/973.

[9] *Official Records of the General Assembly, Fifty-second Session, Supplement No. 20* (A/52/20), annex I; see also *Official Records of the General Assembly, Fifty-eighth Session, Supplement No. 20* (A/58/20), annex II, appendix III.

office of Chair of the Scientific and Technical Subcommittee for the period 2012-2013 (A/AC.105/2010/CRP.14).

304. The Committee noted that the Group of Eastern European States and the Group of African States would nominate their candidates for the offices of Second Vice-Chair/Rapporteur of the Committee and Chair of the Legal Subcommittee, respectively, for the period 2012-2013 before the next meeting of the Committee.

3. Membership of the Committee

305. The Committee welcomed the application of Tunisia for membership of the Committee (see A/AC.105/2010/CRP.3).

306. The Committee decided to recommend to the General Assembly at its sixty-fifth session, in 2010, that Tunisia should become a member of the Committee.

4. Observer status

307. The Committee welcomed the additional information provided by IAASS in accordance with the request made by the Committee at its fifty-second session, in 2009.[10] The application of IAASS is contained in conference room papers A/AC.105/2009/CRP.8 and A/AC.105/2010/CRP.4 and Add.1.

308. The Committee decided to recommend that the General Assembly, at its sixty-fifth session, grant to IAASS the status of permanent observer of the Committee on the understanding that, in accordance with the agreement of the Committee at its thirty-third session concerning observer status for non-governmental organizations and in accordance with the practice established by the Committee, IAASS would apply for consultative status with the Economic and Social Council.

309. The Committee took note of the application of the Association of Remote Sensing Centres in the Arab World. The relevant correspondence was before the Committee in conference room paper A/AC.105/2010/CRP.5.

310. The Committee agreed to invite the Association of Remote Sensing Centres in the Arab World to participate in its fifty-fourth session, as well as in the sessions of the Subcommittees in 2011, with a view to the Association's provision of additional written information, and that a decision on its application would be made by the Committee at that session.

311. The Committee agreed that observer status would be granted to non-governmental organizations on a provisional basis, for a period of three years, pending information on the status of their application for consultative status with the Economic and Social Council. The Committee agreed that the provisional observer status could be extended for an additional year, if necessary. The Committee further agreed that it would grant permanent observer status to such non-governmental organizations upon confirmation of their consultative status with the Council.

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[10] Ibid., *Sixty-fourth Session, Supplement No. 20* (A/64/20), para. 312.

312. Some delegations expressed the view that the requirement for permanent observers to have consultative status with the Economic and Social Council should be suspended. Those delegations were also of the view that the Committee should be fully competent to independently assess applications from non-governmental organizations.

313. The Committee agreed that the Secretariat should contact the Committee on Non-Governmental Organizations of the Economic and Social Council to verify the application process and the duration of the procedure for granting consultative status with the Council.

5. Organizational matters

314. The Committee recalled that at its fifty-second session, in 2009, it had requested the members of its bureau and the bureaux of its subsidiary bodies to consider how to rationalize and optimize the use of the time of the Committee and its subsidiary bodies, taking into account the need strike a balance between technical presentations, which brought great value, and the substantive consideration of the issues before the Committee and its subsidiary bodies, which required adequate time.

315. The Committee requested the Secretariat, in close consultation with the members of the bureaux of the Committee and its subsidiary bodies, to implement measures to rationalize and optimize the use of time of the Committee and its Subcommittees, taking into account the need for maximum flexibility in organizing the work of their sessions in 2011, including the possibility of scheduling symposiums in the second week of a session.

316. To enable the Committee and its Subcommittees to commence their consideration of all the items on their agendas in a timely and balanced manner, the Committee agreed that the possibility of scheduling the item entitled “General exchange of views” over a longer period of time during their sessions should be explored. The Committee agreed that the Secretariat should coordinate with delegations on the rescheduling of statements under that item to a later meeting so as to allow sufficient time for other agenda items to be considered as planned.

317. The Committee agreed that the reports to be submitted by Member States on their national activities in outer space (see A/AC.105/958, para. 19) should comprise a summary of those activities and not exceed three pages.

318. The Committee recommended that open-ended informal consultations be held among interested member States in the margins of the sessions of the Committee and its Subcommittees in 2011, with a view to proposing further measures to rationalize and optimize the work of the Committee and its subsidiary bodies.

319. The Committee agreed to continue reviewing its organizational matters at its fifty-fourth session, in 2011.

320. The Committee requested the Secretariat to present to the Legal Subcommittee at its fiftieth session and the Committee at its fifty-fourth session, for their consideration, a detailed proposal to discontinue the use of unedited transcripts. The use of digital recordings should be assessed.

321. The Committee noted the following proposals for optimizing and rationalizing its work and that of the Subcommittees:

(a) Clustering of agenda items;

(b) Having open only one item at a time;

(c) Making better use of existing tools, such as the daily *Journal* and the indicative schedule of work;

(d) Uploading statements on the website of the Office for Outer Space Affairs in a timely manner and the introduction of webcasts;

(e) Limiting the number of interventions by delegations under each agenda item;

(f) Limiting the length of presentations of information on national activities and projects in statements;

(g) Beginning meetings promptly as scheduled;

(h) Reducing the length and quantity of technical presentations, and the establishment of selection criteria.

322. The Committee considered, upon the request of the States members of the Group of Latin American and Caribbean States, the possibility of introducing new procedural terminology in reports of the Committee and its subsidiary bodies when reflecting views of that regional group.

323. Some delegations were of the view that the reference to names of regional groups in connection with the summaries of views in reports of the Committee and its subsidiary bodies would support the principle of multilateralism and extend a similar practice adopted in other committees of the General Assembly and organizations of the United Nations system.

324. Some delegations were of the view that the present procedural terminology remained relevant and that it reflected clearly the spirit of consensus in the decision-making of the Committee and its subsidiary bodies. Those delegations were of the view that references to names of regional groups in connection with the summaries of views in reports could upset the balance in them by creating the impression that views expressed by a group prevailed over views expressed by individual States.

325. The Committee agreed to include the names of regional groups in the paragraphs listing the speakers under each agenda item in the reports of the Committee and its subsidiary bodies.

6. Commemoration of the fiftieth anniversary of the first session of the Committee and the fiftieth anniversary of human space flight

326. The Committee recalled its agreement at its fifty-second session, in 2009, to celebrate at its fifty-fourth session, scheduled to be held from 1 to 10 June 2011, the fiftieth anniversary of the first session of the Committee and the fiftieth anniversary of the first human space flight.

327. The Committee noted with appreciation that the Office for Outer Space Affairs had begun to make arrangements for special events and activities to be held

throughout 2011 in celebration of those milestones and that, together with the Chair of the Committee, it had conducted informal consultations with interested member States regarding the events to take place at the fifty-fourth session of the Committee.

328. The Committee noted with appreciation the proposal by the Chair regarding the fiftieth anniversary of the Committee and the fiftieth anniversary of human space flight, contained in conference room paper A/AC.105/2010/CRP.13.

329. The Committee agreed that the first day of its fifty-fourth session should be dedicated to the commemoration of the two anniversaries to enable representation at the highest level.

330. The Committee agreed that the commemorative events on 1 June 2011 would include a high-level segment, open to all Member States of the United Nations. Those events would have 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.

331. The Committee encouraged Member States to draw the attention of their ministers, heads of agencies and other dignitaries to the commemorative events with a view to securing their participation.

332. The Committee agreed that a joint statement or similar communiqué should be prepared to raise awareness of how international cooperation is accelerating progress in space science and technology and their application for achieving sustainable development. The Committee agreed that the first draft of the statement should be circulated before the forty-eighth session of the Scientific and Technical Subcommittee.

333. The Committee agreed that as from Thursday, 2 June 2011, the work of its session would follow the usual pattern.

334. The Committee agreed that an informal consultative group, composed of representatives of the permanent missions of interested States, would be set up to support the Chair in the preparations for the events and that interested representatives of the permanent missions should be invited to provide their names to the Office for Outer Space Affairs.

335. The Committee noted with satisfaction the preparations undertaken by the Office for Outer Space Affairs in consultation with interested member States to organize a special exhibition to commemorate the two anniversaries.

7. Future role and activities of the Committee

336. The Committee continued its consideration of the topic “Future role and activities of the Committee”, in accordance with the agreement reached at its fifty-second session.

337. The Committee noted with appreciation the working paper by the Chair of the Committee for the period 2008-2009 entitled “Towards a United Nations space policy” (A/AC.105/L.278) and agreed to include a new item entitled “Future role of the Committee” on the agenda for its fifty-fourth session, for one year only, to enable the Committee to consider that paper further.

8. Panel discussion during the sixty-fifth session of the General Assembly

338. The Committee agreed that the panel discussion to be held in the Fourth Committee of the General Assembly during its sixty-fifth session, when it considers the item "International cooperation in the peaceful uses of outer space", should be on the subject "Space and emergencies".

9. Draft provisional agenda for the fifty-fourth session of the Committee

339. The Committee recommended that the following substantive items be considered at its fifty-fourth session, in 2011:

1. General exchange of views.
2. Ways and means of maintaining outer space for peaceful purposes.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
4. Report of the Scientific and Technical Subcommittee on its forty-eighth session.
5. Report of the Legal Subcommittee on its fiftieth session.
6. Spin-off benefits of space technology: review of current status.
7. Space and society.
8. Space and water.
9. Space and climate change.
10. Use of space technology in the United Nations system.
11. Future role of the Committee.
12. Other matters.

L. Schedule of work of the Committee and its subsidiary bodies

340. The Committee agreed on the following tentative timetable for its session and those of its subcommittees in 2011:

	Date	*Location*
Scientific and Technical Subcommittee	7-18 February 2011	Vienna
Legal Subcommittee	28 March-8 April 2011	Vienna
Committee on the Peaceful Uses of Outer Space	1-10 June 2011	Vienna