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**Committee on the Peaceful
Uses of Outer Space
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Vienna, 6-15 June 2012**

Draft report

Chapter II

Recommendations and decisions

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

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-ninth session (A/AC.105/1001), which contained the results of its deliberations on the items considered by the Subcommittee in accordance with General Assembly resolution 66/71.
2. The Committee expressed its appreciation to Félix Clementino Menicocci (Argentina) for his able leadership during the forty-ninth session of the Subcommittee.
3. The representatives of Canada, China, Czech Republic, Germany, Indonesia, Japan, the Russian Federation, Saudi Arabia, Slovakia, the United States of America and Venezuela (Bolivarian Republic of) 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, by the representative of South Africa on behalf of the Group of African States and by the representative of Ecuador on behalf of the Group of Latin American and Caribbean States.
4. The Committee heard the following presentations:
 - (a) “Identification and evaluation of flooded areas using remote sensing and geographic information systems”, by the representative of Ecuador;
 - (b) “United Nations/Chile workshop on space technology applications for socioeconomic benefits”, by the representative of Chile;



- (c) “CleanSpace One”, by the representative of Switzerland;
- (d) “Beidou: bring the world and China to your doorstep”, by the representative of China;
- (d) “Scientific and technical activities on space weather in Austria”, by the representative of Austria;
- (e) “Satellite applications in support of international cooperation for maritime safety and security: the BluemassMed experience”, by the representative of Italy;
- (f) “Megha-Tropiques”, by the representative of India.

1. United Nations Programme on Space Applications

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

5. The Committee took note of the discussion of the Subcommittee under the item on the United Nations Programme on Space Applications, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 32-52 and annex I, para. 2).
6. The Committee endorsed the decisions and recommendations of the Subcommittee and its Working Group of the Whole, which had been convened under the chairmanship of S. K. Shivakumar (India) to consider the item (A/AC.105/1001, paras. 35 and 45).
7. The Committee noted that the priority areas of the Programme were: (a) environmental monitoring; (b) natural resources management; (c) global health; (d) disaster management; (e) global navigation satellite systems applications; (f) basic space science, including the International Space Weather Initiative; (g) space law; (h) climate change; (i) the Basic Space Technology Initiative; and (j) the Human Space Technology Initiative.
8. The Committee took note of the activities of the Programme that had been carried out in 2011, as presented in the report of the Scientific and Technical Subcommittee (A/AC.105/1001, paras. 41-44) and in the report of the Expert on Space Applications (A/AC.105/1011, annex I).
9. The Committee expressed its appreciation to the Office for Outer Space Affairs of the Secretariat for the manner in which the activities of the Programme had been implemented. The Committee also expressed its appreciation to the Governments and intergovernmental and non-governmental organizations that had sponsored the activities.
10. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2012, as described in the report of the Subcommittee (A/AC.105/1001, para. 45).
11. The Committee noted with satisfaction that the Office for Outer Space Affairs was helping developing countries and countries with economies in transition to participate in and benefit from activities being carried out under the Programme.
12. The Committee noted with concern the limited financial resources available to implement the Programme and appealed to States and organizations to continue supporting the Programme through voluntary contributions.

13. The Committee had before it the report on the United Nations/Malaysia Expert Meeting on Human Space Technology, held in Putrajaya, Malaysia, from 14 to 18 November 2011 (A/AC.105/1017); the report on the United Nations/Nigeria Workshop on the International Space Weather Initiative, held in Abuja from 17 to 21 October 2011 (A/AC.105/1018); the report on the United Nations International Meeting on the Applications of Global Navigation Satellite Systems, held in Vienna from 12 to 16 December 2011 (A/AC.105/1019); and the report on the United Nations/Viet Nam Workshop on Space Technology Applications for Socio-Economic Benefits, held in Hanoi from 10 to 14 October 2011 (A/AC.105/1020).

14. The Committee also had before it the report on the United Nations/Islamic Republic of Iran Regional Workshop on the Use of Space Technology for Human Health Improvement, held in Tehran from 23 to 26 October 2011 (A/AC.105/2012/CRP.13) and noted that the report would be made available as document A/AC.105/1021.

15. The Committee noted the conference room paper on activities under the Basic Space Technology Initiative in 2011-2012 and plans for 2013 and beyond (A/AC.105/2012/CRP.16).

16. The Committee took note of the outreach seminar, jointly organized by the Office for Outer Space Affairs in the framework of its Basic Space Science Initiative and the International Scientific Optical Observation Network (ISON) of the Russian Federation and held on the margins of the fifty-fifth session of the Committee.

17. The Committee also took note of the meeting of experts on the benefits for humanity of the International Space Station, organized by the Office for Outer Space Affairs in the framework of its Human Space Technology Initiative in cooperation with the International Space Station partners and held in Vienna on 11 and 12 June 2012.

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

18. The Committee endorsed the workshops, training courses, symposiums and expert meetings planned for the remaining part of 2012 and expressed its appreciation to Argentina, Austria, Chile, Ecuador, Italy, Japan and Latvia, as well as the European Space Agency, the International Astronautical Federation (IAF), the International Committee on Global Navigation Satellite Systems, the Japan Aerospace Exploration Agency and the National Aeronautics and Space Administration (NASA), for co-sponsoring and hosting those activities (see A/AC.105/1011, annex II).

19. The Committee endorsed the programme of workshops, training courses, symposiums and expert meetings related to environmental monitoring, natural resources management, global health, global navigation satellite systems (GNSS), international space weather, basic space technology, space law, climate change, human space technology and socioeconomic benefits of space activities to be held in 2013 for the benefit of developing countries.

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

20. The Committee 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 fellowships for postgraduate studies on GNSS and related applications.

21. The Committee expressed its appreciation to the Government of Japan, which, through the Kyushu Institute of Technology, had provided fellowships for postgraduate studies in nanosatellite technologies.

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

(iii) *Technical advisory services*

23. The Committee noted with appreciation the technical advisory services provided under the United Nations Programme on Space Applications in support of activities and projects promoting regional cooperation in space applications, as referred to in the report of the Expert on Space Applications (A/AC.105/1011, paras. 38-47).

(iv) *Regional centres for space science and technology education, affiliated to the United Nations*

24. The Committee noted with satisfaction that the United Nations Programme on Space Applications continued to emphasize, promote and foster cooperation with Member States at the regional and global levels to support the regional centres for space science and technology education, affiliated to the United Nations. The highlights of the activities of the regional centres supported under the Programme in 2011 and the activities planned for 2012 and 2013 were presented in the report of the Expert on Space Applications (A/AC.105/1011, annexes I-III).

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

26. The Committee welcomed with satisfaction the inauguration on 29 May 2012 of the Centre for Space Science and Technology Education for Western Asia, affiliated to the United Nations, hosted by the Royal Jordanian Geographic Centre and located in Amman.

(b) International Satellite System for Search and Rescue

27. The Committee noted with satisfaction that the International Satellite System for Search and Rescue (COSPAS-SARSAT) currently had 41 member States and two participating organizations and that several more had shown interest in associating with the programme in the future. The Committee noted with appreciation that the worldwide coverage for emergency beacons had been made possible by the space segment, which consisted of six polar-orbiting and six geostationary satellites provided by Canada, France, the Russian Federation and

the United States, along with the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), as well as by the ground segment contributions made by 26 other countries. The Committee also noted that, since becoming operational in 1982, COSPAS-SARSAT had provided assistance in rescuing at least 32,300 persons in 9,000 search and rescue events and that in 2011 the system's alert data had helped to save 1,650 lives in 630 search and rescue events worldwide.

28. The Committee further noted that the use of satellites in medium-Earth orbit continued to be explored, with a view to improving international satellite-aided search and rescue operations. The Committee welcomed the testing of global positioning system satellites to improve the capabilities of beacons to best take advantage of medium-Earth orbit satellites.

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

29. The Committee took note of the discussion of the Subcommittee under the item on matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 62-73).

30. In the course of the discussion, delegations reviewed national and cooperative programmes on remote sensing, providing examples of national programmes and bilateral, regional and international cooperation that contributed to enhancing the potential of remote sensing technology to advance the socioeconomic development of their countries.

31. The Committee noted with satisfaction that a growing number of developing countries had been actively developing and deploying their own remote sensing satellite systems and utilizing space-based data to advance socioeconomic development, and it stressed the need to continue enhancing the capacities of developing countries with regard to the use of remote sensing technology.

32. The Committee noted the important role played in promoting regional cooperation in the use of remote sensing technology, in particular for the benefit of developing countries, by regional organizations such as the Asia-Pacific Space Cooperation Organization (APSCO) and its remote sensing satellite project, and the Asia-Pacific Regional Space Agency Forum (APRSAF) and its initiatives the Sentinel Asia Project and the Space Applications for Environment programme.

33. The Committee recognized the important role played by international intergovernmental organizations such as the Committee on Earth Observation Satellites (CEOS) and the Group on Earth Observations (GEO), and noted that India had assumed the chairmanship of CEOS for 2012 and would host its plenary meeting in 2012. The Committee also noted that the Canadian Space Agency would assume the chairmanship of CEOS in 2013. The Committee further noted that Brazil would host the next GEO plenary session, in November 2012.

34. The Committee noted a number of international and regional conferences held on remote sensing, such as the International Symposium and Exhibition on Geoinformation 2011, in Kuala Lumpur in September 2011; the International Workshop on Remote Sensing of the Environment for the Sub-Saharan Regions,

organized by the International Academy of Astronautics (IAA) in Nairobi in October 2011; the meeting of experts on the Global Monitoring for Environment and Security (GMES), organized by the Secure World Foundation (SWF) in Brussels in February 2012; and the regional conference on GMES, co-organized by the Government of Romania, the European Commission, the European Space Agency (ESA) and EURISY, in Bucharest in May 2012. The Committee further noted that the 33rd Asian Conference on Remote Sensing would be held in Pattaya, Thailand, from 26 to 30 November 2012, organized by the Government of Thailand and the Asian Association on Remote Sensing.

3. Space debris

35. The Committee took note of the discussion of the Subcommittee under the item on space debris, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 74-95).

36. The Committee endorsed the decisions and recommendations of the Subcommittee on the item (A/AC.105/1001, paras. 91 and 92).

37. The Committee noted with appreciation that some States were already implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee and/or the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines and that other States had developed their own space debris mitigation standards based on those guidelines. The Committee also noted that other States were using the IADC Guidelines and the European Code of Conduct for Space Debris Mitigation as reference points in their regulatory frameworks for national space activities. The Committee further noted that other States had cooperated, in the framework of the ESA space situational awareness programme, to address the issue of space debris.

38. Some delegations expressed the view that the future of space activities largely depended on space debris mitigation and urged those countries that had not yet done so to implement the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space.

39. Some delegations expressed the view that the mitigation of space debris and the limitation of the creation of additional space debris should be among the priorities of the work of the Committee and its subsidiary bodies.

40. Some delegations expressed the view that the issue of space debris should be addressed in a manner that would not jeopardize the development of the space capabilities of developing countries.

41. Some delegations expressed the view that voluntary mitigation measures should be encouraged and that efforts should be intensified to activate national and international mechanisms to reduce the creation and proliferation of space debris.

42. Some delegations called on the Scientific and Technical Subcommittee to continue its thorough consideration of the issue of space debris mitigation, in particular by paying greater attention to the problem of debris coming from platforms with nuclear power sources in outer space and to collisions of space objects with space debris and their derivatives, as well as to the ways of improving the technology and the collaborative networks for monitoring space debris.

43. Some delegations expressed the view that it would be beneficial for Member States to exchange information on measures to reduce the creation and proliferation of space debris; on the collection, sharing and dissemination of data on space objects; and on re-entry notifications.

44. Some delegations expressed the view that the Space Debris Mitigation Guidelines of the Committee should be further developed.

45. Some delegations expressed the view that the Scientific and Technical Subcommittee and the Legal Subcommittee should cooperate in developing legally binding rules relating to space debris.

46. The view was expressed that, during the removal of space debris, no unilateral action should be taken by any State with respect to a space object of another State unless a consultation and agreement with regard to that action had been reached with the State of registry of the space object in question.

47. The view was expressed that the Committee should establish means to limit and eliminate space debris, that more consideration should be given to the issue of space debris in geostationary orbit and low-Earth orbits, and that any tests used for satellite destruction should be prohibited.

4. Space-system-based disaster management support

48. The Committee took note of the discussion of the Subcommittee under the item on space-system-based disaster management support, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 96-112 and annex I, para. 8).

49. The Committee had before it a conference room paper on planned contributions of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) regional support offices to the implementation of the programme activities planned for the period 2012-2013 (A/AC.105/2012/CRP.18).

50. The Committee also had before it a working paper prepared for the fiftieth session of the Subcommittee submitted by the Russian Federation, entitled "Project to create the International Global Monitoring Aerospace System as a forward-looking new initiative in predicting and mitigating the consequences of natural and man-made disasters" (A/AC.105/C.1/L.323).

51. The Committee noted with satisfaction the progress reflected in the reports on the activities carried out under the UN-SPIDER programme in 2011 and noted that the programme would, in the biennium 2012-2013, be implementing the revised workplan contained in conference room paper A/AC.105/C.1/2012/CRP.22.

52. The Committee noted with appreciation the voluntary contributions made by Member States, including cash contributions from Austria, China and Germany for the activities of the UN-SPIDER programme in 2011. The Committee noted with appreciation that the programme had also benefited from the services of associate experts and experts provided by Austria, China, Germany and Turkey.

53. The Committee noted with satisfaction that the Office for Outer Space Affairs had, to date, signed cooperation agreements for the establishment of the 12 UN-SPIDER regional support offices noted in the report of the Scientific and Technical Subcommittee at its forty-ninth session (A/AC.105/1001, para. 109) and

that the Governments of Argentina, Indonesia, the Russian Federation, South Africa and Turkey had each offered to host a UN-SPIDER regional support office.

54. The Committee noted with appreciation that space-based information was being provided to support disaster management, particularly emergency response activities, through several mechanisms, such as the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters), the Sentinel Asia project and the GMES Services and Applications for Emergency Response (SAFER) and the GMES Initial Operations (GIO) initiatives in Europe, as well as COSPAS-SARSAT.

55. The Committee welcomed that the Korea Aerospace Research Institute had joined the International Charter on Space and Major Disasters in July 2011 and that it was providing satellite images to support Charter activities.

56. The Committee noted that the information and services being delivered under the UN-SPIDER programme were making a valuable contribution to mitigating the consequences of natural disasters and called on Member States to continue supporting the programme.

57. The view was expressed that the making available of a greater number of images, in addition to increased timeliness, would improve the usefulness of space-based solutions to disaster-affected countries.

5. Recent developments in global navigation satellite systems

58. The Committee took note of the discussion of the Subcommittee under the item on recent development in global navigation satellite systems, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 113-135).

59. The Committee noted with appreciation that the International Committee on Global Navigation Satellite Systems (ICG), which had emerged from the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) and had been formally established in 2005, continued to make significant progress towards encouraging compatibility and interoperability among global and regional space-based positioning, navigation and timing systems and promoting the use of GNSS and their integration into infrastructures, particularly in developing countries.

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

61. The Committee noted with appreciation that the sixth meeting of ICG and the seventh meeting of its Providers' Forum had been held in Tokyo from 5 to 9 September 2011, organized by the Government of Japan, and that the seventh meeting of ICG would be held in Beijing from 5 to 9 November 2012. The Committee also noted that the United Arab Emirates would host the eighth meeting of ICG in 2013.

62. The Committee noted that the United Nations International Meeting on the Applications of Global Navigation Satellite Systems, co-sponsored by the

United States, had been hosted by the Office for Outer Space Affairs and held in Vienna from 12 to 16 December 2011 to mark 10 years of achievement of the United Nations in the area of GNSS.

63. The Committee noted with appreciation the achievements of providers and users of positioning, navigation and timing services in promoting GNSS, as reflected in the publication entitled “10 years of achievement of the United Nations on Global Navigation Satellite Systems” (ST/SPACE/55).

64. The Committee noted the growing attention given by the international community to the importance of global navigation satellite systems and the progress in the field of GNSS technology and applications.

65. The Committee noted that China’s Beidou satellite navigation system had started providing regional services.

66. The Committee noted the official start of operations of the first pan-European navigation satellite programme, the European Geostationary Navigation Overlay Service (EGNOS), on 1 October 2009. EGNOS was a precursor of the Galileo satellite navigation system of the European Union, as part of which the first two Galileo in-orbit validation satellites had been successfully launched on 21 October 2011.

67. The Committee noted that India was planning to launch the first satellite of the Indian Regional Navigation Satellite System.

68. The Committee noted that the Youth for Global Navigation Satellite Systems Group of the Space Generation Advisory Council (SGAC) had continued its outreach activities on the importance of GNSS systems, including producing a brochure entitled “Global navigation satellite systems (GNSS) and youth”.

6. Use of nuclear power sources in outer space

69. The Committee took note of the discussion of the Subcommittee under the item on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 136-151).

70. The Committee endorsed the decisions and recommendations of the Subcommittee and the Working Group on the Use of Nuclear Power Sources in Outer Space, reconvened under the chairmanship of Sam A. Harbison (United Kingdom) (A/AC.105/1001, para. 151 and annex II, paras. 13-14).

71. The Committee noted with satisfaction the work of the Working Group under its multi-year workplan, in particular the success of the workshops held during the sessions of the Subcommittee in 2011 and 2012 at which member States had had, inter alia, an opportunity to be updated on the progress of implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space by States and intergovernmental organizations.

72. 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.

73. Some delegations expressed the view that, in order to ensure the safe use of nuclear power sources, it would be important for space actors with proven capabilities in the field to make available to other States their know-how and information on measures taken to ensure the safety of objects using nuclear power sources.

74. Some delegations expressed 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.

75. Some delegations expressed the view that more consideration should be given to the use of nuclear power sources in terrestrial orbits in order to address the problem of potential collisions of nuclear power sources 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 Source Applications in Outer Space.

7. Near-Earth objects

76. The Committee took note of the discussion of the Subcommittee under the item on near-Earth objects, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 152-169 and annex III).

77. The Committee endorsed the recommendations of the Subcommittee and its Working Group on Near-Earth Objects, which had been convened under the chairmanship of Sergio Camacho (Mexico) (A/AC.105/1001, para. 169 and annex III).

78. The Committee noted that, on the margins of its fifty-fifth session, the Action Team on Near-Earth Objects had held four meetings to continue its work on the draft recommendations for an international response to the near-Earth object impact threat. The draft recommendations (as contained in document A/AC.105/C.1/L.317) were grouped under the following subject areas: information, analysis and warning; mission campaign planning and operations; and mission, oversight and authorization.

79. The Committee also noted that, on the margins of its fifty-fifth session, the second meeting of the representatives of space agencies had been held to discuss draft terms of reference for a mission planning and operations group, the establishment of which had been part of the draft recommendations made by the Action Team (A/AC.105/C.1/L.317). The Committee further noted that intersessional work on those draft terms of reference would continue in 2012, and the beginning of 2013 with a view to finalizing them by the fiftieth session of the Scientific and Technical Subcommittee.

80. The Committee noted that a number of international meetings had been held in 2011 to discuss international collaborative efforts on near-Earth objects, such as the second IAA Planetary Defense Conference, on the theme "From threat to action", co-organized by the Romanian Space Agency and held in Bucharest from 9 to 12 May; the Workshop on International Recommendations for Near-Earth

Object (NEO) Threat Mitigation, organized by the Action Team on Near-Earth Objects in Pasadena, United States, on 25 and 26 August, and the Near-Earth Object/Media and Risk Communications Workshop organized by the Action Team and the Secure World Foundation in Boulder, United States, on 14 and 15 November 2011.

81. The Committee also noted that a workshop had been held to further analyse the potentially hazardous asteroid known as 2011 AG5, organized by NASA on 29 May 2012, following the proposal by the Action Team on Near-Earth Objects, and that the Action Team had been informed about current knowledge about 2011 AG5.

82. The Committee noted that the Action Team would continue its work by co-organizing a workshop, in collaboration with NASA in October 2012, to address the functions that should be carried out by the Information, Analysis and Warning Network (IAWN). The Committee also noted that a special session on near-Earth object impact hazards, current activities and future plans, organized by the IAU Working Group on near-Earth Objects, would be held during the International Astronomical Union (IAU) General Assembly to be held in Beijing from 20 to 31 August 2012. The Committee also noted that members of the Action Team were involved in the organization of the 2013 IAA Planetary Defense Conference, to be held from 15 to 19 April in Flagstaff, United States.

83. Some delegations expressed the view that early detection and precision tracking were crucial for the management of threats posed by near-Earth objects, and that any measures undertaken to mitigate those threats required coordinated international efforts.

84. The view was expressed that progress had been made in expanding the global network for the detection and characterization of near-Earth objects, and in the efforts of the Action Team on Near-Earth Objects to develop draft terms of reference for an independent mission planning and operations group. That delegation was of the view that, although more work was to be done in that area, the key to any successful response to the near-Earth object impact threat was in early detection; cooperation in further developing detection capabilities and information-sharing networks on near-Earth objects was of the utmost importance.

85. The Committee noted that the Near-Earth Object Working Group of the Space Generation Advisory Council had successfully continued its technical paper competition entitled "Move an asteroid", which had been held since 2008 for students and young professionals to address the challenges of NEO threat mitigation, and that it had started the "Find an asteroid competition" to encourage teams all over the world to search for asteroids.

86. The Committee noted that the Action Team on Near-Earth Objects had been tasked with finalizing the draft recommendations for an international response to the near-Earth object impact threat by the fiftieth session of the Scientific and Technical Subcommittee, to be held in 2013, and to present them to the Committee at its fifty-sixth session.

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

87. The Committee took note of the discussion of the Subcommittee under the item on the examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 211-221).

88. The Committee noted the information on the examination of the geostationary orbit submitted by the delegation of the Czech Republic, and contained in conference room paper A/AC.105/2012/CRP.17.

89. The view was expressed that, with regard to the information contained in the above-mentioned conference room paper, a comparison of the nominal positions of radio space stations, known as “space networks” in the terminology of the International Telecommunication Union (ITU), with actual positions of satellites had shown that a certain percentage of space networks had no spacecraft at those positions and thus was not able to operate at all, and that if the unused radio space stations were suspended or the relevant proposals deleted, the overcrowding in the geostationary orbit would be lessened, which would benefit all users of that orbit.

90. Some delegations reiterated the view that the geostationary orbit was a limited natural resource at risk of becoming saturated, which threatened the sustainability of outer space activities. Those delegations were of the view that the exploitation of the geostationary orbit should, with the participation and cooperation of ITU, be rationalized and made available to all States, irrespective of their current technical capabilities, thus giving them the opportunity to have access to the geostationary orbit under equitable conditions, taking into account in particular the needs of developing countries and the geographical position of certain countries.

91. Some delegations were of the view that the geostationary orbit offered unique potential for the implementation of social programmes, educational projects and medical assistance. Those delegations therefore considered that the item on the geostationary orbit should remain on the agenda of the Subcommittee for further discussion through working groups, intergovernmental panels or task forces, for the purpose of continuing to analyse its scientific and technical characteristics.

9. International Space Weather Initiative

92. The Committee took note of the discussion of the Subcommittee under the item on the International Space Weather Initiative, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 170-182).

93. The Committee noted the conclusion of the item entitled “International Space Weather Initiative” and agreed that the Scientific and Technical Subcommittee

should include on its agenda, starting from its fiftieth session, a new regular item entitled "Space weather", in order to allow member States of the Committee and international organizations having permanent observer status with the Committee to exchange views on national, regional and international activities related to space weather science and outreach, as well as the societal impacts of space weather, with a view to promoting greater international cooperation in that area.

94. The Committee noted the importance of continuing international efforts to coordinate the global monitoring of space weather using space- and ground-based assets, assist in consolidating common knowledge and develop essential forecast capabilities to improve the safety of space-based assets and to increase understanding and enhance predictions of space weather events.

95. The Committee noted with appreciation the establishment of the International Centre for Space Weather Science and Education at Kyushu University, Japan, one of the aims of which was to promote science studies and education in the area of space environment.

96. The Committee noted with appreciation the workshop, organized by the United States and held on the margins of the fifty-fifth session of the Committee, which focused on the societal impacts of space weather.

97. The Committee welcomed the upcoming International Space Weather Initiative and Magnetic Data Acquisition System (MAGDAS) School on Space Science to be held in Bandung, Indonesia, from 17 to 26 September 2012 and hosted by Indonesia in collaboration with the International Space Weather Initiative, the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) and Kyushu University; the 19th United Nations/ESA/Austria Symposium on Data Analysis and Image Processing for Space Applications and Sustainable Development on the topic "Space Weather", scheduled to take place in Graz, Austria, from 18 to 21 September 2012; and the United Nations/Ecuador Workshop on the International Space Weather Initiative, scheduled to take place in Quito from 8 to 12 October 2012, to be hosted by the Quito Astronomical Observatory on behalf of the Government of Ecuador.

10. Long-term sustainability of outer space activities

98. The Committee took note of the discussion of the Subcommittee under the item on the long-term sustainability of outer space activities, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 183-210).

99. The Committee endorsed the recommendations and decisions on the item made by the Scientific and Technical Subcommittee and the Working Group on the Long-term Sustainability of Outer Space Activities, reconvened under the chairmanship of Peter Martinez (South Africa) (A/AC.105/1001, para. 210 and annex IV, para. 16).

100. The Committee noted that the working paper on the long-term sustainability of activities in outer space submitted by the Russian Federation (A/AC.105/2012/CRP.19) would be made available in all official languages of the United Nations as document A/AC.105/L.285 following the conclusion of the session.

101. The Committee had before it the working papers prepared for the fiftieth session of the Subcommittee by expert groups A-D of the Working Group (A/AC.105/C.1/L.324-327), which had been made available for comments by member States and permanent observers of the Committee, as recommended by the Working Group at the forty-ninth session of the Subcommittee (A/AC.105/1001, annex IV, para. 16 (i)).

102. The Committee also had before it a working paper prepared for the fiftieth session of the Subcommittee, submitted by the Russian Federation and Ukraine, entitled "Technology safeguards associated with cooperation in the field of the exploration and use of outer space for peaceful purposes and in the development and operation of space rockets and rocket equipment" (A/AC.105/C.1/L.322).

103. The Committee noted that expert groups A-D of the Working Group were meeting on the margins of the current session of the Committee, in accordance with the terms of reference and methods of work of the Working Group, and as agreed by the Working Group at the forty-ninth session of the Subcommittee (A/AC.105/1001, annex IV, para. 16 (a)).

104. On 11 June, the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities informed the Committee about the progress made by the expert groups and on the planned programme of work.

105. The Committee noted with satisfaction the nominations of Enrique Pacheco Cabrera (Mexico) as co-chair for expert group A and Ian Mann (Canada) as co-chair for expert group C, which would further enhance the efforts of those expert groups to achieve the goals set out in the terms of reference and methods of work and subsequently reaffirmed by the Working Group.

106. The Committee recalled that, under the workplan for 2013, a workshop would be held in conjunction with the fiftieth session of the Scientific and Technical Subcommittee and that States members of the Committee would be invited to include in their delegations representatives of national non-governmental organizations and of private sector entities having experience in space activities, so as to collect information on their experiences and practices in the conduct of sustainable space activities. The Committee also noted that a joint meeting of the expert groups would be held on the margins of the fiftieth session of the Subcommittee in preparation for the workshop.

107. Some delegations expressed the view that special attention should be paid to the risks posed by space debris because of the pressing need to advance international cooperation on that major priority issue.

108. Some delegations expressed the view that it was important to avoid duplication of efforts and to conduct a gap analysis to identify issues affecting the long-term sustainability of outer space activities that were not currently being addressed in any other forum.

109. The view was expressed that discussions on the long-term sustainability of outer space activities were also promoting the contribution of space activities to sustainable development on Earth, and that developing countries should actively participate in the work of the Working Group.

110. Some delegations expressed the view that the Legal Subcommittee should closely follow the discussions on the agenda item, since the topic of long-term sustainability of outer space activities had already exceeded the scope of space science and technology.

111. The view was expressed that the work to be conducted by the group of governmental experts on outer space transparency and confidence-building measures, which was due to commence its work in July 2012, could contribute to the work of the Working Group, taking into consideration the two groups, shared goals of promoting stability, safety and security in the space environment.

112. The view was expressed that the complex nature of the issues at hand necessitated the allotment of sufficient time for deliberations, so that measured decisions, aiming at long-term solutions, could be taken, and that the envisioned schedule for the work of the Working Group should be revisited, as necessary.

113. The view was expressed that the meetings of the expert groups should be carefully prepared and that documents for those meetings should be made available to the experts well in advance, in order to allow sufficient time for coordination at the national level prior to the meetings, thus enabling active participation by all and supporting a productive outcome.

114. The view was expressed that decisions on the topics under consideration by the Working Group should not be taken in meetings held in parallel with the plenary sessions, so as to enable the participation of all delegations.

115. The view was expressed that having more information on the structure of the reports of the expert groups, including envisioned results, would facilitate the production of a full and harmonized Working Group report.

11. Draft provisional agenda for the fiftieth session of the Scientific and Technical Subcommittee

116. The Committee took note of the discussion of the Subcommittee under the item on the draft provisional agenda for the fiftieth session of the Scientific and Technical Subcommittee, as reflected in the report of the Subcommittee (A/AC.105/1001, paras. 222-230 and annex I, paras. 9-10).

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

1. General exchange of views and introduction of reports submitted on national activities.
2. United Nations Programme on Space Applications.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
5. Space debris.

6. Space-system-based disaster management support.
7. Recent developments in global navigation satellite systems.
8. Space weather.
9. Items to be considered under workplans:
 - (a) Use of nuclear power sources in outer space;
(Work for 2013 as reflected in the multi-year workplan in paragraphs 8 and 10 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 2013 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) Long-term sustainability of outer space activities.
(Work for 2013 as reflected in paragraph 23 of the terms of reference and methods of work of the Working Group on the Long-Term Sustainability of Outer Space Activities, contained in annex II to the report of the Committee on its fifty-fourth session (A/66/20))
10. 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.
11. Draft provisional agenda for the fifty-first 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.

118. The Committee agreed that the Working Group of the Whole, the Working Group on the Use of Nuclear Power Sources in Outer Space, the Working Group on Near-Earth Objects and the Working Group on the Long-term Sustainability of Outer Space Activities should be reconvened at the fiftieth session of the Scientific and Technical Subcommittee.

119. The Committee endorsed the recommendation of the Working Group of the Whole that further consideration could be given to organizational matters in the Working Group during the fiftieth session of the Subcommittee.

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

121. The Committee endorsed the recommendation of the Working Group on the Use of Nuclear Power Sources in Outer Space that its work in 2013 should be conducted under the arrangements established in its workplan for 2014, in the event that no presentations were offered by member States and intergovernmental organizations for the workshop referred to in paragraph 113 above.

122. The Committee agreed that the topic for the symposium to be organized in 2012 by IAF, 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 “Overview of studies and concepts for active orbital debris removal”.
