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**Committee on the Peaceful
Uses of Outer Space
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Draft report

Chapter II

Recommendations and decisions

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

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-sixth session (A/AC.105/933), which contained the results of its deliberations on the agenda items considered by the Subcommittee in accordance with General Assembly resolution 63/90.
2. The Committee expressed its appreciation to the Chairman of the Scientific and Technical Subcommittee, Aboubekr Seddik Kedjar (Algeria), for his able leadership and contributions during the forty-sixth session of the Subcommittee.
3. The representatives of Brazil, Canada, Chile, Colombia, the Czech Republic, Ecuador, France, Germany, Greece, India, Italy, Japan, Malaysia, Nigeria, Pakistan, the Russian Federation, Switzerland, Turkey, the United States and Venezuela (Bolivarian Republic of) made statements under this item. During the general exchange of views, statements relating to this item were also made by representatives of other member States. The observer for Azerbaijan also made a statement.
4. The Committee heard the following presentations:
 - (a) “Status report on the operation of the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP)”, by the Director of the Centre;



- (b) “Status report on the operation of the African Regional Centre for Space Science and Technology Education – in French Language (CRASTE-LF)”, by the Director of the Centre;
- (c) “Status report on the operation of the African Regional Centre for Space Science and Technology Education – in English Language (ARCSSTE-E)”, by the Director of the Centre;
- (d) “Status report on the operation of the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC)”, by the Secretary-General of the Centre;
- (e) “Disaster management activities of the Asian Disaster Reduction Centre (ADRC)”, by the representative of Japan;
- (f) “Chandrayaan-1: mission and scientific achievements”, by the representative of India;
- (g) “Small satellite constellations for environment and disaster monitoring and forecasting”, by the representative of China;
- (h) “Solar mission Coronas-Photon: scientific objectives and first observational results”, by the representative of the Russian Federation;
- (i) “Application of satellite remote sensing for monitoring of crops and environment”, by the representative of Pakistan;
- (j) “International Charter on Space and Major Disasters”, by the representative of Argentina;
- (k) “Iridium-Cosmos satellite collision”, by the representative of the United States;
- (l) “Consequences of the collision of Iridium 33 and Cosmos-2251”, by the representative of the United States;
- (m) “Update on COSPAS-SARSAT programme activities”, by the representative of the United States;
- (n) “Uses of outer space for scientific aims in Turkey”, by the representative of Turkey;
- (o) “Report on the workshop on the efficient use of the spectrum/orbit resources”, by the observer for ITU;
- (p) “ESA space situational awareness NEO programme”, by the observer for ESA;
- (q) “Asteroid threats: a call for global response”, by the observer for ASE.

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.105/933, paras. 19-40 and annex I, paras. 3-4).

6. The Committee endorsed the recommendations of the Subcommittee and its Working Group of the Whole, which was convened under the chairmanship of K. Radhakrishnan (India) to consider this item (A/AC.105/933, paras. 22 and 32).

7. The Committee took note of the activities of the Programme carried out in 2008, as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/933, paras. 28-31) and in the report of the Expert on Space Applications (A/AC.105/925, annex I).

8. The Committee expressed its appreciation to the Office for Outer Space Affairs for the manner in which the activities of the Programme had been implemented with the limited funds available. 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 2009, as set out in the report of the Subcommittee (A/AC.105/933, para. 32).

10. The Committee noted with satisfaction that the Programme was helping developing countries and countries with economies in transition to participate in and benefit from the space activities being carried out to implement the recommendations of UNISPACE III.

11. The Committee noted with concern the limited financial resources available to implement the Programme and appealed to the donor community to continue supporting the Programme through voluntary contributions.

12. The Committee noted that implementation of the United Nations Programme on Space Applications was among the main priorities of the Office for Outer Space Affairs.

(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 2009, and expressed its appreciation to Austria, Azerbaijan, Iran (Islamic Republic of), Mexico, Morocco, Peru, the Republic of Korea and the United States, as well as to ESA and IAF, for co-sponsoring, hosting and supporting those activities (A/AC.105/925, annex II).

14. The Committee endorsed the programme of workshops, training courses, symposiums and expert meetings related to water resources management, socio-economic benefits of space activities, small satellite development, space weather, global navigation satellite systems, search and rescue and space law, planned to be held in 2010 for the benefit of developing countries.

15. 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*

16. The Committee expressed its appreciation to the Politecnico di Torino, the Istituto Superiore Mario Boella, the Istituto Elettrotecnico Nazionale Galileo Ferraris, the National Commission on Space Activities (CONAE) of Argentina and

the Mario Gulich Institute for Advanced Space Studies for the fellowships that they provided for postgraduate studies relating to global navigation satellite systems (GNSS) and landscape epidemiology. The Committee also welcomed the cooperation between CONAE and several Chilean universities, including the University of La Serena.

17. 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*

18. 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.105/925, paras. 35-42).

(b) International Space Information Service

19. The Committee noted with satisfaction that the publication entitled *Highlights in Space 2008*¹ had been issued on CD-ROM.

20. 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

21. 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 2008 and the activities planned for 2009 and 2010 were included in the report of the Expert on Space Applications (A/AC.105/925, annex III).

22. The Committee commended the reports made by the Directors and Secretary-General of the regional centres at its present session, on the current and planned activities and training programmes at each of the centres. The reports of the Directors and Secretary-General are contained in A/AC.105/2009/CRP.13.

23. The Committee agreed that the regional centres should continue to report to the Committee on their activities on an annual basis.

24. The Committee noted with appreciation that the publication entitled "Capacity-building in Space Science and Technology: Regional Centres for Space Science and Technology Education Affiliated to the United Nations" provided comprehensive information on the development and achievements of the regional centres since their inauguration (ST/SPACE/41).

¹ United Nations publications, Sales No. E.09.I.4.

(d) International Satellite System for Search and Rescue

25. 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.

26. The Committee noted with satisfaction that COSPAS-SARSAT currently had 38 member States and two participating organizations, which offered five 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 approximately 25,000 lives. In 2007 it helped to save 2,386 lives in 562 different search and rescue events worldwide.

27. The Committee took note of the phasing out of the beacons operating at 121.5 MHz, replaced by beacons operating at 406 MHz, which was completed by 1 February 2009.

28. The Committee noted with satisfaction that outreach efforts were being undertaken to expand the use of the International Beacon Registration Database for COSPAS-SARSAT. This capability enabled beacon owners who lived in countries that did not register beacons to have a place to do so and enabled nations that maintained a beacon registration service not available online to manage their beacons within the International Database.

29. 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.

30. The Committee welcomed the continued efforts for enhancements to the system by developing and testing the next generation of COSPAS-SARSAT, known as the Medium-Earth Orbit Search and Rescue (MEOSAR) system.

31. The Committee also noted with satisfaction that the United States, jointly with the Office for Outer Space Affairs, had organized and hosted a regional training course on satellite-aided search and rescue, held from 19 to 23 January 2009 in Miami Beach, Florida. A total of 22 nations participated in the training, the aim of which was to promote awareness of the COSPAS-SARSAT system and to establish a formal interface with user countries for better understanding and coordination of the system's operations.

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

32. The Committee took note of the discussion of the Subcommittee under this agenda item, as reflected in the report of the Subcommittee (A/AC.105/933, paras. 54-63).

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

34. The Committee stressed the important role of Earth observation satellite data in supporting activities in a number of key areas of sustainable development. It

emphasized, in that connection, the importance of providing non-discriminatory access to remote sensing data and to derived information at a reasonable cost or free of charge and in a timely manner, as well as the importance of building capacity in the use of remote sensing technology, in particular to meet the needs of developing countries.

35. The Committee noted with satisfaction the presentation made by the observer for the secretariat of GEO at the forty-sixth session of its Scientific and Technical Subcommittee on the progress made in the implementation of the GEOSS 10-Year Implementation Plan.

36. The Committee encouraged further international cooperation among member States in the use of remote sensing satellites, in particular by sharing experiences and technologies through bilateral, regional and international collaborative projects.

3. Space debris

37. 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.105/933, paras. 64-82).

38. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/933, paras. 70, 74 and 75).

39. 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 the regulatory framework established for national space activities.

40. The Committee noted that some member States were continuing to carry out at both the national and international levels, research on the problem of space debris.

41. The view was expressed that the creation of an international database on space debris was needed. That delegation was of the view that an ad hoc working group on space debris should be established to explore possible solutions for the establishment of such a system.

42. Some delegations were of the view that the increasing density of space debris, in particular in low-Earth orbits, threatened access to and the use of outer space in both the short term and the long term.

43. Some delegations expressed the view that the collision involving an active commercial Iridium 33 satellite and an inactive Cosmos-2251 satellite that had occurred in low-Earth orbit on 10 February 2009 demonstrated the increasing risk that space debris posed to space activities.

44. Some delegations expressed the view that the States most responsible for the creation of space debris 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

45. 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.105/933, paras. 83-95 and annex I, paras. 11-14).
46. The Committee endorsed the recommendations of the Subcommittee and its Working Group of the Whole, which was convened under the chairmanship of K. Radhakrishnan (India), inter alia, to consider this item (A/AC.105/933, para. 84 and annex I, para. 13).
47. The Committee noted with satisfaction the progress made as reflected in the report on the activities carried out in 2008 in the framework of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (A/AC.105/929).
48. The Committee endorsed the workplan of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) for the biennium 2010-2011 (A/AC.105/937).
49. The Committee noted with appreciation the cash and in-kind contributions made by the Governments of Austria, China, Germany, Croatia, the Czech Republic, Indonesia, the Republic of Korea and Spain to support the activities of UN-SPIDER in 2008 and 2009. The Committee further noted that the UN-SPIDER programme would require additional voluntary contributions to carry out the activities planned for 2010, as well as the provision of senior experts, as non-reimbursable loans, and associate experts.
50. The Committee noted with satisfaction that the Office for Outer Space Affairs had signed cooperation agreements for the establishment of UN-SPIDER regional support offices with Iran (Islamic Republic of), Nigeria and Romania, and the Asian Disaster Reduction Center. The regional support offices would serve as centres of expertise in the use of space technology in disaster management in accordance with paragraph 11 of General Assembly resolution 61/110.
51. The Committee noted with appreciation that the Governments of Algeria, Pakistan, South Africa and Ukraine had each made an offer to host a UN-SPIDER regional support office.
52. The Committee noted with satisfaction the increase in the availability of space-based information to support disaster management and emergency response activities, including the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of National or Technological Disasters, whose resources were being made available to an increasing number of Member States, as well as Sentinel Asia, which, with the beginning of its Step 2 phase, would expand the opportunities made available through that initiative.
53. The Committee noted the offer from the Government of Turkey to provide, as a non-reimbursable loan, a senior expert to support the UN-SPIDER programme, to be based in the UN-SPIDER office in Bonn, Germany.

5. Recent developments in global navigation satellite systems

54. The Committee took note of the discussion of the Subcommittee under the agenda item on recent developments in global navigation satellite systems, as reflected in the report of the Subcommittee (A/AC.105/933, paras. 96-118).

55. The Committee agreed that, as requested by the General Assembly in paragraph 16 of its resolution 62/217, the Chairman of the International Committee on Global Navigation Satellite Systems (ICG) should be invited, under this item, at the forty-seventh session of the Scientific and Technical Subcommittee, to report on the work of ICG.

56. The Committee noted with appreciation that ICG continued to make significant progress towards achieving compatibility and interoperability among global and regional space-based positioning, navigation and timing systems and in promoting the use of global navigation satellite systems (GNSS) and their integration into national infrastructure, particularly in developing countries.

57. The Committee noted with appreciation the activities conducted in the framework of the workplan of ICG in 2008 focusing on the application of GNSS in various areas to support sustainable development, as reflected in document A/AC.105/922.

58. The Committee noted with appreciation that the third meeting of ICG and its Providers' Forum had been held in Pasadena, California, United States, from 8 to 12 December 2008 (A/AC.105/928). The Committee noted that the Providers' Forum had adopted its terms of reference and workplan.

59. The Committee noted that the fourth meeting of ICG would be held in Saint Petersburg, Russian Federation, from 14 to 18 September 2009 and that the fifth meeting, to be held in 2010, would be hosted by Italy in cooperation with the European Commission.

60. The Committee noted with appreciation that the regional centres for space science and technology education, affiliated to the United Nations, would serve as ICG information centres.

61. The Committee agreed that the Office for Outer Space Affairs should continue to serve as the executive secretariat of ICG and its Providers' Forum, including carrying out the activities planned for 2010 under the workplan and maintaining the ICG information portal (<http://www.icgsecretariat.org>).

6. Use of nuclear power sources in outer space

62. 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.105/933, paras. 119-135).

63. The Committee endorsed the 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.105/933, paras. 130 and 135 and annex II).

64. The Committee welcomed the adoption by the Scientific and Technical Subcommittee, at its forty-sixth session, of the Safety Framework for Nuclear

Power Sources Applications in Outer Space and the subsequent agreement of the IAEA Commission on Safety Standards at its twenty-fifth meeting, held in Vienna from 22 to 24 April 2009.

65. The Committee noted with appreciation that the draft Safety Framework had been prepared and submitted for approval one year ahead of when originally scheduled.

66. The Committee endorsed the Safety Framework for Nuclear Power Sources Applications in Outer Space, as contained in document A/AC.105/934.

67. The Committee expressed its gratitude to the Joint Expert Group of the Scientific and Technical Subcommittee and IAEA, established to develop an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable applications of nuclear power sources (NPS) in outer space, to the Subcommittee's Working Group on the Use of Nuclear Power Sources in Outer Space and to IAEA for the constructive and efficient cooperation in the preparation of the Safety Framework. In that connection, the Committee requested the Secretariat to submit, on its behalf, a letter of appreciation to IAEA, reflecting the fact that the Safety Framework was an example of successful inter-agency cooperation within the United Nations system.

68. The Committee noted with appreciation that the Safety Framework would also be published as a report of IAEA and that an electronic version of the text of the Safety Framework, in the six official languages of the United Nations, would also be made available by the IAEA secretariat on a CD-ROM.

69. The Committee noted that the Working Group on the Use of Nuclear Power Sources in Outer Space of the Subcommittee held an informal meeting in Vienna from 2 to 4 June 2009 to discuss possible follow-up actions with respect to the Safety Framework.

70. The view was expressed that the Safety Framework addressed concerns regarding the safety of space activities only partially.

71. 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 activity associated with the use of NPS 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 NPS in outer space conducted by governmental and non-governmental organizations and that such activities must be beneficial and not detrimental to humanity.

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

73. The view was expressed that the Safety Framework was not intended to interpret, supplement or replace the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, adopted by the General Assembly in its resolution 47/68.

74. The view was expressed that the use of NPS 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. That delegation was of the view that no justification existed for the use of NPS in near-Earth orbits, for which other sources of energy were available, were much safer and had been proven to be efficient.

7. Near-Earth objects

75. 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.105/933, paras. 136-148 and annex III).

76. The Committee endorsed the recommendations of the Subcommittee and its Working Group on Near-Earth Objects, which was convened under the chairmanship of Richard Crowther (United Kingdom) (A/AC.105/933, paras. 146 and 148 and annex III).

77. The Committee noted that the Action Team on Near-Earth Objects had convened on the margins of the fifty-second session of the Committee to further review and develop draft recommendations on the international response to the threat of NEO impacts, for consideration by the Working Group of the Subcommittee at the forty-seventh session of the Subcommittee, in 2010.

78. The Committee noted that as part of its intersessional work, the Action Team was planning to hold a series of workshops dealing with policy, legal and operational aspects of the international response to the threat of NEO impacts. The workshops would be organized jointly with universities and space-related institutions.

79. The view was expressed that the international response to the threat of NEO impacts required a multidimensional and multidisciplinary approach and decision-making process, involving technical, legal, humanitarian and institutional aspects. That delegation considered that the international community needed to address the technical and legal implications, and the related institutional implications, of the response to the threat of NEO impacts.

8. International Heliophysical Year 2007

80. The Committee took note of the discussion of the Subcommittee under the agenda item on the International Heliophysical Year 2007, as reflected in the report of the Subcommittee (A/AC.105/933, paras. 157-168).

81. The Committee noted with appreciation the achievements of the International Heliophysical Year 2007, as reflected in the publication entitled "IHY 2007 Final Report" (ST/SPACE/43 and Corr.1).

82. The Committee expressed its appreciation to the secretariat of the International Heliophysical Year and the Office for Outer Space Affairs for the numerous activities carried out from 2005 to 2009. The Committee agreed that those activities had successfully raised awareness of basic space science and its role in the sustainable development of the Earth and space environment.

83. The Committee noted that the final workshop on basic space science and the International Heliophysical Year 2007, co-sponsored by ESA, Japan Aerospace Exploration Agency (JAXA) and the National Aeronautics and Space

Administration (NASA) of the United States, would be hosted by the Republic of Korea, in Daejeon, from 21 to 25 September 2009.

84. The Committee noted the importance of continuing to build upon the success of the International Heliophysical Year 2007, in particular by deepening the understanding of the function of the Sun and its effects on the Earth's magnetosphere, environment and climate, and noted with satisfaction the agreement reached by the Scientific and Technical Subcommittee at its forty-sixth session to consider, beginning at its forty-seventh session, a new agenda item entitled "International Space Weather Initiative" under a three-year workplan with specific focus on the effects of space weather on the Earth and its impact, inter alia, on communications and transport.

9. 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

85. 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, as reflected in the report of the Subcommittee (A/AC.105/933, paras. 149-156).

86. 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.

87. Some delegations expressed the concern that commercial exploitation of the geostationary orbit, in particular the overexploitation of spectrum resources, under the protection of a number of Governments, was severely threatening equitable access by all States to those spectrum resources.

88. The view was expressed that gaps in the regulatory framework for the geostationary orbit made it difficult for developing countries to gain equitable access to spectrum resources within the geostationary orbit.

10. Draft provisional agenda for the forty-seventh session of the Scientific and Technical Subcommittee

89. The committee took note of the discussion of the Subcommittee on the agenda item on the draft provisional agenda for the forty-seventh session of the Scientific

and Technical Subcommittee, as reflected in the report of the Subcommittee (A/AC.105/933, paras. 169-171 and annex I, sect. V).

90. The Committee agreed that the Scientific and Technical Subcommittee should include, starting from its forty-seventh session, a new agenda item entitled "Long-term sustainability of outer space activities" under the multi-year workplan as presented below:

- 2010 General exchange of views on present and future challenges facing outer space activities, as well as potential measures that could enhance the long-term sustainability of outer space activities, with a view to establishing a working group open to all member States of the Committee.
- 2011 Preparation of a report on the long-term sustainability of outer space activities and examination of measures that could enhance their long-term sustainability; preparation of a draft set of best practices guidelines.
- 2012/2013 Continuation of consideration and finalization of the report and of the set of best practices guidelines for presentation to and review by the Committee.

91. The Committee also agreed that it would consider whether the set of best practices guidelines should require review by the Legal Subcommittee before endorsement by the Committee. Once the set of best practices guidelines has been endorsed, the Committee may also consider whether it should be annexed to a specific General Assembly resolution or should be endorsed by the General Assembly as part of its annual resolution on international cooperation in the peaceful uses of outer space.

92. The Committee welcomed the agreement of the Subcommittee that the topic for the symposium to strengthen the partnership with industry (the industry symposium), to be organized in 2010 by the Office for Outer Space Affairs, should be "Nurturing the development of space technology" and that the symposium should be held during the first week of the forty-seventh session of the Subcommittee (A/AC.105/933, annex I, para. 19).

93. On the basis of the deliberations of the Scientific and Technical Subcommittee at its forty-sixth session, the Committee agreed on the following draft provisional agenda for the forty-seventh session of the Subcommittee:

- 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 2010 as reflected in the multi-year workplan in paragraph 7 of annex II to the report of the Scientific and Technical Subcommittee on its forty-fourth session (A/AC.105/890))
 - (b) Near-Earth objects;
(Work for 2010 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 2010 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 2010 as reflected in para. 90 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-eighth 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.

94. The Committee endorsed the recommendation that the Working Group on the Use of Nuclear Power Sources in Outer Space and the Working Group on Near-Earth Objects 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-seventh session.

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

95. The Committee took note with appreciation of the report of the Legal Subcommittee on its forty-eighth session (A/AC.105/935), which contained the results of its deliberations on the items considered by the Subcommittee in accordance with General Assembly resolution 63/90.

96. The Committee expressed its appreciation to Vladimír Kopal (Czech Republic) for his able leadership and contributions during the forty-eighth session of the Subcommittee.

97. The representatives of Algeria, Austria, Brazil, China, Colombia, the Czech Republic, Indonesia, Iran (Islamic Republic of), Italy, Japan, Nigeria, Pakistan, the Russian Federation, Saudi Arabia, the Syrian Arab Republic, 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.

98. The Committee paid tribute to Eileen Galloway of the United States, who had passed away at the age of 102 in 2009, for her long-term contribution and dedication to work on and the development of space law.

99. The view was expressed that the Committee should strengthen interaction between the Legal Subcommittee and the Scientific and Technical Subcommittee.

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

100. 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.105/935, paras. 30-40).

101. The Committee endorsed the 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 Vassilis Cassapoglou (Greece) (A/AC.105/935, para. 38 and annex I). The Committee noted that the Subcommittee had agreed that, at its forty-ninth session, it would review the need to extend the mandate of the Working Group beyond that period.

102. Some delegations were of the view that there had been positive developments in the revitalization of the agendas and methods of work of the Committee and its Subcommittees and recognized the important efforts to widen and strengthen the present legal basis for space activities by increasing the number of States and international intergovernmental organizations adhering to the United Nations treaties on outer space.

103. Some delegations were of the view that the Subcommittee should encourage States that had acceded to the core United Nations treaties on outer space to examine their legislative frameworks to ensure compliance.

104. Some delegations were of the view that, considering the constant growth in the conduct of space activities, a new, comprehensive convention on space law was needed to further strengthen the international legal regime governing those activities. Those delegations were of the view that a single, comprehensive convention could regulate all aspects of outer space activities. Those delegations welcomed the continuation, at the forty-ninth session of the Legal Subcommittee, of the discussion on the current state of international space law and possible options for its future development.

105. The view was expressed that the negotiation of a new, comprehensive space law instrument might undermine the existing space law regime.

106. Some delegations were of the view that the joint statement on the benefits of adherence to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies by States parties to the Agreement (A/AC.105/C.2/L.272, annex)

provided a useful analysis of the benefits offered by participation in the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.²

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

107. 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.105/935, paras. 41-52).

108. The Committee endorsed the recommendation of the Subcommittee on this item (A/AC.105/935, para. 51).

109. The Committee noted that the activities of international intergovernmental and non-governmental organizations relating to space law were important and had contributed significantly to the development of space law, and that intergovernmental organizations had an important role to play in strengthening the legal framework applicable to space activities and should therefore 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

110. 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.105/935, paras. 53-85).

111. 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.105/935, paras. 71 and 84 and annex II).

112. Some delegations were of the view that scientific and technological progress, the commercialization of outer space, emerging legal questions and the increasing use of outer space in general had made it necessary for the Subcommittee to consider the question of the definition and delimitation of outer space.

113. The view was expressed that reaching agreement on the definition and delimitation of outer space would create certainty with respect to the sovereignty of States over their airspace and would enable the effective application of the principles of the freedom of use of outer space and of the non-appropriation of outer space. That delegation was of the view that progress in the definition and delimitation of outer space could be achieved through cooperation with the International Civil Aviation Organization (ICAO).

² United Nations, *Treaty Series*, vol. 1363, No. 23002.

114. The view was expressed that current and foreseeable civil aviation operations would not exceed altitudes of 100-130 km, where there was a potential danger of collision with numerous spacecraft. In that connection, that delegation proposed that the boundary between airspace and outer space be established in that range.

115. The view was expressed that the proposal made by the Union of Soviet Socialist Republics during the eighteenth session of the Subcommittee, in 1979, and contained in document A/AC.105/C.2/L.121, could serve as a solid basis for the consideration by the Subcommittee of the delimitation of outer space.

116. Some delegations expressed the view that the topic for the symposium to be organized by the International Institute of Space Law and the European Centre for Space Law in the framework of the forty-ninth session of the Subcommittee, in 2010, should relate to the issue of the definition and delimitation of outer space.

117. Some delegations expressed the view that the geostationary orbit was an integral part of outer space and that, therefore, its use should be governed by the provisions of the United Nations treaties on outer space and the relevant ITU regulations.

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

118. 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.105/935, paras. 86-100).

119. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/935, para. 99).

120. The Committee noted the work being undertaken by the Scientific and Technical Subcommittee under the item entitled "Use of nuclear power sources in outer space" and that the Safety Framework for Nuclear Power Source Applications in Outer Space had been adopted by the Scientific and Technical Subcommittee at its forty-sixth session.

121. Some delegations were of the view that the Principles Relevant to the Use of Nuclear Power Sources in Outer Space remained valid and significant and that their revision was not warranted.

122. The view was expressed that the Safety Framework should be considered by the Legal Subcommittee in order to initiate the development of legally binding norms to strengthen the safety of space activities.

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

123. 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.105/935, paras. 101-113).

124. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/935, para. 112).

125. The Committee noted that the steering committee of the International Institute for the Unification of Private Law (Unidroit) had held its second meeting in Paris from 13 to 15 May 2009 and that a third session of the Unidroit committee of governmental experts would be convened in Rome from 7 to 11 December 2009 with a view to resuming negotiations of the draft space assets protocol.

6. Capacity-building in space law

126. 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.105/935, paras. 114-147).

127. The Committee endorsed the recommendations of the Subcommittee on the agenda item (A/AC.105/935, paras. 122-123 and 144-146).

128. 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.

129. The Committee noted with appreciation that the Islamic Republic of Iran would act as host of the next United Nations workshop on space, to be held in Tehran in November 2009.

130. The Committee agreed that the workshops on space law organized by the Office for Outer Space Affairs were making a meaningful contribution to building capacity in space law.

131. The Committee noted with appreciation the progress made in developing a curriculum on space law (see A/AC.105/C.2/2009/CRP.5) and expressed its appreciation to the educators and the representatives of the regional centres who were participating in this important initiative.

132. The view was expressed that adequate support, through the provision of expertise as well as material and financial resources, would be necessary to enable the regional centres for space science and technology education to effectively implement courses on space law.

133. The Committee agreed that the Office for Outer Space Affairs should continue to update the directory of education opportunities in space law.

134. The Committee agreed that the work being conducted by the Legal Subcommittee under its agenda item "General exchange of information on national

legislation relevant to the peaceful exploration and use of outer space” had an important role in building capacity and supporting developing countries in elaborating their own national space laws.

135. The Committee noted the information provided by the United Nations University in response to the letter by the Chairman of the Committee (A/AC.105/2009/CRP.10).

136. The view was expressed that the Office for Outer Space Affairs should continue to support the efforts of developing countries to build capacity in space law, notwithstanding the constraints of limited resources.

137. The view was expressed that improving education in space law was a prerequisite for furthering space activities and ensuring that they were carried out in conformity with international space law.

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

138. 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.105/935, paras. 148-162).

139. The Committee endorsed the recommendations of the Subcommittee on this item (A/AC.105/935, paras. 160-161).

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

141. The view was expressed that although the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space and the IADC Space Debris Mitigation Guidelines were of a scientific and technical nature and were not legally binding, they were significant for the consideration of legal aspects of the undesirable effects of space activities, which would become warranted sooner or later.

142. The view was expressed that it was important to ensure the safety, security and predictability of space activities by codifying best practices and technical norms concerning space operations, which would be aimed at limiting or minimizing harmful interference in outer space.

143. Some delegations were of the view that it was important to strengthen international space law by updating its norms or introducing new ones in order to effectively address, among other things, challenging issues of space debris and the use of nuclear power sources in outer space.

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

144. 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.105/935, paras. 163-182).

145. 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, established at its forty-eighth session to consider this item, with Irmgard Marboe (Austria) as Chairman (A/AC.105/935, paras. 171 and 181 and annex III).

146. The Committee noted with satisfaction that the exchange of information by the Subcommittee under this agenda item provided States with a comprehensive overview of the current status of national space laws and regulations. The Committee further noted that the information was considered valuable by delegations, as it allowed States, in particular developing States, to gain an understanding of existing national regulatory frameworks, and that it could assist States in their efforts to establish their own national regulatory frameworks in accordance with their specific needs and level of development.

147. The view was expressed that the sharing of information on national legislation could help States to identify common principles and procedures that could facilitate the consensus on the direction of the development of international space law, while promoting both the acceptance and the implementation of the principles and provisions enshrined in the United Nations treaties on outer space.

148. The Committee noted with appreciation the increasing number of space-related international cooperation programmes and projects. In that connection, the Committee noted the importance of the development of space legislation by States, as that legislation played a significant role in regulating and promoting such cooperation activities.

149. The Committee noted that the Working Group of the Subcommittee on the item also discussed reasons for not enacting space legislation (A/AC.105/935, annex III, para. 7).

9. Draft provisional agenda for the forty-ninth session of the Legal Subcommittee

150. The Committee took note of the discussion of the Subcommittee under the agenda item on the draft provisional agenda for the forty-ninth session of the Legal Subcommittee, as reflected in the report of the Subcommittee (A/AC.105/935, paras. 183-195).

151. On the basis of the deliberations of the Legal Subcommittee at its forty-eighth session, the Committee agreed on the following draft provisional agenda for the forty-ninth session of the Subcommittee, in 2010:

Regular items

1. Opening of the session, election of the Chairman and adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views.
4. Status and application of the five United Nations treaties on outer space.
5. Information on the activities of international intergovernmental and non-governmental organizations relating to space law.
6. Matters relating to:
 - (a) The definition and delimitation of outer space;

- (b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

Single issues/items for discussion

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

Items considered under workplans

- 11. General exchange of information on national legislation relevant to the peaceful exploration and use of outer space.
2010: Continued examination, by a working group, of responses received and initiation of drafting of the working group's report, including conclusions.

New items

- 12. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its fiftieth session.
- 152. The Committee agreed that the Legal Subcommittee should, at its forty-ninth session, reconvene the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, the Working Group on the Definition and Delimitation of Outer Space and the Working Group on National Legislation Relevant to the Peaceful Exploration and Use of Outer Space.
- 153. The Committee agreed that the Subcommittee should review, at its forty-ninth 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.
- 154. The Committee agreed that the European Centre for Space Law and the International Institute of Space Law should be invited to hold a symposium on space law at the forty-ninth session of the Subcommittee (A/AC.105/935, para. 189).
- 155. Some delegations reiterated their support for the proposed new agenda item relating to the regulation of the dissemination of high-resolution Earth observation satellite images through the World Wide Web. Those delegations were of the view that the irresponsible dissemination of space-based images, in particular through the World Wide Web, seriously undermined the privacy of citizens worldwide, as well as the sovereignty and national security of States.