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Report of the Scientific and Technical Subcommittee on its forty-eighth session, held in Vienna from 7 to 18 February 2011

I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its forty-eighth session at the United Nations Office at Vienna from 7 to 18 February 2011, 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, Burkina Faso, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, France, Germany, 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, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.

4. At its 738th meeting, on 7 February, the Subcommittee decided to invite, at their request, observers for Azerbaijan, Costa Rica, the Dominican Republic, Israel, Namibia, the United Arab Emirates and Zimbabwe to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to

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further requests of that nature and that doing so would not involve any decision of the Subcommittee concerning status.

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

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

7. The session was also attended by observers for the following non-governmental organizations with permanent observer status with the Committee: Association of Space Explorers, Committee on Space Research (COSPAR), European Space Policy Institute (ESPI), International Academy of Astronautics, International Association for the Advancement of Space Safety, International Astronautical Federation (IAF), International Astronomical Union (IAU), International Society for Photogrammetry and Remote Sensing (ISPRS), International Space University (ISU), Prince Sultan bin Abdulaziz International Prize for Water, Secure World Foundation (SWF) and Space Generation Advisory Council (SGAC).

8. At its 745th meeting, on 10 February, the Subcommittee decided to invite, at its request, the European Union, to send an observer to attend its forty-eighth session, 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 Subcommittee regarding status.

9. The session was attended by the observer for the Association of Remote Sensing Centres in the Arab World, in accordance with the invitation extended by the Committee at its fifty-third session for the Association to participate in the Committee's fifty-fourth session, as well as in the sessions of the Subcommittees in 2011.[1] The Subcommittee had before it A/AC.105/C.1/2011/CRP.18 and Add.1, containing the application of the Association for permanent observer status with the Committee.

10. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in A/AC.105/C.1/2011/INF/40.

B. Adoption of the agenda

11. At its 738th meeting, on 7 February, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.

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[1] See *Official Records of the General Assembly, Sixty-fifth Session, Supplement No. 20* (A/65/20), para. 310.

2. Statement by the Chair.

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

4. United Nations Programme on Space Applications.

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

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

7. Space debris.

8. Space-system-based disaster management support.

9. Recent developments in global navigation satellite systems.

10. Use of nuclear power sources in outer space.

11. Near-Earth objects.

12. International Space Weather Initiative.

13. Long-term sustainability of outer space activities.

14. 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.

15. Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee.

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

C. General statements

12. Statements were made by representatives of the following member States during the general exchange of views: Algeria, Argentina, Austria, Burkina Faso, Canada, China, Colombia, Cuba, Czech Republic, Ecuador, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kenya, Libyan Arab Jamahiriya, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, South Africa, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Ukraine, United Kingdom, United States and Venezuela (Bolivarian Republic of). Statements were also made by the representative of the Islamic Republic of Iran on behalf of the Group of 77 and China, and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States. A general statement was also made by the observer for Zimbabwe. The observers for ITU and WMO also made general statements. General statements were also made by the observers for APSCO, ESPI,

IAF, IAU, ISPRS, ISU, SGAC and SWF. A general statement was also made by the observer for the Association of Remote Sensing Centres in the Arab World.

13. The Subcommittee noted the statement by the representative of the Islamic Republic of Iran on behalf of the Group of 77 and China, in which he expressed views on remote sensing, space debris, space-system-based disaster management support, use of nuclear power sources in outer space, the International Space Weather Initiative, long-term sustainability of outer space activities and the geostationary orbit.

14. The Subcommittee welcomed Tunisia as the seventieth member of the Committee.

15. The Subcommittee welcomed the International Association for the Advancement of Space Safety as the newest permanent observer of the Committee.

16. The Subcommittee conveyed its condolences to the peoples of Australia, Brazil, Chile, Colombia, Haiti, Mexico, Pakistan, the Russian Federation, Sri Lanka and Venezuela (Bolivarian Republic of) for the loss of lives and infrastructure caused by natural disasters that had occurred in those countries. The Subcommittee noted that loss of life and property could be reduced 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.

17. At the 738th 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. The Chair stressed the need for better coordination between the space community and the disaster management community.

18. Also at the 738th meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement reviewing the work programme of the Office and the need for additional resources to be able to successfully perform the envisaged responsibilities for the biennium 2012-2013.

19. The Subcommittee noted the remarkable space-related events in 2011, including the fiftieth anniversary of the Committee on the Peaceful Uses of Outer Space and the fiftieth anniversary of human space flight, and welcomed the opportunity presented by those anniversaries to increase awareness of the relevance and importance of space applications for the betterment of the conditions of human life. In that connection, the Subcommittee noted the information provided by the Office for Outer Space Affairs on its plans to organize, jointly with member States, a number of events to celebrate those important anniversaries.

20. The Subcommittee congratulated the Governments of Mexico and South Africa on the establishment of their national space agencies, the Government of France on the fiftieth anniversary of the Centre national d'études spatiales and the Government of Romania on the country's accession to the Convention for the establishment of a European Space Agency.[2]

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[2] United Nations, *Treaty Series*, vol. 1297, No. 21524.

21. Some delegations reiterated the commitment of their countries 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.

22. Some delegations expressed the view that, given the impact of space activities on human life and the environment, there should be greater coordination and interaction between the Scientific and Technical Subcommittee and the Legal Subcommittee in order to promote the establishment of binding international norms addressing issues such as space debris and use of nuclear power sources in outer space, which are critical issues in the use and exploration of outer space.

23. Some delegations expressed the view that developing countries should benefit from space technologies, in particular to support their social and economic development, that it was necessary to promote greater North-South and South-South cooperation to facilitate the transfer of technology among States and that training of scientists in developing countries was crucial for the free flow of scientific information and data exchange.

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

(a) “Summary of APRSAF-17: the role of space technology and industry in addressing climate change”, by the representative of Japan;

(b) “Enhancing global cooperation in satellite-based emergency mapping”, by the representative of Germany;

(c) “Space activities in Tunisia in 2010”, by the representative of Tunisia;

(d) “Activities of the Space Foundation”, by the representative of the United States;

(e) “Terrestrial benefits of research on extraterrestrial constructions”, by the representative of Turkey;

(f) “The role of TÜBITAK in recent developments in the field of space in Turkey”, by the representative of Turkey;

(g) “China’s lunar exploration programme”, by the representative of China;

(h) “ISPRS: 100th year of serving society with information from imagery”, by the observer for ISPRS.

25. The Subcommittee noted the screening of videos presented on the margins of the current session: “On APRSAF” and “Mission of ‘Hayabusa’”, both by the delegation of Japan, and “From Sputnik to today to tomorrow” by the observer for SGAC.

26. The Subcommittee expressed its gratitude to the Governments of Italy and Japan and ESPI, as well as to the European Union, for organizing scientific and technical events on the margins of the current session of the Subcommittee.

D. National reports

27. The Subcommittee took note with appreciation of the reports submitted by Member States (A/AC.105/977 and Add.1 and A/AC.105/C.1/2011/CRP.8) for its consideration of agenda item 3, "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.

E. Symposium

28. On 14 February, COSPAR organized a symposium on the theme "Planetary protection and space exploration", which was moderated by John Rummel of COSPAR. The presentations given at the symposium included the following: "Planetary protection overview: the role of COSPAR in international missions", by John Rummel of COSPAR; "Mars lives? A planet worth protecting either way", by Charles Cockell of the Open University; "The international Mars exploration program and current planetary protection measures", by Gerhard Kminek of ESA; "Outer planet satellites as potential crucibles for life: extraterrestrial and terrestrial", by Kevin Hand of the Jet Propulsion Laboratory of the National Aeronautics and Space Administration (NASA) of the United States; "Planetary protection beyond the living world: the role of COSPAR in future exploration missions and in preserving and promoting science", by Pascale Ehrenfreund of COSPAR and George Washington University; and "We lost Pluto? Future steps in preserving planets, satellites and small solar system bodies", by John Rummel of COSPAR.

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

29. After considering the items before it, the Subcommittee, at its 757th meeting, on 18 February 2011, 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

30. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 4, "United Nations Programme on Space Applications".

31. At the 739th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

32. The representatives of Japan and the United States made statements under agenda item 4. During the general exchange of views, statements relating to this item were also made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

33. The Working Group of the Whole was reconvened under the chairmanship of S. K. Shivakumar (India), in accordance with paragraph 7 of General Assembly resolution 65/97. The Working Group of the Whole held six meetings, from 7 to 17 February 2011. At its 754th meeting, on 17 February, the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex I to the present report.

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

(a) "Introduction of the United Nations/Japan Long-term Fellowship Programme on Nanosatellite Technologies", by the representative of Japan;

(b) "Integrated space applications", by the observer for ESA.

A. Activities of the United Nations Programme on Space Applications

35. 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.105/980, paras. 2-8). The Subcommittee noted that the Programme for 2010 had been carried out satisfactorily and commended the work accomplished by the Office under the Programme.

36. 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 on Space Applications (A/AC.105/980, paras. 56 and 57).

37. The Subcommittee expressed its concern that the financial resources available for carrying out the Programme remained limited. The Subcommittee appealed to Member States and international organizations 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.

38. The Subcommittee noted that the activities of the Programme in 2011 (see para. 45 below) would place emphasis on the following areas, among others: socio-economic benefits of space activities, small satellite technology for sustainable development, human space technology, space weather, global navigation satellite systems, water management, climate change, human health and security, and tele-epidemiology.

39. The Subcommittee noted with appreciation the provision of ground-based space weather instruments by Armenia, Brazil, France, Japan, Switzerland and the United States for the implementation of the International Space Weather Initiative.

40. The Subcommittee noted with appreciation the participation of the International Space Station partners in the Outreach Seminar on the International Space Station, held on 8 February, organized by the Office in the framework of the Human Space Technology Initiative of the Programme.

1. Year 2010

Meetings, seminars, symposiums, training courses and workshops

41. With regard to the activities of the United Nations Programme on Space Applications carried out in 2010, 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.105/980, para. 53 and annex I):

(a) The Governments of Austria, Bolivia (Plurinational State of), the Czech Republic, Egypt, Nigeria, Republic of Moldova, Thailand, Turkey and the United States;

(b) APSCO, the Centre for Research and Remote Sensing Services (CISTEL) of the Universidad Mayor de San Simon of the Plurinational State of Bolivia, the Ministry of Rural Development and Land and the Vice-Ministry of Science and Technology of the Ministry of Education of the Plurinational State of Bolivia, ESA, Geo-Informatics and Space Technology Development Agency of Thailand, Helwan University of Egypt (through its Space Weather Monitoring Centre), International Academy of Astronautics, IAF, International Committee on Global Navigation Satellite Systems (ICG) (through its Executive Secretariat), Kyushu University of Japan, the Ministry of Higher Education and Scientific Research of Egypt, National Space Research and Development Agency and Obafemi Awolowo University of Nigeria, Regional Centre for Training in Aerospace Surveys in Nigeria, Japan Aerospace Exploration Agency (JAXA) and NASA.

Long-term fellowships for in-depth training

42. 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.

43. The Subcommittee expressed its appreciation to the Government of Japan and the Kyushu Institute of Technology for establishing the United Nations/Japan Long-term Fellowship Programme on Nanosatellite Technologies in the framework of the Basic Space Technology Initiative of the Programme. The fellowship will contribute to building capacity in countries seeking to establish basic capabilities in the field of space technology development.

Technical advisory services

44. 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 and international cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/980, paras. 43-52).

2. Year 2011

Meetings, seminars, symposiums, training courses and workshops

45. The Subcommittee recommended the approval of the following programme of meetings, seminars, symposiums, training courses and workshops for 2011:

(a) United Nations/United Arab Emirates Workshop on the Applications of Global Navigation Satellite Systems, co-sponsored by the United States through ICG, to be held in Dubai, United Arab Emirates, from 16 to 20 January;

(b) United Nations/Argentina International Conference on the Use of Space Technology for Water Management, co-organized by ESA and the Prince Sultan bin Abdulaziz International Prize for Water, to be held in Buenos Aires in March;

(c) United Nations/Syrian Arab Republic Workshop on Integrated Space Technology Applications: Support to Monitoring Climate Change and its Impact on Natural Resources, to be held in Damascus in May;

(d) United Nations/Canada Workshop on the Contribution of Tele-epidemiology to Public Health Actions in the Context of Climate Change Adaptation, co-sponsored by ESA, to be held in Montreal, Canada, in June;

(e) United Nations/Viet Nam Workshop on Space Technology Applications for Socio-Economic Benefits, co-sponsored by ESA, to be held in Hanoi in October;

(f) United Nations/Islamic Republic of Iran Regional Workshop on the Use of Space Technology for Improving Human Health, to be held in Tehran in July;

(g) United Nations/Austria/European Space Agency Symposium on Small Satellite Programmes for Sustainable Development, to be held in Graz, Austria, in September;

(h) United Nations/International Astronautical Federation Workshop on Space for Human and Environmental Security, to be held in Cape Town, South Africa, in September;

(i) United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries, to be held in Cape Town, South Africa, in October;

(j) United Nations/Nigeria Workshop on the International Space Weather Initiative, co-organized by NASA, JAXA, Kyushu University and ICG, to be held in Abuja in October;

(k) United Nations Expert Meeting on the Human Space Technology Initiative, to be held in Putrajaya, Malaysia, in the second half of 2011;

(l) United Nations International Meeting on Global Navigation Satellite Systems, co-sponsored by the United States of America through ICG, to be held in Vienna in December.

B. International Space Information Service

46. The Subcommittee noted with satisfaction the publication of *Highlights in Space 2010*, which had been compiled in a CD-ROM from a report prepared in

cooperation with COSPAR, IAF and the International Institute of Space Law. The Subcommittee expressed its appreciation to the contributors for their work.

47. 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

48. The Subcommittee noted that the schedule of nine-month postgraduate courses for the period 2009-2012 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.105/980, annex III).

49. The Subcommittee recalled that the General Assembly, in its resolution 65/97, 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[3] and, to that end, fostered interregional dialogue on space matters between Member States.

50. The Subcommittee noted that the fourth African Leadership Conference on Space Science and Technology for Sustainable Development on the theme "Building a shared vision for space in Africa" would be hosted by the Government of Kenya, and be held from 26 to 28 September 2011. The Subcommittee noted that discussions were being held between the Office and the Government of Kenya on possible activities to be organized in connection with the Conference.

51. The Subcommittee noted that the seventeenth session of the Asia-Pacific Regional Space Agency Forum had been held in Melbourne, Australia, from 23 to 26 November 2010. The theme of the session was "The role of space technology and industry in addressing climate change". The eighteenth session of the Forum would be jointly organized by the Government of Singapore and the Government of Japan and be hosted by Singapore in December 2011.

52. The Subcommittee also noted that APSCO had held its fourth Council Meeting in Pattaya, Thailand, at the end of January 2011, at which it approved the implementation of the APSCO Applied High Resolution Satellite System as an optional project and the Asia-Pacific Ground-based Optical Space Objects Observation System as a basic activity. These two projects would be implemented in addition to the Data Sharing Service Platform project of APSCO.

53. The Subcommittee further noted that the Sixth Space Conference of the Americas had been held in Pachuca, Mexico, from 15 to 19 November 2010, hosted by the Government of Mexico. The Conference had concluded with the adoption of the Pachuca Declaration which, inter alia, calls for the creation of a space technical advisory group made up of representatives of space agencies and/or government agencies responsible for space matters in the countries of the continent, which shall provide advisory assistance to the work of the Space Conference of the Americas and its respective pro tempore secretariats.

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[3] General Assembly resolution 55/2.

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

54. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 5, “Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)”.

55. The representatives of Canada, Japan, Nigeria and the United States made statements under agenda item 5. During the general exchange of views, statements relating to the item were made by representatives of other member States.

56. The Subcommittee heard the following scientific and technical presentation: “Recommendations from the Space Generation Congress 2010: input from the next generation of space sector leaders on the development of space” by the observer for SGAC.

57. The Subcommittee reiterated 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.

58. The Subcommittee 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.

59. The Subcommittee noted that the Action Team on Near-Earth Objects and the Action Team on Public Health had held meetings during its forty-eighth session.

60. The Subcommittee noted with appreciation the recommendations made by the Working Group on Near-Earth Objects, contained in paragraphs 9-12 of the report of the Working Group, contained in annex III to the present report.

61. The Subcommittee noted with appreciation that the Action Team on Public Health, co-chaired by Canada and India, had submitted the final report of the Action Team (A/AC.105/C.1/L.305) for consideration by the Subcommittee at its current session and noted the recommendations contained in paragraphs 5-9 of the report of the Working Group of the Whole, contained in annex I to the present report.

62. The Subcommittee agreed that the contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development, to be held in Rio de Janeiro, Brazil, in 2012, should focus on geospatial data for sustainable development and assess how that theme related to the main agenda of the Conference.

63. The Working Group of the Whole, reconvened in accordance with General Assembly resolution 65/97, also considered agenda item 5, “Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)”. At its 754th meeting, on 17 February, the Subcommittee endorsed the recommendations of the Working

Group of the Whole concerning the implementation of the recommendations of UNISPACE III, contained in annex I to the present report.

64. The Subcommittee noted the request made by Arab States that are members of the Committee that a regional centre for space science and technology education for Western Asia — in Arabic language, affiliated to the United Nations, should be established. The Subcommittee also noted that those States had recommended that the Syrian Arab Republic should host that regional centre since the Syrian Arab Republic was hosting the Arab Centre for Space Science Qualification and Training in Arabic of the Association of Remote Sensing Centres in the Arab World.

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

65. In accordance with General Assembly resolution 65/97, the Subcommittee continued its consideration of agenda item 6, "Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment".

66. The representatives of Austria, Canada, China, Germany, India, Italy, Japan, Ukraine and the United States made statements under the agenda item. During the general exchange of views, statements relating to this item were also made by representatives of other member States.

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

(a) "ALSAT-2A", by the representative of Algeria;

(b) "National company Kazakhstan Gharysh Sapary", by the representative of Kazakhstan;

(c) "High-resolution imaging applications in India", by the representative of India;

(d) "Application of space technologies to the control of pirate fishing", by the observer for ISU.

68. 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; monitoring climate change; disaster management; hydrology; managing ecosystems and natural resources; monitoring air and water quality; mapping biodiversity resources, coastal zones, land use, wasteland and wetlands; oceanography; rural development and urban planning; safety; and search and rescue efforts.

69. The Subcommittee noted with satisfaction that comprehensive, coordinated and sustained Earth observation systems were essential for the benefit of humankind and that significant efforts were being made to build the capacity of developing countries in using Earth observations to improve quality of life and advance their socio-economic development.

70. The Subcommittee noted the increased availability of space-based data at little or no cost, including the remote sensing data from the China-Brazil Earth resources satellites made available on a free-of-charge basis to users on the African continent.

71. The Subcommittee took note of the number of continued launches of Earth observation satellites and the innovative research conducted using such satellites, data from which could be used to develop advanced, global-integrated Earth system models.

72. The Subcommittee recognized the important role played by organizations such as the Asia-Pacific Regional Space Agency Forum and Sentinel Asia and its Space Applications for the Environment (SAFE) initiative, the Committee on Earth Observation Satellites (CEOS) and its Virtual Constellations for the Group on Earth Observations initiative, and the Group on Earth Observations (GEO) in promoting international and regional cooperation in the use of remote sensing technology, in particular for the benefit of developing countries.

73. 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 seventh plenary session, held in Beijing from 3 to 4 November 2010, GEO had adopted the Data Sharing Action Plan to implement the GEOSS Data Sharing Principles, and had launched the Global Forest Observation Initiative, with the objective of helping countries to generate reliable, consistent and comparable reports on forest cover and forest cover change and estimate forest carbon stocks and trends.

74. The Subcommittee noted that the next CEOS plenary meeting would take place in Lucca, Italy, in November 2011, hosted by Italy, which had taken over the presidency of CEOS from the National Institute for Space Research of Brazil in October 2010. The Subcommittee further noted that India would hold the chairmanship of CEOS in 2012 and host the CEOS plenary meeting that year.

75. The Subcommittee welcomed the initiative of reviewing the responses offered by space technology to address the growing challenges related to the protection and sustainable use of marine and coastal ecosystems, in particular in developing regions. In that context, the Subcommittee took note with appreciation of the possible convening of a side event on the margins of the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space on that topic.

V. Space debris

76. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 7, “Space debris”.

77. The representatives of China, France, India, Indonesia, Japan, the Russian Federation, Ukraine, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 7. The representatives of Argentina and Italy made a joint statement. During the general exchange of views, statements relating to the item were also made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

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

(a) “Analysis of modes and estimation of costs to decrease the level of space contamination during the realization of space missions”, by the representative of the Russian Federation;

(b) “USA space debris environment, operations and policy updates”, by the representative of the United States;

(c) “Overview of 2010 space debris activities in France”, by the representative of France;

(d) “Activity of the Russian Federation on the space debris problem”, by the representative of the Russian Federation;

(e) “Detection and warning automated system of hazardous situations in near-Earth space (NES): state and perspective of development”, by the representative of the Russian Federation;

(f) “Review of events that occurred in geostationary region in 2010 based on data obtained by the ISON international network”, by the representative of the Russian Federation;

(g) “Space debris mitigation activities at ESA”, by the observer for ESA;

(h) “Towards long-term sustainability of space activities: overcoming the challenges of space debris”, by the observer for the International Association for the Advancement of Space Safety;

(i) “Two space debris issues: long-term cost of satellite operations and refining re-entry disposal hazards”, by the observer for the International Association for the Advancement of Space Safety.

79. The Subcommittee had before it the following:

(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.105/978 and Add.1);

(b) Report of the International Interdisciplinary Congress on Space Debris entitled “Towards long-term sustainability of space activities: overcoming the challenges of space debris”, contained in conference room paper A/AC.105/C.1/2011/CRP.14.

80. 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.

81. The Subcommittee requested IADC to inform it of any revisions made to the IADC Space Debris Mitigation Guidelines in the light of evolving technologies and debris mitigation practices.

82. The Subcommittee noted with appreciation that States had adopted a number of approaches and concrete actions to mitigate space debris, including the improvement of the design of launch vehicles and spacecraft, the re-orbiting 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 and continuous monitoring, space debris environmental modelling and technologies to protect space systems from space debris and to limit the creation of additional space debris.

83. The Subcommittee noted the projects of some States in the field of active removal of space debris and, in this connection, of their comprehensive studies on the long-term evolution of the space debris environment.

84. The Subcommittee noted technical collaboration of member States in the area of space debris monitoring and mitigation, including training and the joint use of observatory facilities for sharing monitoring data.

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

86. 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.

87. 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.

88. The Subcommittee agreed that States, in particular spacefaring nations, should pay greater attention to the problem of collisions of space objects, including those with nuclear power sources 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 65/97, 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.

89. 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 nuclear power sources on board and problems relating to the collision of such space objects with space debris.

90. Some delegations expressed the view that reports 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 did not contain replies from

the States that were largely responsible for creating space debris, including debris from platforms with nuclear power sources.

91. 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 “to the extent 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.

92. 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.

93. The view was expressed that the movement of space debris in the geostationary orbit had a specific characteristic associated with the cyclic evolution of the orbit inclination. Owing to this particular feature, space debris in the geostationary orbit that had not been placed in a graveyard orbit periodically returned to the region of operational geostationary satellites. The increasing amount of space debris in the geostationary orbit was thus a cause for great concern.

94. 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.

95. 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.

96. 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

97. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 8, “Space-system-based disaster management support”.

98. The representatives of Austria, France, Germany, India, Indonesia, Italy, Japan, Nigeria, the Russian Federation, Ukraine, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 8. A statement was also made by the observer for SGAC. During the general exchange of views, statements related to the item were also made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

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

(a) “Space technology applications for disaster reduction in China”, by the representative of China;

(b) “Reception, interpretation and utilization of satellite images received by UN-SPIDER during the earthquake and tsunami that affected Chile on 27 February 2010”, by the representative of Chile;

(c) “The tenth anniversary of the International Charter on Space and Major Disasters”, by the representative of the European Space Agency;

(d) “Four-dimensional Earth observation: space and time”, by the representative of Romania;

(e) “Satellite-based soil moisture information for flood risk assessment: the case of the 2010 floods in Pakistan”, by the representative of Austria;

(f) “International Charter”, by the representative of the United States;

(g) “Institutional framework of the international global monitoring aerospace system (IGMASS) project”, by the representative of the Russian Federation;

(h) “Management of the 2010 floods in Pakistan using satellite technology”, by the representative of Pakistan.

100. For its consideration of the item, the Subcommittee had before it the following:

(a) Report on the activities carried out in 2010 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/981);

(b) Report of the Secretariat on technical advisory support activities carried out in 2010 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/985);

(c) Note by the Secretariat on the United Nations Platform for Space-based Information for Disaster Management and Emergency Response: proposed workplan for the biennium 2012-2013 (A/AC.105/C.1/2011/CRP.15);

(d) Report on coordination activities carried out by the United Nations Office for Outer Space Affairs with existing mechanisms and initiatives supporting emergency response activities with space-based information (A/AC.105/C.1/2011/CRP.16).

101. At the 746th 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 2010, on the implementation of the activities planned for 2011 and on the proposed UN-SPIDER workplan for the biennium 2012-2013 (see A/AC.105/C.1/2011/CRP.15).

102. The Subcommittee noted with satisfaction the progress made with regard to the activities carried out in the framework of UN-SPIDER in 2010, including the support provided through the programme to the emergency efforts made in response to major disasters worldwide.

103. The Subcommittee also noted with satisfaction the formal inauguration of the UN-SPIDER Beijing office on 10 November 2010.

104. The Subcommittee noted with satisfaction the voluntary contributions that were being made available by Member States, including cash contributions from Austria, China and Germany, 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 current workplan for the biennium 2010-2011.

105. The Subcommittee noted with appreciation that in 2010, the Office for Outer Space Affairs had signed cooperation agreements with five national and regional organizations to establish a regional support office, bringing the total of established regional support offices to 10. Currently, UN-SPIDER regional support offices are being hosted by six national organizations (the Algerian Space Agency, the Iranian Space Agency, the Nigerian National Space Research and Development Agency, the Pakistan Space and Upper Atmosphere Research Commission, the Romanian Space Agency and the National Space Agency of Ukraine) and by four regional organizations (the Asian Disaster Reduction Center, based in Kobe, Japan; the Regional Center for Mapping of Resources for Development, based in Nairobi; the University of the West Indies, based in St. Augustine, Trinidad and Tobago; and the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), based in Panama City).

106. The Subcommittee welcomed the offers of Colombia, Indonesia and Turkey to host UN-SPIDER regional support offices.

107. The Subcommittee noted with satisfaction 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 Constellation of Small Satellites for Mediterranean Basin Observation (COSMO)-SkyMed operated by Italy; the Sentinel Asia project and the associated Wide-band InterNetworking Engineering Test and Demonstration Satellite; 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 Mesoamerican Regional Visualization and Monitoring System (SERVIR); the Famine Early Warning System Network; GEONETCast, which is a global satellite-based data dissemination system; those activities falling within the framework of the Asia-Pacific Regional Space Agency Forum (APRSAF); the Global Environmental Alert Service (GEAS) for dissemination of early warning of environmental hazards; and the Services and Applications for Emergency Response (SAFER) project being implemented in the framework of the Global Monitoring for Environment and Security (GMES) initiative in Europe.

108. The Subcommittee noted that, in accordance with paragraph 16 of the United Nations General Assembly resolution 65/97, the United Nations Office for Outer Space Affairs was ensuring coordination of the UN-SPIDER SpaceAid framework with mechanisms and initiatives that were making space-based information available to support responses to emergency events (see A/AC.105/C.1/2011/CRP.16).

109. The Subcommittee noted that the Office had organized an expert meeting on space-based technologies and emergency response, held on 9 February 2011, which was attended by representatives of the four leading mechanisms, namely, the International Charter on Space and Major Disasters, Sentinel Asia, SAFER and SERVIR, as well as representatives from a number of service providers and the

UN-SPIDER regional support offices. The Subcommittee also noted that those representatives agreed to further consider the possibility of establishing a working group, to be facilitated by the Office for Outer Space Affairs, in order to optimize collaboration and related communications during major disasters, and requested the Office to seek official confirmation from those mechanisms and service providers that they would participate in the proposed working group, inviting them to nominate representatives.

110. The Subcommittee noted that the Government of the Philippines, through the Philippine Council for Advanced Science and Technology Research and Development and the Department of Science and Technology and in cooperation with the Economic and Social Commission for Asia and the Pacific, hosted the Expert Group Meeting on Regional Cooperation Mechanisms on Space Applications for Disaster Management and Sustainable Development on 15 and 16 December 2010 and the fourteenth session of the Intergovernmental Consultative Committee on the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific on 16 and 17 December 2010.

111. The Subcommittee noted that the existing United Nations Working Group on Emergency Telecommunications would, at its next meeting, review the possibility of establishing an emergency telecommunication charter, which would ensure access to telecommunication infrastructure to support the response to emergency events.

112. The view was expressed that the Committee on the Peaceful Uses of Outer Space should indicate its support for the International Global Monitoring Aerospace System project.

113. The view was expressed that a working group on enhancing global cooperation in satellite-based emergency mapping could be established in the framework of the Committee on the Peaceful Uses of Outer Space.

114. The Working Group of the Whole, reconvened pursuant to General Assembly resolution 65/97, also considered agenda item 8, “Space-system-based disaster management support”. At its 754th meeting, on 17 February, the Subcommittee endorsed the report of the Working Group of the Whole, contained in annex I to the present report.

VII. Recent developments in global navigation satellite systems

115. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 9, “Recent developments in global navigation satellite systems”.

116. The representatives of Canada, China, Germany, India, Italy, Japan, Nigeria, the Russian Federation and the United States made statements under agenda item 9. The observer for the United Arab Emirates also made a statement. A statement was made by the observer for the European Union. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

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

(a) "Remote sensing of the Earth's atmosphere with navigation satellites: recent results (from GFZ)", by the representative of Germany;

(b) "Status and perspectives of the development of the Global Navigation Satellite System (GLONASS)", by the representative of the Russian Federation;

(c) "The Fifth Meeting of the International Committee on Global Navigation Satellite Systems (Turin, 18-22 October 2010): achievements and results", by the representative of Italy.

118. For its consideration of the item, the Subcommittee had before it the following documents:

(a) Report on the United Nations/Republic of Moldova/United States of America Workshop on Applications of Global Navigation Satellite Systems (A/AC.105/974);

(b) Note by the Secretariat on the Fifth Meeting of the International Committee on Global Navigation Satellite Systems (A/AC.105/982);

(c) Report on the United Nations/International Astronautical Federation Workshop on Global Navigation Satellite System Applications for Human Benefit and Development (A/AC.105/984).

119. The Subcommittee noted that the United Nations/United Arab Emirates Workshop on the Applications of Global Navigation Satellite Systems, co-sponsored by the United States, had been hosted by the Emirates Institution for Advanced Science and Technology on behalf of the Government of the United Arab Emirates from 16 to 20 January 2011 in Dubai, United Arab Emirates.

120. The Subcommittee was informed that the Office for Outer Space Affairs was developing its programme on global navigation satellite system (GNSS) applications, including deploying instruments for the International Space Weather Initiative and developing an education curriculum on GNSS to be integrated into the educational programmes of the regional centres for space science and technology education, affiliated to the United Nations, which were also acting as information centres for the International Committee on Global Navigation Satellite Systems (ICG).

121. The Subcommittee reviewed issues related to ICG and the latest developments in the field of GNSS technology and applications.

122. The Subcommittee noted with satisfaction that the Fifth Meeting of ICG had been held in Turin, Italy, from 18 to 22 October 2010, jointly organized by the Government of Italy and the European Commission on behalf of the European Union, and that the sixth meeting of ICG would be held in Tokyo from 5 to 9 September 2011. The Subcommittee also noted the expression of interest by China to host the seventh meeting of ICG in 2012.

123. The Subcommittee noted that each of the four working groups of ICG focused on one of the following issues: compatibility and interoperability; enhancement of the performance of GNSS services; information dissemination and capacity-building; and timing and applications. The Subcommittee also noted the substantive progress made with regard to the workplans of ICG and its Providers' Forum, in

particular with regard to the principle of transparency for open services, and called for the further advancement of this principle in the coming year. The Subcommittee also noted that the Providers' Forum had held its sixth meeting, in conjunction with the fifth meeting of ICG.

124. The Subcommittee commended the Office for Outer Space Affairs in its capacity as the Executive Secretariat of ICG and the Providers' Forum, and for its attempt to create synergy among global players in satellite navigation.

125. The Subcommittee expressed its appreciation to the Office for Outer Space Affairs for its efforts in promoting the use of GNSS throughout its capacity-building initiatives in developing countries.

126. The Subcommittee noted that the United States was committed to continuing to improve the accuracy and availability of the global positioning system (GPS) through improved satellite and clock performance and an expanded constellation configuration. It also noted the commitment of the United States to maintain GPS as a central pillar of an emerging international system of GNSS.

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

128. The Subcommittee noted that the Global Navigation Satellite System (GLONASS) of the Russian Federation currently had 22 operational GLONASS-M satellites in orbit, with the other four satellites in maintenance status. The Subcommittee also noted that the test flight for the next generation of GLONASS-K satellites was planned for 2011.

129. The Subcommittee noted that Germany, as one of the founders of the European Galileo satellite navigation system, continued to promote and develop national application projects aimed at fostering the use of satellite navigation, harmonizing them with European projects. The long-term intention was to make the exploitation of Galileo the starting point for enabling innovative small and medium-sized national enterprises to compete in international markets.

130. The Subcommittee noted the progress made in the development of the Compass/BeiDou navigation system, the planned global navigation satellite system of China, which would be used in a wide variety of fields, such as mapping, surveying, telecommunications, remote sensing and transportation.

131. The Subcommittee noted that India was currently implementing the GPS-aided GEO-Augmented Navigation System (GAGAN), a space-based augmentation system for delivering increased position accuracy for civil aviation applications. The Indian Regional Navigation Satellite System (IRNSS), with seven satellites in geostationary and geo-equatorial orbits, was in the implementation phase, and the full constellation was expected to be completed in 2014.

132. 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). The first satellite of QZSS, named "Michibiki", was successfully launched on September 2010. QZSS would complement and reinforce GPS, its signals to be received in the Asia-Oceania

region. Japan's involvement in the establishment of a multi-GNSS network for the region was outlined.

133. The Subcommittee noted the progress made by Nigeria in the establishment of the continuously operating reference stations as part of the ground segment of a future space-based augmentation system for Africa. The Nigerian permanent GNSS network (NIGNET) would consist of a total of 50 stations with the aim of providing uniform coverage at the national level, thus maintaining a modern reference frame for the country.

134. The Subcommittee noted that, in the framework of the International Satellite System for Search and Rescue (COSPAS-SARSAT), Canada was coordinating with GNSS providers to incorporate operational search and rescue payloads on future global navigation satellites in medium-Earth orbit, such as GPS, GLONASS and Galileo in order to improve coverage and the speed of detecting and locating 406 megahertz emergency distress beacons worldwide.

VIII. Use of nuclear power sources in outer space

135. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 10, "Use of nuclear power sources in outer space".

136. The representatives of the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 10. During the general exchange of views, a statement relating to the item was also made by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

137. The Subcommittee encouraged States and international intergovernmental organizations to begin or to continue implementing the Safety Framework for Nuclear Power Source Applications in Outer Space (A/AC.105/934).

138. Some delegations expressed the view that the Safety Framework represented a significant advance in the development of safe nuclear power source (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.

139. The view was expressed that the implementation of the Safety Framework would enable bilateral and multilateral cooperation in the field of the use of space NPS by States and international intergovernmental organizations. That delegation was of the view that sharing of information on national practices in the area of the safety of use of NPS would encourage the implementation of the Safety Framework by member States and international intergovernmental organizations.

140. Some delegations expressed the view that more consideration should be given to the use of NPS in geostationary orbit and low-Earth orbit in order to address the problem of potential collisions of NPS objects in orbit, as well as to their accidental re-entry in the Earth's atmosphere. Those delegations were of the view that more attention should be given to this matter through adequate strategies, long-term planning and regulations, including the Safety Framework for Nuclear Power Sources Applications in Outer Space.

141. 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 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.

142. 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 while NPS were needed for some interplanetary missions, no justification existed for the use of NPS in terrestrial orbits, for which other sources of energy were available that were much safer and had been proved to be efficient.

143. The view was expressed that the Sun was a source of energy that could effectively serve present and future needs of mankind in the areas of satellite applications, such as Earth observation, telecommunications, tele-health and tele-education.

144. The view was expressed that in using NPS in outer space, States should consider the limited character of the near-Earth space environment.

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

146. Pursuant to General Assembly resolution 65/97, 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 three meetings.

147. The Subcommittee welcomed the Workshop on the Use of Nuclear Power Sources in Outer Space, held by the Working Group during its first meeting, in the afternoon of 9 February.

148. The view was expressed that the workshops organized by the Working Group promoted activities related to the use of NPS in outer space. In that connection, that delegation was of the view that proliferation of NPS in outer space, including terrestrial orbits, should not be allowed, as the effects of the use of NPS in outer space on mankind and the environment had not been assessed and there was no definite framework establishing responsibilities and introducing technical and legal tools that could effectively address critical situations that might arise because of undue practices.

149. The view was expressed that the Safety Framework was not sufficient in its present form to meet the challenges posed by the use of NPS in outer space.

150. At its 754th meeting, on 17 February, the Subcommittee endorsed the report of the Working Group, including the report on the Workshop held by the Working Group in conjunction with the current session of the Subcommittee. The report of the Working Group is contained in annex II to the present report.

IX. Near-Earth objects

151. In accordance with General Assembly resolution 65/97, the Scientific and Technical Subcommittee considered agenda item 11, “Near-Earth objects”.

152. The representatives of Japan, Slovakia, the Russian Federation and the United States made statements under agenda item 11. During the general exchange of views, statements relating to this item were also made by representatives of other member States, the representative of Colombia on behalf of the Group of Latin American and Caribbean States, and by the observers for APSCO and IAU.

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

(a) “The first scientific light of the GMT millimetric telescope”, by the representative of Mexico;

(b) “NASA’s near-Earth objects program (Spaceguard)”, by the representative of the United States;

(c) “Towards a national NEO program”, by the representative of the Russian Federation;

(d) “Dawn of the age of solar system exploration: Hayabusa, Ikaros and the future”, by the representative of Japan;

(e) “Results from the NEO Mission Planning and Operations Group workshop”, by the observer for the Association of Space Explorers;

(f) “The Washington Summit of the Heads of Space Agencies in November 2010” and “Planetary defence conferences: sharing information on near-Earth objects threats and mitigation”, by the observer for the International Academy of Astronautics.

154. The Subcommittee had before it the following:

(a) Interim report of the Action Team on Near-Earth Objects (2010-2011) (A/AC.105/C.1/L.308);

(b) 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.105/976 and A/AC.105/C.1/2011/CRP.12).

155. 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 due to their scientific value as remnant debris from the process of the formation of the inner solar system, the potentially devastating consequences of such objects colliding with the Earth and the wide range of natural resources that they contained.

156. The Subcommittee noted the increased awareness of the global threat posed by the near-Earth objects and 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.

157. The Subcommittee welcomed the efforts made with respect to comprehensive national plans as well as the broadened international cooperation related to early detection, precision tracking, characterization and dissemination of data for the purpose of NEO threat detection, and agreed that efforts should be continued and expanded at the national and international levels.

158. The Subcommittee noted with appreciation the international projects undertaken by Member States to detect and characterize near-Earth objects, such as the Arecibo and Goldstone radio telescope facilities; the Panoramic Survey Telescope and Rapid Response System (Pan-STARRS); the Skalnaté Pleso Observatory; and the Asia-Pacific Ground-based Optical Satellite Observation System, which was expected to be completed by the end of 2012.

159. The Subcommittee noted with satisfaction the role of the Minor Planet Center, operated by the Smithsonian Astrophysical Observatory, in coordination with the International Astronomical Union, as a gateway and clearing house for collecting, validating and distributing all positional measurements of asteroids made worldwide and related comments. The Subcommittee also noted that since March 2010, the International Astronomical Union had maintained a web page presenting a chronology of milestones of near-Earth asteroid observations and research (www.iau.org/public/nea/).

160. The Subcommittee welcomed past and upcoming missions investigating near-Earth objects, including the Dawn, Deep Impact, Stardust and the Wide-field Infrared Survey Explorer (WISE) spacecraft missions of the United States and the Near-Earth Object Surveillance Satellite mission of Canada.

161. The Subcommittee noted with satisfaction the successful return of the first sample return mission of the asteroid explorer Hayabusa of Japan on 13 June 2010.

162. The Subcommittee noted with satisfaction the holding, in Darmstadt, Germany, of the workshop on NEO mission planning and operations, organized by the Association of Space Explorers and SWF and hosted by ESA, and noted that the results of the workshop had been provided to the Action Team on Near-Earth Objects for consideration in its future work.

163. The Subcommittee noted the success of an ongoing NEO search programme by the United States to detect at least 90 per cent of all near-Earth objects larger than 1 kilometre in diameter, as well as the objective of the recent NEO search programme of the United States to detect, track, catalogue and characterize NEOs with a diameter larger than 140 metres and achieve the detection of 90 per cent of such objects by 2020.

164. Pursuant to General Assembly resolution 65/97, 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.

165. At its 755th meeting, on 17 February, the Subcommittee endorsed the report of the Working Group on Near-Earth Objects, including the agreement of the Working Group to continue its multi-year workplan in 2012 and 2013. The report of the Working Group is contained in annex III to the present report.

X. International Space Weather Initiative

166. In accordance with General Assembly resolution 65/97, the Scientific and Technical Subcommittee considered agenda item 12, “International Space Weather Initiative” under the workplan contained in the annex to document A/AC.105/933.

167. The representatives of China, India, Japan, Slovakia and the United States made statements under agenda item 12. The observer for WMO also made a statement. During the general exchange of views, statements relating to the item were also made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

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

(a) “Space weather superstorm: not ‘if’ but ‘when’ — and extreme solar minimum”, by the representative of the United States;

(b) “From research to operations: ongoing and planned European and international space weather projects”, by the representative of Germany;

(c) “International space weather initiative update”, by the representative of the United States;

(d) “Japanese space weather activities”, by the representative of Japan;

(e) “Chinese ground-based space weather monitoring project”, by the representative of China;

(f) “Scientific activities on space weather research in India”, by the representative of India.

169. The Subcommittee had before it a note by the Secretariat containing information received from Member States and observers on regional and international activities related to the International Space Weather Initiative (A/AC.105/979).

170. The Subcommittee noted that the objectives of the International Space Weather Initiative were to develop the scientific insight necessary to understand the solar-terrestrial relationships inherent to space weather, to reconstruct and forecast near-Earth space weather and to communicate that knowledge to scientists, engineers, policymakers and the general public.

171. The Subcommittee welcomed the fact that participation in the Initiative was open to all countries, as instrument hosts or as instrument providers. The Initiative is governed by a Steering Committee of 16 members, which meet once a year to assess progress and provide prioritization for the upcoming year. The Steering Committee held its first meeting in Vienna on February 9, 2011. National coordinators from 81 countries help to coordinate International Space Weather Initiative activities at the national level.

172. The Subcommittee noted that the Initiative consisted of three elements: the instrument array programme to operate and deploy space weather instruments; the data coordination and analysis programme to develop predictive models using International Space Weather Initiative data; and training, education and public outreach programmes.

173. The view was expressed that research under the Initiative had to be a globally concerted effort, given that it would ultimately contribute to the understanding of the conditions on the Sun and of the solar wind, the magnetosphere, the ionosphere and the thermosphere that could influence the performance and reliability of space-borne and ground-based technological systems and could endanger human life or health.

174. The Subcommittee noted with appreciation that WMO had supported international efforts of the International Space Weather Initiative since 2008, through the following activities: the capability of flying space weather instruments on meteorological satellites, the use of WMO information systems to enhance data exchange and data distribution worldwide and the exchange of experience between the atmospheric modelling community and the space weather community.

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

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

177. The Subcommittee welcomed the fact that the United Nations Programme on Space Applications had organized the United Nations/National Aeronautics and Space Administration/Japan Aerospace Exploration Agency Workshop on the International Space Weather Initiative, held from 6 to 10 November 2010 at Helwan University in Cairo, and welcomed the upcoming workshops scheduled to take place in Nigeria in 2011 and in Ecuador in 2012.

XI. Long-term sustainability of outer space activities

178. In accordance with General Assembly resolution 65/97, the Scientific and Technical Subcommittee considered agenda item 13, “Long-term sustainability of outer space activities”, under the workplan contained in the report of the Committee at its fifty-second session.[4]

179. The representatives of Canada, Chile, China, France, Germany, Italy, Japan, the Russian Federation, South Africa, Switzerland and the United States made statements under the item. During the general exchange of views, statements relating to the item were also made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

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

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

(a) “Procedure for risk assessment and identification of best practices to support the Working Group for Sustainability”, by the representative of Japan;

(b) “Space Situational Awareness update”, by the representative of the United States of America;

(c) “German national space situational awareness centre”, by the representative of Germany;

(d) “The Inter-Agency Space Debris Coordination Committee: an overview of the IADC scope and its activities”, by the representative of Germany in his capacity as member of the Inter-Agency Space Debris Coordination Committee;

(e) “A summary of the Galaxy 15 situation and its impact on space sustainability”, by the observer for the Secure World Foundation.

181. The Subcommittee had before it the following:

(a) Working paper submitted by the Chair of the Working Group on the terms of reference and methods of work of the Working Group on the Long-term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee (A/AC.105/C.1/L.307);

(b) Conference room papers containing comments on the long-term sustainability of outer space activities received from member States and permanent observers of the Committee (A/AC.105/C.1/2011/CRP.9, A/AC.105/C.1/2011/CRP.17 and A/AC.105/C.1/2011/CRP.20);

(c) Conference room papers containing a list of points of contact communicated to the Secretariat pursuant to the note verbale dated 11 October 2010 (A/AC.105/C.1/2011/CRP.10 and Adds.1 and 2).

182. In accordance with General Assembly resolution 65/97, the Working Group on the Long-term Sustainability of Outer Space Activities was reconvened under the chairmanship of Peter Martinez (South Africa). The Working Group held four meetings.

183. Some delegations expressed the view that the Working Group would promote mutually beneficial international cooperation and dialogue on the sustainability, safety and security of space activities.

184. The view was expressed that the work of the Working Group was important for improving the international standards to be implemented by each spacefaring nation and each spacecraft and launch operator.

185. The view was expressed that the Working Group should operate in a well-balanced, pragmatic, efficient and open manner.

186. The view was expressed that the work of the Working Group should be guided by the principles of relevance and efficiency.

187. Some delegations expressed the view that the scope of work of the Working Group should neither duplicate nor overlap with existing mandates or ongoing operations of other subsidiary bodies of the Subcommittee.

188. The view was expressed that the Working Group should consider, among other things, future objectives and priorities of international space activities, and identify ways and means to make outer space activities sustainable in the long term.

189. At its 756th meeting, on 18 February 2011, the Subcommittee endorsed the report of the Working Group, contained in annex IV to the present report.

190. The Subcommittee agreed that any guidelines that might 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.

191. Some delegations expressed the view 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 control, 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.

192. 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 States with emerging space capabilities. It was further stressed that full consideration should be given to the key concerns of developing countries and that setting overly high standards or thresholds for space activities in a way that might hinder the enhancement of capacity-building should be avoided.

193. Some delegations expressed the view that actions were necessary to reduce the risk to space activities of all space actors and ensure equitable access by all countries to the limited natural resources of outer space.

194. Some delegations emphasized the need for capacity-building to ensure that the required technical expertise was made available to Member States, in particular developing countries.

195. Some delegations expressed the view that the viewpoints of interested private sector entities involved in space activities should be taken into account when considering the long-term sustainability of outer space activities, and called upon wider international and industrial cooperation in that regard.

196. The view was expressed that States must ensure that outer space, as the heritage of mankind, was not used to favour commercial interests that undermine the social interests of humanity.

197. The view was expressed that the draft European code of conduct for outer space activities was a complementary initiative aimed at promoting, through voluntary measures of trust and transparency, the security of space activities.

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

199. The view was expressed that threats posed by the possible development of military capabilities in outer space could undermine efforts towards the sustainability of space activities in the future.

200. The view was expressed that in order to reach consensus on this issue in which States are involved, the subject must be considered in accordance with the principle of access to outer space on the basis of equality and without any discrimination.

201. The view was expressed that it was important to have constructive dialogue and synergy between the Conference on Disarmament and the Committee on the Peaceful Uses of Outer Space and also between the Scientific and Technical Subcommittee and the group of governmental experts requested by the First Committee of the General Assembly to conduct a study on outer space transparency and confidence-building measures.

XII. 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

202. In accordance with General Assembly resolution 65/97, the Scientific and Technical Subcommittee considered agenda item 14, “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.

203. The representatives of Ecuador and Venezuela (Bolivarian Republic of) and the observer for Azerbaijan made statements under agenda item 14. During the general exchange of views, statements relating to the item were made by representatives of other member States and by the representative of Colombia on behalf of the Group of Latin American and Caribbean States.

204. The Subcommittee welcomed the information provided in the annual report for 2010 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.1/2011/CRP.13. The Subcommittee invited ITU to continue submitting reports to it.

205. Some delegations were of the view that the geostationary orbit was a limited natural resource that risked becoming saturated, thereby threatening the sustainability of space activities in that environment; that its exploitation should be rationalized; and that it should be made available to all States, under equitable conditions, irrespective of their current technical capabilities, taking into account in

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

206. Some delegations were of the view that in the use of the geostationary orbit account should be taken of the needs of developing countries and priority should be given to space activities that could contribute to sustainable development and to the achievement of the Millennium Development Goals.[5]

207. Some delegations were of the view that the geostationary orbit provided unique potential for access to communications and information, in particular for assisting developing countries in implementing social programmes and educational projects, and for providing medical assistance. Those delegations were of the view that it was important to use the geostationary orbit in compliance with international law, in accordance with the decisions of ITU and within the legal framework established in the relevant United Nations treaties.

208. The Subcommittee noted that Nigeria and the International Academy of Astronautics had jointly organized, in the fall of 2010, an international symposium on the theme "Equatorial plane: attributes and characteristics", and that the symposium examined the physical nature and technical attributes of the geostationary orbit and its utilization and applications.

209. Some delegations were of the view that this item should remain on the agenda of the Subcommittee, and that its study could be carried out, as necessary, by working groups or intergovernmental panels in order to ensure the use of the geostationary orbit in accordance with international law.

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

210. In accordance with General Assembly resolution 65/97, the Subcommittee considered agenda item 15, "Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee". The Working Group of the Whole, convened pursuant to paragraph 7 of that resolution, considered the draft provisional agenda for the forty-ninth session.

211. The Subcommittee noted that the Secretariat had scheduled the forty-ninth session of the Subcommittee to be held from 6 to 17 February 2012.

212. The Subcommittee noted that, in accordance with General Assembly resolution 65/97, it would submit to the Committee its proposal on the draft provisional agenda for the forty-ninth session of the Subcommittee and recommended that the following substantive items be included in the draft provisional agenda:

1. General exchange of views and introduction of reports submitted on national activities.
2. United Nations Programme on Space Applications.

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[5] A/56/326, annex.

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 2012 as reflected in the multi-year workplan in paragraphs 8 and 9 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 2012 as reflected in the multi-year workplan in paragraph 9 of annex III to the report of the Scientific and Technical Subcommittee on its forty-eighth session (A/AC.105/987))

   (c) International Space Weather Initiative;

   (Work for 2012 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,[4] subject to any decision to be made during the fifty-fourth session of the Committee, in 2011)

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 fiftieth 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.

213. The Subcommittee agreed that the topic for the symposium to be organized in 2012 by the Office for Outer Space Affairs, 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 "The Earth observation services industry: market opportunities". The symposium should target the contribution of the Committee to the United Nations Conference on Sustainable Development and should include observance of the fortieth anniversary of the launch of Landsat-1.

214. The Subcommittee noted with appreciation that open-ended informal consultations had been held during its current session pursuant to the recommendation made by the Committee at its fifty-third session, and welcomed the efforts of the Chair of the Subcommittee to further rationalize the working methods of the Subcommittee.

215. The Subcommittee noted with satisfaction that the Secretariat had taken measures, in close consultation with the Chair of the Subcommittee, to rationalize and optimize the Subcommittee's use of time, including by scheduling the symposium during the second week, by scheduling the item entitled "General exchange of views and introduction of reports on national activities" over a longer period of time during the session and by limiting the number of slots for statements per meeting.

216. The Subcommittee agreed that maximum flexibility should be applied in the scheduling of items, in particular those to be considered by working groups.

217. The Subcommittee noted that an increasing number of reports submitted by Member States on their national activities in outer space comprised a summary of those activities and did not exceed three pages, in accordance with the agreement of the Committee at its fifty-third session. The Subcommittee recommended that this practice should continue to be applied and that only reports not exceeding three pages should be included in the official document.

218. The Subcommittee recommended that member States of the Committee should avoid duplicating detailed information provided in their reports on national activities with information provided in statements during the session of the Subcommittee.

219. The Subcommittee recommended that, as a general rule, statements should not exceed 10 minutes and scientific and technical presentations should be closely linked to the agenda items of the Subcommittee and should not exceed 15 minutes in duration.

220. The Subcommittee recommended that member States and observers of the Committee should communicate to the Secretariat their wish to make scientific and technical presentations and under which item, before the start of the session, in order to optimize the plan of work of the session. The Subcommittee also recommended that speaking notes for such presentations should be provided to facilitate the simultaneous interpretation.

221. The Subcommittee recommended that the group composed of the members of the Bureaux of the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies (the "Group of 15") should consider matters relating to the optimization of the plan of work of the Subcommittee's sessions, in view of the increasing number of scientific and technical presentations.

222. The Subcommittee expressed its appreciation to the Secretariat for its overall management of the current session of the Subcommittee.

223. The Subcommittee recommended to the Committee to extend the provisions contained in paragraph 325 of the report of the Committee on the Peaceful Uses of Outer Space on its fifty-third session[6] to the Group of 77 and China and other interregional groups.

224. At its 754th meeting, on 17 February, the Subcommittee endorsed the recommendations of the Working Group of the Whole, contained in section F of annex I to the present report.

225. The Subcommittee noted that the Working Group of the Whole had also considered the preparations for events to be held at the fifty-fourth session of the Committee to mark the fiftieth anniversary of human space flight and the fiftieth anniversary of the Committee. At its 754th meeting, on 17 February, the Subcommittee endorsed the recommendations of the Working Group of the Whole contained in section E of annex I to the present report.

[6] *Official Records of the General Assembly, Sixty-fifth Session, Supplement No. 20* (A/65/20).

Annex I

Report of the Working Group of the Whole

A. Introduction

1. In accordance with paragraph 7 of General Assembly resolution 65/97, the Scientific and Technical Subcommittee, at its forty-eighth session, reconvened its Working Group of the Whole. The Working Group held six meetings from 7 to 17 February 2011, 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, the organization of the events at the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space, in June 2011, and the draft provisional agenda for the forty-ninth session of the Subcommittee, to be held in 2012. At its sixth meeting, on 17 February, the Working Group adopted the present report.

B. 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.105/980). It was noted that the Expert had supplemented the report with a statement.

3. The Working Group of the Whole noted the meetings, seminars, symposiums, training courses and workshops that had been proposed in annex II of the report of the Expert on Space Applications.

C. 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) Note by the Secretariat containing the final report of the Action Team on Public Health: the use of space technology to improve public health (A/AC.105/C.1/L.305);

(b) Conference room paper containing a draft contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development: harnessing geospatial data for sustainable development (A/AC.105/C.1/2011/CRP.3).

Final report of the Action Team on Public Health

5. The Working Group of the Whole welcomed the final report of the Action Team on Public Health and noted its recommendations on the coordination of inter-organizational and multidisciplinary actions at the national, regional and international levels, including by international organizations, with the objective of bringing technical experts together with policymakers and other stakeholders for better harmonization of the use of space technology applications with the key public health functions.

6. The Working Group of the Whole noted, on the basis of the overall findings of the Action Team, that continued discussions were needed at the national, regional and international levels on the deployment and use of space technology to bring concrete benefits for meeting health needs; that long-term efforts in cross-disciplinary capacity-building in the area of tele-epidemiology and tele-health could be further pursued in the form of initiatives and pilot projects at the national and regional levels; and that horizontal linkages in activities of United Nations entities in tele-epidemiology and tele-health should be encouraged in order to disseminate information and promote initiatives in those areas throughout the United Nations system.

7. The Working Group of the Whole recommended that the findings and recommendations presented by the Action Team in its final report should be further discussed in the Scientific and Technical Subcommittee.

8. The Working Group of the Whole requested the Secretariat to transmit the final report of the Action Team to the World Health Organization (WHO), with an invitation to WHO to report to the Subcommittee at its forty-ninth session on the possible development of long-term tele-epidemiology and tele-health activities. Consideration would be given to the creation of an international committee on tele-epidemiology and tele-health.

9. The Working Group of the Whole noted the United Nations/Canada workshop on the contribution of tele-epidemiology to public health actions in the context of climate change adaptation, co-sponsored by the European Space Agency, to be held in Montreal, Canada, in June 2011. The Working Group of the Whole requested that the outcome and recommendations of the workshop be presented to the Subcommittee under its agenda item on the United Nations Programme on Space Applications, for consideration by the Subcommittee.

Draft contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development

10. The Working Group of the Whole considered the draft contribution of the Committee on the Peaceful Uses of Outer Space to the United Nations Conference on Sustainable Development, and requested the Secretariat to prepare a revised draft in the form of a conference room paper for consideration by the Legal Subcommittee at its fiftieth session, in 2011.

11. The Working Group of the Whole recommended that, in the contribution of the Committee, the institutional framework for harnessing geospatial data for sustainable development should be reviewed with a view to providing an overall picture of the role of the Committee and its continuous impact in this field; the role

of other mechanisms and initiatives for harnessing geospatial data for sustainable development undertaken by United Nations entities and other international organizations such as the Committee on Earth Observation Satellites; and, at the regional level, the role of high-level mechanisms for space cooperation, such as the Asia-Pacific Space Cooperation Organization, the Asia-Pacific Regional Space Agency Forum, the African Leadership Conference on Space Science and Technology for Sustainable Development and the Space Conference of the Americas, in relation to the theme of geospatial data. The role of the regional centres for space science and technology education, affiliated to the United Nations, and the Office for Outer Space Affairs under the United Nations Programme on Space Applications and the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) should also be assessed.

D. Space-system-based disaster management support

12. For its consideration of the item, the Working Group of the Whole had before it the following:

(a) Report on the activities carried out in 2010 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/981);

(b) Report of the Secretariat on technical advisory support activities carried out in 2010 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/985);

(c) Note by the Secretariat on the United Nations Platform for Space-based Information for Disaster Management and Emergency Response: proposed workplan for the biennium 2012-2013 (A/AC.105/C.1/2011/CRP.15);

(d) Report on coordination activities carried out by the United Nations Office for Outer Space Affairs with existing mechanisms and initiatives supporting emergency response activities with space-based information (A/AC.105/C.1/2011/CRP.16).

13. The Working Group of the Whole noted the proposed workplan for the biennium 2012-2013 for the UN-SPIDER programme. The Working Group of the Whole further noted that the Office for Outer Space Affairs would follow up with Member States, specifically requesting them to consider providing the necessary resources to carry out the proposed workplan, and that the Office for Outer Space Affairs would present a final revised proposed workplan for the biennium 2012-2103, which would take into consideration the level of resources committed to the programme by Member States for 2012-2013 and would be considered by the Committee on the Peaceful Uses of Outer Space during its fifty-fourth session.

E. Events at the fifty-fourth session of the Committee on the Peaceful Uses of Outer Space

14. The Working Group of the Whole recalled that the General Assembly, in its resolution 65/97, had welcomed the fact that the Committee on the Peaceful Uses of Outer Space, at its fifty-fourth session, in 2011, would celebrate the fiftieth anniversary of human space flight and the fiftieth anniversary of the Committee.

15. The Working Group of the Whole noted the decision by the Committee at its fifty-third session, in 2010, that the events on 1 June 2011 would include a high-level segment, open to all States Members of the United Nations. Those events would enjoy the participation of representatives at the ministerial level, heads of agencies, astronauts and other dignitaries and would address the achievements of the Committee over the course of 50 years, the 50 years of human space flight and the future of humanity in outer space.

16. The Working Group of the Whole considered the preparations for the high-level segment and noted that 1 June would be reserved for a one-day high-level event, with addresses to be made by the participating States Members of the United Nations, and that the normal procedures for similar high-level events organized at the United Nations Office at Vienna would be applied. The Working Group requested the Secretariat to communicate to all permanent missions in Vienna information on the administration of the high-level segment.

17. The Working Group of the Whole agreed that a draft document should be prepared with the objective of having a declaration of the Committee on the Peaceful Uses of Outer Space adopted at the high-level segment, and that the draft document should be further negotiated among member States of the Committee and finalized before the fifty-fourth session of the Committee. The Working Group noted in this regard that consultations had been held during the current session of the Subcommittee under the leadership of the Chair of the Committee, on the basis of a non-paper by the Secretariat circulated among permanent missions in Vienna, and agreed that the Chair of the Committee, in close consultation with the Secretariat, should prepare a working paper of the Chair, to be issued in all official languages of the United Nations, for further consideration by the Legal Subcommittee at its fiftieth session.

F. Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee

18. The Working Group of the Whole noted that, in accordance with General Assembly resolution 65/97, the Scientific and Technical Subcommittee would submit to the Committee its proposal for the draft provisional agenda for the forty-ninth session of the Subcommittee, to be held in 2012.

19. The Working Group of the Whole considered the list of substantive items contained in the provisional agenda for the forty-eighth session of the Subcommittee (A/AC.105/C.1/L.306) and recommended that the same substantive items should be considered at the forty-ninth session of the Subcommittee.

20. The Working Group of the Whole noted that, in accordance with the agreement reached by the Subcommittee at its forty-fourth session, in 2007 (A/AC.105/890, annex I, para. 24), the Office for Outer Space Affairs would organize a symposium to strengthen the partnership with industry (the industry symposium) at the forty-ninth session of the Subcommittee, and noted that the Office had proposed "The Earth observation services industry: market opportunities" as a topic for that symposium.

21. The Working Group of the Whole recommended that further consideration be given to the topic to be selected for the industry symposium in view of the fact that there were other possible themes related to substantive items on the agenda of the Subcommittee.

22. The Working Group of the Whole recommended that consultations among interested member States, permanent observer organizations and the Office for Outer Space Affairs be held during the fifty-fourth session of the Committee, in June 2011, to consider events to be held during the forty-ninth session of the Subcommittee to mark the fortieth anniversary of the launch of Landsat-1.

Annex II

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

1. At its 738th meeting, on 7 February 2011, the Scientific and Technical Subcommittee reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space, under the chairmanship of Sam Harbison (United Kingdom of Great Britain and Northern Ireland).

2. The Working Group recalled the objectives of its multi-year workplan for the period 2011-2015, adopted by the Subcommittee at its forty-seventh session (A/AC.105/958, annex II, para. 7):

(a) To promote and facilitate the implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space 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.

3. The Working Group held a workshop during its first meeting, on 9 February 2011, in accordance with its multi-year workplan. Five presentations were delivered at the workshop. (For the summaries of the presentations, see the appendix to the present report.)

4. The presentations were followed by an open discussion on various topics, including safety culture, transparency and the justification of the rationale for using NPS in specific space missions, as well as on the status of implementation of the Safety Framework.

5. The Working Group noted that the presentations had contributed significantly to fulfilling part (a) of the objectives of its multi-year workplan. It also noted that there would be further opportunity for member States and international intergovernmental organizations to make presentations at the next workshop. It encouraged States and international intergovernmental organizations considering or initiating involvement in NPS applications to provide information about their plans and progress to date.

6. The Working Group noted the comments that had been made in the presentations and general discussions about possible areas for further enhancing safety in the development and use of space NPS applications. Those were potentially relevant to part (b) of the objectives of the workplan and would be considered at future workshops and carried forward into the discussion about potential additional work that would take place at the end of the series of workshops.

7. The Working Group recalled that in accordance with its multi-year workplan, it would hold in 2012 a workshop with member States and international intergovernmental organizations making presentations pursuant to the invitations extended in 2010 and 2011.

8. The Working Group stressed that, at the workshop in 2012, it would be beneficial to have the broadest possible contribution from States and international intergovernmental organizations with experience in space NPS applications. Also, the Working Group encouraged all those States and international intergovernmental organizations considering or initiating involvement in space NPS applications to contribute actively to the workshop in 2012.

9. The Working Group recalled that the workshop in 2012 would be held with the same arrangements as set out in the report on its meeting held during the forty-seventh session of the Subcommittee, in 2010 (A/AC.105/958, annex II, para. 9).

10. The Working Group requested the Secretariat to invite, in March 2011, member States and international intergovernmental organizations with experience in space NPS applications, as well as those considering or initiating involvement in space NPS applications, to notify the Secretariat of any plans they might have to provide workshop presentations in 2012 and 2013, in accordance with the workplan of the Working Group.

11. The Working Group agreed to hold a teleconference on 11 May 2011 at 1500 hours UTC and, subject to replies received to the invitation referred to in paragraph 10 above, to make a decision on the need to hold an informal meeting in the margins of the fifty-fourth session of the Committee or on a future teleconference.

12. At its third meeting, on 17 February 2011, the Working Group adopted the present report.

Appendix

Summaries of the presentations made at the workshop held during the meeting of the Working Group on the Use of Nuclear Power Sources in Outer Space

“Introduction to the workshop”, by Sam Harbison (United Kingdom of Great Britain and Northern Ireland) (A/AC.105/C.1/L.311 and A/AC.105/C.1/2011/CRP.4)

The 2011 workshop is the first in a series approved by the Scientific and Technical Subcommittee at its forty-seventh session, in 2010. The workshops are a major part of the new five-year workplan of the Working Group, aimed at following up and reinforcing the Safety Framework for Nuclear Power Source Applications in Outer Space.

“Safety in the design and development of United States nuclear power source applications for use in outer space”, by Reed Wilcox (United States of America) (A/AC.105/C.1/L.313 and A/AC.105/C.1/2011/CRP.6)

The United States of America subjects its planned nuclear power source (NPS) applications in outer space to a safety analysis and risk assessment process consistent with the relevant guidance recommended in the Safety Framework, as jointly published by the Scientific and Technical Subcommittee and the International Atomic Energy Agency in 2009. Safety considerations receive close attention from the earliest design stages of both space NPS and their proposed mission applications.

Since the design/development phase for space NPS typically occurs well in advance of specific NPS applications, the safety basis for United States NPS initially focuses on containing NPS fuel under a wide range of postulated accident scenarios. Subsequent proposed mission applications focus on detailed risk assessments of the integrated NPS application (i.e. NPS, spacecraft, launch system, mission design, flight rules) to identify potential design modifications that can enhance the mission’s nuclear safety consistent with accomplishing mission objectives. Quantitative requirements on the performance of safety systems guide design/development, but are not as important as a rigorous launch nuclear safety review process that encourages continual evaluation and consideration of safety enhancements throughout the entire design, development and approval process.

“Safety workshop for space nuclear power sources: the roadmap for its implementation in a special case for Argentina”, by Conrado Varotto (Argentina) (A/AC.105/C.1/2011/CRP.7 and Corr.1)

Argentina, a country with wide experience in nuclear projects and their regulation, is working to establish the internal process for the inclusion of NPS on Earth observation satellites, particularly to ensure adequate availability of power during early orbits. To this end, short half-life radioisotope sources are being considered.

The definition of the project involves the participation of the National Atomic Energy Commission (CNEA) of Argentina, working together with the National Commission on Space Activities (CONAE) to meet the needs of the satellite missions of the Argentine space programme and to fulfil international commitments.

The Nuclear Regulatory Authority (ARN) is in charge of the authorization and control of the inclusion of NPS on Earth observation satellites, ensuring that the design and use of NPS will be fully compatible with Argentina’s radiological safety standards and with the Safety Framework for Nuclear Power Source Applications in Outer Space (A/AC.105/934).

This project allows Argentina to implant a culture of safe use of nuclear power sources, not just for missions around Earth, but also for foreseeable projects in deep space.

During the process of analysing its implementation of the Safety Framework, Argentina identified two specific challenges. For countries with NPS applications but without the capacity to launch the applications, the mission launch authorization process presents one of the biggest difficulties. Another challenge is how to

coordinate emergency preparedness and response with other countries over which the space mission would fly.

“The United States approach to risk assessment and its role in implementing an effective safety programme for nuclear power source applications in outer space”, by Ryan Bechtel (United States of America) (A/AC.105/C.1/L.312 and A/AC.105/C.1/2011/CRP.5)

The United States subjects its planned nuclear power source applications in outer space to a safety analysis and risk assessment. The United States safety analysis for nuclear power sources begins with an understanding of the launch vehicle, spacecraft, mission design and launch rules. These inputs are used to characterize a range of postulated accident scenarios to create a launch accident environment and the probabilities of such an accident occurring. Safety testing of nuclear power source components and continuum mechanics modelling are used to understand how the nuclear power source and nuclear fuel will respond in a variety of accident scenarios. The accident environments, accident probabilities, safety testing results and computer simulations are combined in a safety analysis to characterize the risk of the mission.

“Implementing the Safety Framework for Nuclear Power Source Applications in Outer Space at ESA: status and plans”, by Leopold Summerer (European Space Agency) (A/AC.105/C.1/2011/CRP.19)

The European Space Agency (ESA) subjects all its space missions to a rigorous, well-established safety programme with an excellent track record. ESA has used the energy provided by nuclear power sources on past interplanetary science missions and is currently planning their use in collaborative international science and exploration missions. ESA has started the process of implementing the recommendations provided by the Safety Framework.

While preliminary analysis indicates that the implementation of many recommendations appear to be straightforward, the implementation of some recommendations requires a deeper analysis of the options available within the organizational setup of ESA. These currently include aspects related to:

(a) The implementation of the prime responsibility of the organization conducting the space NPS mission and its formal arrangements with all relevant participants to the mission;

(b) The share of responsibilities between ESA and its member States related to recommendations for Governments and relevant international intergovernmental organizations authorizing, approving or conducting space NPS missions;

(c) The organization of launch safety and emergency preparedness and response for different launch phases and accident scenarios.

Annex III

Report of the Working Group on Near-Earth Objects

1. Pursuant to paragraph 7 of General Assembly resolution 65/97, the Scientific and Technical Subcommittee, at its forty-eighth session, reconvened its Working Group on Near-Earth Objects. The Working Group held three meetings, from 14 to 17 February 2011.

2. Sergio Camacho (Mexico) was elected Chairman of the Working Group on Near-Earth Objects at the 738th session of the Subcommittee, on 7 February 2011.

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

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

(b) Finalization of the agreement on international procedures for handling the NEO threat and engagement of international stakeholders;

(c) Review of progress on international cooperation and collaboration on NEO observations and on international capability for the exchange, processing, archiving and dissemination of data for the purpose of threat detection;

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

4. The Working Group had before it information on research in the field of near-Earth objects carried out by Member States, international organizations and other entities, contained in A/AC.105/976 and A/AC.105/C.1/2011/CRP.12.

5. The Working Group noted that during the current session of the Subcommittee, technical presentations related to the exchange, processing, archiving and dissemination of data for the purpose of threat detection and on near-Earth object mission planning and operations had been made by the representatives of Japan, Mexico, the Russian Federation and the United States and by the observers for the Association of Space Explorers and the International Academy of Astronautics (IAA).

6. The Working Group noted that the work accomplished on near-Earth objects in the intersessional period had resulted in important contributions to international cooperation in that area. In that context, the Working Group encouraged international conferences such as the forthcoming IAA Planetary Defense Conference, to be held from 9 to 12 May 2011 in Bucharest, to raise awareness among decision makers about the threat posed by near-Earth objects and to promote further cooperation.

7. The Working Group also noted that the Association of Space Explorers and the Secure World Foundation had organized a workshop of experts, held in Mexico City in January 2010, on ways and means to establish a NEO information, analysis and warning network. A similar workshop of experts on mission planning and operations was held at the European Space Operations Centre of ESA in Darmstadt, Germany,

in October 2010. The recommendations resulting from those workshops had been considered by the Action Team on Near-Earth Objects and incorporated in its interim report to the Subcommittee for the period 2010-2011 (A/AC.105/C.1/L.308, annex).

8. The Working Group noted with satisfaction the progress made by the Action Team on Near-Earth Objects in the period 2010-2011, as reflected in the draft recommendations for an international response to the near-Earth object impact threat (A/AC.105/C.1/L.308, annex).

9. Taking note that the multi-year workplan on near-Earth objects concluded in 2011, the Working Group recommends to the Subcommittee that the multi-year workplan be continued for the period 2012-2013, as follows:

2012 Consider the reports submitted in response to the annual request for information on near-Earth object activities and continue intersessional work. Review progress on international cooperation and collaboration on NEO observations. Facilitate, for the purpose of NEO threat detection, a more robust international capability for the exchange, processing, archiving and dissemination of data. Continue the work begun during the intersessional period on drafting international procedures for handling the NEO threat and seek agreement on those procedures. Consider updated information as presented in an interim report of the Action Team on Near-Earth Objects. Review progress made in activating the work of the NEO Information, Analysis and Warning Network (IAWN) and the mission planning and operations group.

2013 Consider the reports submitted in response to the annual request for information on near-Earth object activities and continue intersessional work. Review progress on international cooperation and collaboration on NEO observations and on the capability for the exchange, processing, archiving and dissemination of data for the purpose of NEO threat detection. Finalize the agreement on international procedures for handling the NEO threat and engage international stakeholders. Consider the final report of the Action Team on Near-Earth Objects. Review progress made in activating the work of IAWN and the mission planning and operations group, and assess their performance.

10. The Working Group agreed that the Action Team on Near-Earth Objects should be tasked with continuing its work on the draft recommendations for an international response to the near-Earth object impact threat with a view to finalizing them by the fiftieth session of the Subcommittee, to be held in 2013. The Working Group further agreed that intersessional work to be carried out in the 2011-2012 period could include workshops held under the auspices of the Action Team that would gather experts on various aspects of the draft recommendations made by the Action Team (A/AC.105/C.1/L.308, annex), and meetings of experts, which could facilitate the establishment of a mission planning and operations group.

11. The Working Group encouraged member States to participate in the intersessional work on NEOs and submit their research contributions to the Chairman of the Action Team. The Working Group also encouraged member States to financially support the facilities and programmes necessary for planetary defence.

12. The Working Group encouraged member States and their institutions to follow near-Earth object developments on a regular basis (see http://neo.jpl.nasa.gov and www.jpl.nasa.gov/asteroidwatch).

13. At its third meeting, on 17 February 2011, the Working Group adopted the present report.

Annex IV

Report of the Working Group on the Long-term Sustainability of Outer Space Activities

1. At its 738th meeting on 7 February 2011, the Scientific and Technical Subcommittee reconvened its Working Group on the Long-term Sustainability of Outer Space Activities, under the Chairmanship of Peter Martinez (South Africa). The Working Group held four meetings from 14 to 18 February 2011. The Working Group considered the draft terms of reference, scope and methods of work of the Working Group as contained in document A/AC.105/C.1/L.307.

2. The Working Group had before it the following documents:

(a) Working paper submitted by the Chair of the Working Group on the terms of reference and methods of work of the Working Group on the Long-term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee (A/AC.105/C.1/L.307);

(b) Conference room papers containing comments on the long-term sustainability of outer space activities received from member States and permanent observers of the Committee on the Peaceful Uses of Outer Space (A/AC.105/C.1/2011/CRP.9, A/AC.105/C.1/2011/CRP.17 and A/AC.105/C.1/2011/CRP.20);

(c) Conference room papers containing a list of points of contact communicated to the Secretariat pursuant to the note verbale dated 11 October 2010 (A/AC.105/C.1/2011/CRP.10 and Adds.1 and 2).

3. At the first meeting of the Working Group, on 14 February 2011, the Chair of the Working Group recalled the following process in the development of document A/AC.105/L.307 since the fifty-third session of the Committee, in 2010:

(a) In accordance with the agreement of the Committee, the Secretariat had sent to all member States of the Committee, in a note verbale dated 11 October 2010, a working paper submitted by the Chair of the Working Group containing proposed draft terms of reference and methods of work for the Working Group, intended to form the basis of A/AC.105/C.1/L.307. That working paper incorporated the comments received from member States at the fifty-third session of the Committee in response to the proposal for the terms of reference and methods of work of the Working Group contained in document A/AC.105/L.277 (see A/65/20, para. 155);

(b) Member States of the Committee were invited to submit their views and comments on the working paper to be submitted by the Chair, with specific emphasis on the terms of reference, thematic areas, methods of work and workplan (see A/65/20, para. 156);

(c) The Secretariat incorporated views received from member States as of 21 January 2011 to prepare the working paper of the Chair of the Working Group, for consideration by the Working Group at the forty-eighth session of the Subcommittee.

4. The Chair of the Working Group conducted informal consultations on 9 and 11 February 2011, during which a number of additional comments were received.

5. At the first meeting of the Working Group, held on 14 February 2011, delegations were invited to provide further comments on the terms of reference and methods of work to be submitted in document A/AC.105/C.1/L.307.

6. At its second meeting, held on 15 February 2011, the Working Group considered a revised non-paper containing a draft version of document A/AC.105/C.1/L.307 that incorporated all comments that had been received as of 14 February 2011. Delegations were again invited to contribute additional comments to document A/AC.105/C.1/L.307. The Secretariat also informed the Working Group of the process to be followed in preparing that document, once all comments had been received.

7. At the third meeting of the Working Group, held on 16 February 2011, document A/AC.105/C.1/L.307 was again opened for comments. After taking account of comments received as of 15 February 2011, no additional comments were received, and the Working Group agreed that the revised non-paper incorporating all comments received as of 16 February could be transmitted to the Secretariat for translation into the official languages of the United Nations.

8. The Working Group considered a proposal contained in A/AC.105/C.1/2011/CRP.17 for the clustering of the proposed topics listed in section IV (“Scope”) of the draft terms of reference and methods of work as contained in document A/AC.105/C.1/2011/L.307, in order to allow for a more efficient consideration of closely related items. The following clusters were proposed:

(a) Sustainable space utilization supporting sustainable development on Earth;

(b) Space debris; space operations and tools to support collaborative space situational awareness;

(c) Space weather;

(d) Regulatory regimes and guidance for actors in the space arena.

9. The Working Group agreed that the proposed clustering of topics could be considered as a basis for the establishment of expert groups. The Working Group stressed that the work of the expert groups should be balanced to ensure that the proposed clusters listed in paragraph 8 above received due consideration, and that the expert groups should take advantage of work done by other entities.

10. The Working Group agreed that the expert groups should be established in the intersessional period. The Working Group therefore requested the Secretariat to invite member States of the Committee and intergovernmental organizations with permanent observer status with the Committee to nominate suitable experts to participate in the expert groups.

11. The Working Group agreed that these expert groups should be established and their chairs or co-chairs identified by the end of April 2011, with a view to reporting on the progress made to the Committee at its fifty-fourth session, in June 2011.

12. The Working Group agreed that the revised text of document A/AC.105/C.1/L.307 should be transmitted to all member States of the Committee as document A/AC.105/C.1/L.307/Rev.1, inviting member States to provide comments by the end of April 2011, with a view to adopting the terms of reference and methods of work of the Working Group on the Long-term Sustainability of Outer Space Activities at the fifty-fourth session of the Committee, in 2011.

13. At its fourth meeting, on 18 February 2011, the Working Group adopted the present report.