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Draft report

Addendum

Chapter II

Recommendations and decisions

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

1. In accordance with paragraph 14 of General Assembly resolution 71/90, the Committee continued its consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes and its consideration of the broader perspective of space security and associated matters that would be instrumental in ensuring the safe and responsible conduct of space activities, including ways to promote international, regional and interregional cooperation to that end.

2. In accordance with the agreement of the Committee at its fifty-ninth session, in 2016, the Secretariat invited States members of the Committee to submit their views on transparency and confidence-building measures in outer space activities, on the report of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities (A/68/189) and on document A/AC.105/1116 to the sixtieth session of the Committee, in 2017, and that those matters should be addressed under the item on ways and means of maintaining outer space for peaceful purposes (A/71/20, para. 272). In this connection, the Committee had before it the following:

(a) Report of the Secretary-General on transparency and confidence-building measures in outer space activities (A/72/65);

(b) Note by the Secretariat containing views of States members of the Committee on the Peaceful Uses of Outer Space on transparency and confidence-building measures in outer space activities (A/AC.105/1145 and Add.1);

(c) Note by the Secretariat containing views of States members of the Committee on the Peaceful Uses of Outer Space on transparency and confidence-building measures in outer space activities (A/AC.105/2017/CRP.19);

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(d) Note by the Secretariat containing views of States members of the Committee on the Peaceful Uses of Outer Space on transparency and confidence-building measures in outer space activities (A/AC.105/2017/CRP.10);

(e) Conference room paper containing information on the official visit to China of the Director of the United Nations Office for Outer Space Affairs (10-24 April 2017) (A/AC.105/2017/CRP.11).

3. The representatives of Canada, Egypt, Japan, Mexico, the Russian Federation, South Africa, the United States and Venezuela (Bolivarian Republic of) made statements under the item. During the general exchange of views, statements relating to the item were also made by other member States.

4. The Committee heard a presentation entitled “Space Security Index 2017: trust, transparency, accountability”, by the representative of Canada.

5. Some delegations expressed the view that the report of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities (A/68/189) and General Assembly resolution 69/38, in which the Assembly encouraged Member States to continue to review and implement, to the greatest extent practicable, the proposed transparency and confidence-building measures contained in that report, provided a solid basis for States to share information and improve mutual understanding of their activities in outer space and would help prevent military confrontation and foster regional and global stability.

6. Some delegations expressed the view that ratification of and adherence to key space treaties, as well as national implementation of these treaties and other international instruments, such as the Space Debris Mitigation Guidelines, remained a priority. The exchange of information, in particular with regard to the publication of national policies on the use of outer space, the registration of satellites with the Secretary-General of the United Nations and the advance notification of satellite launches in accordance with the Hague Code of Conduct were effective ways to reaffirm collective commitment of States to the implementation of the report of the Group of Governmental Experts and to be open and transparent in their space activities to preserve the use of outer space for peaceful purposes.

7. Some delegations expressed the view that it was important to establish, by 2018, clear, practicable and proven guidelines for the long-term sustainability of outer space activities, which could be a stepping stone to strengthening a rule-based outer space environment.

8. Some delegations expressed the view that the preservation of outer space for peaceful purposes would require the adoption by the international community of new standards of conduct in space, such as standards of transparency and trust, which would strengthen existing international standards governing outer space, increase mutual understanding and reduce tensions, and ultimately contribute to the preservation of a safe, secure and sustainable space environment. The delegations expressing that view were also of the view that such measures would constitute a pragmatic and short-term means of improving the exchange of information between States, reducing the risk of computational errors based on inaccurate perceptions of the action of others in space, and serve to increase the level of confidence among States in the peaceful use of outer space.

9. The view was expressed that in 2014, the Committee recognized the feasibility of an in-depth review of the principles and norms of international law related to preserving outer space for peaceful purposes, and thus the Committee should set itself a very practical task of analysing different behavioural situations and behavioural responses in relation to the issue of self-defence in outer space, which had great significance for the entire discipline of space safety and security. The delegation expressing that view was also of the view that document A/AC.105/L.294 and the questionnaire included therein were a solid basis for discussion of the issue, and that it would be a good idea to invite States to express their views on how the Committee should proceed with reviewing the principles and

norms of international law related to preserving outer space for peaceful uses and considering the broader perspective of space security and associated matters.

10. The view was expressed that, taking into account the mandates given to the Committee by the General Assembly in its resolution 1472 (XIV) A of 12 December 1959, the Committee had the authority to promote international cooperation in space from scientific, technical and legal aspects. The delegation expressing that view was also of the view that the Committee's position as a subsidiary or advisory organ of the General Assembly gave it a political character, and thus the Committee had to address international space cooperation from not only a technical perspective but also examine current problems objectively and carry out its responsibility before humanity.

11. The view was expressed that the Committee should make use of its full potential as part of the United Nations system and engage in interaction and communications with all entities of that system in order to achieve the Committee's fundamental objective of maintaining peace and security in outer space. The delegation expressing that view was also of the view that the Committee should have in place clearly established operating rules that would allow it to act in a flexible manner and create the right working conditions.

12. Some delegations expressed the view that the existing legal regime with respect to outer space was not sufficient to prevent the placement of weapons in outer space or to address issues concerning the space environment, and that it was important to further develop international space law in order to maintain outer space for peaceful purposes. Those delegations were of the view that, in order to ensure that outer space was used peacefully and to prevent its militarization, the preparation of binding international legal instruments was necessary.

13. The view was expressed that international cooperation in the peaceful uses of outer space was hindered by some non-peaceful utilization of space technology, for example, the development of spy satellites and use of satellites to intercept communications, that such activities were an invasion of privacy and that the technologies involved could be better used for terrorism prevention and humanitarian purposes. The delegation expressing that view was also of the view that activities involving international cooperation, such as participation in international scientific campaigns, the sharing of satellite data, the provision of educational and training assistance to other countries and building institutional capacity, should be further encouraged to enable the exploration of outer space and the use of outer space for peaceful purposes.

14. The view was expressed that some activities of States could prompt a new arms race on Earth and in outer space, including unilateral activities in outer space that could cause tensions, and such developments could lead to a situation where countries would feel forced into protecting their space assets or perceived rights, including with respect to the unilateral mining of celestial bodies or the unauthorized removal of space objects.

15. Some delegations expressed the view that in order to maintain the peaceful nature of space activities and prevent the placement of weapons in outer space, it was essential for the Committee to encourage greater cooperation and linkages across the United Nations system, such as with the First Committee of the General Assembly and the Conference on Disarmament. Those delegations were also of the view that the Committee had a duty to suggest, recommend and generate synergies with those bodies, with a view to formulating an approach to ways and means of maintaining outer space for peaceful purposes.

16. The view was expressed that the Committee had been created exclusively to promote international cooperation with respect to the peaceful uses of outer space and that disarmament issues were more appropriately dealt with in other forums such as the First Committee and the Conference on Disarmament. The delegation expressing that view was also of the view that no actions by the Committee were

needed regarding the weaponization of outer space and that there was no scarcity of appropriate multilateral mechanisms under which disarmament could be discussed.

17. The view was expressed that consideration of the prevention of an arms race in outer space by the First Committee and the Conferences on Disarmament should not prevent the Committee on the Peaceful Uses of Outer Space from also considering related issues, as it has responsibilities relating to strengthening the international basis for the peaceful exploration and uses of outer space, which could cover, among other things, the further development of international space law, including, as appropriate, the preparation of international agreements governing various practical peaceful applications of space science and technology.

18. Some delegations welcomed the organization of joint events by the First Committee and the Fourth Committee of the General Assembly and recommended that it would be appropriate for the Committee on the Peaceful Uses of Outer Space to express to the General Assembly the desirability of holding further such meetings as an established practice in the future.

19. The Committee noted with satisfaction continuous developments in a number of cooperative endeavours that were being pursued at the international, regional and interregional levels by various actors, such as States and international intergovernmental and non-governmental organizations, and emphasized that such cooperation was essential for strengthening the peaceful uses of outer space and for assisting States in the development of their space capabilities. In that regard, the Committee noted the important role that bilateral and multilateral agreements played in promoting common space exploration objectives and cooperative and complementary space exploration missions.

20. Some delegations expressed the view that the United Nations was essential for strengthening and developing cooperation and collaboration among countries, in particular with regard to scientific and space technology, and for maximizing space resources for the common prosperity, security and the long-term sustainability of outer space activities. The delegations expressing that view were also of the view that solid cooperation should enhance information-sharing and technical cooperation among countries in line with the principles of friendship, equal partnership and mutual respect.

21. Some delegations expressed the view that the Committee played a crucial role in promoting cooperation among States in space activities and that the Committee provided a unique forum for States to exchange information in that regard. Those delegations also expressed the view that there were tangible opportunities to further enhance international cooperation, in accordance with the Committee’s mandate.

22. The Committee welcomed the adoption of the African Space Policy and Strategy by African Union Heads of State and Government at the twenty-sixth ordinary session of the Assembly of the Union, held in Addis Ababa on 30 and 31 January 2016, a milestone achievement that marked the first concrete steps towards the realization of an African outer space programme within the framework of the African Union’s Agenda 2063.

23. The Committee noted that the Government of the Bolivarian Republic of Venezuela and the Bolivarian Agency for Space Activities would host the Eighth Space Conference of the Americas and the Second Venezuelan Conference on Space Technology, to be held in parallel in Caracas from 11 to 15 September 2017.

24. The Committee also noted that the twenty-third session of the Asia-Pacific Regional Space Agency Forum, on the theme “Building a future through space science, technology and innovation”, had been held in Manila from 15 to 18 November 2016. The twenty-fourth session would be held in Bangalore, India, from 14 to 17 November 2017.

25. The Committee further noted the activities that the Asia-Pacific Space Cooperation Organization had been pursuing in 2016 to promote the socioeconomic development of the Asia-Pacific region.

26. The view was expressed that international cooperation in space activities should be inclusive and take into consideration the technological level of development of States, especially of developing States, thus enhancing the use of outer space for peaceful purposes.

27. The Committee agreed that through its work in the scientific, technical and legal fields, as well as through the promotion of international dialogue and exchange of information on various topics relating to the exploration and use of outer space, it had a fundamental role to play in enhancing transparency and confidence-building among States, as well as in ensuring that outer space was maintained for peaceful purposes.

28. The Committee recommended that at its sixty-first session, in 2018, consideration of the item on ways and means of maintaining outer space for peaceful purposes should be continued, on a priority basis.

B. Report of the Scientific and Technical Subcommittee on its fifty-fourth session

29. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its fifty-fourth session (A/AC.105/1138), which contained the results of its deliberations on the items considered by the Subcommittee in accordance with General Assembly resolution 71/90.

30. The Committee expressed its appreciation to Chiaki Mukai (Japan) for her able leadership during the fifty-fourth session of the Subcommittee.

31. The representatives of Austria, Belgium, Canada, Chile, China, Germany, India, Indonesia, Italy, Japan, Mexico, the Russian Federation, South Africa, the Sudan, Switzerland, the United States and Venezuela (Bolivarian Republic of) made statements under the item. Statements were also made by the representative of Argentina on behalf of the Group of Latin American and Caribbean States and by the representative of Costa Rica on behalf of the Group of 77 and China. The observer for IAU also made a statement under the item. During the general exchange of views, statements relating to the item were also made by other member States.

32. The Committee heard the following presentations:

(a) “Massive Collision Monitoring Activity: examining urgency and options for debris remediation”, by the observer for IAASS;

(b) “Italy in space: from the Malindi base to the space economy”, by the representative of Italy;

(c) “Space and major disasters”, by the representative of the United Kingdom.

1. United Nations Programme on Space Applications

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

33. The Committee took note of the discussion of the Subcommittee under the item on the activities of the United Nations Programme on Space Applications, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 46-64).

34. The Committee had before it the following:

(a) Report of the United Nations/Islamic Republic of Iran Workshop on the Use of Space Technology for Dust Storm and Drought Monitoring in the Middle East Region, held in Tehran from 5 to 9 November 2016 (A/AC.105/1132);

(b) Report on the United Nations/Nepal workshop on the applications of global navigation satellite systems, held in Kathmandu from 12 to 16 December 2016 (A/AC.105/1149).

35. The Committee noted that the priority areas of the Programme were environmental monitoring, natural resource management, satellite communications for tele-education and telemedicine applications, disaster risk reduction, the use of global navigation satellite systems, the Basic Space Science Initiative, climate change, the Basic Space Technology Initiative, the Human Space Technology Initiative, and biodiversity and ecosystems.

36. The Committee took note of the activities of the Programme carried out in 2016 and planned in 2017, as presented in the report of the Subcommittee (A/AC.105/1138, paras. 49-54 and 58-59).

37. 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 the activities. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2017.

38. The Committee once again expressed its concern that the financial resources available to the United Nations Programme on Space Applications remained limited and appealed to the donor community to support the Programme through voluntary contributions.

39. The Committee requested the Office to continue to work with the Scientific and Technical Subcommittee on defining the priorities of the Programme. The Committee also noted that in her statement, the Director of the Office, in her capacity as the Expert on Space Applications, had informed the Committee about transitional measures in view of the UNISPACE+50 process, aimed at strengthening the work of the Office for a more resilient capacity-building programme of the Office for Outer Space Affairs.

40. The Committee noted with appreciation that since its fifty-ninth session, additional resources for 2017 and 2018 had been offered by various Member States and organizations.

41. 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 significant financial and in-kind support to the centres.

42. The Committee noted that the Government of Japan, through the Kyushu Institute of Technology, and the Politecnico di Torino and Instituto Superiore Mario Boella, with the collaboration of the Istituto Nazionale di Ricerca Metrologica, had continued to provide long-term fellowship programme opportunities for students from developing countries under the United Nations/Japan Long-term Fellowship Programme on Nanosatellite Technologies, and the United Nations/Italy Long-term Fellowship Programme on Global Navigation Satellite Systems and Related Applications, respectively.

43. The Committee noted that the Office for Outer Space Affairs, in collaboration with the Japan Aerospace Exploration Agency (JAXA), provided CubeSat opportunities for deployments from the Japanese Experiment Module (Kibo) of the International Space Station through the KiboCube programme's calls for proposals. The University of Nairobi was implementing its project selected under the first call in 2016, and the selection of the project under the 2017 call for proposals would be completed by August 2017.

44. The Committee also noted the Drop Tower Experiment Series, which was a fellowship programme of the Office for Outer Space Affairs, undertaken in collaboration with the Center of Applied Space Technology and Microgravity (ZARM) and the German Aerospace Center (DLR), in which students could study

microgravity by performing experiments in a drop tower. The Costa Rica Institute of Technology, together with the University of Costa Rica, had successfully implemented their project in 2016, and a new call cycle was under way.

45. The Committee noted with satisfaction that the United Nations Programme on Space Applications had continued to emphasize, promote and foster cooperation with Member States at the regional and global levels to support the regional centres for space science and technology education, affiliated to the United Nations.

46. The Committee expressed its appreciation to the Office for Outer Space Affairs for implementing the United Nations Programme on Space Applications and noted the important role of the Programme in supporting capacity-building in space science technology and its applications, particularly in developing countries.

(b) International Satellite System for Search and Rescue

47. The Committee noted with satisfaction that the International Satellite System for Search and Rescue (COSPAS-SARSAT) currently had 40 member States and two participating organizations and that other entities were also interested in becoming associated with the programme in the future. The Committee noted with appreciation that the worldwide coverage for emergency beacons, carried on vessels, aircraft, and individual users around the world, had been made possible by the space segment, which consisted of transponders carried on 5 polar-orbiting, 5 geostationary and 32 newly added medium-Earth orbit satellites provided by Canada, France, India, the Russian Federation and the United States, along with the European Organization for the Exploitation of Meteorological Satellites, as well as by the ground-segment contributions of 28 other countries. The Committee also noted that, in 2016, alert data from the system had helped to save 2,100 lives in 850 search and rescue events worldwide.

2. Space technology for sustainable socioeconomic development

48. The Committee took note of the discussion of the Subcommittee under the item on space technology for sustainable socioeconomic development, as reflected in the report of the Scientific and Technical Subcommittee (A/AC.105/1138, paras. 65-80).

49. The Committee endorsed the recommendations and decisions on the item made by the Subcommittee and its Working Group of the Whole (A/AC.105/1138, para. 80).

50. The Committee had before it the conference room paper entitled “The ‘Dark and quiet skies’ proposal as an initiative under the auspices of the Committee on the Peaceful Uses of Outer Space for protecting the environmental observing conditions for large astronomical observatories and world citizens, submitted by the International Astronomical Union” (A/AC.105/2017/CRP.24).

51. The Committee recalled that the General Assembly, in its resolution 71/90, had reiterated the need to promote the benefits of space technology and its applications in the major United Nations conferences and summits for economic, social and cultural development and related fields, and had recognized that the fundamental significance of space science and technology and their applications for global, regional, national and local sustainable development processes should be promoted in the formulation of policies and programmes of action and their implementation, including through efforts towards achieving the objectives of those conferences and summits and in implementing the 2030 Agenda for Sustainable Development.

52. The Committee noted the crucial role of space data and technology in the public health domain and reaffirmed the importance of the work of the Expert Group on Space and Global Health of the Scientific and Technical Subcommittee.

53. The Committee agreed that the Office for Outer Space Affairs and IAU would jointly organize a workshop/conference in the coming years on the general topic of light pollution, and noted the offers from Chile and Mexico to host the event.

54. Some delegations expressed the view that the examination of ways in which space science and technology and their applications could contribute to the implementation of the 2030 Agenda for Sustainable Development should remain part of the work of the Committee.

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

55. The Committee took note of the discussion of the Subcommittee under the item on matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 81-97).

56. The Committee noted that international and regional initiatives had been undertaken in order to promote and use remote sensing data to support socioeconomic and sustainable development, in particular for the benefit of developing countries.

57. In the course of the discussion, delegations reviewed national and international cooperation programmes on using remote sensing data. A number of key areas in which remote sensing data were viewed as crucial for well-informed decision-making were singled out. Examples included atmospheric gas measurement in support of climate change monitoring; disaster management and emergency response; the management of natural resources; forest cover mapping and agricultural forecasting and management; irrigation infrastructure mapping; drought and desertification status mapping; oceanography and sea temperature and sea level monitoring; an inventory of coastal waterways and wetlands, and monitoring of rivers and watershed development; snow and glacial studies, including inventory and monitoring of glacial lakes and water bodies; rural development, urban planning and overall land-use monitoring, including the identification of cultivable wasteland; food security, public health and epidemiological monitoring; and facilitating the deployment of humanitarian and development aid.

58. The Committee noted that with the increased relevance and use of remote sensing technology and other space science and technology applications by relevant national actors, greater capacity-building was needed, in particular in developing countries, to most effectively incorporate and apply such technologies and solutions into planning and development decision-making processes. In that regard, some delegations expressed their support for initiatives that promoted greater availability of space-based data at no cost.

4. Space debris

59. The Committee took note of the discussion of the Subcommittee under the item on space debris, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 98-133).

60. The Committee endorsed the decisions and recommendations of the Subcommittee on the item (A/AC.105/1138, paras. 132-133).

61. The Committee noted with satisfaction that 2017 marked the tenth anniversary of the endorsement by the General Assembly, in its resolution 62/217, of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, and urged those countries that had not yet done so to consider implementing the Guidelines on a voluntary basis.

62. The Committee noted with appreciation that many States and international intergovernmental organizations were already implementing space debris mitigation

measures consistent with the Space Debris Mitigation Guidelines of the Committee and/or the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines, and that other States had developed their own space debris mitigation standards based on those guidelines.

63. In addition, the Committee noted that some States were using the Space Debris Mitigation Guidelines of the Committee and/or the IADC Space Debris Mitigation Guidelines, the European Code of Conduct for Space Debris Mitigation, International Organization for Standardization standard 24113:2011 (Space systems: space debris mitigation requirements), and International Telecommunication Union recommendation ITU-R S.1003 (“Environmental protection of the geostationary-satellite orbit”) as reference points in their regulatory frameworks for national space activities. The Committee also noted that some States had cooperated in the space surveillance and tracking support framework funded by the European Union and in the European Space Agency space situational awareness programme.

64. The Committee noted that an increasing number of States were adopting concrete measures to mitigate space debris, including the improvement of the design of launch vehicles and spacecraft, the de-orbiting of satellites, passivation, life extension, end-of-life operations and the development of specific software and models for space debris mitigation.

65. Some delegations expressed the view that the future of space activities largely depended on space debris mitigation and removal and that the mitigation of space debris should continue to be treated as a priority.

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

67. Some delegations expressed the view that measures taken to address the issue of space debris should not impose an undue burden on the space programmes of developing nations.

68. Some delegations expressed the view that there was a need for the detection, tracking, monitoring and reduction of space debris.

69. The view was expressed that since much of the orbital space debris was a result of the past operations of major spacefaring countries, there was a moral international responsibility on their part to assist emerging spacefaring countries in the implementation of space debris mitigation guidelines through the provision of space situational awareness and conjunction assessment risk analysis systems, as well as financial contributions in order to absorb the additional costs incurred by developing countries with regard to spacecraft design modifications.

70. The view was expressed that international efforts were required to reach a common view, establish common rules and pool efforts in relation to the increasing amount of space debris and related matters.

71. The view was expressed that presentations and statements made under the agenda item illustrated the dedicated research efforts required to mitigate the effects of space debris to better protect future space missions.

72. The view was expressed that it was necessary to ensure that policies and procedures aimed at minimizing the risks of accidents in space did not result in long-term disadvantages for emerging spacefaring countries seeking to launch to space objects in the future, and that developing countries should not be denied an opportunity to work in research and development on the grounds that such activity could generate more space debris or pose a danger to objects already in space.

73. The view was expressed that all States should take into account that space debris affected the sustainable use of outer space, constituted a hazard to outer space activities and potentially limited the effective deployment and utilization of associated outer space capabilities.

5. Space-system-based disaster management support

74. The Committee took note of the discussion of the Subcommittee under the item on space-system-based disaster management support, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 134-152).

75. The Committee had before it the report on the United Nations/Germany International Expert Meeting on the Global Partnership on Space Technology Applications for Disaster Risk Reduction, held in Bonn, Germany, on 1 and 2 December 2016 (A/AC.105/1148).

76. The Committee welcomed the activities organized by the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) aimed at promoting greater understanding, acceptance and commitment by countries regarding ways of accessing and developing capacity to use all types of space-based information in support of the full disaster management cycle. In that regard, the Committee took note of the UN-SPIDER Knowledge Portal (www.un-spider.org), a web-based platform for information, communication and process support that fostered the exchange of information, the sharing of experiences, capacity-building and technical advisory support.

77. Some delegations called upon the Office for Outer Space Affairs, through UN-SPIDER, to intensify its capacity-building activities through technical advisory missions and training programmes, in particular in developing countries, to strengthen disaster risk preparedness and emergency response at the national level.

78. In her statement to the Committee at its 722nd meeting, on 7 June 2017, the Director of the Office for Outer Space Affairs thanked the Governments of Austria, China and Germany for their commitment to and support of UN-SPIDER since its inception, including through the implementation of UN-SPIDER activities coordinated by the UN-SPIDER offices in Bonn, Germany, Beijing and Vienna.

79. The Committee noted with appreciation that the eighth annual UN-SPIDER regional support offices coordination meeting had been held in Vienna on 6 June 2017. The meeting had brought together 27 representatives of 11 regional support offices. The offices were a strong pillar of UN-SPIDER and contributed to the programme's activities in the areas of capacity-building, institutional strengthening and knowledge management.

80. The Committee noted that UN-SPIDER would hold its seventh annual conference in Beijing in October 2017, as one of the commitments of the Office for Outer Space Affairs to supporting the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

81. The Committee also noted the valuable contribution of the ongoing activities of Member States to increase the availability and use of space-based solutions in support of disaster management, including the Sentinel Asia project and its coordination of emergency observation requests through the Asian Disaster Reduction Centre, the emergency mapping service of the European Earth Observation Programme (Copernicus) and the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters).

6. Recent developments in global navigation satellite systems

82. The Committee took note of the discussion of the Subcommittee under the item on recent developments in global navigation satellite systems, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 153-178).

83. The Committee noted with appreciation that the eleventh meeting of the International Committee on Global Navigation Satellite Systems (ICG) and the seventeenth meeting of its Providers' Forum had been hosted by the Roscosmos State Corporation for Space Activities on behalf of the Government of the Russian

Federation in Sochi, Russian Federation, from 6 to 10 November 2016. The Committee noted that the twelfth meeting of ICG in 2017 would be hosted by Japan.

84. The Committee noted that the items on the ICG meeting agenda covered compatibility and interoperability of satellite navigation systems; reference frames and timing; enhancement of GNSS performance; and development of new navigation services and capabilities. It also noted that ICG was progressing significantly in establishing an interoperable GNSS space service volume, and that by exploiting the interoperability of all systems, a GNSS signal availability of nearly 100 per cent had been achieved.

85. The Committee noted the proposal by ICG that the Subcommittee consider issues related to GNSS spectrum protection and interference detection and mitigation under its current agenda item on recent developments in GNSS. The Committee also noted that the intent behind the proposal was to raise awareness of the issue among States members of the Committee as part of efforts to promote the effective use of GNSS open services by the global community. In that context, States members and permanent observers of the Committee were invited to participate in the focused exchange of information under the item.

86. The Committee expressed its appreciation to the Office for Outer Space Affairs for its continued support as executive secretariat for ICG and its Providers' Forum, and for the organization of workshops and training courses focusing on capacity-building in the use of GNSS-related technologies in various fields of science and industry, including on the subject of space weather disturbances in the ionosphere and their impact on positioning and navigation.

87. The Committee noted with appreciation the financial contributions made by the United States and the European Commission to the Office for Outer Space Affairs in support of GNSS-related activities and ICG and its Providers' Forum.

88. The Committee noted that the National Commission for Space Activities (CONAE) would host a workshop on the applications of GNSS in Córdoba, Argentina, in 2018 dedicated to strengthening capacity-building in satellite navigation technologies.

7. Space weather

89. The Committee took note of the discussion of the Subcommittee under the item on space weather, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 179-201).

90. The Committee welcomed the fact that the Expert Group on Space Weather, working under the leadership of Canada and with substantive support from the Office for Outer Space Affairs as the mechanism designated to pursue the objective formulated under thematic priority 4 of UNISPACE+50, had taken steps in coordination with the Office to align its workplan with the objective under thematic priority 4 and had started to develop a strategy, taking into account its intersessional work.

91. The Committee noted that the Expert Group had held meetings on the margins of the fifty-fourth session of the Scientific and Technical Subcommittee, in 2017, as well as intersessionally, in Vienna, on 27-28 April 2017, to further its work to meet the objective under thematic priority 4.

92. The Committee also noted that the Office had aligned the space weather-related activities it implemented through its capacity-building efforts and those it carried out in its capacity as the executive secretariat of ICG.

93. The Committee noted with appreciation a number of global conferences and workshops on space weather that had been held or were being planned, including the United Nations/United States workshop entitled "International Space Weather Initiative: the decade after the International Heliophysical Year 2007", to be held in Boston, United States, from 31 July to 4 August 2017.

8. Near-Earth objects

94. The Committee took note of the discussion of the Subcommittee under the item on near-Earth objects, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 202-218).

95. The Committee noted with appreciation the work done by the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG), as provided in the reports on their activities to the fifty-fourth session of the Scientific and Technical Subcommittee (A/AC.105/1138, paras. 205-210).

96. The Committee welcomed the progress made by IAWN and SMPAG in strengthening international cooperation to mitigate the potential threat posed by near-Earth objects. In the interests of public safety, cooperative action was required on the part of the global community. In that context, IAWN and SMPAG had reached an initial agreement on proposed criteria and thresholds for impact response, which had been presented to the Scientific and Technical Subcommittee at its fifty-fourth session (see A/AC.105/C.1/2017/CRP.25).

97. The Committee noted that SMPAG had held its eighth meeting on 1 February 2017, supported by the Office for Outer Space Affairs, on the margins of the fifty-fourth session of the Subcommittee. The Committee also noted that the SMPAG Ad Hoc Working Group on Legal Issues, established in 2016, had held its first meeting on 2 February 2017, also on the margins of the fifty-fourth session of the Subcommittee, to discuss its terms of reference, identify and agree on its plan of work, in particular with regard to possible legal questions related to SMPAG workplan items.

98. The Committee noted that IAWN and the Office for Outer Space Affairs had initiated the establishment of an interface for general communication on near-Earth objects with the public, and for communication with Member States in the event of an impact warning.

99. At the Committee's 722nd meeting, the Director of the Office for Outer Space Affairs had informed the Committee that, pursuant to General Assembly resolution 71/90, the Office had assumed its role as the permanent secretariat of SMPAG and that the funding arrangements between SMPAG and the Office in that regard were to be finalized.

100. The Committee further noted that the next meetings of the IAWN steering committee and of SMPAG would be held in Toulouse, France, from 10 to 12 October 2017.

101. The Committee also noted that International Asteroid Day, declared by the General Assembly in its resolution 71/90, to raise public awareness about the asteroid impact hazard, would be observed on 30 June 2017.

9. Use of nuclear power sources in outer space

102. The Committee took note of the discussion of the Subcommittee under the item on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 219-237).

103. The Committee endorsed the report 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), including the Working Group's new multi-year workplan (A/AC.105/1138, para. 237, and annex II).

104. The Committee had before it the document entitled "Report on the status of implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space, and recommendations for future work" (A/AC.105/C.1/112), which had been prepared by the Working Group in accordance with its multi-year

workplan for the period 2010-2015, adopted by the Subcommittee at its forty-seventh session, in 2010 (A/AC.105/958, para. 134 and annex II, para. 8), and extended to 2017 by the Subcommittee at its fifty-first session, in 2014 (A/AC.105/1065, para. 187 and annex II, para. 9).

105. The Committee stressed the value and importance of implementing the voluntary Safety Framework for Nuclear Power Source Applications in Outer Space, which had been developed by the Subcommittee jointly with the International Atomic Energy Agency.

106. Some delegations expressed the view that more consideration should be given to the use of nuclear power sources in terrestrial orbits, specifically in the geostationary orbit and low-Earth orbit, in order to address the problem of potential collisions of nuclear-powered space objects in orbit and the incidents or emergencies that could be created by the accidental re-entry of such objects into the Earth's atmosphere, as well as the impact of such a re-entry on the Earth's surface, human life and health and the ecosystem. The delegations expressing this view were also of the view that increased attention should be given to these issues through adequate strategies, long-term planning and regulation, including the Safety Framework for Nuclear Power Source Applications in Outer Space.

10. Long-term sustainability of outer space activities

107. The Committee took note of the discussion by the Subcommittee under the item on the long-term sustainability of outer space activities, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 238-273).

108. The Committee endorsed the recommendations and decisions on the item endorsed by the Subcommittee regarding the Working Group on the Long-term Sustainability of Outer Space Activities, reconvened under the chairmanship of Peter Martinez (South Africa) (A/AC.105/1138, para. 273).

109. The Committee had before it the following:

(a) Working paper by the Chair of the Working Group entitled "Outline for the report of the Working Group on the Long-term Sustainability of Outer Space Activities" (A/AC.105/C.1/L.357), which had been before the Subcommittee at its fifty-fourth session;

(b) Note by the Secretariat entitled "Guidelines for the long-term sustainability of outer space activities" (A/AC.105/L.308);

(c) Working paper submitted by the Russian Federation entitled "Considerations aimed at facilitating a broader systemized understanding of the objective dimensions of issues and the functional dimensions of solutions related to sharing information on the situation in outer space in the context of deciding on the establishment of a working group on enhanced information exchange on space objects and events" (A/AC.105/L.310), which had been before the Subcommittee at its fifty-fourth session as conference room paper A/AC.105/C.1/2017/CRP.27;

(d) Conference room paper by the Chair of the Working Group entitled "Guidelines for the long-term sustainability of outer space activities" (A/AC.105/2017/CRP.23), which contained proposals for structuring the work of the Working Group;

(e) Working paper by the Chair of the Working Group entitled "Guidelines for the long-term sustainability of outer space activities" (A/AC.105/2017/CRP.26), which reflected the proposed amendments to the guidelines discussed at the present session of the Committee.

110. The Committee agreed on the importance of completing a compendium of guidelines for the long-term sustainability of outer space activities, to be adopted by the Committee and transmitted to the General Assembly in 2018 to coincide with UNISPACE+50.

111. The Committee noted that the Working Group had held an intersessional meeting on 5 and 6 June, just prior to the current session of the Committee. In that connection, the Committee noted with appreciation that the Permanent Mission of Japan had provided the meeting venue on 5 June.

112. The Committee noted that during the current session, the Working Group had met, using available interpretation services, and that the Chair of the Working Group and interested delegations had held extensive informal consultations to further advance their work on the preamble and the draft guidelines.

113. The Committee noted that, having acknowledged the large amount of work before the Working Group and the limited amount of working time remaining under the extended workplan (A/71/20, para. 137), the Working Group had considered the preamble and some of the guidelines in small informal drafting groups during the present session of the Committee in order to accelerate the progress of its work. The Committee also noted that the outputs from those small informal drafting groups were then considered in multilateral informal consultations so as to give the maximum number of delegations an opportunity to view and react to all proposals.

114. The Committee noted that the preamble and the text of the following guidelines had been discussed in detail during the present session, and that the latest versions of the updated texts were reflected in conference room paper A/AC.105/2017/CRP.26:

(a) Guideline 6: Enhance the practice of registering space objects;

(b) Guideline 7: Provide, in national legal and/or policy frameworks, for a commitment to conducting space activities solely for peaceful purposes;

(c) Guideline 11:[1] Provide updated contact information and share information on space objects and orbital events;

(d) Guideline 14: Perform conjunction assessment during all orbital phases of controlled flight;

(e) Guideline 15: Develop practical approaches for pre-launch assessment of possible conjunctions of space objects to be launched with space objects already present in near-Earth space;

(f) Guideline 24:[1] Share experience related to the long-term sustainability of outer space activities and develop new procedures, as appropriate, for information exchange;

(g) Guideline 30: Address approaches to the design and operation of small-size space objects;

(h) Guideline 31: [Mitigate] [Take measures to address] risks associated with the uncontrolled re-entry of space objects;

(i) Guideline 32:[1] Observe measures of precaution when using sources of laser beams passing through outer space.

115. The Committee noted that a proposal for consolidating guideline 20, guideline 21 and three paragraphs of guideline 22 had been presented at this session for consideration by delegations.

116. The Committee requested that the content of conference room paper A/AC.105/2017/CRP.26 be made available in the six official languages of the United Nations following the current session of the Committee.

117. The Committee noted that the fifth intersessional meeting of the Working Group would be held in Vienna in the period of September/October 2017, and

[1] Extensive discussions were held on this guideline, and the Working Group agreed to postpose further discussions on this guideline pending agreement on the preamble and the harmonization of the final compendium of guidelines.

requested the Chair and the Secretariat to make the necessary arrangements as soon as possible.

118. The Committee noted that, in an effort to expedite its work, the Working Group had requested the Chair to produce a streamlined version of the preambular text following the current session of the Committee, taking into account inputs of all interested delegations. In that connection, the Committee noted that the Working Group had agreed to submit those related views of delegations electronically to the Chair and the Secretariat by no later than 31 July, 2017. The Committee noted that those informal documents containing views on the preamble would then be made available on the Working Group's dedicated web page. The Committee also noted that the Working Group had agreed to use the above-mentioned preambular text to be prepared by the Chair as the starting point for discussions on the preamble at the fifth intersessional meeting of the Working Group.

11. 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

119. The Committee took note of the discussion of the Subcommittee under the item on the examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of ITU, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 274-285).

120. Some delegations expressed the view that the geostationary orbit — a limited natural resource clearly in danger of saturation — needed to be used rationally, efficiently and economically, in conformity with the ITU Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of developing countries and the geographical situation of particular countries. Those delegations underscored that the geostationary orbit was not to be subject to national appropriation by claim of sovereignty, by means of use, repeated use or occupation, or by any other means, and that its utilization was governed by applicable international law, including the Outer Space Treaty and ITU instruments and regulations.

121. Some delegations expressed the view that the geostationary orbit provided unique potential for access to communications and information, in particular for assisting developing countries in implementing social programmes and educational projects, in disseminating knowledge and in providing medical assistance. Those delegations therefore considered that, in order to ensure the sustainability of the geostationary orbit, it was necessary to keep the issue on the agenda of the Subcommittee.

12. Draft provisional agenda for the fifty-fifth session of the Scientific and Technical Subcommittee

122. The Committee took note of the discussion of the Subcommittee under the item on the draft provisional agenda for its fifty-fifth session, as reflected in the report of the Subcommittee (A/AC.105/1138, paras. 286-292).

123. The Committee endorsed the recommendations and decisions on the item made by the Subcommittee (A/AC.105/1138, paras. 287-292).

124. On the basis of the deliberations of the Subcommittee at its fifty-fourth session, the Committee agreed that the following items should be considered by the Subcommittee at its fifty-fifth session:

1. Adoption of the agenda.
2. Election of the Chair.
3. Statement by the Chair.
4. General exchange of views and introduction of reports submitted on national activities.
5. United Nations Programme on Space Applications.
6. Space technology for sustainable socioeconomic development.
7. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
8. Space debris.
9. Space-system-based disaster management support.
10. Recent developments in global navigation satellite systems.
11. Space weather.
12. Near-Earth objects.
13. Use of nuclear power sources in outer space.

    (Work for 2018 as reflected in the multi-year workplan of the Working Group (A/AC.105/1138, para. 237 and annex II, para. 9))
14. Long-term sustainability of outer space activities.

    (Work for 2018 as reflected in the extended multi-year workplan of the Working Group (A/71/20, para. 137))
15. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.

    (Single issue/item for discussion)
16. Draft provisional agenda for the fifty-sixth 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.

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