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Report of the Scientific and Technical Subcommittee on its sixty-second session, held in Vienna from 3 to 14 February 2025

Contents

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I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its sixty-second session at the United Nations Office at Vienna from 3 to 14 February 2025, with Ulpia-Elena Botezatu (Romania) as Chair.

2. The Subcommittee held 20 meetings.

A. Attendance

3. Representatives of the following 87 States members of the Committee attended the session: Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Belarus, Belgium, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Costa Rica, Cuba, Cyprus, Czechia, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Finland, France, Germany, Ghana, Greece, Guatemala, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Libya, Luxembourg, Malaysia, Mexico, Mongolia, Morocco, Netherlands (Kingdom of the), New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Türkiye, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of) and Viet Nam.

4. At its 1015th meeting, on 3 February, the Subcommittee decided to invite observers for Croatia and Serbia, at their request, to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that doing so would not involve any decision of the Committee concerning status.

5. Also at its 1015th meeting, the Subcommittee considered the request of Myanmar to attend the session. The Subcommittee recalled the practice of other United Nations bodies in similar situations to which competing credentials had been submitted and agreed to defer a decision on the credentials of Myanmar, pending guidance from the Credentials Committee of the General Assembly.

6. At the same meeting, the Subcommittee decided to invite the observer for the Holy See, at its request, to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that doing so would not involve any decision of the Committee concerning status.

7. Also at the same meeting, the Subcommittee decided to invite the observer for the League of Arab States, at its request, to attend the session and to address it, as appropriate, on the understanding that it would be without prejudice to further requests of that nature and that doing so would not involve any decision of the Committee concerning status.

8. Observers for the Executive Office of the Secretary-General, the Office for Disarmament Affairs of the Secretariat, the Food and Agriculture Organization of the United Nations (FAO), the International Atomic Energy Agency (IAEA), the International Civil Aviation Organization (ICAO) and the International Telecommunication Union (ITU) attended the session.

9. The session was attended by representatives of the European Union, in its capacity as permanent observer of the Committee and in accordance with General Assembly resolutions 65/276 and 73/91.

10. The session was attended by observers for the following intergovernmental organizations having permanent observer status with the Committee: Asia-Pacific Space Cooperation Organization (APSCO), European Organization for Astronomical Research in the Southern Hemisphere (ESO), European Space Agency (ESA),

Inter-Islamic Network on Space Sciences and Technology (ISNET), International Organization of Space Communications (Intersputnik) and Square Kilometre Array Observatory.

11. The session was attended by observers for the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG), in accordance with the agreement of the Subcommittee at its fifty-third session (A/AC.105/1109, para. 182), and by the observer for the Space and Global Health Network in accordance with the agreement of the Subcommittee at its sixtieth session (A/AC.105/1279, para. 238).

12. The session was attended by observers for the following non-governmental organizations having permanent observer status with the Committee: CANEUS International, Committee on Space Research (COSPAR), European Astronomical Society (EAS), European Space Policy Institute (ESPI), For All Moonkind, Global Satellite Operators Association (GSOA), International Academy of Astronautics (IAA), International Astronautical Federation (IAF), International Astronomical Union (IAU), International Organization for Standardization (ISO), International Peace Alliance (Space), Moon Village Association, National Space Society (NSS), Open Lunar Foundation, Outer Space Institute (OSI), Prince Sultan Bin Abdulaziz International Prize For Water, Scientific Committee on Solar-Terrestrial Physics, Secure World Foundation (SWF), Space Generation Advisory Council (SGAC), Space Renaissance International (SRI), University Space Engineering Consortium-Global (UNISEC-Global) and World Space Week Association (WSWA).

13. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in document A/AC.105/C.1/2025/INF/54.

14. The Subcommittee was informed by the secretariat of the application for membership in the Committee submitted by Myanmar (A/AC.105/C.1/2025/CRP.2), which was to be considered by the Committee at its sixty-eighth session, in 2025.

15. The Subcommittee was also informed by the secretariat of the application for permanent observer status with the Committee submitted by the Alliance for Collaboration in the Exploration of Space (ACES Worldwide) (A/AC.105/C.1/2025/CRP.3), which was to be considered by the Committee at its sixty-eighth session, in 2025.

B. Adoption of the agenda

16. At its 1015th meeting, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.
2. Statement by the Chair.
3. General exchange of views and introduction of reports submitted on national activities.
4. Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications.
5. Space debris.
6. Space-system-based disaster management support.
7. Recent developments in global navigation satellite systems.
8. Space weather.
9. Near-Earth objects.
10. Long-term sustainability of outer space activities.
11. Future role and method of work of the Committee.

12. Space and global health.

13. Use of nuclear power sources in outer space.

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

15. Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges.

16. Draft provisional agenda for the sixty-third session of the Scientific and Technical Subcommittee.

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

C. General statements

17. Statements were made by representatives of the following member States during the general exchange of views: Algeria, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Costa Rica, Czechia, Dominican Republic, Ecuador, Egypt, Finland, France, Germany, Ghana, Guatemala, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Kazakhstan, Kenya, Kuwait, Latvia, Luxembourg, Malaysia, Mexico, Morocco, New Zealand, Nigeria, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Türkiye, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay and Venezuela (Bolivarian Republic of). Statements were made by the representative of Burkina Faso on behalf of the Group of African States and by the representative of Colombia on behalf of the Group of 77 and China. The representative of the European Union, in its capacity as permanent observer, made a statement on behalf of the European Union and its member States. Additional statements were made by the observers for APSCO, CANEUS International, COSPAR, ESA, For All Moonkind, IAA, IAF, IAU, ISNET, the Moon Village Association, NSS, OSI, Prince Sultan bin Abdulaziz International Prize for Water, SWF, SKAO, SGAC, UNISEC-Global and WSWA.

18. The Subcommittee had before it the following:

(a) Conference room paper submitted by Germany, Peru and the United Arab Emirates on key takeaways from the World Space Forum 2024 on the implementation of action 56 of the Pact for the Future (A/AC.105/C.1/2025/CRP.12);

(b) Conference room paper submitted by Australia, Bahrain, Canada, Ecuador, Germany, Italy, Japan, Luxembourg, Mexico, Slovenia, Spain, the United Arab Emirates, the United Kingdom and the United States containing an update on the work of the signatories of the Artemis Accords (A/AC.105/C.1/2025/CRP.16/Rev.1);

(c) Conference room paper submitted by COSPAR, IAA, IAU and the Moon Village Association on the need for the designation and preservation of sites of special scientific interest on the Moon (A/AC.105/C.1/2025/CRP.18);

(d) Conference room paper submitted by the Moon Village Association containing reports on the status and plan for 2025 of the Global Expert Group on Sustainable Lunar Activities; International Moon Day 2024 and the outlook for 2025; and the Participation of Emerging Space Countries project (A/AC.105/C.1/2025/CRP.19);

(e) Conference room paper submitted by ICAO on the outcomes of related meetings of ICAO (A/AC.105/C.1/2025/CRP.28).

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

(a) “Brazil’s investment policy in the space sector”, by the representative of Brazil;

(b) “Chang’E-6 mission”, by the representative of China;

(c) “SpaDeX mission”, by the representative of India;

(d) “Current status and future of human resource development and industry innovation through international collaboration”, by the representative of Japan;

(e) “Basic principles of airspace integration”, by the observer for ICAO;

(f) “The third International Moon Day results and outlook for 2025”, by the observer for the Moon Village Association.

20. At its 1015th meeting, the Chair of the Subcommittee made a statement in which she outlined the work of the Subcommittee at its sixty-second session. She noted that space had become increasingly high on the global political agenda. Looking back at historical achievements, she noted that 2025 marked the fiftieth anniversary of the Apollo-Soyuz mission, the first crewed international space mission, and the thirty-fifth anniversary of the launch of the Hubble Space Telescope, which had revolutionized understanding of the universe. Looking forward, she emphasized the importance of the Subcommittee delivering on its agenda, as the outcomes of its work could be impactful for both current and future generations and for all countries and stakeholders and could expand opportunities for people and the planet through the development and implementation of measures to further enhance the safety and sustainability of the exploration and use of outer space.

21. The Chair welcomed Djibouti and Latvia as the newest members of the Committee.

22. The Chair also welcomed the African Astronomical Society, GSOA, OSI, the Space Data Association and SRI as the newest organizations with observer status with the Committee.

23. Also at the 1015th meeting, the Director of the Office for Outer Space Affairs made a statement in which she recalled the development of the Office’s Vision and Strategy 2024–2030 and noted that attention had now turned to implementation of the vision and strategy. She highlighted, in that connection, recent activities by the Office, including the first United Nations Conference on Sustainable Lunar Activities, the first United Nations Space Bridge round table on global space traffic coordination and the first United Nations Space Sustainability Days, held directly prior to the present session. She emphasized that the fourth United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE IV) was a potential milestone event to work towards and to deliver mechanisms and solutions that the space community and the developing world urgently needed. She also called for the Office to be strengthened and fully resourced to truly be the bridge between investments and the needs of millions around the world.

24. The Subcommittee expressed its condolences on the passing of Andrzej Misztal of Poland, who had been the Chair of both the Legal Subcommittee and of the Working Group on Legal Aspects of Space Resource Activities of the Legal Subcommittee, and of Adigun Ade Abiodun of Nigeria, who had been the Chair of the Committee and the Expert on Space Applications of the Office for Outer Space Affairs.

25. The Subcommittee noted with appreciation the landmark achievements that had been made by space programmes in areas such as space exploration and innovation, human space flight, space science, planetary defence and astronomy since it had held its sixty-first session, in 2024.

26. The Subcommittee agreed that it, together with the Committee and the Legal Subcommittee, and with the support of the Office for Outer Space Affairs, remained

a unique international forum for promoting international cooperation in the exploration and peaceful uses of outer space.

27. The Subcommittee agreed that joint efforts should be made to maximize the effectiveness of its work.

28. The following events were held on the margins of the sixty-second session of the Subcommittee:

(a) “Space-based solutions for disaster management”, co-organized by Austria, Germany and the Office for Outer Space Affairs;

(b) “Preserving our celestial heritage: dark and quiet skies”, co-organized by Chile and Spain, and supported by EAS, ESO, the Institute of Astrophysics of the Canary Islands, IAU, SKAO and the Spanish Space Agency;

(c) “Shaping an effective framework for space traffic”, co-organized by Germany and ESPI;

(d) “Innovation, beauty, inspiration: space design Italiano”, co-organized by Italy and ESPI;

(e) “Japan Day”, co-organized by Japan and the Office for Outer Space Affairs;

(f) “SpaceUp: unlocking the space economy”, organized by Saudi Arabia;

(g) “Networking lunch hosted by the delegation of Thailand to the Scientific and Technical Subcommittee”, organized by Thailand;

(h) “Launching the Long-term Sustainability of Outer Space Activities Information Repository”, co-organized by the United Kingdom and the Office for Outer Space Affairs;

(i) “Sustainability of the space environment: join us for a discussion on metrics and models”, co-organized by the United Kingdom and the Office for Outer Space Affairs;

(j) “Apophis 2029: advancing science and planetary defence in the International Year of Asteroid Awareness”, organized by COSPAR;

(k) “Leveraging space technology for agricultural development and food security”, co-organized by FAO and the Office for Outer Space Affairs;

(l) “Lunar sites of special scientific interest: designation and preservation”, organized by the Moon Village Association;

(m) “Harnessing space and artificial intelligence for disaster risk management”, organized by the Office for Outer Space Affairs;

(n) “Office for Outer Space Affairs partnership and fundraising, supporting the Office’s leadership vision: driving innovation to address global needs”, organized by the Office for Outer Space Affairs;

(o) “Space4Women project: celebrating women and girls in science”, organized by the Office for Outer Space Affairs.

D. National reports

29. The Subcommittee took note with appreciation of the reports by Member States (see A/AC.105/1337, A/AC.105/1337/Add.1 and A/AC.105/1337/Add.2) and the conference room papers (A/AC.105/C.1/2025/CRP.5 and A/AC.105/C.1/2025/CRP.17) submitted for its consideration under agenda item 3, entitled “General exchange of views and introduction of reports submitted on national activities”. The Subcommittee recommended that the secretariat continue to invite Member States to submit annual reports on their space activities.

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

30. After considering the items before it, the Subcommittee, at its 1034th meeting, on 14 February, adopted its report to the Committee on the Peaceful Uses of Outer Space, containing its recommendations, as set out in the paragraphs below.

31. The Subcommittee noted that the approach taken to the present report did not constitute a precedent for future reports.

32. The Subcommittee noted that the views of delegations expressed at the sixty-second session of the Scientific and Technical Subcommittee, held from 3 to 14 February 2025, had been made available on the dedicated web page for the sixty-second session, in the form of written statements and digital recordings.

II. Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications

33. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 4, entitled “Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications”.

34. The representatives of Austria, Belarus, Brazil, China, Costa Rica, France, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Mexico, the Philippines, the Republic of Korea, the Russian Federation, Saudi Arabia, Thailand and the United States made statements under agenda item 4. During the general exchange of views, statements relating to the item were made by representatives of other member States.

35. The Subcommittee had before it the following:

(a) Report on the United Nations/Costa Rica/Prince Sultan bin Abdulaziz International Prize for Water Sixth Conference on the Use of Space Technology for Water Management, held in San José and online, from 7 to 10 May 2024 (A/AC.105/1330);

(b) Report on the United Nations/Austria symposium on the theme “Climate action: transforming space-based technology projects into sustainable services that support policy-making”, held in Graz, Austria, on 17 and 18 July 2024 (A/AC.105/1335);

(c) Report on the United Nations/International Astronautical Federation Workshop on Space Technology for Socioeconomic Benefits: “Space sustainability as a game changer for development”, held in Milan, Italy, from 11 to 13 October 2024 (A/AC.105/1336);

(d) Report on the United Nations World Space Forum 2024 on the theme “Sustainable space for sustainability on Earth”, held in Bonn, Germany, from 3 to 5 December 2024 (A/AC.105/C.1/2025/CRP.11).

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

(a) “Space technologies in support of the European Union regulation on deforestation-free products”, by the representative of Austria;

(b) “Space missions programme”, by the representative of Brazil;

(c) “Report on the tenth anniversary of the Regional Centre for Space Science and Technology Education in Asia and the Pacific”, by the representative of China;

(d) “Global ocean and climate satellite observation network in China and role in the United Nations decade of ocean science”, by the representative of China;

(e) “China’s Earth observation system promotes global socioeconomic sustainable development”, by the representative of China;

(f) “Mattei plan for Africa activities”, by the representatives of Italy;

(g) “Paraguay space agency: advancing space technology and geospatial data – Paraguay’s journey towards innovation and sustainability”, by the representative of Paraguay;

(h) “Space technology development initiatives spearheaded by the Philippine Space Agency and its contribution to the United Nations Sustainable Development Goals”, by the representative of the Philippines;

(i) “Russian and Chinese project of the complex of the Russian outer space theatre”, by the representatives of the Russian Federation;

(j) “Space and Earth science at low Earth orbit: prospects of cosmonautics”, by the representative of the Russian Federation;

(k) “Benefiting from space technology for monitoring agricultural production and achieving the Sustainable Development Goals”, by the observers for FAO;

(l) “Collaborative potential for synergies between artificial intelligence and quantum science and technology with space applications”, by the observer for CANEUS International;

(m) “Space SDG18 and Space Renaissance 4 All Gallery”, by the observer for SRI.

37. The Subcommittee noted the value of space technology and its applications, as well as of space-derived data and information, for sustainable development, including in the areas of improving the formulation and subsequent implementation of policies and programmes of action relating to environmental protection, land and water management, including the protection of resources, the development of degraded land and wastelands, urban and rural development, marine and coastal ecosystems, healthcare, climate change, disaster risk reduction and emergency response, energy, infrastructure, navigation, transport and logistics, rural connectivity, seismic monitoring, natural resource management, snow and glaciers, biodiversity, agriculture and food security.

38. The Subcommittee noted the importance of the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries (General Assembly resolution 51/122, annex), which stated that international cooperation in the exploration and use of outer space for peaceful purposes should take particular account of the needs of developing countries and should be conducted both on an equitable and mutually acceptable basis and in modes that are considered most effective and appropriate by the participating countries.

39. The Subcommittee noted that the Committee and its subcommittees, with the support of the Office for Outer Space Affairs, had a fundamental role to play in promoting international cooperation and capacity-building in disseminating information and knowledge on space applications and in support of socioeconomic development.

40. The Subcommittee noted with appreciation that, since its previous session, cash and in-kind contributions, including the provision of staff on a non-reimbursable loan basis, had been offered for the activities of the Office for Outer Space Affairs by the donors listed in the annex to the statement of the Director of the Office delivered during the general exchange of views.

41. The Subcommittee noted that the United Nations Programme on Space Applications continued to implement the Access to Space for All initiative and the

following activities and programmes, focused on developing the capacity of Member States to access the benefits of space:

(a) Drop Tower Experiment Series;

(b) Hypergravity Experiment Series;

(c) United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station Japanese Experiment Module (KiboCUBE), the "Kibo-Robot Programming Challenge" and "KiboCUBE Academy" online lectures;

(d) United Nations/China cooperation on the utilization of the China Space Station;

(e) Cooperation programme on the utilization of the Vega-C launcher;

(f) "ISONscope" telescope provision cooperation programme;

(g) The Payload Hosting Initiative;

(h) United Nations/Airbus Defence and Space cooperation on accessing space using the Bartolomeo platform;

(i) "Post-Graduate Study on Nanosatellite Technology" fellowship programme, carried out in collaboration with the Kyushu Institute of Technology;

(j) National Aeronautics and Space Administration (NASA) of the United States/Office for Outer Space Affairs Systems Engineering Webinar Series.

42. The Subcommittee also noted the highlights of the activities of the regional centres for space science and technology education, affiliated to the United Nations, and that, through multiple degree programmes and short-term training activities, the regional centres had trained talented individuals in the space science and technology sector as part of the efforts of States Members of the United Nations to promote capacity-building for developing countries.

43. The Subcommittee noted that the activities of the Office had included the United Nations/Costa Rica/Prince Sultan bin Abdulaziz International Prize for Water Sixth Conference on the Use of Space Technology for Water Management; the United Nations/Austria symposium on the theme "Climate action: transforming space-based technology projects into sustainable services that support policymaking"; the United Nations/International Astronautical Federation Workshop on Space Technology for Socioeconomic Benefits: "Space sustainability as a game changer for development"; and the United Nations World Space Forum 2024 on the theme "Sustainable space for sustainability on Earth".

44. In accordance with paragraph 13 of General Assembly resolution 79/87, the Working Group of the Whole was reconvened, with Prakash Chauhan (India) as Chair.

45. At its 1030th meeting, on 12 February, the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex I to the present report.

III. Space debris

46. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 5, entitled "Space debris".

47. The representatives of Brazil, Canada, China, France, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Malaysia, Mexico, New Zealand, the Republic of Korea, the Russian Federation, Saudi Arabia, Slovakia, the United Kingdom and the United States made statements under agenda item 5. During the general exchange of views, statements relating to the item were also made by representatives of other member States. A statement was made by the observer for ESA on behalf of the Inter-Agency Space Debris Coordination Committee (IADC). The observer for COSPAR also made a statement.

48. The Subcommittee had before it the following:

(a) Notes by the Secretariat on research on space debris, the safety of space objects with nuclear power sources on board and problems relating to the collision of such objects with space debris, containing replies received from Member States and international organizations (A/AC.105/C.1/128, A/AC.105/C.1/128/Add.1 and A/AC.105/C.1/2025/CRP.8);

(b) Conference room paper containing the IADC Space Debris Mitigation Guidelines (A/AC.105/C.1/2025/CRP.9);

(c) Conference room paper containing the IADC report on the status of the space debris environment (A/AC.105/C.1/2025/CRP.10).

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

(a) "Space debris mitigation regulations and technical standards of China", by the representative of China;

(b) "Space Road Right and the principles for the avoidance of on-orbit collision", by the representative of China;

(c) "2024 space debris activities in France", by the representative of France;

(d) "Progress on (laser-)optical technologies and retroreflectors for space traffic management", by the representative of Germany;

(e) "Zero Debris Mission", by the representative of India;

(f) "Global implementation of active debris removal", by the representative of Japan;

(g) "Current stage of space situational awareness development in Kazakhstan", by the representative of Kazakhstan;

(h) "Status and plans for space situational awareness in the Republic of Korea", by the representative of the Republic of Korea;

(i) "Results of monitoring by Roscosmos of the key events in the near-Earth orbit in 2024", by the representative of the Russian Federation;

(j) "Methodological approach to assessing the impact of space debris and meteoroids on orbital vehicles taking into account the cumulative impact of small-size fragments", by the representative of the Russian Federation;

(k) "International airborne observation campaign dedicated to the re-entry of the European Space Agency's Cluster–Salsa satellite", by the representative of Slovakia;

(l) "A call for action from Tunisia on international regulatory frameworks", by the representative of Tunisia;

(m) "Near-Earth space observation activities in Ukraine in 2024", by the representative of Ukraine;

(n) "Update on the European Space Agency's space sustainability efforts", by the observer for ESA.

50. The Subcommittee noted with satisfaction that 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 had proved vital in controlling the space debris problem for the safety of future space missions.

51. The Subcommittee also noted with satisfaction that many States and international intergovernmental organizations were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines and the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee (A/74/20, annex II) and/or the Space Debris Mitigation Guidelines of IADC, and were using those guidelines.

52. The Subcommittee noted that a number of States had harmonized their national space debris mitigation standards with those guidelines and standards, and that some other States cooperated under the space surveillance and tracking support framework funded by the European Union.

53. The Subcommittee noted that IADC, whose initial work had served as the basis for the Space Debris Mitigation Guidelines of the Committee, had updated its own Space Debris Mitigation Guidelines in January 2025.

54. The Subcommittee expressed concern at the increasing amount of space debris and encouraged States, agencies, industries and academic institutions that had not yet done so to consider voluntarily implementing the Space Debris Mitigation Guidelines and the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee and to work to preserve the space environment.

55. The Subcommittee agreed that Member States and international organizations having permanent observer status with the Committee should continue to be invited to provide reports on research on space debris, the safety of space objects with nuclear power sources on board, problems relating to the collision of such space objects with space debris and the ways in which debris mitigation guidelines were being implemented.

56. The Subcommittee noted with appreciation that States had undertaken a number of actions to mitigate space debris, such as improving the design of launch vehicles, engines and spacecraft, developing special software, passivation, end-of-life operations and disposal.

57. The Subcommittee noted the development and application of new technologies and ongoing research related to space debris mitigation; the protection of space systems from space debris; means of limiting the creation of additional space debris; re-entry and collision avoidance techniques; the measurement, characterization, continuous monitoring and modelling of space debris; the prediction, early warning and notification of space debris re-entry and collision; and the evolution of space debris in orbit and fragmentation.

58. The Subcommittee noted the importance of space situational awareness for space sustainability, and recognized challenges and opportunities in addressing that matter.

IV. Space-system-based disaster management support

59. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 6, entitled “Space-system-based disaster management support”.

60. The representatives of Argentina, Austria, China, France, Germany, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Luxembourg, Malaysia, Mexico, Morocco, Nigeria, the Philippines, the Republic of Korea, the Russian Federation, South Africa, Spain and the United Kingdom made statements under agenda item 6. During the general exchange of views, statements relating to the item were also made by representatives of other States members.

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

(a) “Space-based information for emergency management in China in 2024”, by the representative of China;

(b) “Italian Space Agency activities on space-system-based disaster management”, by the representative of Italy;

(c) “The application of space science and technology in disaster management in Kazakhstan”, by the representative of Kazakhstan;

(d) “Kazakhstan’s experience in developing the Taskyn information programme”, by the representative of Kazakhstan.

62. The Subcommittee welcomed with appreciation the activities and achievements of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), as contained in the report on activities carried out in 2024 in the framework of UN-SPIDER (A/AC.105/1339), and noted the commitment of States members to supporting UN-SPIDER, including through the network of regional support offices, their participation in capacity-building and training programmes, the provision of in-kind expertise and the continued organization of relevant workshops and advisory missions.

63. The Subcommittee was informed about the retirement of Juan Carlos Villagran de Leon of Guatemala, who had been Head of the UN-SPIDER Office in Bonn, Germany, since 2011. The Subcommittee thanked Mr. Villagran de Leon for his many years of service at the Office and wished him all the best for the future.

64. The Subcommittee noted the continued importance of space-based technology and applications for disaster management, especially given the growing climate-related challenges and increased frequency of disasters worldwide, and also noted that satellite data were crucial for mitigating the effects of natural disasters in all phases of emergency response.

65. The Subcommittee took note of the information provided by delegations on their national efforts and international cooperation mechanisms to strengthen the use of space technologies for disaster management and emergency response. Delegations highlighted significant ongoing initiatives to develop and operate new satellite constellations, ground-based infrastructure and specialized applications for monitoring hazards such as floods, wildfires, cyclones, landslides, droughts, debris flows and volcanic eruptions.

66. The Subcommittee noted the overarching role of the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (International Charter on Space and Major Disasters), which continued to be activated at record levels in response to global disasters. The growing number of Charter activations reflected not only an increasing awareness of the importance of space-based data solutions for crisis management but also the growing intensity and frequency of extreme weather and other climate-related events.

67. The Subcommittee noted that, in order to maximize the benefits of space-based data, several member States continued to actively participate in or lead regional and international partnerships, such as Sentinel Asia, for enhancing collaborative disaster monitoring in the Asia-Pacific region, and that the Charter was viewed as a model for rapid, coordinated responses worldwide.

68. The Subcommittee noted that space-based support for disaster risk reduction and emergency response was vital for addressing and mitigating the impacts of both rapid-onset and slow-onset disasters, including those aggravated by climate change, which underscored the value of seamlessly integrating satellite-based information into operational disaster management plans and the need for robust data policies and partnerships to ensure that all States, in particular developing countries, had the capacity to acquire and utilize such data.

69. The Subcommittee expressed its satisfaction that a growing number of States and entities had universal access to the Charter on Space and Major Disasters, commended States that made their space assets freely available to support emergency operations around the world, and encouraged all member States and relevant international organizations to share their expertise, enhance the interoperability of the different satellite systems and continue promoting free and open data policies to strengthen collective resilience.

70. The Subcommittee acknowledged the crucial role of voluntary contributions and in-kind support, including through the provision by member States of experts and

technical resources to maintain and enhance UN-SPIDER activities, and noted that such efforts demonstrated a shared commitment to ensuring that space-based information and services benefited communities most in need and paved the way for more effective global disaster risk reduction.

71. The Subcommittee underscored that enhanced international cooperation, technical innovation and capacity-building in the field of space-system-based disaster management remained critical for all countries, especially those most vulnerable to natural hazards, and encouraged member States and other stakeholders to deepen their partnerships and collaboration, increase awareness of the mechanisms available, such as the Charter and Sentinel Asia, and to continue to leverage the expertise and services of UN-SPIDER in order to strengthen global and regional preparedness and resilience.

V. Recent developments in global navigation satellite systems

72. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 7, entitled "Recent developments in global navigation satellite systems", and reviewed matters related to the International Committee on Global Navigation Satellite Systems (ICG).

73. The representatives of China, France, India, Italy, Japan, Mexico, Pakistan, the Republic of Korea, the Russian Federation and the United States made statements under agenda item 7. A statement was also made by the representative of New Zealand in that country's capacity as Chair of the eighteenth meeting of ICG. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

74. The Subcommittee had before it the following:

(a) Note by the Secretariat on the eighteenth meeting of the International Committee on Global Navigation Satellite Systems (A/AC.105/1327 and A/AC.105/1327/Corr.1);

(b) Report of the Secretariat on activities carried out in 2024 in the framework of the workplan of the International Committee on Global Navigation Satellite Systems (A/AC.105/1328);

(c) Report on the United Nations workshop on the applications of global navigation satellite systems and related space technologies in support of responses to urban sustainability challenges (A/AC.105/1329).

75. The Subcommittee noted with satisfaction that the eighteenth meeting of ICG and the thirtieth meeting of the Providers' Forum, organized jointly by Australia and New Zealand, had been held in Wellington from 6 to 11 October 2024. The Subcommittee noted that the nineteenth meeting of ICG would be hosted by the Republic of Korea, in Busan, from 19 to 24 October 2025.

76. The Subcommittee noted that the Global Positioning System (GPS) of the United States remained a reliable pillar throughout the world and that the United States continued its work to ensure that GPS remained compatible and interoperable with other global and regional systems that provided similar services. In addition, the United States had continued to upgrade the capability of and the service provided by GPS through the integration of the newest generation of satellites, known as GPS Block III.

77. The Subcommittee noted that the service provided by the Global Navigation Satellite System (GLONASS) of the Russian Federation operated on the basis of open access navigation signals in the L1 and L2 radio frequency bands. In addition, GLONASS satellites had been broadcasting the third open access signal in the L3 radio frequency band.

78. The Subcommittee noted that the BeiDou Navigation Satellite System (BDS) constellation of China continuously provided stable and reliable positioning,

navigation and timing services for the world; that, in 2024, China had launched the fifty-ninth and sixtieth BDS-III backup satellites; that China had started the construction of the next generation of BDS, which would provide real-time, high-precision and high-integrity navigation, positioning and timing services with metre- to decimetre-scale accuracy; and that China was promoting the development of low-orbit satellite navigation augmentation capacity, thus further enhancing the global service performance of BDS. The Subcommittee further noted that China had been continuously sharing its BDS application solutions and experience by holding a series of international forums.

79. The Subcommittee noted that France had participated in the development and operation of the European Satellite Navigation System (Galileo) and the European Geostationary Navigation Overlay Service. The Subcommittee also noted that the Open Service Navigation Message Authentication service and the Early Warning Satellite Service would be upcoming services of the next Galileo satellite constellation.

80. The Subcommittee noted that the Lunar GNSS Receiver Experiment (LuGRE) was a demonstration of technology led by NASA and the Italian Space Agency resulting directly from the work enabled by ICG. The LuGRE experiment had established a foundation for enhanced interplanetary navigation and communication systems that would support future space exploration missions.

81. The Subcommittee noted that India was conducting two satellite navigation programmes, namely the GPS-aided Geostationary Augmented Navigation (GAGAN) system, a satellite-based augmentation system, and the Indian Regional Navigation Satellite System, also known as Navigation with Indian Constellation (NavIC).

82. The Subcommittee noted that the Quasi-Zenith Satellite System (QZSS) of Japan, also known as “Michibiki”, was currently providing three types of services: a service complementing GPS that transmitted ranging signals from satellites; a high-accuracy service that augmented GNSS by providing error corrections through QZSS; and a messaging service to contribute to disaster risk reduction. The Subcommittee also noted that Japan had been trialling a high-accuracy augmentation service based on a precise point positioning technique and an early warning service for the Asia and Oceania region.

83. The Subcommittee noted with appreciation that Pakistan and the Republic of Korea had reported on the status and development of their satellite system programmes and that Mexico had been focusing on bringing GNSS technology to the widest possible user community.

VI. Space weather

84. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 8, entitled “Space weather”.

85. The representatives of China, France, India, Italy, Japan, Mexico, Nigeria, the Republic of Korea, Saudi Arabia, South Africa, Thailand, the United Kingdom and the United States made statements under agenda item 8. During the general exchange of views, statements relating to the item were made by representatives of other member States.

86. The Subcommittee had before it the report on the United Nations/Germany workshop on the International Space Weather Initiative: Preparing for the Solar Maximum (A/AC.105/1326).

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

(a) “China meteorological administration space weather operations update”, by the representative of China;

(b) “Development of space weather capability in China”, by the representative of China;

(c) “ASI activities on space weather”, by the representative of Italy;

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

(e) “Development of space weather monitoring system components in Kazakhstan”, by the representative of Kazakhstan;

(f) “Space weather research in the Philippines: status and opportunities”, by the representative of the Philippines;

(g) “Preparedness and response of the Republic of Korea to space weather during the solar maximum”, by the representative of Republic of Korea;

(h) “Ensuring operational capabilities at the Russian segment of the ICAO international space weather service”, by the representative of the Russian Federation;

(i) “The general issues of space sunshade system creation”, by the representatives of Ukraine;

(j) “Activities of the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)”, by the observer for the Scientific Committee on Solar-Terrestrial Physics.

88. The Subcommittee noted that space weather, caused by solar variability, was a global concern that affected all Member States as it posed economic and societal risks owing to its potential threat to space systems, human space flight, ground- and space-based infrastructure and aviation activity, upon which society was increasingly reliant. The issue of space weather therefore needed to be urgently addressed in a global manner, through international cooperation and coordination, to make it possible to predict potentially severe space weather events and mitigate their impact in order to ensure the safety and sustainability of outer space activities.

89. The Subcommittee noted that a number of national, regional and international activities had been undertaken in relation to space weather research and capacity-building to improve scientific and technical understanding of adverse space weather effects, with the aim of strengthening space weather resilience.

90. The Subcommittee also noted the importance of the work of WMO, including the development of its technical and regulatory framework for space weather, and the opportunities offered by its Integrated Global Observing System and related systems, as well as the importance of the engagement of Member States with COSPAR in developing international space weather action teams for scientific research in support of transitional efforts related to research for operations, and their engagement in the space weather-related work of the International Space Environment Service and ITU.

91. The Subcommittee noted the collaboration between COSPAR, the International Space Environment Service and WMO on space weather.

92. The Subcommittee noted that activities related to space weather could have an impact on aviation and, in particular, could potentially interrupt high-frequency communications and satellite navigation. In that regard, the Subcommittee noted the importance of the four ICAO global space weather information centres, which were tasked to provide the civil aviation sector with information about space weather that could potentially affect communications, navigation and the health of passengers and crew.

VII. Near-Earth objects

93. In accordance with General Assembly resolution 79/87, the Scientific and Technical Subcommittee considered agenda item 9, entitled “Near-Earth objects”.

94. The representatives of Canada, China, France, Germany, Italy, Japan, Mexico, the Republic of Korea, the Russian Federation, the United Kingdom and the United States made statements under agenda item 9. A statement was made by the observer for ESA. Statements were also made by the observers for IAWN and SMPAG. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

95. The Subcommittee had before it a conference room paper entitled “Status report by the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG)” (A/AC.105/C.1/2025/CRP.6).

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

(a) “Research on monitoring and early warning system for near-Earth asteroids based on space-Earth coordination”, by the representative of China;

(b) “ASI activities on near-Earth objects”, by the representative of Italy;

(c) “Peaceful applications of space rocks: JAXA contributions to science and humanity”, by the representative of Japan.

97. The Subcommittee noted with appreciation that the General Assembly, in its resolution 79/86, had declared 2029 to be the International Year of Asteroid Awareness and Planetary Defence, in order to take advantage of the unique occasion of the close approach of 99942 Apophis, which in 2029 would pass safely but in very close proximity to the Earth, making the asteroid visible to billions of people with the naked eye in the clear night sky.

98. The Subcommittee heard status reports by IAWN and SMPAG and noted in that regard that the asteroid designated 2024 YR4 had first been reported on 27 December 2024. The Subcommittee also noted that the three orbit computation centres of IAWN had been independently computing the impact probability for asteroid 2024 YR4, and on 27 January 2025 the centres jointly arrived at the conclusion that the impact probability for that asteroid would exceed the 1 per cent threshold for potential impact on 22 December 2032. As at 6 February 2025, the impact probability for 22 December 2032 was calculated to be 1.9 per cent and was being updated daily as telescopic observations continued.

99. The Subcommittee noted that IAWN had provided information on asteroid 2024 YR4 to SMPAG and the Office for Outer Space Affairs in a notification dated 29 January 2025, which had been disseminated by the Office to States Members of the United Nations on 30 January 2025.

100. The Subcommittee further noted that the worldwide network of IAWN would continue to observe asteroid 2024 YR4 through early April 2025, when it would become too faint to be observable from Earth until June 2028, and that three orbit computation centres of IAWN would continue to update the impact probability on their public websites.

101. The Subcommittee noted efforts and activities at the national, regional and international levels aimed at developing capabilities for the discovery, observation, early warning and mitigation of potentially hazardous near-Earth objects, and the importance of the further development of ground-based and space-based telescopic assets.

102. The Subcommittee noted the launch of the Hera mission of ESA in October 2024, which was planned to encounter the Didymos asteroid system in 2026 with a view to providing a valuable assessment of the deflection technique used in the NASA Double Asteroid Redirection Test mission, which had been the first planetary defence technology demonstration mission to alter the motion of a natural celestial body.

103. The Subcommittee noted the proposal to establish a regional space situational awareness centre in Kazakhstan for the purpose of tracking near-Earth objects using ground-based observatories, and also noted the request of Kazakhstan that the proposed centre be affiliated with the United Nations.

104. The Subcommittee noted that there were currently 61 signatories to the IAWN Statement of Intent, representing independent astronomers, observatories and space institutions from over 28 countries, and that the signatories to the Statement of Intent recognized the importance of collaborative data analysis and of being adequately prepared for communications with a variety of audiences about near-Earth objects, their close approaches to the Earth and Earth impact risks.

105. The Subcommittee noted that SMPAG currently had 19 members and 7 permanent observers, and that the Indian Space Research Organisation and the Spanish Space Agency had indicated their interest in joining. In that regard, the Subcommittee noted that States and their space agencies and offices that were not yet members of SMPAG and were interested in contributing to its work were invited to express such interest in a letter to the Chair of SMPAG, providing a copy to the Office for Outer Space Affairs as the permanent secretariat of SMPAG.

106. The Subcommittee noted that, in preparation for the ninth IAA Planetary Defense Conference, to be held in Stellenbosch, South Africa, from 5 to 9 May 2025, IAWN and SMPAG had been working on a hypothetical asteroid impact scenario to test their capabilities and that more information on the work of IAWN and SMPAG was available on their websites (http://iawn.net and http://smpag.net).

VIII. Long-term sustainability of outer space activities

107. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 10, entitled “Long-term sustainability of outer space activities”.

108. The representatives of Australia, Austria, Brazil, Canada, China, Egypt, France, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Malaysia, Mexico, Morocco, New Zealand, Nigeria, Norway, Pakistan, the Philippines, Portugal, the Republic of Korea, Romania, the Russian Federation, Saudi Arabia, Singapore, South Africa, Spain, Switzerland, the United Arab Emirates, the United Kingdom and the United States made statements under agenda item 10. Statements were also made by the observers for ITU, OSI, SGAC and SWF. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

109. The Subcommittee had before it the following:

(a) Working paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities containing a draft report of the Working Group (A/AC.105/C.1/L.419);

(b) Conference room paper submitted by the Russian Federation containing information on the long-term sustainability of outer space activities (A/AC.105/C.1/2025/CRP.7);

(c) Conference room paper submitted by Canada, Chile, France, the Philippines, Spain and the United Kingdom on the need for a substantive conclusion to the Working Group on the Long-term Sustainability of Outer Space Activities and next steps (A/AC.105/C.1/2025/CRP.14/Rev.1);

(d) Conference room paper submitted by SGAC on the responsible use of outer space (A/AC.105/C.1/2025/CRP.15);

(e) Conference room paper submitted by the United Arab Emirates containing a proposal for the establishment of an expert group on space situational awareness (A/AC.105/C.1/2025/CRP.20);

(f) Conference room paper submitted by the United Kingdom containing an update on the country’s reporting approach for the voluntary implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2025/CRP.21);

(g) Conference room paper submitted by the Office for Outer Space Affairs on the United Nations Space Bridge dialogue on global space traffic coordination (A/AC.105/C.1/2025/CRP.24);

(h) Non-paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities dated 6 February 2025 containing a revised draft outline for a final report of the Working Group.

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

(a) "The importance of space sustainability for the continuity of scientific services", by the representative of Brazil;

(b) "Progress and prospects in extraterrestrial resource utilization", by the representative of China;

(c) "Green in-space manufacturing", by the representative of China;

(d) "Findings from the United Kingdom Space Agency and Office for Outer Space Affairs space environment sustainability assessment", by the representative of the United Kingdom;

(e) "Recognizing cultural heritage as part of new guidelines for the long-term sustainability of outer space activities", by the observer for For All Moonkind;

(f) "Integrating culture, commerce and collaboration for sustainable space exploration", by the observer for NSS;

(g) "Space elevators for long-term sustainability", by the observer for NSS;

(h) "3xE: energy, economy, environment – the case for big data farms' relocation in outer space", by the observer for SRI;

(i) "Building a space factory in the L5 Lagrange point of the Earth-Moon system", by the observer for SRI.

111. The Subcommittee reaffirmed the interconnection between the growing number of objects being launched into outer space, the increasing complexity of space operations and the continuing importance of its work addressing the long-term sustainability of outer space activities.

112. In accordance with General Assembly resolution 79/87, the Working Group on the Long-term Sustainability of Outer Space Activities was reconvened at the present session, with Umamaheswaran R. (India) as Chair.

113. The Subcommittee was informed of a number of measures that had been or were being undertaken to implement the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee (A/74/20, annex II). Those measures included the development of national operating procedures, space strategies and policies; the creation, review and updating of relevant domestic legislation and regulation; the ratification of relevant international treaties; the enhanced registration of space objects; developments in licensing processes; the establishment of national on-orbit servicing guidelines; a joint declaration to create safe and sustainable space infrastructure through in-orbit service systems; a space policy directive; the incorporation of space-related objectives into a national recovery and resilience plan; a public consultation process to inform regulatory revisions; a parliamentary report on the environmental impact of space activities; national and regional space surveillance and tracking systems; a publicly available collision risk analysis service open to operators around the world; a national research and development investment programme for space surveillance; the activities of an observatory to observe and characterize space debris; efforts to minimize the post-mission orbital life of space objects; efforts to define a maximum period after which satellites should be deorbited, proportional to the lifetime of the satellite; preparations for debris removal missions; a mission that would monitor the disintegration of a satellite upon re-entry into the atmosphere to advance the design of future satellites that would completely disintegrate during re-entry; a dedicated space economy fund designed to foster

market innovation through both public and private investments; and wider investment in space sustainability research and technology development, including atmospheric ablation.

114. The Subcommittee was also informed of various initiatives linked to the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee, including their implementation. Those initiatives included international cooperation opportunities related to the International Space Station, the China Space Station and the International Lunar Research Station project; capacity-building undertaken through collaboration with APSCO; the capacity-building work of the Asia-Pacific Regional Space Agency Forum; the work of the Subcommittee on Space Technology and Applications of the Association of Southeast Asian Nations; training and capacity-building opportunities offered through the regional centres for space science and technology education, affiliated to the United Nations; efforts by IADC; work by the Space Safety Centre at the European Space Operations Centre; the Zero Debris Charter; a statement for a responsible space sector; the second edition of the Abu Dhabi Space Debate, entitled "From Earth to orbit: a space for action and accountability", with a key theme of space sustainability; the upcoming eighteenth International Conference on Space Operations, on the theme "Towards space sustainability"; training modules of the Swiss Federal Institute of Technology in Lausanne and the Swiss Federal Institute of Technology in Zurich dedicated to the sustainability of space activities; the centre of excellence for space and sustainability to be established at ESPI; the United Nations Space Bridge dialogue on global space traffic coordination; the United Nations Space Sustainability Days; space situational awareness training events; the Long-term Sustainability of Outer Space Activities Information Repository; and other relevant capacity-building projects and activities of the Office for Outer Space Affairs.

115. The Subcommittee agreed on the importance of focused and dedicated work on the timely topics of space situational awareness and space traffic coordination.

116. The Subcommittee took note of the proposal on space situational awareness contained in conference room paper A/AC.105/C.1/2025/CRP.20 and was informed that the United Arab Emirates would hold further informal consultations on the proposal and report on the results of those exchanges to the Working Group on the Long-term Sustainability of Outer Space Activities.

117. At its 1032th meeting, on 13 February, the Subcommittee endorsed the report of the Working Group on the Long-term Sustainability of Outer Space Activities, which is contained in annex II to the present report.

IX. Future role and method of work of the Committee

118. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 11, entitled "Future role and method of work of the Committee".

119. The representatives of Argentina, Australia, Austria, Canada, China, France, Germany, Indonesia, Iran (Islamic Republic of), Italy, Kenya, Morocco, Portugal, the Republic of Korea, the Russian Federation, Spain, South Africa, the United Arab Emirates and the United Kingdom made statements under agenda item 11. The Vice-Chair of the Working Group on Legal Aspects of Space Resource Activities of the Legal Subcommittee made a statement in accordance with the workplan of the Working Group (A/AC.105/1260, annex II, appendix). During the general exchange of views, statements relating to the item were made by representatives of other member States.

120. The Subcommittee had before it the following:

(a) Conference room paper on UNISPACE IV submitted by Morocco and Italy and co-sponsored by Belgium, Bulgaria, Canada, Costa Rica, Czechia, France, Latvia,

Mexico, Nigeria, Peru, the Philippines, Spain, the United Arab Emirates and the United Kingdom (A/AC.105/C.1/2025/CRP.4/Rev.2);

(b) Working paper submitted by the Russian Federation entitled "The United Nations information platform as a larger configuration of competencies in the domain of sharing information on objects and events in outer space" (A/AC.105/C.1/2025/CRP.26).

121. The Subcommittee heard a technical presentation entitled "Charting the future: enhancing collaboration and impact in space governance", by the observer for NSS.

122. The Subcommittee noted the ongoing work of the Working Group on Legal Aspects of Space Resource Activities, including the preparation of an initial draft set of recommended principles for space resource activities.

123. The Subcommittee noted that the Committee and its subcommittees served as a unique platform for international cooperation in the peaceful uses of outer space.

124. The Subcommittee welcomed the enhancements to the organization of its work, such as the streamlining of the agenda and the scheduling of agenda items in sequential order.

Action Team on Lunar Activities Consultation

125. The Subcommittee welcomed the establishment of the Action Team on Lunar Activities Consultation at the sixty-seventh session of the Committee, noted its mandate, terms of reference, and methods of work as contained in annex IV to that report (A/79/20, para. 351) and noted with appreciation the efforts led by the delegation of Romania, which had resulted in the establishment of the Action Team.

126. The Subcommittee noted that, as agreed by the Committee at its sixty-seventh session (A/79/20, para. 351), the secretariat had invited contributions from States members of the Committee on the bureau and the workplan of the Action Team, for endorsement by the Committee at its sixty-eighth session, in 2025.

127. The Subcommittee noted that an intersessional meeting had been held on 18 November 2024 and informal consultations among States members of the Committee had been held on 14 January 2025 to review and discuss contributions received from States members on the bureau and the workplan of the Action Team.

128. The Subcommittee noted with satisfaction that through a silence procedure initiated by Egypt as the State holding the chairmanship of the Committee, following the consultations, the Committee had decided to establish a bureau consisting of two Co-Chairs, Hasan Abbas (Pakistan) and Ulpia-Elena Botezatu (Romania).

129. The Subcommittee noted with satisfaction that an increasing number of States had provided contributions to support the work of the Action Team and had appointed their representatives to participate in that work (A/79/20, annex IV, para. 4). The Subcommittee requested the secretariat to continue to invite member States that had not yet done so to appoint their representatives to the Action Team.

130. The Subcommittee noted that the Co-Chairs of the Action Team had held four meetings on the margins of the present session of the Subcommittee to advance discussions on the workplan of the Action Team.

131. The Subcommittee recalled that its work was to be without prejudice to the consultations stipulated in article IX of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) and to relevant ongoing efforts within the framework of the Committee and its subcommittees, in particular the work of the Working Group on Legal Aspects of Space Resource Activities and the Working Group on Status and Application of the Five United Nations Treaties on Outer Space of the Legal Subcommittee (A/79/20, annex IV, para. 3).

132. The Subcommittee noted that the Action Team would meet during the intersessional period, in March and April 2025, and during the sixty-fourth session of the Legal Subcommittee and the sixty-eighth session of the Committee, to further discuss and refine the draft workplan, for endorsement by the Committee in 2025, and requested the secretariat to make the relevant arrangements for meetings during those sessions with the benefit of interpretation services.

Holding a fourth United Nations Conference on the Exploration and Peaceful Uses of Outer Space

133. The Subcommittee noted the proposal by Morocco and Italy and co-sponsored by Belgium, Bulgaria, Canada, Costa Rica, Czechia, France, Latvia, Mexico, Nigeria, Peru, the Philippines, Spain, the United Arab Emirates and the United Kingdom containing further information on a fourth United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE IV), contained in a conference room paper (A/AC.105/C.1/2025/CRP.4/Rev.2).

134. The Subcommittee, bearing in mind the deliberations at the commencement of the seventy-ninth session of the General Assembly, which reaffirmed the importance of the widest possible adherence to and full compliance with the Outer Space Treaty, as well as the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries of 1996, emphasized that UNISPACE IV would provide a timely opportunity to recognize the vital contribution of space technology, data and services for socioeconomic development, particularly for developing countries, and the role of the Committee in strengthening the global governance of outer space activities. The Subcommittee further emphasized that 2027 would mark the milestones of the sixtieth anniversary of the entry into force of the Outer Space Treaty and the seventieth session of the Committee on the Peaceful Uses of Outer Space, which was the primary forum for international cooperation on outer space activities.

135. The Subcommittee recommended, for consideration by the Committee, that UNISPACE IV be held in 2027. The Subcommittee noted that further consultations on the objectives, venue, organization and funding of UNISPACE IV should be held at the sixty-fourth session of the Legal Subcommittee and at the sixty-eighth session of the Committee under their respective agenda items entitled “Future role and method of work of the Committee”, during which they could consider any ideas and proposals submitted by delegations.

136. The Subcommittee further requested the secretariat to prepare, in advance of the sixty-fourth session of the Legal Subcommittee, a report on the possible organizational arrangements, funding (including how existing resources could be used for UNISPACE IV) and the logistical implications of holding such a conference, which should include an analysis of UNISPACE III and UNISPACE+50, as well as an analysis of the various combinations of duration, scope and venue for UNISPACE IV.

X. Space and global health

137. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 12, entitled “Space and global health”.

138. The representatives of China, Japan, Mexico, Saudi Arabia, Switzerland and the United Kingdom made statements under agenda item 12. A statement was also made on behalf of the Coordinator of the Space and Global Health Network. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

139. The Subcommittee had before it the following:

(a) Report on the United Nations/World Health Organization Regional Conference on Space Technology for Advancing Global Health, held in Vienna from 23 to 25 October 2024 (A/AC.105/1333);

(b) Note by the Secretariat on the long-term strategy on space and global health for the period 2025–2035 (A/AC.105/C.1/127);

(c) Conference room paper entitled "Report on the meetings of the Space and Global Health Network held on the margins of the sixty-second session of the Subcommittee" (A/AC.105/C.1/2025/CRP.29);

(d) Conference room paper entitled "Space and Global Health Network annual report 2024" (A/AC.105/C.1/2025/CRP.30);

(e) Conference room paper entitled "Draft syllabus of the space and global health curriculum" (A/AC.105/C.1/2025/CRP.31).

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

(a) "Australian progress in digital health leveraging space technologies", by the representative of Australia;

(b) "Disease prevention and control in China based on spatial information technology", by the representative of China;

(c) "Development of a neuro-helmet for monitoring cognitive and behavioural processes of cosmonauts in extreme conditions", by the representative of Kazakhstan;

(d) "Health research in the SSA-HSF1 mission", by the representative of Saudi Arabia;

(e) "Designing resilience: healthcare innovations from space to remote environments", by the observer for NSS.

141. The Subcommittee noted that the General Assembly, in its resolution 79/87, had requested the Office for Outer Space Affairs to strengthen capacity-building and networking in Africa, Asia and the Pacific and Latin America and the Caribbean, through regional technical cooperation projects, and to support field projects for strengthening collaboration between the space and global health sectors as an efficient strategy for making better use of space science and technology for access to global health for beneficiary States and taking better advantage of opportunities offered by bilateral or multilateral collaboration, as mandated by the General Assembly in its resolution 77/120, entitled "Space and global health". Furthermore, the Subcommittee noted with appreciation that the long-term strategy on space and global health for the period 2025–2035 served as an effective framework for the implementation of recommendations contained in resolution 77/120.

142. In that regard, the Subcommittee noted that the United Nations/World Health Organization Regional Conference on Space Technology for Advancing Global Health, which had focused on the Americas, had been co-organized by the Office for Outer Space Affairs and the World Health Organization, in collaboration with the Space and Global Health Network and with the support of ESA, as the first regional event since the adoption of General Assembly resolution 77/120 and the long-term strategy.

143. The Subcommittee heard a status report by the Coordinator of the Space and Global Health Network and noted that the Network had held two meetings on 6 February 2025 (see A/AC.105/C.1/2025/CRP.29), at which the Coordinator had presented the Network's priorities for 2025, which were in line with the long-term strategy and included the following:

(a) Strengthening mechanisms and institutions at the national level to facilitate collaboration among stakeholders, and promoting interdisciplinary approaches;

(b) Focusing on knowledge and awareness-raising;

(c) Continuing to develop an interdisciplinary curriculum in the area of space and global health aimed at examining the intersection between space sciences, technology and global health;

(d) Developing a strategic road map and methodology of work to guide the identification and description of space-based essential health variables.

144. The Subcommittee noted with appreciation the efforts of the Coordinator and the members of the Space and Global Health Network, as well as the Office for Outer Space Affairs, in facilitating the work of the Network within existing resources.

145. The Subcommittee noted a broad array of activities relevant to space and global health in areas such as telemedicine and e-health, space life sciences, space technologies, microgravity research, the promotion of human health and welfare, the addressing of global health issues, the monitoring of environmental factors that affect public health, the use of artificial intelligence for health, the provision of healthcare services to individuals and communities, including in rural areas with limited access to healthcare, tele-epidemiology and disaster management, including responses to epidemics and heat risks, as well as activities undertaken through space-based research, including at the International Space Station.

XI. Use of nuclear power sources in outer space

146. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 13, entitled “Use of nuclear power sources in outer space”.

147. The representatives of Canada, China, France, Indonesia, Italy, Mexico, the Russian Federation, the United Kingdom and the United States made statements under agenda item 13. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

148. The Subcommittee had before it the following documents:

(a) Working paper submitted by the Chair of the Working Group on the Use of Nuclear Power Sources in Outer Space entitled “Draft questionnaire containing a preliminary set of questions to be used to collect information relating to the objectives of the workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space” (A/AC.105/C.1/C.1/L.421);

(b) Conference room paper submitted by the United States entitled “Developing a mission safety analysis report for launch authorization: partnering across agency boundaries to ensure mission success” (A/AC.105/C.1/2025/CRP.23).

149. The Subcommittee heard a presentation entitled “Overview of Canadian activities on space nuclear power systems”, by the representative of Canada.

150. The Subcommittee noted that the content and requirements of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, and of the Safety Framework for Nuclear Power Source Applications in Outer Space jointly developed by the Subcommittee and IAEA, represented a comprehensive foundation to ensure the safe use of nuclear power sources in outer space and were being taken into account by States and international intergovernmental organizations when developing legal and regulatory instruments for the safe use of nuclear power sources in outer space.

151. The Subcommittee welcomed the work of the Working Group on the Use of Nuclear Power Sources in Outer Space under its five-year workplan for the period 2024–2028 and under the able chairmanship of Leopold Summerer (Austria) and noted the importance of the Working Group’s work in sharing the knowledge, understanding and best practices acquired by States and international intergovernmental organizations using nuclear power source applications on the implementation of the Principles and the Safety Framework.

152. The Subcommittee also noted that the Working Group had agreed on a questionnaire containing a set of questions to be used to collect information relating

to the three main objectives of the workplan of the Working Group, with a view to inviting more member States and international intergovernmental organizations, in particular IAEA, to engage in the work of the Working Group. In that regard, the Subcommittee noted that the Working Group served as an important mechanism to promote the further understanding and awareness of effective processes to ensure the safe use of nuclear power sources in space and to collect and analyse relevant technical information about potential future uses of nuclear power sources in outer space, in particular those involving nuclear reactors.

153. The Working Group on the Use of Nuclear Power Sources in Outer Space held five meetings. At its 1030th meeting, on 12 February 2025, the Subcommittee endorsed the report of the Working Group, which is contained in annex III to the present report.

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

154. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 14, entitled “Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union”, as a single issue/item for discussion.

155. The representatives of China, Ecuador, India, Indonesia, Iran (Islamic Republic of), Pakistan, the Russian Federation, the United Kingdom and Venezuela (Bolivarian Republic of) made statements under agenda item 14. The observer for ITU also made a statement. During the general exchange of views, statements relating to the item were made by representatives of other member States.

156. In accordance with the invitation extended by the Subcommittee at its sixty-first session, in 2024 (A/AC.105/1307, para. 245), the observer for ITU presented a report concerning the contribution of ITU to the peaceful uses of outer space, including the use of the geostationary satellite orbit and other orbits. In that connection, the Subcommittee took note with appreciation of the information provided in the annual report for 2024 of the Radiocommunication Bureau of ITU on the use of the geostationary satellite orbit and other orbits, as well as other documents referred to in conference room paper A/AC.105/C.1/2025/CRP.25. The Subcommittee invited ITU to continue to submit reports to it.

XIII. Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges

157. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 15, entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” as a single issue/item for discussion.

158. The representatives of Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Indonesia, Iran (Islamic Republic of), Italy, Mexico, New Zealand, Peru, the Republic of Korea, the Russian Federation, South Africa, Spain, the United Kingdom, the United States and Ukraine made statements under agenda item 15. The

observers for the African Astronomical Society, EAS, IAU, OSI, SGAC and SKAO also made statements under the item. During the general exchange of views, statements relating to the item were made by representatives of other member States.

159. The Subcommittee had before it the following:

(a) Conference room paper submitted by SKAO (A/AC.105/C.1/2025/CRP.13);

(b) Conference room paper on the protection of dark and quiet skies for science and society submitted by Belgium, Bulgaria, Chile, Colombia, Germany, Mexico, Peru, Spain, Switzerland, the United Kingdom, the African Astronomical Society, COSPAR, EAS, ESO, IAA, IAU and SKAO (A/AC.105/C.1/2025/CRP.22/Rev.3);

(c) Working paper on large constellations of small satellites submitted by the Russian Federation (A/AC.105/C.1/2025/CRP.27);

(d) Conference room paper submitted by NSS (A/AC.105/C.1/2025/CRP.32).

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

(a) "VGOS – the very-long-baseline interferometry (VLBI) global observing system", by the representative of Germany;

(b) "Morocco's contribution to the dark and quiet sky initiative for peaceful space uses", by the representative of Morocco;

(c) "Dark and quiet skies: the perspective of a satellite operator", by the representative of the United Kingdom;

(d) "Towards an intergenerational pact for space sustainability: what does it mean for dark and quiet skies?", by the observer for SGAC;

(e) "Dark and quiet skies: thoughts on the Committee on the Peaceful Uses of Outer Space-ITU collaboration", by the observer for SKAO.

161. The Subcommittee welcomed the inclusion of the item for the next five years in the agenda of the Subcommittee.

162. The Subcommittee noted that, while increasing numbers of satellites and constellations were bringing benefits to society, concerns had been raised about space objects that emitted radio signals and reflected sunlight into astronomical telescopes or crossed their fields of view, thereby degrading astronomical observation. A balanced approach was thus important for safeguarding astronomy while maintaining the benefits offered by satellites and constellations.

163. The Subcommittee noted various national and international efforts for researching technologies to mitigate light pollution and monitoring the impact of satellite constellations on astronomy, as well as for developing regulations and legal frameworks, technical standards and policy guidelines, which included the regulation of lighting, making coordination with the scientific community prior to launch a licensing requirement, the establishment of dark sky conservation areas and radio quiet zones.

164. The Subcommittee noted that all stakeholders in large constellations needed to comply with the Outer Space Treaty and the fundamental principles of international space law.

XIV. Draft provisional agenda for the sixty-third session of the Scientific and Technical Subcommittee

165. In accordance with General Assembly resolution 79/87, the Subcommittee considered agenda item 16, entitled "Draft provisional agenda for the sixty-third session of the Scientific and Technical Subcommittee".

166. The Subcommittee noted that the secretariat had scheduled its sixty-third session to be held from 2 to 13 February 2026.

167. The Subcommittee agreed that the following items would be proposed to the Committee for inclusion in the agenda of the Subcommittee at its sixty-third 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. Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications.
6. Space debris.
7. Space-system-based disaster management support.
8. Recent developments in global navigation satellite systems.
9. Space weather.
10. Near-Earth objects.
11. Long-term sustainability of outer space activities.

    (Work for 2026 as reflected in the multi-year workplan of the Working Group on the Long-term Sustainability of Outer Space Activities (see A/AC.105/1258, annex II, appendix, para. 18))
12. Future role and method of work of the Committee.
13. Space and global health.
14. Use of nuclear power sources in outer space.

    (Work for 2026 as reflected in the five-year workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space (see A/AC.105/1279, annex III, para. 8; and A/AC.105/1307, annex III, para. 6))
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. Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges.

    (Single issue/item for discussion)
17. Draft provisional agenda for the sixty-fourth session of the Scientific and Technical Subcommittee.
18. Report to the Committee on the Peaceful Uses of Outer Space.

168. The Subcommittee recalled its agreement related to the item entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” (see A/AC.105/1307, para. 257).

169. The Subcommittee agreed that, in accordance with the agreement reached at its forty-fourth session, in 2007 (A/AC.105/890, annex I, para. 24), the symposium to be held at the sixty-third session of the Subcommittee, in 2026, was to be organized by the Office for Outer Space Affairs and would consist of two panels, addressing the topics “Long-term sustainability of outer space activities” and “Space solutions for sustainable development”.

Annex I

Report of the Working Group of the Whole

1. In accordance with paragraph 13 of General Assembly resolution 79/87, the Scientific and Technical Subcommittee, at its sixty-second session, reconvened its Working Group of the Whole.

2. From 4 to 12 February 2025, the Working Group held seven meetings, with Prakash Chauhan (India) as Chair and Ajimandiram K. Nair Anilkumar (India) as Acting Chair.

3. The Working Group considered the following items:

(a) Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications;

(b) Future role and method of work of the Committee;

(c) Draft provisional agenda for the sixty-third session of the Scientific and Technical Subcommittee.

4. The Working Group had before it the documents listed in paragraph 35 of the report of the Subcommittee on its sixty-second session.

5. The Working Group discussed the large number of requests for scientific and technical presentations to be made during the sessions of the Subcommittee and the Committee on the Peaceful Uses of Outer Space. The Working Group acknowledged the value of such presentations while noting that there was a need to improve the organization of presentations and facilitate meaningful discussions.

6. The Working Group discussed the possibility that, for the future sessions of the Committee and its subcommittees in 2025 and 2026, the scheduling limits could be set at a maximum of 45 technical presentations per session of the Committee and at a maximum of 60 presentations per session of the subcommittees. As previously agreed by the Subcommittee:

(a) States members and permanent observers of the Committee should pay due attention to the need to keep the total number of presentations at a session at a reasonable level (A/AC.105/1038, para. 242);

(b) The secretariat might, if necessary, and upon consultation with the member State or permanent observer concerned, reduce the number of presentations requested (A/AC.105/1038, para. 242);

(c) When delegations request the scheduling of presentations, they are to indicate which of their presentations they wish to be given priority consideration, given that there may not be enough time at a session to accommodate all requests (A/AC.105/1224, annex I, para. 7 (b)).

7. The Working Group also discussed that, at future sessions of the Committee and its subcommittees in 2025 and 2026, (a) up to two full meetings per session of the Committee or its subcommittees could be allocated for technical presentations, with presentations grouped according to relevant agenda item, (b) the dates of those meetings could be included in the indicative schedule of work included in the annotated provisional agenda, and (c) flexibility in scheduling presentations during other meetings would be maintained.

8. The Working Group recommended that the discussions on that matter be led intersessionally by the delegation of India at the sixty-fourth session of the Legal Subcommittee and at the sixty-eighth session of the Committee, and requested the secretariat to make the necessary arrangements, including with regard to the use of interpretation.

9. The Working Group heard interim reports on informal consultations of the Action Team on Lunar Activities Consultation, led by the Co-Chairs of the Action Team, Hasan Abbas (Pakistan) and Ulpia-Elena Botezatu (Romania).

10. The Working Group heard interim reports on the informal consultations on the proposal to hold a fourth United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE IV), led by Morocco and Italy.

11. The Working Group considered the list of substantive items contained in the provisional agenda for the sixty-second session of the Subcommittee (A/AC.105/C.1/L.418) and recommended that the same substantive items be considered at the sixty-third session of the Subcommittee, to be held in 2026.

12. The Working Group noted that, in accordance with the agreement reached by the Subcommittee at its forty-fourth session, in 2007 (A/AC.105/890, annex I, para. 24), the Office for Outer Space Affairs would organize a symposium to be held at the sixty-third session of the Subcommittee. The Working Group agreed that the symposium would comprise two panels, addressing the topics of “Long-term sustainability of outer space activities” and “Space solutions for sustainable development”.

13. At its 7th meeting, on 12 February, the Working Group adopted the present report.

Annex II

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

1. In accordance with paragraph 13 of General Assembly resolution 79/87, the Scientific and Technical Subcommittee, at its sixty-second session, reconvened its Working Group on the Long-term Sustainability of Outer Space Activities.

2. The Working Group on the Long-term Sustainability of Outer Space Activities held meetings from 4 to 13 February 2025, with Umamaheswaran R. (India) as Chair.

3. The Working Group had before it the documents listed in paragraph 109 of the report of the Subcommittee on its sixty-second session.

4. The Working Group noted that, in addition to the formal meetings that it had held with the benefit of interpretation services during the present session, it had also held extensive informal consultations on the margins of the session.

5. The Working Group recalled that, at the sixty-seventh session of the Committee on the Peaceful Uses of Outer Space, in June 2024, the Working Group had agreed to use tables, which included information on challenges related to implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee (A/74/20, annex II), challenges related to capacity-building within the framework of the Guidelines, and the identification and consideration of existing and emerging challenges to the long-term sustainability of outer space activities, as a basis for subsequent substantive discussions, and that input for those tables had been collected and compiled in the intersessional period (A/79/20, paras. 142–144).

6. The Working Group also recalled that it had held an informal online meeting on 12 and 13 November 2024 (A/79/20, para. 144), during which it had discussed similar and cross-cutting ideas and themes based on input for the tables. The discussions during the informal online meeting were focused largely on seven possible groupings of challenges to the long-term sustainability of outer space activities.

7. The Working Group noted that at the present session, it had been informed of several proposals to advance its work. In that connection, the Chair had prepared a non-paper merging the proposals to act as a common basis for further discussions. The Working Group had subsequently used that non-paper to discuss, inter alia, information and possible recommendations that could be included in its final report, acknowledging that nothing was agreed until everything was agreed.

8. The Working Group agreed to hold an informal online meeting in April 2025, at which it would continue its discussions on information and possible recommendations that could be included in its final report.

9. Recognizing the volume of work before it, the Working Group requested the Chair of the Working Group to coordinate with the Chair of the Committee and the secretariat to make arrangements for the Working Group to meet during the sixty-eighth session of the Committee, in 2025, making use of available interpretation services.

10. On 13 February 2025, the Working Group considered and adopted the present report.

Annex III

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

1. In accordance with paragraph 13 of General Assembly resolution 79/87, the Scientific and Technical Subcommittee, at its 1015th meeting, on 3 February 2025, reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space, with Leopold Summerer (Austria) as Chair.

2. The Working Group recalled the three main objectives under its five-year workplan, as contained in the report of the Subcommittee at its sixtieth session (A/AC.105/1279, annex III, paras. 8 and 9) and endorsed by the Committee at its sixty-sixth session (A/78/20, para. 150). The Working Group also recalled that, to implement its five-year workplan, it had agreed on a yearly plan for the period 2024–2028, as endorsed by the Subcommittee at its sixty-first session (A/AC.105/1307, annex III, para. 6).

3. The Working Group had before it the documents listed in paragraph 148 of the report of the Subcommittee on its sixty-second session.

4. The Working Group met both in informal and formal meetings during the sixty-second session of the Subcommittee to discuss the documents before it as referred to in paragraph 3 above and to advance its work under the three core objectives, as referred to in paragraph 2 above.

5. The Working Group noted with satisfaction the increasing number of States participating in its discussions, including States with plans and activities related to nuclear power source (NPS) applications in outer space, and encouraged additional States to join the work of the Working Group.

6. The Working Group exchanged and discussed information relevant to the use of NPS applications in outer space under the objectives of its workplan that had been provided by Canada, Germany, the United Kingdom of Great Britain and Northern Ireland, the United States of America, the European Space Agency and the International Atomic Energy Agency (IAEA).

7. The Working Group recalled that in 2024 it had held two intersessional meetings, on 20 and 21 June and on 14 November 2024, to discuss the draft questionnaire containing a preliminary set of questions to be used to collect information relating to the objectives of the workplan of the Working Group, as contained in document A/AC.105/C.1/L.421.

8. At its 2nd meeting, on 7 February, the Working Group agreed on the questionnaire, as contained in the appendix to the present report of the Working Group, containing a set of questions to collect information relating to the objectives of the workplan of the Working Group.

9. The Working Group noted that the questionnaire was one of the methods for collecting information under the objectives of the workplan and a way to invite more member States and international intergovernmental organizations to join the Working Group and share their views, plans and experiences. The responses to the questionnaire would be used in an anonymized and aggregated form to assist the Working Group in advancing its work for the period 2024–2028.

10. The Working Group recalled that another possible method of collecting information under the objectives of its workplan, in particular under objective 2, to collect information about potential future uses of NPS in outer space, was to hold a dedicated workshop with IAEA. In that regard, the Working Group appreciated the active participation of IAEA in its discussions and noted that a joint workshop with IAEA could be held in 2026, possibly in conjunction with the sixty-ninth session of the Committee, and that the intersessional meetings of the Working Group in 2025

could be used to further discuss the organization of such a joint workshop together with IAEA.

11. The Working Group agreed to hold an intersessional meeting, facilitated by the secretariat, on the margins of the sixty-eighth session of the Committee, in 2025, preferably during the second week of the session, to further discuss the modalities of a joint workshop with IAEA, and further intersessional meetings as necessary.

12. The Working Group noted the complementary nature of its work and technical expertise in the area of NPS applications in outer space with the work of the newly established Action Team on Lunar Activities Consultation and agreed on future cross-collaboration and the exchange of information with the Action Team on matters pertaining to the use of NPS applications in outer space that were related to lunar activities.

13. The Working Group agreed to request the secretariat to invite States members of the Committee and international intergovernmental organizations to make technical presentations pursuant to objectives 1 and/or 2 of the workplan at the next session of the Subcommittee, and to provide responses to the questionnaire, as contained in the appendix to the present report, and noted that an online form of the questionnaire had been made available on the dedicated web page of the Working Group.

14. The Working Group also agreed to request the secretariat to facilitate the discussion and preparation of the joint workshop together with IAEA, which would be discussed during the intersessional meetings in 2025.

15. The Working Group agreed that the secretariat should, under the guidance of the Chair of the Working Group, update the content of the website of the Office for Outer Space Affairs dedicated to the work of the Working Group (www.unoosa.org/oosa/en/COPUOS/stsc/wgnps/index.html).

16. At its 5th meeting, on 12 February, the Working Group adopted the present report.

Appendix

Questionnaire containing a set of questions to be used to collect information relating to the objectives of the workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space

1. For the purposes of the questionnaire, the terms “space nuclear power source” and “space nuclear power source application” are to be understood as defined in the Safety Framework.[1]

2. Similarly, in line with section 3.1 of the Safety Framework, the questions are intended to include space missions involving a nuclear power source (NPS) authorized or approved by Governments and relevant international intergovernmental organizations, independently of whether such missions are conducted by governmental agencies or by non-governmental entities.

Questionnaire

Would you consider your country/international intergovernmental organization to be:

(a) A country/an international intergovernmental organization with experience and expertise in the development and use of space nuclear power source (NPS) applications?

(b) A country/an international intergovernmental organization with plans to develop and/or use space NPS applications in the next 10 years?

(c) A country/an international intergovernmental organization with no current plans to develop and/or use space NPS applications in the next 10 years?

If you have selected (a):

1. Have you encountered any difficulties or challenges in implementing the guidance provided in the Safety Framework for Nuclear Power Source Applications in Outer Space?

2. Could you please share information (for example, presentations given at meetings of the Working Group on the Use of Nuclear Power Sources in Outer Space) on your mission-specific experiences in implementing the guidance contained in the Safety Framework?

3. Could you please share information (for example, presentations given at meetings of the Working Group) on future uses of NPS in outer space, in particular, those involving nuclear reactors, and specify any challenges you foresee in the application of the guidance provided in the Safety Framework?

4. Have you identified the need for further guidance?

If you have selected (b):

1. Are you aware that the Safety Framework provides high-level guidance in the form of a model safety framework for achieving the fundamental safety objective of protecting people and the environment in Earth’s biosphere from potential hazards associated with relevant launch, operation and end-of-service phases of space NPS applications?

2. Are you using or do you intend to use the guidance provided in the Safety Framework for your safety framework? If so, are you encountering any difficulties or

[1] *Space nuclear power source*: a device that uses radioisotopes or a nuclear reactor for electrical power generation, heating or propulsion in a space application. *Space nuclear power source application*: the overall system (space nuclear power source, spacecraft, launch system, mission design, flight rules etc.) involved in conducting a space mission involving a space nuclear power source.

challenges in implementing that guidance? Could you please share such information (for example, presentations given at meetings of the Working Group)?

3. Could you please share information (for example, presentations given at meetings of the Working Group) on future uses of NPS in outer space, in particular, those involving nuclear reactors, and specify any challenges you foresee in the application of the guidance provided in the Safety Framework?

4. Have you identified the need for further guidance?

If you have selected (c):

1. Are you aware that the Safety Framework provides high-level guidance in the form of a model safety framework for achieving the fundamental safety objective of protecting people and the environment in Earth's biosphere from potential hazards associated with relevant launch, operation and end-of-service phases of space NPS applications?

2. Are you aware that the Safety Framework provides a foundation for the development of national and international intergovernmental safety frameworks while allowing for flexibility in adapting such frameworks to specific space NPS applications and organizational structures?

3. Are you aware that the purpose of implementing the guidance provided by the Safety Framework through national frameworks is to provide assurance to the global public that space NPS applications would be launched and used in a safe manner and could also facilitate bilateral and multilateral cooperation on space missions using NPS?

4. Are you aware that the Safety Framework provides safety guidance covering both programmatic and technical aspects, including the design and application of space NPS, and the relevant launch, operation and end-of-service phases of space NPS applications?