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**Committee on the Peaceful
Uses of Outer Space
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Vienna, 9-18 June 2010**

Draft report

Chapter II

Recommendations and decisions

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

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-seventh session (A/AC.105/958), which contained the results of its deliberations on the agenda items considered by the Subcommittee in accordance with General Assembly resolution 64/86.
2. The Committee expressed its appreciation to the Chairman of the Subcommittee, Ulrich Huth (Germany) for his able leadership during its forty-seventh session.
3. The representatives of Belgium, Canada, China, Colombia, Cuba, Germany, India, Indonesia, Japan, Mexico, Nigeria, the Russian Federation, Saudi Arabia, South Africa, Thailand, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to this item were also made by representatives of other member States.
4. The Committee heard the following presentations:
 - (a) “Japanese contribution for disaster management support”, by the representative of Japan;
 - (b) “An introduction to the Space Foundation”, by the representative of the United States;
 - (c) “Use of space-based information for seismic risk management: an Italian Space Agency pilot project”, by the representative of Italy;



- (d) “NASA today and tomorrow”, by the representative of the United States;
- (e) “Re-entry of Hayabusa on 13 June 2010”, by the representative of Japan;
- (f) “Gamma-ray astronomy on the way to uncovering the mystery of dark matter in the universe”, by the representative of the Russian Federation;
- (g) “Proposing a new radio-quiet zone on the far side of the Moon”, by the observer for IAA;
- (h) “Space in Chile: past, present, future”, by the representative of Chile.

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.105/958, paras. 22-46 and annex I, paras. 2-3).
6. The Committee endorsed the decisions and recommendations of the Subcommittee and its Working Group of the Whole, which was convened under the chairmanship of S. K. Shivakumar (India) to consider this item (A/AC.105/958, paras. 25 and 35).
7. The Committee took note of the activities of the Programme carried out in 2009, as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/958, paras. 32-34) and in the report of the Expert on Space Applications (A/AC.105/969, annex I).
8. 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 those activities.
9. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2010, as set out in the report of the Subcommittee (A/AC.105/958, para. 35).
10. The Committee noted with satisfaction that the Office for Outer Space Affairs was helping developing countries and countries with economies in transition to participate in and benefit from activities being carried out by the Programme.
11. 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.
12. The Committee noted with appreciation the implementation of the Programme’s Basic Space Science Initiative and Basic Space Technology Initiative, as well as its preparation of the Human Space Technology Initiative (HSTI), aimed at enhancing the participation of developing countries in scientific activities at the International Space Station.

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

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

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

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

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

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

17. The Committee expressed its appreciation to the Politecnico di Torino, the Istituto Superiore Mario Boella and the Istituto Elettrotecnico Nazionale Galileo Ferraris for the fellowships they provided for postgraduate studies relating to global navigation satellite systems (GNSS) and landscape epidemiology.

18. 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*

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

(b) International Space Information Service

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

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

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

(c) Regional and interregional cooperation

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

(d) International Satellite System for Search and Rescue

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

25. The Committee noted with satisfaction that COSPAS-SARSAT currently had 40 member States and two participating organizations, which offered six polar-orbiting and five geostationary satellites that provided worldwide coverage for emergency beacons. The Committee further noted that since 1982, COSPAS-SARSAT had helped to save thousands of lives every year. In 2009, it helped to save 1,596 lives in 478 search and rescue events worldwide.

26. 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.

27. The Committee welcomed the continued efforts for enhancements to the System for Search and Rescue, including testing of Global Positioning System (GPS) satellites, and further improving the capabilities of future 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

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

29. 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.

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

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

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

33. The view was expressed that the unrestricted and unregulated availability of high-resolution satellite data in the public domain could be detrimental to the safety of people and States. That delegation proposed that the Committee and its Legal Subcommittee could consider developing guidelines for the regulation of the sale, distribution and dissemination of high-resolution satellite data on the Internet.

3. Space debris

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

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

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

37. The Committee noted with appreciation that some States were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space and/or the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines and that other States had developed their own space debris mitigation standards based on those guidelines. The Committee also noted that other States were using the IADC Guidelines and the European Code of Conduct for Space Debris Mitigation as reference points in their regulatory frameworks established for national space activities.

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

39. The view was expressed that more transparency in the information on space debris, as well as in 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.

40. 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.

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

operators, common standards, best practices and guidelines and the establishment of national regulatory regimes.

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

4. Space-system-based disaster management support

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

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

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

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

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

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

49. The Committee noted with satisfaction the increase in the availability of space-based information to support disaster management, particularly emergency response activities, and also the work carried out within the UN-SPIDER SpaceAid framework, which was supporting interested end-users in having access to and using all the space-based information made available by existing mechanisms and initiatives to support responses to emergency events.

50. Additionally, the Committee noted with satisfaction that the Office for Outer Space Affairs would establish, as outlined in A/AC.105/2010/CRP.11, the SpaceAid fund as a separate account within the existing Trust Fund for the United Nations Programme on Space Applications. The separate account would be used to receive funds to support the aims of the SpaceAid framework, particularly to ensure the rapid and direct acquisition of satellite imagery and other space-based technologies to support emergency and humanitarian response in cases where existing mechanisms could not provide everything needed. The Committee also noted that the Office for Outer Space Affairs would inform member States of the establishment of the SpaceAid fund and invite them to contribute to it.

51. The view was expressed that the establishment of the SpaceAid fund could lead to overlaps in access to and use of available resources in support of responses to emergency events, and that the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters was the best means to channel such requests.

5. Recent developments in global navigation satellite systems

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

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

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

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

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

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

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

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

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

6. Use of nuclear power sources in outer space

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

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

63. The Committee welcomed the endorsement by the Subcommittee at its forty-seventh session of a new multi-year workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space. The Committee noted that the workplan for the period 2010-2015 is aimed at promoting and facilitating the implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space (A/AC.105/934) by providing information pertinent to challenges faced by member States and international intergovernmental organizations, in particular those considering or initiating involvement in applications of nuclear power sources in outer space, and at identifying 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 nuclear power source applications in space.

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

65. [...] 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 and not detrimental to humanity.

66. [...] were of the view that the use of nuclear power sources in outer space should be as limited as possible and that comprehensive and transparent information on measures taken to ensure safety should be provided to other States. Those delegations were of the view that no justification existed for the use of nuclear

power sources in terrestrial orbits, for which other sources of energy were available, that were much safer and had been proved to be efficient.

7. Near-Earth objects

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

68. The Committee endorsed the recommendations of the Subcommittee and its Working Group on Near-Earth Objects, which was convened under the chairmanship of Sergio Camacho (Mexico) (A/AC.105/958, paras. 151 and 152 and annex III).

69. The Committee noted that, on the margins of its fifty-third session, the Action Team on Near-Earth Objects had held three meetings to consider, among other things, the executive summaries from a workshop held in Mexico City in January 2010 on the establishment of an information, analysis and warning network and from a report proposed by the University of Nebraska-Lincoln (United States) in February 2010 on legal aspects of the international response to the threat of near-Earth object impact, with a view to incorporating pertinent elements into the draft report of the Action Team on recommendations for the international response to the threat of near-Earth object impact.

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

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

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

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

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

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

75. Some delegations reiterated the view that the geostationary orbit was a limited natural resource and that it was at risk of becoming saturated. Those delegations were of the view that the exploitation of the geostationary orbit should 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, with the participation and cooperation of ITU. Those delegations therefore considered that the item on the geostationary orbit should remain on the agenda of the Subcommittee for further discussion, with the purpose of continuing to analyse its scientific and technical characteristics.

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

9. International Space Weather Initiative

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

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

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

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

and develop essential forecast capabilities to improve the safety of space-based assets.

10. Long-term sustainability of outer space activities

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

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

83. The Committee welcomed the establishment of the Working Group on this item under the chairmanship of Peter Martinez (South Africa) and endorsed the recommendation of the Subcommittee that the Working Group be allowed to meet during the current session of the Committee to further develop its terms of reference and methods of work.

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

85. At its 620th meeting, the Chairman of the Working Group of the Scientific and Technical Subcommittee on the Long-Term Sustainability of Outer Space Activities informed the Committee about the results of the meeting held by the Working Group at the current session of the Committee.

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

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

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

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

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

91. The view was expressed that although the preservation of space assets, particularly communication and Earth observation satellites, was critical for social

and economic development, there was at present no international space traffic management, nor any mechanism for sharing space awareness information among all States, and it was essential for member States to actively contribute to the work under this item.

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

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

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

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

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

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

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

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

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

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

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

2. United Nations Programme on Space Applications.
3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
5. Space debris.
6. Space-system-based disaster management support.
7. Recent developments in global navigation satellite systems.
8. Items to be considered under workplans:
 - (a) Use of nuclear power sources in outer space;
(Work for 2011 as reflected in the multi-year workplan in paragraph 8 of annex II to the report of the Scientific and Technical Subcommittee on its forty-seventh session (A/AC.105/958))
 - (b) Near-Earth objects;
(Work for 2011 as reflected in the multi-year workplan in paragraph 11 of annex III to the report of the Scientific and Technical Subcommittee on its forty-fifth session (A/AC.105/911))
 - (c) International Space Weather Initiative;
(Work for 2011 as reflected in the multi-year workplan in paragraph 16 of annex I to the report of the Scientific and Technical Subcommittee on its forty-sixth session (A/AC.105/933))
 - (d) Long-term sustainability of outer space activities;
(Work for 2011 as reflected in paragraph [...] above)
9. Single issue/item for discussion: Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.
10. Draft provisional agenda for the forty-ninth session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year workplans.

101. The Committee endorsed the recommendation that the Working Group on the Use of Nuclear Power Sources in Outer Space, the Working Group on Near-Earth Objects and the Working Group on the Long-term Sustainability of Outer Space should reconvene in accordance with their multi-year workplans, and agreed that the Subcommittee should reconvene the Working Group of the Whole at its forty-eighth session.

102. The Committee agreed that two hours of each session of the Subcommittee from 2011 to 2013 should be available for holding workshops under the workplan of Subcommittee on the item “Use of nuclear power sources in outer space” (A/AC.105/958, annex II, para. 8).

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

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

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

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

106. The representatives of Austria, Canada, China, the Czech Republic, Japan, Indonesia, Italy, the Russian Federation, Saudi Arabia, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to this item were also made by representatives of other member States.

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

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

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

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

110. The view was expressed that the Committee should review, update and modify the five treaties with the purpose of strengthening the guiding principles of outer space activities, in particular those principles that guarantee its peaceful use, strengthen international cooperation and make space technology available to humanity.

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

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

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

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

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

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

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

3. Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit, without prejudice to the role of the International Telecommunication Union

117. The Committee took note of the discussion of the Subcommittee under the agenda item on matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit, without prejudice to the role of the International Telecommunication Union, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 55-75).

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

119. Some delegations expressed the view that the lack of a definition or delimitation of outer space created legal uncertainty concerning the applicability of space law and air law and that matters concerning State sovereignty and the

boundary between airspace and outer space needed to be clarified in order to reduce the possibility of disputes among States.

120. The view was expressed that the Subcommittee, when considering matters relating to the definition and delimitation of outer space, should take into account recent and future technological developments, and that the Scientific and Technical Subcommittee should also consider this subject.

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

122. [...] were of the view that use of the geostationary orbit, which was a limited natural resource, not only should be rational but should be made available to all States, irrespective of their current technical capacities. That would allow States to have access to the orbit under equitable conditions, bearing in mind in particular the needs and interests of developing countries, as well as the geographical position of certain countries, and taking into account the processes of ITU and relevant norms and decisions of the United Nations. Those delegations expressed their satisfaction with the agreement reached by the Subcommittee at its thirty-ninth session (see A/AC.105/738, annex III) to the effect that coordination among countries aimed at the utilization of the geostationary orbit should be carried out in a rational and equitable manner and in conformity with the ITU Radio Regulations.

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

124. The view was expressed that access to the geostationary orbit, as a limited natural resource with sui generis characteristics that was at risk of saturation, should be guaranteed for all States, taking into account in particular the needs and interests of developing countries and the geographical position of certain countries.

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

126. The view was expressed that the geostationary orbit could not be appropriated by States or by international intergovernmental and non-governmental organizations.

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

other related international organizations to ensure equitable access to the geostationary orbit for all States.

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

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

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

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

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

132. The view was expressed that the Committee, through its Legal Subcommittee, should undertake a review of the Safety Framework for Nuclear Power Source Applications in Outer Space and promote binding standards with a view to ensuring that any activity conducted in outer space was governed by the principles of preservation of life and maintenance of peace. The delegation that expressed that view considered that any activities arising as a result of the new workplan for the period 2010-2015 of the Working Group on the use of Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee should be approved by the Legal Subcommittee.

133. The view was expressed that recommendations from the Safety Framework might be considered in further detail for possible implementation in the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (General Assembly resolution 47/68), if and when the Principles were reviewed and revised.

5. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment

134. The Committee took note of the discussion of the Subcommittee under the item on the examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment, as reflected in the report of the Subcommittee (A/AC.105/942, paras. 89-106).

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

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

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

6. Capacity-building in space law

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

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

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

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

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

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

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

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

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

146. The Committee noted that some States had strengthened their national mechanisms governing space debris mitigation through the nomination of governmental supervisory authorities, the involvement of academia and industry and the development of new legislative norms, instructions, standards and frameworks.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Regular items

1. General exchange of views.
2. Status and application of the five United Nations treaties on outer space.
3. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
4. Matters relating to:
 - (a) The definition and delimitation of outer space;
 - (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

Single issues/items for discussion

5. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
6. Examination and review of the developments concerning the draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment.
7. Capacity-building in space law.
8. General exchange of information on national mechanisms relating to space debris mitigation measures.

Items considered under workplans

9. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.
2011: Finalization, by a working group, of a report to the Legal Subcommittee.

New items

10. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fifty-first session.

159. The Committee agreed that the Legal Subcommittee should, at its fiftieth session, reconvene the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, the Working Group on Matters Relating to the Definition and Delimitation of Outer Space and the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space.

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

161. The Committee agreed that International Institute of Space Law and the European Centre for Space Law should be invited to organize a symposium on space law at the fiftieth session of the Subcommittee.

162. The view was expressed that an item on reviewing the Space Debris Mitigation Guidelines of the Committee with a view to transforming them into a set of principles should be included on the agenda of the Legal Subcommittee.
