



# General Assembly

Distr.: General  
21 February 2024

Original: English

**Committee on the Peaceful  
Uses of Outer Space**  
Sixty-seventh session  
Vienna, 19–28 June 2024

## **Report of the Scientific and Technical Subcommittee on its sixty-first session, held in Vienna from 29 January to 9 February 2024**

### Contents

	<i>Page</i>
I. Introduction . . . . .	3
A. Attendance . . . . .	3
B. Adoption of the agenda . . . . .	4
C. Election of the Chair . . . . .	5
D. General statements . . . . .	5
E. National reports . . . . .	10
F. Adoption of the report of the Scientific and Technical Subcommittee . . . . .	10
II. Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications . . . . .	10
III. Space debris . . . . .	14
IV. Space-system-based disaster management support . . . . .	17
V. Recent developments in global navigation satellite systems . . . . .	18
VI. Space weather . . . . .	20
VII. Near-Earth objects . . . . .	22
VIII. Long-term sustainability of outer space activities . . . . .	23
IX. Future role and method of work of the Committee . . . . .	27
X. Space and global health . . . . .	29
XI. Use of nuclear power sources in outer space . . . . .	31



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 . . . . .	33
XIII.	Draft provisional agenda for the sixty-second session of the Scientific and Technical Subcommittee . . . . .	35
Annexes		
I.	Report of the Working Group of the Whole . . . . .	37
II.	Report of the Working Group on the Long-term Sustainability of Outer Space Activities . . . . .	39
III.	Report of the Working Group on the Use of Nuclear Power Sources in Outer Space . . . . .	41

## I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its sixty-first session at the United Nations Office at Vienna from 29 January to 9 February 2024, 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, Bangladesh, Belarus, Belgium, Brazil, Bulgaria, Burkina Faso, Canada, Chile, China, Colombia, Costa Rica, Cuba, Cyprus, Czechia, Denmark, 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, Libya, Luxembourg, Malaysia, Mexico, Mongolia, Morocco, Netherlands (Kingdom of the), New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Rwanda, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, 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 and Venezuela (Bolivarian Republic of).

4. At its 995th and 998th meetings, on 29 and 30 January, the Subcommittee decided to invite observers for Croatia, Honduras, Nepal 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. At its 995th 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 its 996th meeting, on 29 January, 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.

7. At its 995th meeting, the Subcommittee decided to invite the observer for the Sovereign Order of Malta, 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 Office for Disarmament Affairs of the Secretariat, the Food and Agriculture Organization of the United Nations, the International Atomic Energy Agency (IAEA), the International Civil Aviation Organization, the International Telecommunication Union (ITU), the Economic and Social Commission for Asia and the Pacific and the World Meteorological Organization (WMO) 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), European Telecommunications Satellite Organization, International Institute for the Unification of Private Law, International Organization of Space Communications, Regional Centre for Remote Sensing of the North African States and Square Kilometre Array Observatory (SKAO).

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 Space Policy Institute, European Astronomical Society (EAS), For All Moonkind, International Academy of Astronautics (IAA), International Association for the Advancement of Space Safety (IAASS), International Astronautical Federation (IAF), International Astronomical Union (IAU), International Organization for Standardization (ISO), International Peace Alliance (Space), Moon Village Association, National Space Society, Prince Sultan bin Abdulaziz International Prize for Water, Scientific Committee on Solar-Terrestrial Physics, Secure World Foundation (SWF), Space Generation Advisory Council (SGAC), University Space Engineering Consortium-Global and World Space Week Association.

13. At its 995th meeting, the Subcommittee decided to invite observers for the Global Satellite Operators Association and the Space Data Association, 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.

14. 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.1/2024/INF/53](#).

15. The Subcommittee was informed of the nominations for the Second Vice-Chair/Rapporteur of the Committee for the term 2024–2025 ([A/AC.105/C.1/2024/CRP.12](#)).

16. The Subcommittee was also informed by the Secretariat of the applications for permanent observer status with the Committee submitted by the Global Satellite Operators Association ([A/AC.105/C.1/2024/CRP.9](#)), the Space Data Association ([A/AC.105/C.1/2024/CRP.10](#)) and the African Astronomical Society ([A/AC.105/C.1/2024/CRP.27](#)), which were to be considered by the Committee at its sixty-seventh session, in 2024.

## **B. Adoption of the agenda**

17. At its 995th meeting, the Subcommittee adopted the following agenda:

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.
12. Future role and method of work of the Committee.
13. Space and global health.
14. Use of nuclear power sources in outer space.
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.
16. Draft provisional agenda for the sixty-second session of the Scientific and Technical Subcommittee.
17. Report to the Committee on the Peaceful Uses of Outer Space.

### **C. Election of the Chair**

18. At its 995th meeting, the Subcommittee took note of the nomination by the Eastern European States (A/AC.105/C.1/2024/CRP.8) and elected Ulpia-Elena Botezatu (Romania) as Chair, pursuant to General Assembly resolution 78/72.

### **D. General statements**

19. Statements were made by representatives of the following member States during the general exchange of views: Algeria, Argentina, Armenia, Australia, Austria, Belarus, Belgium, Brazil, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechia, Dominican Republic, Ecuador, Egypt, Finland, France, Germany, Greece, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Kazakhstan, Kenya, Luxembourg, Malaysia, Mexico, Morocco, Netherlands (Kingdom of the), New Zealand, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Rwanda, Singapore, Slovakia, Slovenia, South Africa, Spain, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Türkiye, Ukraine, United Arab Emirates, United Kingdom, United States and Venezuela (Bolivarian Republic of). A statement was made by the representative of Ghana on behalf of the Group of African States and by the representative of Pakistan 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, EAS, ESA, ESO, For All Moonkind, IAA, IAF, IAU, International Peace Alliance (Space), ITU, the Moon Village Association, National Space Society, SKAO, SGAC, SWF, the University Space Engineering Consortium-Global and the World Space Week Association. A statement was also made by the Global Satellite Operators Association, which had been admitted to the session as an observer.

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

- (a) “Aerospace Team Graz: why and how students built rockets”, by the representatives of Austria;
- (b) “China’s deep space exploration”, by the representative of China;

- (c) “China Platform of Earth Observation System”, by the representative of China;
- (d) “Space technology in Egypt”, by the representative of Egypt;
- (e) “German Federal Government’s new space strategy”, by the representative of Germany;
- (f) “Chandrayaan-3: India soft lands in the southern polar region of the Moon for scientific exploration”, by the representatives of India;
- (g) “Aditya L1 and XPOsAT: India’s quest to demystify cosmic phenomena”, by the representative of India;
- (h) “Examples of optical astronomy coordination requirements in satellite authorizations”, by the representatives of the United States;
- (i) “United States Novel Space Activities Authorization and Supervision Framework”, by the representative of the United States;
- (j) “Leveraging space technology for advancing agricultural development and ensuring food security”, by the observer for the Food and Agriculture Organization of the United Nations;
- (k) “IAASS at twenty”, by the observer for IAASS;
- (l) “Opportunities and threats for astronomical observations from the Moon”, by the observer for IAU;
- (m) “Cooperation to protect dark and quiet skies, outcomes of the IAU Symposium 385, ‘Astronomy and satellite constellations: pathways forward’”, by the observer for IAU;
- (n) “The second International Moon Day results and outlook for 2024”, by the observer for the Moon Village Association.

21. The Subcommittee welcomed the election of Ulpia-Elena Botezatu (Romania) as Chair for a two-year term starting in 2024. The Subcommittee expressed its appreciation to the outgoing Chair, Juan Francisco Facetti (Paraguay), for his leadership and contribution to furthering the achievements of the Subcommittee during his term of office.

22. At its 995th meeting, the Chair of the Subcommittee made a statement in which she outlined the work of the Subcommittee at its sixty-first session. She recalled that the Subcommittee formed part of the unique intergovernmental platform comprised of the Committee and its two subcommittees, which together were the preeminent forums for fostering dialogue, reinforcing mutual understanding among nations and promoting international cooperation in the peaceful uses of outer space. She encouraged the international community to use the sixty-first session of the Subcommittee to maximize related vital multilateral work and expressed her openness to leading the work of the Subcommittee to increase the visibility of the Committee and highlight the importance of outer space on the global agenda.

23. The Chair welcomed EAS and Three Country – Trusted Broker as the newest organizations with observer status with the Committee.

24. Also at the 995th meeting, the Director of the Office for Outer Space Affairs made a statement in which she recalled the Office’s role as the gateway to space in the United Nations system, and as a capacity-builder, a convener and a facilitator of international cooperation in the peaceful uses of outer space. She highlighted the recently launched United Nations Space Bridge (USB), which was aimed at engaging a variety of stakeholders to promote global dialogue that would enable local action, through targeted exchanges that would enhance international expertise and break down silos. She also made reference to the new vision and strategy of the Office, which were centred around five pillars focusing on space sustainability, on space for

the Sustainable Development Goals, for the climate and for developing countries, and on how to engage the broader space ecosystem on relevant issues and topics.

25. The Subcommittee noted the landmark achievements that had been made by space programmes in areas such as space exploration, human space flight, space science and astronomy since it had held its sixtieth session, in 2023.

26. The Subcommittee was informed of, *inter alia*, the following:

(a) The new record, set by a Russian cosmonaut during the present session, for the total time spent in space – more than 878 days;

(b) The landmark achievement by the Turkish space programme, namely, the completion by the first Turkish astronaut of his mission at the International Space Station in February 2024;

(c) The landing of the Japanese Smart Lander for Investigating Moon (SLIM) spacecraft on the Moon within 100 metres of the target;

(d) The soft landing of the Indian Chandrayaan-3 lander near the south pole of the Moon;

(e) The launch by China of the first synthetic aperture radar satellite to the geostationary orbit;

(f) The launch, for the first time, of a spacecraft to study the metal-rich asteroid Psyche;

(g) The launches of the Iranian satellite launch vehicles Qaem 100 and Simorgh, carrying the Suraya, Mahda and other satellites;

(h) The first long-duration mission of 180 days aboard the International Space Station by an astronaut from the United Arab Emirates and the performance of the first spacewalk by an Arab astronaut;

(i) The simulated human-robotic Mars mission to be conducted in the Armash region of Armenia in 2024 in the framework of the AMADEE-24 project.

27. The Subcommittee noted with regret the passing of Mr. José Monserrat Filho of Brazil, who had been a dedicated contributor to the work of the Committee and its subsidiary bodies, in particular the work of the Working Group on the Definition and Delimitation of Outer Space of the Legal Subcommittee.

28. 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 and offering a suitable environment to discuss matters that had a great impact on the development of States for the betterment of humankind.

29. Some delegations expressed the view that it was crucial that developing countries did not get left behind and were not left unfairly disadvantaged by space exploration efforts, that space technology applications must produce concrete benefits for developing countries and that, in order to achieve that goal, the transfer of technology on favourable terms for developing countries, as well as associated capacity-building, were of vital importance. The delegations expressing that view encouraged States to strengthen international, multilateral, regional and bilateral cooperation in the exploration and use of outer space for peaceful purposes.

30. Some delegations also expressed the view that the Committee must remain the forum for enhancing cooperation on the peaceful uses of outer space. Those delegations called upon the Office for Outer Space Affairs and Member States to provide greater support to enhance both North-South and South-South cooperation to facilitate the transfer of technology and equipment among nations.

31. Some delegations called upon the Office for Outer Space Affairs and Member States to make more opportunities available for greater scientific and academic

linkages, long-term fellowships and further collaboration among national and regional laboratories, United Nations research centres, other national and international institutions on space matters and institutions in developing countries.

32. Some delegations noted the most recent signatories of the Artemis Accords on the Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, a common set of principles for the safe, sustainable and transparent civil exploration and use of outer space. Those delegations were of the view that the Artemis Accords provided non-legally binding guidance on the implementation of key obligations under the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, the Convention on Registration of Objects Launched into Outer Space and the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space and promoted important principles, such as the full, free, open and timely release of scientific information.

33. The view was expressed that the Artemis Accords, which were going forward outside the Committee, had raised some concerns, would result in fragmentation among Member States and should therefore be addressed by the Committee.

34. Some delegations noted that additional States were cooperating on the International Lunar Research Station initiated by China and the Russian Federation.

35. Some delegations noted the progress made in establishing the African Space Agency, paving the way for the further strengthening of African cooperation and the realization of the African Union goals enshrined in its Agenda 2063.

36. Some delegations expressed the view that the increasing use of outer space for security purposes was of grave concern and that an arms race in outer space ran contrary to the principle of the peaceful uses of outer space.

37. Some delegations expressed the view that it was more appropriate to discuss issues concerning the use of outer space for security purposes in forums whose mandates focused on those issues.

38. Some delegations expressed the view that there was serious concern over space activities conducted in violation of existing Security Council resolutions.

39. Some delegations expressed serious concern about the politicization of the work of the Committee, especially by bringing to its attention highly politicized issues that were beyond the mandate of the work of the Committee.

40. Some delegations expressed the view that the deployment of megaconstellations, if not carried out sustainably and equitably, might pose a risk of congestion in low Earth orbit, which would be a significant disadvantage in the use and exploration of space by developing countries and that, consequently, the importance of observing the principle of equitable access to outer space and, in particular, in low Earth orbit was greater than ever.

41. The view was expressed that the activities of satellite constellations conducted in the territory of any State must respect local landing rights, as well as the sovereignty of States. In accordance with article 2, paragraph 7, of the Charter of the United Nations, such activities that did not respect local landing rights were in violation of international law. The delegation expressing that view was also of the view that States with control or jurisdiction over private megaconstellations should be held responsible for those constellations under international space law.

42. The view was expressed that low Earth orbits were a limited natural resource and activities conducted using those orbits, including the deployment of thousands of satellites in megaconstellations, would saturate them and pose a threat to the sustainability of space activities. The delegation expressing that view was also of the view that the development of megaconstellations should limit neither the allocation to developing countries of orbital slots in low Earth orbits nor equitable access to those orbits.



43. The view was expressed that large constellations offered opportunities for international cooperation and that relevant issues concerning those constellations, such as issues involving space radio communication services, should be discussed by the relevant technical experts in the appropriate forum.

44. The view was expressed that commercial space activities had made the benefits of outer space more accessible to more people, with over 71 million people connected to commercial satellite broadband services last year, helping to bridge the digital divide.

45. Some delegations reiterated their opposition to the establishment of a new regional centre for space science and technology education in the Eurasian region, affiliated to the United Nations, hosted by the Roscosmos Corporate Academy, as proposed by the Government of the Russian Federation. Those delegations were also of the view that although the General Assembly, in its resolution 76/76, had noted with satisfaction the progress in the establishment of the regional centre, in the light of recent developments, they were not in a position to accept the affiliation of that regional centre to the United Nations.

46. The view was expressed that the Committee, at its sixty-fourth session, had noted that the evaluation mission on the proposed establishment of the regional centre for space science and technology education had resulted in the recommendation to accept the offer of the Russian Federation to establish the regional centre and that the Committee had welcomed the progress on the establishment of the regional centre, and thus no additional agreement was required by the Committee. The delegation expressing that view also informed the Committee that the centre was already operational and providing services.

47. The Subcommittee was informed of the conference room papers submitted by the Moon Village Association containing reports on the Global Expert Group on Sustainable Lunar Activities and on International Moon Day (A/AC.105/C.1/2024/CRP.11) and by ITU on results of the Radiocommunication Assembly and World Radiocommunication Conference 2023 (A/AC.105/C.1/2024/CRP.23).

48. The Subcommittee agreed on the following text and noted that Romania, in its capacity as holder of the Chair of the Subcommittee, would seek its inclusion in the outcome document of the High-Level Political Forum on Sustainable Development to be held in July 2024: “Promote the use of space science, technology, data and applications for agriculture, food security and climate action, and advance capacity-building, education and training in space science and applications, in particular for developing countries”.

49. The Subcommittee noted with appreciation the poster exhibition by the International Space Weather Initiative presented in the rotunda of the Vienna International Centre in conjunction with its sixty-first session.

50. The following events were held on the margins of the sixty-first session of the Subcommittee:

(a) “Space – youth – future generations”, co-organized by the Government of Austria, SGAC and the Office for Outer Space Affairs;

(b) “Outer space in the zero draft of the pact of the future: perspectives and next steps”, co-organized by Germany and the Office for Outer Space Affairs;

(c) “United Nations/Portugal Conference on Management and Sustainability of Outer Space Activities”, co-organized by the Government of Portugal and the Office for Outer Space Affairs;

(d) “Reception by Romania and the Chair of the Scientific and Technical Subcommittee”, co-organized by the delegation of Romania to the Subcommittee and the Chair of the Subcommittee;

(e) “Dark and quiet skies for science and society”, co-organized by the Permanent Mission of Spain, the Permanent Mission of Chile, ESO, SKAO and the

IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference;

(f) “Spacetalk – Space Operations Coordination Platform”, organized by Switzerland;

(g) “IADC at 30: the work of IADC in tackling the challenges of attaining sustainability in the space environment”, co-organized by the European Space Policy Institute and the United Kingdom Space Agency;

(h) “United Kingdom/Office for Outer Space Affairs collaboration on space sustainability: announcing phase 4”, co-organized by the United Kingdom and the Office for Outer Space Affairs;

(i) “Initiative for the International Year of Planetary Defence”, organized by ESA;

(j) “The strategic value of Earth observation: maximizing the benefits for Governments and the international community”, co-organized by the European Space Policy Institute and the International Society for Photogrammetry and Remote Sensing;

(k) “World Space Week Association reception”, organized by the World Space Week Association;

(l) “Office for Outer Space Affairs leadership strategy”, organized by the Office for Outer Space Affairs;

(m) “Space4Women: progress and updates”, organized by the Office for Outer Space Affairs;

(n) “Access to Space For All: overview and updates for 2024”, organized by the Office for Outer Space Affairs.

## **E. National reports**

51. The Subcommittee took note with appreciation of the reports by Member States (see [A/AC.105/1308](#), [A/AC.105/1308/Add.1](#), [A/AC.105/1308/Add.2](#) and [A/AC.105/1308/Add.3](#)) and the conference room papers (A/AC.105/C.1/2024/CRP.3 and A/AC.105/C.1/2024/CRP.17) submitted for its consideration under agenda item 4, 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.

## **F. Adoption of the report of the Scientific and Technical Subcommittee**

52. After considering the items before it, the Subcommittee, at its 1014th meeting, on 9 February, adopted its report to the Committee on the Peaceful Uses of Outer Space, containing its views and recommendations, as set out in the paragraphs below.

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

53. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 5, entitled “Space for sustainable development: technology and its applications, including the United Nations Programme on Space Applications”.

54. The representatives of Argentina, Austria, Brazil, Canada, China, Cuba, France, India, Indonesia, Japan, Nigeria, Paraguay, the Russian Federation, Rwanda, Ukraine,

the United Arab Emirates, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 5. 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 the Economic and Social Commission for Asia and the Pacific, SKAO and the Prince Sultan bin Abdulaziz International Prize for Water. During the general exchange of views, statements relating to the item were made by representatives of other member States.

55. The Subcommittee had before it the following:

(a) Report on the United Nations/Austria Symposium on Space for Climate Action, held in Graz, Austria (online), from 12 to 14 September 2023 ([A/AC.105/1299](#));

(b) Report on the third Space4Water stakeholder meeting, held in Vienna on 24 and 25 October 2023 ([A/AC.105/1300](#));

(c) Report on the United Nations/IAF Workshop on Space Technology for Socioeconomic Benefits, on the theme “Challenges and capacity-building opportunities for emerging space nations”, held in Baku from 29 September to 1 October 2023 ([A/AC.105/1301](#));

(d) Report on the United Nations/Canada Space for Women expert meeting on the theme “Building capacity to promote and advance gender equality in the space sector”, held in Montreal, Canada, from 30 October to 3 November 2023 ([A/AC.105/1309](#));

(e) Conference room paper submitted by the Russian Federation entitled “Draft General Assembly resolution ‘Space science and technology for promoting peace’” ([A/AC.105/C.1/2024/CRP.7](#));

(f) Conference room paper submitted by the Russian Federation entitled “Explanatory note to the draft resolution entitled ‘Space science and technology for promoting peace’” ([A/AC.105/C.1/2024/CRP.28](#)).

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

(a) “Revolutionizing traceability in agro-forest commodities: integrating GNSS technology for European Union Deforestation Regulation compliance in the coffee and timber industries”, by the representative of Austria;

(b) “Technological development in the space sector: political and institutional set-up in Brazil”, by the representative of Brazil;

(c) “The Open Universe Initiative”, by the representative of Brazil;

(d) “Results of the 2023 Space4Women expert meeting”, by the representative of Canada;

(e) “Application of Fengyun meteorological satellites for sustainable development”, by the representative of China;

(f) “Remote sensing applications for supporting the Sustainable Development Goals in Indonesia”, by the representative of Indonesia;

(g) “The development of the space industry in the Republic of Kazakhstan”, by the representative of Kazakhstan;

(h) “Space systems production in Kazakhstan”, by the representative of Kazakhstan;

(i) “Leveraging the space value chain for sustainable development”, by the representative of the Philippines;

(j) “NEMO-HD satellite data and digital twin models to support the sustainable management of ecosystems and related multi-hazard risks”, by the representative of Slovenia;

(k) “Overview of the Space Analytics and Solution Programme”, by the representative of the United Arab Emirates;

(l) “Space technologies for tackling sustainability challenges”, by the representative of the United Arab Emirates;

(m) “Showcasing the benefits of space at the Summit of the Future: opportunity to advance the peaceful and sustainable use of outer space”, by the observers for CANEUS International;

(n) “Leveraging digital and geospatial innovations for building capacity in Asia and the Pacific”, by the observer for the Economic and Social Commission for Asia and the Pacific;

(o) “Space4Water”, by the representative of the Office for Outer Space Affairs.

57. 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, the development of degraded land and wastelands, urban and rural development, marine and coastal ecosystems, health care, 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.

58. In the course of the discussions, some delegations reviewed national, bilateral, regional and international programmes on space technology and its applications for sustainable development, including in terms of improving the formulation and subsequent implementation of policies and programmes related to achieving the Sustainable Development Goals, the “Space2030” Agenda and regional instruments such as the African Union’s Agenda 2063 and the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030).

59. 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.

60. 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 support of socioeconomic development, in disseminating information and knowledge on space applications, in empowering women and young people in the space sector, and in removing barriers and advancing inclusive and equitable development in space in support of people with disabilities.

61. 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 by the following donors: APSCO; Austrian Space Forum; Brazilian Air Force; Canadian Space Agency; Center for Applied Space Technology and Microgravity (ZARM), University of Bremen, Germany; China National Space Administration; City of Vienna; European Commission; ESA; Geneva Digital Health Hub; Government of Austria; Government of China; Government of Finland; Government of France; Government of Germany; Government of Japan; Government of the Republic of Korea; Government of Switzerland; Government of the United Kingdom; Government of the United States (Department of State); IAF; Japan Aerospace Exploration Agency (JAXA); Keldysh

Institute of Applied Mathematics of the Russian Academy of Sciences; Kyushu Institute of Technology, Japan; Ministry of Emergency Management of China; National Aeronautics and Space Administration (NASA); Prince Sultan bin Abdulaziz International Prize for Water; Sapienza University of Rome; SWF; United Kingdom Space Agency; and United Nations Development Programme.

62. The Subcommittee noted that the United Nations Programme on Space Applications had enabled national programmes on space applications to disseminate information and knowledge to a wider audience and achieve greater development.

63. The Subcommittee noted that the United Nations Programme on Space Applications continued to implement the following programme and activities, including the Access to Space for All initiative, which was 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) NASA/Office for Outer Space Affairs Systems Engineering Webinar Series.

64. The Subcommittee also noted the highlights of the activities of the regional centres for space science and technology education, affiliated to the United Nations.

65. The Subcommittee noted that the activities of the Office included the United Nations/Austria Symposium on Space for Climate Action, which reviewed experiences and best practices in mitigating and adapting to climate change and supporting sustainability on Earth; the third Space4Water stakeholder meeting, which was focused on increasing understanding of the diverse nature of water-related challenges faced by communities globally; the United Nations/IAF Workshop on Space Technology for Socioeconomic Benefits, which was aimed at addressing challenges and capacity-building opportunities for emerging space nations; and the United Nations/Canada Space for Women expert meeting, which was aimed at advancing gender equality and developing the gender mainstreaming toolkit for the space sector.

66. On the margins of the session, informal consultations were held on the proposal contained in conference room paper A/AC.105/C.1/2024/CRP.7.

67. Some delegations expressed the view that the draft resolution presented elements of importance to member States, emphasizing fundamental principles such as the peaceful use of outer space, the promotion of international cooperation and the work of the Office to continue promoting cooperation among States.

68. The view was expressed that the growing trend of using large constellations of small commercial satellites and related ground-based infrastructure to support

military operations posed a risk to the safety of space operations and the long-term sustainability of outer space.

69. Some delegations expressed the view that the draft resolution included paragraphs that referred to issues that should be dealt with in the context of the United Nations disarmament platforms. The delegations expressing that view were also of the view that some paragraphs contained ambiguous concepts or wording not entirely aligned with existing international space law.

70. Some delegations expressed the view that the draft resolution as submitted would not be endorsed through consensus and that the issues raised needed further consideration, including with regard to the resolution's aim and purpose, under the agenda item of the Committee on the Peaceful Uses of Outer Space entitled "Ways and means of maintaining outer space for peaceful purposes".

71. In accordance with paragraph 10 of General Assembly resolution 78/72, the Working Group of the Whole was reconvened, with Prakash Chauhan (India) as Chair.

72. At its 1011th meeting, on 8 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

73. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 6, entitled "Space debris".

74. The representatives of Austria, Canada, China, Colombia, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, the Philippines, the Republic of Korea, the Russian Federation, Slovakia, Thailand, the United Kingdom and the United States made statements under agenda item 6. During the general exchange of views, statements relating to the item were also made by representatives of other member States. The observers for ESA and COSPAR also made statements.

75. The Subcommittee had before it information 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, contained in replies received from Member States and international organizations ([A/AC.105/C.1/125](#), [A/AC.105/C.1/125/Add.1](#), [A/AC.105/C.1/2024/CRP.6](#) and [A/AC.105/C.1/2024/CRP.16](#)).

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

- (a) "2023 space debris activities in France: highlights", by the representative of France;
- (b) "Italian Space Agency activities on space debris", by the representative of Italy;
- (c) "Current state of space situational awareness in Kazakhstan", by the representative of Kazakhstan;
- (d) "2024 space debris activities and status in the Republic of Korea: the Korea Astronomy and Space Science Institute's Space Object Monitoring and Tracking Network and future plans, and the Republic of Korea's second Plan for Preparing against Dangers in Space", by the representative of the Republic of Korea;
- (e) "Modelling of re-entry events using data from global all-sky meteor cameras", by the representative of Slovakia;
- (f) "An update on the United Kingdom Space Agency's active debris removal activities", by the representative of the United Kingdom;
- (g) "United States space debris environment and activity updates", by the representative of the United States;
- (h) "ESA's zero debris approach", by the observer for ESA;

(i) “IADC activities for 2023”, by the representative of India in his capacity as chair of the Inter-Agency Space Debris Coordination Committee (IADC).

77. 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.

78. 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, relevant ISO standards and the ESA Space Debris Mitigation Requirements as reference points in their regulatory frameworks for national space activities. Furthermore, 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.

79. The Subcommittee welcomed the event entitled “IADC at 30: the work of IADC in tackling the challenges of attaining sustainability in the space environment”.

80. 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.

81. The Subcommittee noted that the compendium of space debris mitigation standards adopted by States and international organizations was being continuously updated. The Subcommittee further noted that the compendium, initiated by Canada, Czechia and Germany, could be consulted on the website of the Office for Outer Space Affairs, and encouraged Member States to continue to provide contributions and updates to it.

82. 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.

83. 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, life extension, end-of-life operations and disposal. The Subcommittee noted the evolving technologies related to the in-orbit robotic servicing of satellites, the extension of satellite lifespans and active space debris removal.

84. 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 space debris orbit evolution and fragmentation.

85. Some delegations expressed the view that the major contributors to space debris must assume their historical responsibility for the mitigation and removal of that debris, and, in that context, stressed the importance of not causing new space actors to be overburdened by the consequences of the historical activities of established space actors. Some delegations expressed the view that the increase in space debris

posed a serious risk to the safety, security and sustainability of space activities, and that international and national activities were necessary.

86. Some delegations expressed the view that destructively testing direct-ascent anti-satellite missiles generated a large amount of space debris in low Earth orbit, increasing the risk of collisions.

87. Some delegations expressed the view that there was a need for developing countries to have access to technologies, equipment and methodologies for the measurement, monitoring and characterization of space debris and other space objects, and called for increased cooperation in addressing the issue of space debris.

88. Some delegations expressed the view that States should refrain from promulgating, adopting and applying any unilateral economic, financial and trade measures and sanctions, imposed and/or maintained in contravention of international law and the Charter of the United Nations, that could hamper or impede access to space and space activities and impede the sustainable development of developing countries. The delegations expressing that view were also of the view that such an approach continued to have a severe impact on the ability of targeted States to access necessary technologies and equipment in the space sector.

89. The view was expressed that financial sanctions were a legitimate, important, appropriate and effective tool, consistent with international law, for responding to harmful activity and addressing threats to peace and security.

90. Some delegations welcomed the establishment of the Zero Debris Charter, which was aimed at achieving the sustainable use of outer space by 2030 through concrete steps to mitigate the production of new orbital debris and remediate existing debris.

91. The view was expressed that it was necessary to develop a legal definition of the term “space debris”.

92. Some delegations welcomed the work performed by IADC and the release of its report on the status of the space debris environment (A/AC.105/C.1/2024/CRP.16).

93. Some delegations expressed the view that the widespread adoption of the Space Debris Mitigation Guidelines of IADC and its recommendations for large constellations of satellites remained the most effective way to reduce the long-term environmental impact of global space activity by slowing the rate of growth of the space debris population.

94. The view was expressed that in addition to mitigation, remediation of space debris was needed to reduce the risk of collision in orbit.

95. The view was expressed that guidelines on space debris mitigation and remediation measures, including observation, characterization and re-entry operations, should be developed, and that space debris monitoring information should be shared in a timely manner.

96. The view was expressed that further research on the re-entry of space objects was needed to limit the impact on the upper atmosphere and the Earth system.

97. The view was expressed that the complexity of the space environment had increased, with the introduction of new propulsion systems and an upwards trend in the number of conjunction warnings involving large constellations.

98. The view was expressed that further discussions and the development of a harmonized regulatory framework were needed to address the following issues: (a) the disposal of space objects after use and incentives for compliance with relevant guidelines; (b) the effective tracking and cataloguing of space objects; and (c) greater investment in science and technologies for moving passive objects.



99. The view was expressed that the respective mandates of the agencies and offices within the United Nations system should be respected to avoid duplication of work and, in that regard, the Inter-Agency Meeting on Outer Space Activities (UN-Space) was the relevant coordination mechanism.

#### IV. Space-system-based disaster management support

100. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 7, entitled “Space-system-based disaster management support”.

101. The representatives of Argentina, Canada, China, France, Germany, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Pakistan, the Russian Federation, Rwanda, South Africa, Thailand, the United Kingdom and the United States made statements under agenda item 7. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

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

(a) “Progress in building emergency management satellites and satellite emergency response to major natural disasters in 2023”, by the representative of China;

(b) “Latest trends and perspectives: Japan’s contribution to disaster risk reduction in the Asia-Pacific region through Sentinel Asia”, by the representative of Japan;

(c) “Multi-purpose aerospace monitoring system and service for the prompt provision of emergency situation data”, by the representative of Kazakhstan;

(d) “Philippine space data mobilization for enhancing disaster resilience”, by the representative of the Philippines;

(e) “Earth Observatory of Singapore – Remote Sensing Lab’s support for humanitarian assistance and disaster relief”, by the representative of Singapore.

103. 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 2023 in the framework of UN-SPIDER ([A/AC.105/1310](#)).

104. The Subcommittee noted that in 2023, with the continued support of its network of partners, including the regional support offices, UN-SPIDER had conducted institutional strengthening missions to South Africa and Tonga and a scoping mission to French Polynesia; provided virtual support to Bolivia (Plurinational State of), El Salvador and Malawi; organized training courses in Chile, Fiji, Germany and Hungary; and organized workshops in Algeria and Germany, a subforum in China and an annual meeting of regional support offices in Austria.

105. The Subcommittee noted with satisfaction that UN-SPIDER had delivered tailored space-based information and resources that had helped to strengthen the capacity of States to effectively respond to disasters triggered by natural hazards.

106. The Subcommittee also noted that space-based support for disaster risk reduction and emergency response was vital for addressing and mitigating the impact of natural disasters, and that space technology played a significant role in the management of natural disasters, enabling national observatories to monitor a variety of natural hazards, including floods, wildfires, typhoons or hurricanes, droughts and landslides.

107. Some delegations expressed the view that space technology contributed to an improved understanding of disaster risks, enabling States to effectively allocate resources to reduce the associated negative impacts and to improve preparedness and response capabilities at the national and local levels.

108. The Subcommittee noted the benefits of initiatives such as 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 enabled the organization of resources and expertise for rapid response to catastrophic events and was an effective mechanism for using space-based information to support disaster management efforts.

109. The Subcommittee also noted the need to continue encouraging international collaboration in order to maximize the resilience of communities.

110. The view was expressed that there was a need to facilitate regional emergency observations outside the scope of the International Charter on Space and Major Disasters and Sentinel Asia, as well as a need to facilitate access to data for Member States in order to support the monitoring and prevention of disasters.

111. The Subcommittee expressed its satisfaction with the International Charter on Space and Major Disasters as an ongoing example of the collective use of satellites for good and via the universal access programme.

112. Some delegations expressed their satisfaction with the contribution of Sentinel Asia to disaster management efforts in the Asian region.

113. Some delegations highlighted the efforts of their countries to develop new satellite constellations to monitor forest fires, to develop new tools and services to address water-related disasters using satellite data, to improve existing technologies for the thematic processing and analysis of remote sensing data and develop new ones, and to develop ground-based infrastructure for receiving and processing space information.

114. Some delegations expressed appreciation for the many international partnerships that promoted the free and open sharing of critical data, which would lead to greater utilization of space-based information for societal benefit.

115. The view was expressed that the Recovery Observatory of the Committee on Earth Observation Satellites (CEOS) allowed for coordinated satellite image acquisitions and synthesis of the information derived therefrom. The delegation expressing that view noted the efforts of UN-SPIDER to raise awareness of the Recovery Observatory at several workshops and training sessions in 2023.

116. The view was expressed that there was a need to enact and implement space policies to meet the objectives of the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction 2015–2030.

117. The Subcommittee noted the financial and staff resources that had been contributed by China and Germany to UN-SPIDER. Such support, including in-kind contributions, efforts to share experiences with other interested countries and the provision of experts, provided by States members of the Committee and by the regional support offices in 2023 for the activities conducted by the Office for Outer Space Affairs through UN-SPIDER, was crucial for States to reduce the risk of disasters.

118. The Subcommittee noted that since its establishment, UN-SPIDER had benefited from voluntary contributions (cash and in-kind) from the following States: Austria, China, Croatia, Czechia, France, Germany, India, Indonesia, Mexico, Republic of Korea, Russian Federation, Spain, Switzerland, Türkiye and United States.

## **V. Recent developments in global navigation satellite systems**

119. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 8, entitled “Recent developments in global navigation satellite systems”, and reviewed matters related to the International Committee on Global Navigation Satellite Systems (ICG).

120. The representatives of China, France, India, Indonesia, Japan, Mexico, Pakistan, the Republic of Korea, the Russian Federation and the United States made statements under agenda item 8. A statement was also made by the representative of the European Union, in its capacity as Chair of the seventeenth meeting of ICG and permanent observer of the Committee. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

121. The Subcommittee had before it the following:

(a) Note by the Secretariat on the seventeenth meeting of ICG ([A/AC.105/1304](#));

(b) Report of the Secretariat on activities carried out in 2023 in the framework of the workplan of ICG ([A/AC.105/1305](#));

(c) Report on the United Nations/Finland workshop on the applications of global navigation satellite systems ([A/AC.105/1303](#)).

122. The Subcommittee heard a scientific and technical presentation by the representative of China on the services and applications of the BeiDou Navigation Satellite System (BDS).

123. The Subcommittee noted with satisfaction that the seventeenth meeting of ICG and the twenty-eighth meeting of the Providers' Forum, organized by the European Commission in collaboration with the Spanish Presidency of the Council of the European Union, had been held in Madrid from 15 to 20 October 2023. The Subcommittee noted that the eighteenth meeting of ICG would be organized jointly by Australia and New Zealand.

124. 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 operated effectively and efficiently. The year 2023 marked the fiftieth anniversary of the GPS programme. Furthermore, the Subcommittee noted that the United States had continued to upgrade the capability of and service provided by GPS through the integration of the newest generation of satellites, GPS Block III, and by developing new capabilities and enhancements for the GPS Block III F satellites. In addition to being more resilient, the GPS Block III F satellites would host a laser retroreflector array to enable the precise optical laser ranging of GPS satellites and a search-and-rescue repeater to relay distress signals to rescuers.

125. 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 2023, the first satellite of the fourth generation of the GLONASS constellation, namely, the GLONASS-K2 satellite, had been launched. The constellation had provided new open access code division signals in the L1 and L2 bands. In addition, the GLONASS-K2 satellites would facilitate the registration of emergency signals and thus improve the efficiency of search and rescue operations. The Subcommittee also noted that GLONASS satellites had been broadcasting the third open access signal in the L3 radio frequency band.

126. The Subcommittee noted that the BDS constellation of China had been further improved and provided global positioning, navigation and timing services. In 2023, two BeiDou navigation satellites had been launched with the aim of improving the system's reliability and service capabilities. The Subcommittee also noted that BDS had been introducing innovations that seamlessly integrated the positioning, navigation and timing functions of the System, while also building major services, namely, search and rescue services, the satellite-based augmentation system service, the short message communication service and the ground-based augmentation service to support the development of BDS service applications.

127. The Subcommittee noted that India was pursuing 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). In 2023, the NavIC space segment was strengthened through the launch of the first satellite in the navigation satellite series. The NVS-01 satellite would ensure the continued legacy of NavIC services in the L5 and S bands, and also provide a new civilian interoperable signal in the L1 band.

128. 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 regions.

129. 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 (EGNOS). The Subcommittee also noted that Galileo had been providing a precise satellite navigation service through its open service offering metre-scale accuracy. The Subcommittee noted that the capabilities of Galileo had grown, with the addition of a new high-accuracy service.

130. The Subcommittee noted that the Korean Positioning System development programme, a regional satellite system of the Republic of Korea, had been initiated. The first satellite was to be launched in 2027, and the satellite constellation was planned to be completed by 2035. The Subcommittee also noted that the Republic of Korea was currently developing a satellite-based augmentation system. The first geostationary satellite of the system had been launched in 2022, and provision of the safety-of-life services had begun in 2023.

131. The Subcommittee noted that the Pakistan Space-Based Augmentation System (Pak-SBAS) had been implemented by the Space and Upper Atmosphere Research Commission (SUPARCO) of Pakistan with the support of the Pakistan Civil Aviation Authority. The Subcommittee also noted that the System would utilize GPS and BDS signals and was scheduled to enter service in 2024.

## VI. Space weather

132. In accordance with General Assembly resolution [78/72](#), the Subcommittee considered agenda item 9, entitled “Space weather”.

133. The representatives of Argentina, Brazil, China, Colombia, France, India, Indonesia, Japan, Nigeria, the Republic of Korea, South Africa, Thailand, the United Kingdom and the United States made statements under agenda item 9. The observer for WMO also made a statement on behalf of COSPAR, the International Space Environment Service and WMO under the item. During the general exchange of views, statements relating to the item were made by representatives of other member States.

134. The Subcommittee had before it the report on the United Nations workshop on the International Space Weather Initiative: the Way Forward ([A/AC.105/1302](#)).

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

(a) “Comprehensive space weather monitoring and analysis in Brazil and neighbouring regions”, by the representative of Brazil;

(b) “Recent activities on space weather in China and perspectives on international collaboration”, by the representative of China;

(c) “Indonesia’s contribution to regional space weather research and observation”, by the representative of Indonesia;

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

(e) “Space weather activities in Kazakhstan in 2023”, by the representative of Kazakhstan;

(f) “National preparedness plan for the 25th solar maximum”, by the representative of the Republic of Korea;

(g) “Operations summary of the Russian segment of the China-Russia Consortium for space weather”, by the representative of the Russian Federation;

(h) “Recent scientific activities related to solar-terrestrial physics”, by the observer for the Scientific Committee on Solar-Terrestrial Physics.

136. The Subcommittee noted that space weather, caused by solar variability, was an international concern that 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 increasingly relied. It therefore needed to be 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 to guarantee the safety and sustainability of outer space activities.

137. The Subcommittee noted a number of national, regional and international activities 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.

138. 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.

139. 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 International Civil Aviation Organization global space weather information centres, which were tasked with providing the civil aviation sector with information about space weather that could potentially affect communications, navigation and the health of passengers and crew.

140. Some delegations expressed views on the importance of the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee ([A/74/20](#), annex II), in particular guidelines B.6 and B.7, which addressed the safety of space operations.

141. The view was expressed that in order to improve research on and the predictability of space weather, further information-gathering would be beneficial. In that connection, the private sector could contribute to the monitoring of the upper atmosphere and the near-Earth space environment.

142. The Subcommittee noted the collaboration between COSPAR, the International Space Environment Service and WMO on space weather, as formalized in their joint Coimbra Declaration, and it noted that the collaboration represented action taken in response to the recommendations contained in the final report of the Expert Group on Space Weather ([A/AC.105/C.1/122](#)).

143. Some delegations expressed the view that there was a need to establish a dedicated international coordination group on space weather, which could significantly improve international collaboration and coordination, contributing to enhanced scientific knowledge of the space environment and increased global resilience to the adverse effects of space weather.

## VII. Near-Earth objects

144. In accordance with General Assembly resolution 78/72, the Scientific and Technical Subcommittee considered agenda item 10, entitled “Near-Earth objects”.

145. The representatives of Belgium, China, France, Germany, Italy, Japan, the Republic of Korea, the Russian Federation and the United States made statements under agenda item 10. 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.

146. The Subcommittee had before it the following:

(a) Conference room paper submitted by the Coordinator of IAWN and the Chair of SMPAG entitled “Information on an initiative for a United Nations-designated international year of asteroid awareness and planetary defence, 2029 (IYPD2029): a collaborative effort” (A/AC.105/C.1/2024/CRP.20);

(b) Conference room paper containing guidelines for the proclamation of international years, and related General Assembly resolutions (A/AC.105/C.1/2024/CRP.26).

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

(a) “Activities of near-Earth space observation in Ukraine in 2022–2023”, by the representative of Ukraine;

(b) “Near-Earth objects – threats and treasures”, by the observer for the National Space Society.

148. The Subcommittee heard status reports by IAWN and SMPAG and noted their tenth year of establishment and the importance of international cooperation and efforts being undertaken by them to share information with regard to discovering, monitoring and physically characterizing potentially hazardous near-Earth objects in order to ensure that all nations, in particular developing countries with limited capacity to predict and mitigate the impact of a near-Earth object, were aware of the potential hazard of impact by an asteroid. In that regard, the Subcommittee noted that it was important to contribute to the work of IAWN and SMPAG. The Subcommittee further noted that more information on the work of IAWN and SMPAG was available on their websites (<http://iawn.net> and <http://smpag.net>).

149. The Subcommittee noted that the total number of known near-Earth objects came to 34,274 as at 30 January 2024, of which 2,883 additional near-Earth objects had been discovered in 2023, and that currently a total of 2,395 catalogued asteroids with approximate diameters of 140 m or more had orbits that brought them within 8 million km of the Earth’s orbit. In that regard, the Subcommittee also noted that only about 44 per cent of the near-Earth objects in that size range had been found.

150. The Subcommittee noted the unique opportunity presented by a close approach by the asteroid 99942 Apophis in 2029 to raise awareness about asteroids that pass close to the Earth, their scientific and resource value and the potential hazard that they present.

151. The Subcommittee recommended to the Committee that 2029 be declared a United Nations-designated international year of asteroid awareness and planetary defence, dedicated to a worldwide campaign to raise awareness about asteroids and to highlight the collaborative efforts being undertaken by the Committee to mitigate the potential hazard posed by the impact on the Earth of near-Earth objects, and as an excellent opportunity for a global educational campaign about near-Earth objects. In that regard, the Subcommittee took note of the guidelines for the proclamation of international years, contained in the annex to Economic and Social Council resolution 1980/67 and related General Assembly resolutions 53/199 and 61/185.

152. The Subcommittee noted efforts and activities at the national and international levels aimed at developing capabilities for the discovery, observation, early warning

and mitigation of potentially hazardous near-Earth objects, including the work currently being done by space agencies on the space-based reconnaissance of the asteroid 99942 Apophis, which was important for demonstrating planetary defence capabilities.

153. The Subcommittee noted that there were currently 56 signatories to the IAWN Statement of Intent, representing independent astronomers, observatories and space institutions from over 25 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.

154. The Subcommittee noted that, should a credible threat of impact be discovered by IAWN, the best information available would be provided by the Network and disseminated to all Member States through the Office for Outer Space Affairs.

155. The Subcommittee noted that SMPAG currently had 19 members and 7 permanent observers, that the Canadian Space Agency had joined SMPAG as the most recent member and that there was an indication of interest by the Indian Space Research Organisation to join. 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, with a copy to the Office for Outer Space Affairs as the permanent secretariat of SMPAG.

156. The Subcommittee noted the progress made in the first hypothetical impact threat exercise of SMPAG, under the lead of the Italian Space Agency and the Polytechnic University of Milan. The primary objective of the exercise was to simulate a case of a hypothetical threat caused by an asteroid and to focus on SMPAG procedures to develop coordinated advice for a response to such an impact threat.

157. The Subcommittee noted that the eighth IAA Planetary Defense Conference had been held in Vienna from 2 to 7 April 2023, at the Austrian Academy of Sciences and at the Vienna International Centre, hosted by the Office for Outer Space Affairs, in cooperation with ESA and the Commission of Geosciences of the Austrian Academy of Sciences, and that the ninth IAA Planetary Defense Conference was to be held from 5 to 9 May 2025, in Stellenbosch, South Africa.

158. The Subcommittee noted with appreciation the latest brochure developed jointly by the Office for Outer Space Affairs, IAWN and SMPAG, with the support of ESA, entitled “Near-Earth Objects and Planetary Defence” ([ST/SPACE/73](#)).

## VIII. Long-term sustainability of outer space activities

159. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 11, entitled “Long-term sustainability of outer space activities”.

160. The representatives of Australia, Austria, Belarus, Canada, China, Finland, France, India, Indonesia, Japan, Luxembourg, Malaysia, Mexico, New Zealand, the Philippines, the Republic of Korea, the Russian Federation, South Africa, the United Arab Emirates, the United Kingdom and the United States made statements under agenda item 11. Statements were also made by the observers for IAU and SGAC. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

161. 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 summaries of implementation experiences, opportunities for capacity-building and challenges (A/AC.105/C.1/L.410);

(b) Conference room paper submitted by Canada containing an update on implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.4);

(c) Conference room paper submitted by the United Kingdom containing an update on its reporting approach for the voluntary implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.21);

(d) Conference room paper submitted by the Islamic Republic of Iran on bridging the gap and empowering States in pursuit of space sustainability (A/AC.105/C.1/2024/CRP.25);

(e) Conference room paper submitted by India containing a proposal for a new guideline for the long-term sustainability of outer space activities (A/AC.105/C.1/2024/CRP.32);

(f) Conference room paper submitted by Portugal containing a report on the technical preparatory symposium of the United Nations/Portugal Conference on Management and Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.34);

(g) Conference room paper submitted by the Moon Village Association containing a written contribution for the Working Group on the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.5);

(h) Conference room paper submitted by SGAC containing information on a proposed intergenerational pact for space sustainability (A/AC.105/C.1/2024/CRP.13);

(i) Conference room paper submitted by EAS, ESO, For All Moonkind, IAU, the Open Lunar Foundation, SKAO and SWF containing information on the protection of astronomy and science on the Moon (A/AC.105/C.1/2024/CRP.14);

(j) Conference room paper submitted by COSPAR, For All Moonkind, IAU and SGAC, also on behalf of the Lunar Policy Platform, containing information on promoting the long-term sustainability of lunar activities through good practices encouraging due regard for lunar science and ethics (A/AC.105/C.1/2024/CRP.15);

(k) Non-paper by India containing a proposal for a way ahead for the Working Group on the Long-term Sustainability of Outer Space Activities;

(l) Non-paper by the United Kingdom containing a proposal for a potential approach to understanding challenges and developing recommendations on the long-term sustainability of outer space activities;

(m) Non-paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities containing possible decisions to be taken by the Working Group at the sixty-first session of the Subcommittee.

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

(a) “A glimpse into long-term sustainability efforts by India in 2023”, by the representative of India;

(b) “An overview of United Kingdom activities on space-based solar power”, by the representative of the United Kingdom;

(c) “Data-sharing for space traffic management”, by the representative of the United Kingdom;

(d) “APSCO student small-satellite activity updates”, by the observer for APSCO;



(e) “Challenges to sustainable lunar exploration”, by the observer for For All Moonkind;

(f) “United Nations Moon far side science treaty”, by the observer for IAA;

(g) “Proposed human research programme for civilians in space flight and space habitation”, by the observers for IAASS;

(h) “International standards development activities supporting the Guidelines for the Long-term Sustainability of Outer Space Activities”, by the observer for ISO.

163. 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.

164. In accordance with General Assembly resolution 78/72, the Working Group on the Long-term Sustainability of Outer Space Activities was reconvened at the present session, with Umamaheswaran R. (India) as Chair.

165. Pursuant to the agreement reached by the Subcommittee in 2023 ([A/AC.105/1279](#), para. 309), and in accordance with the multi-year workplan of the Working Group ([A/AC.105/1258](#), annex II, appendix, para. 18), the Working Group held a workshop on 6 February 2024.

166. The Subcommittee noted with satisfaction that the workshop had raised awareness of the long-term sustainability of outer space activities, supported capacity-building and provided an opportunity to collect views from entities that might not normally participate directly in the work of the Working Group, including through written contributions. The Subcommittee also noted that a report on the workshop would be made available following its sixty-first session.

167. 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, inter alia, the development of national 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 licencing processes; the establishment of national on-orbit servicing guidelines; an enforcement action against a satellite operator that did not dispose of its satellite in accordance with international guidelines; regional coordination on space traffic management; expanded joint government-commercial as well as international partnerships to increase communications, exchange space situational data and analyses and establish best practices for autonomous spacecraft collision avoidance; the broadening of access to collision avoidance services, alongside fragmentation and re-entry analysis services; innovations by the commercial sector in value-added technologies and services to reduce the risk of collisions; the reduction of the lifetime of rocket bodies in orbit; the improved post-mission disposal of satellites; a project for the 3D printing of algae-based materials to be used in the space industry; the development by a company of an electro-thermal propulsion system for small satellites in low Earth orbit; the development of the Lunar Gateway’s crew and science airlock module; preparations for a national debris removal mission; collaboration on a project to demonstrate the commercial removal of debris; and the addition by a space agency of a funding function to enable investment in space technology development by the private sector and academia.

168. The Subcommittee was also informed of various initiatives linked to the Guidelines for the Long-term Sustainability of Outer Space Activities, including their implementation. Those initiatives included the European Union space surveillance and tracking initiative (EU-SST); international cooperation opportunities related to the International Space Station and the China Space Station; the Astra Carta, a framework for shaping future responsible and sustainable space exploration,

development and cooperation; the Unispace Nanosatellite Assembly and Training capacity-building programme of the Indian Space Research Organisation (UNNATI); a workshop on space situational awareness and space traffic management for the academic community; an open access e-learning course on the Guidelines; the publication of a children's book with the objective of positively influencing young people and increasing public awareness of and support for space science, technology, policy and diplomacy activities; capacity-building undertaken through collaboration with APSCO; the capacity-building work of the Asia-Pacific Regional Space Agency Forum; training and capacity-building opportunities offered through the regional centres for space science and technology education, affiliated to the United Nations; the Space Sustainability Rating; and relevant capacity-building projects of the Office for Outer Space Affairs.

169. Some delegations expressed the view that the Committee and its subcommittees served as unique platforms for international cooperation, including in relation to the development of international space law, international guidelines, best practices, and transparency and confidence-building measures related to the long-term sustainability of outer space activities, and that the development of instruments related to the long-term sustainability of outer space activities should be distinct from, but complementary to, work being undertaken to address space threats in other United Nations forums.

170. Some delegations expressed the view that the Guidelines for the Long-term Sustainability of Outer Space Activities provided an effective framework for supporting the development and implementations of rules and norms that sought to support the safety, stability and sustainability of outer space activities.

171. Some delegations expressed the view that the adoption of the voluntary Guidelines for the Long-term Sustainability of Outer Space Activities had been the outcome of a multidimensional compromise and a delicate balance, and that the delicate balance should be preserved in the implementation of the workplan of the Working Group, taking into consideration the priorities and concerns of all member States, in particular those of developing countries.

172. Some delegations expressed the view that a periodic review of the implementation of the Guidelines should be encouraged in order to promote the exchange of good practices between States, in particular with regard to how to respond to any difficulties encountered and lessons learned.

173. Some delegations expressed the view that the sharing of experiences, practices and lessons learned from voluntary national implementation of the Guidelines was key to supporting awareness-raising and capacity-building in their implementation.

174. Some delegations expressed the view that the implementation of the Guidelines was in accordance with member States' respective needs, conditions and capabilities.

175. Some delegations expressed the view that future work on the long-term sustainability of outer space activities should include increased consideration of capacity-building efforts, and that those efforts should go beyond a general exchange of information and instead focus on hands-on, interactive discussions and demonstrations of tools and resources to aid emerging spacefaring nations as they grew their space capabilities.

176. Some delegations expressed the view that space traffic management remained a key issue in connection with the fair and sustainable use of space, and that promoting regional approaches to space traffic management was a pragmatic and bottom-up way to build confidence and establish concrete space traffic management solutions at the global level.

177. The view was expressed that having a means of discussing the scientific and technical aspects of space traffic management within the Committee and its subsidiary bodies would result in the improved implementation of guidelines B.2 and B.3.

178. The view was expressed that all participants in space activities should support the call to develop a United Nations information platform serving the common need to collect and make available to the public information on the monitoring of outer space in the interest of ensuring the safety of space operations.

179. The view was expressed that the involvement of private actors in multilateral processes should be encouraged and that the competitiveness and innovation capacities of companies that provided solutions to the challenges to the long-term sustainability of space activities should be supported.

180. Some delegations expressed the view that urgent, universal challenges to the long-term sustainability of outer space activities should be selected and addressed in the drafting of new guidelines, including, for example, ensuring the safety of crewed space flight and space stations, ensuring fair access to low Earth orbit and strengthening the regulation of large constellations.

181. The view was expressed that the considerations contained in conference room paper A/AC.105/2022/CRP.11, which had first been made available in June 2022, could provide a thematic basis for new draft guidelines to address outstanding matters on the safety of space operations.

182. The view was expressed that the IADC report on the status of the space debris environment provided critical insight into the forecast environmental challenges that may be faced on-orbit and continued to serve as a reminder that global dialogue on the sustainability of the space environment was essential and that only through joint action could the outer space environment be preserved for future generations.

183. At its 1012th meeting, on 8 February, the Subcommittee endorsed the report of the Working Group, which is contained in annex II to the present report.

## **IX. Future role and method of work of the Committee**

184. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 12, entitled “Future role and method of work of the Committee”.

185. The representatives of Argentina, Brazil, Canada, Chile, China, France, Germany, Indonesia, Iran (Islamic Republic of), New Zealand, the Republic of Korea, the Russian Federation, Spain, South Africa, the United Kingdom and the United States made statements under agenda item 12. 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. The observers for CANEUS International 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.

186. The Subcommittee had before it a conference room paper on the protection of dark and quiet skies for science and society, submitted by Argentina, Austria, Belgium, Bulgaria, Chile, Colombia, Czechia, Denmark, Ecuador, Germany, Italy, Netherlands (Kingdom of the), Paraguay, Peru, Slovakia, South Africa, Spain, Switzerland, EAS, ESO, IAU and SKAO (A/AC.105/C.1/2024/CRP.18).

187. The Subcommittee heard a technical presentation entitled “Indonesia’s astronomical observatory: a novel global platform for space research enhancing peaceful applications and space situational awareness”, by the representative of Indonesia.

188. Some delegations welcomed the establishment of the “Group of Friends for Dark and Quiet Skies” and its multi-stakeholder work to advance efforts to mitigate the effects of satellites and satellite constellations on astronomy.

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

190. Some delegations expressed the view that any rule-making activity aimed at the sustainable exploration, exploitation and utilization of outer space should be conducted within the framework of the Committee in order to avoid the fragmentation of governance of outer space activities.

191. The view was expressed that multiple parallel platforms for considering the subject matter that had been under the purview of the Committee for years were emerging and functioning without the consensus-based principle, and that one such platform was the open-ended working group established pursuant to General Assembly resolution 78/20.

192. Some delegations expressed the view that the Committee should focus on the safety and sustainability of outer space activities, while matters relating to security should be dealt with in the context of the United Nations disarmament platforms.

193. Some delegations expressed the view that the Committee should actively respond to new challenges in outer space and that it needed new approaches, tools and procedures to adjust to fast-paced space-related developments and activities.

194. The view was expressed that it was important to retain the intergovernmental nature of the governance of outer space activities.

195. Some delegations expressed the view that although non-governmental processes could benefit or supplement the work of the Committee in certain ways, such processes should not interfere with that work.

196. The view was expressed that the Committee could benefit from the latest research, practical experience and scientific practice through wider engagement with non-State actors, including the private sector and the scientific community, whether it was through more presentations or additional panel discussions.

197. Some delegations expressed the view that initiatives such as the United Nations Space Bridge that were aimed at building constructive dialogue with commercial operators and with scientific and academic circles should not supplant the primary role of States in the work of the Committee.

198. The view was expressed that the Committee could play a key role in facilitating access to databases to support the voluntary implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee ([A/74/20](#), annex II).

199. The view was expressed that persistent efforts should be made to achieve more diversified and institutionalized capacity-building, including with the support of the private sector, that continued support should be given to all the regional centres for space science and technology education, affiliated to the United Nations, and that those centres should enhance exchanges and cooperation with one another.

200. Some delegations expressed the view that the Committee and its subcommittees should jointly consider interdisciplinary issues such as the long-term sustainability of outer space activities and space resources.

201. The view was expressed that all decisions of the Committee and its subcommittees, except for routine administrative decisions, should continue to be made by consensus.

202. Some delegations expressed the view that it was important for the Pact for the Future to underscore the central role of the Committee on the Peaceful Uses of Outer Space in space governance and that any duplication or dilution of the ongoing work and mandates of the Committee in those areas should be avoided.

203. Some delegations expressed the view that the Pact for the Future should help promote regional approaches to space traffic management as a pragmatic, bottom-up way to build confidence and establish concrete space traffic management solutions at the global level; should encourage the implementation and updating of the existing Guidelines for the Long-Term Sustainability of Outer Space Activities; and should

urge the Secretary-General to strengthen the Office for Outer Space Affairs to ensure that the Office can fully and effectively implement its mandate.

204. Some delegations expressed the view that an item entitled “Exchange of views on dark and quiet skies for science and society” should be included in the agenda of the Subcommittee at its sessions in 2025, 2026 and 2027 as a single issue/item for discussion, and that the item should focus on the effects of large constellations of satellites on astronomical observations.

205. Some delegations expressed the view that issues relating to the phenomenon of dark and quiet skies arose as a result of activities of large constellations.

206. The view was expressed that the multifaceted nature of the challenges posed by megaconstellations made it highly advisable to examine the issue under separate items in both subcommittees, since megaconstellations of satellites in low Earth orbit created not only technical but also legal challenges to the existing norms and national and international regulatory regimes governing space activities that must be addressed.

207. Some delegations expressed the view that the topic of dark and quiet skies concerned the effect of satellites, radio-wavelength emissions and artificial light at night on astronomy and the night sky. The delegations expressing that view noted the important work being done on the topic by ITU and in other forums.

208. Some delegations expressed the view that large constellations were affecting not only astronomical observations but also the safe conduct of space activities, and that the new agenda item related to dark and quiet skies and large constellations should be a regular item on the agenda of the Subcommittee.

209. Some delegations expressed the view that large constellations provided important services for enhancing communications, improving disaster preparedness and recovery and facilitating sustainable development. The delegations expressing that view were of the view that the Committee and its subcommittees were the appropriate forums in which to discuss many aspects of large constellations, including their relation to the long-term sustainability of outer space activities, space debris, disaster management and the ways and means of maintaining outer space for peaceful purposes. The delegations expressing that view were also of the view that it was more appropriate to discuss other aspects at ITU and in United Nations disarmament forums.

210. Some delegations expressed the view that the Committee and its subsidiary bodies should provide capacity-building and facilitate awareness-raising and the sharing of best practices on the issue of dark and quiet skies and large constellations.

211. The view was expressed that the existing procedure for the adoption of the report of the Committee and its subcommittees was cumbersome and time-consuming, and that it should be simplified or replaced by alternative methods, such as a Chair’s report or minutes of meetings.

212. The Subcommittee welcomed the enhancements to the organization of its work, such as the streamlining of the agenda, the scheduling of agenda items in sequential order and the reduction in the volume of printed documentation.

213. Some delegations expressed the view that the Subcommittee’s agenda remained too large to enable sufficient consideration of important emerging issues, and that the agenda could be further streamlined by combining similar agenda items.

## **X. Space and global health**

214. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 13, entitled “Space and global health”.

215. The representatives of Argentina, China, India, Indonesia, Mexico, Switzerland, Thailand and the United States made statements under agenda item 13. The

Coordinator of the Space and Global Health Network also made a statement under the item. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

216. The Subcommittee had before it the following:

(a) Report on the United Nations/World Health Organization International Conference on Space and Global Health, held in Geneva from 1 to 3 November 2023 (A/AC.105/1306);

(b) Conference room paper entitled “Space and Global Health Network: 2023 annual report and plan of activities 2024” (A/AC.105/C.1/2024/CRP.29);

(c) Conference room paper entitled “Report on the meetings of the Space and Global Health Network held on the margins of the sixty-first session of the Subcommittee” (A/AC.105/C.1/2024/CRP.33).

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

(a) “Australian conduits in digital health for sustained development with artificial intelligence”, by the representative of Australia;

(b) “Revolutionizing dengue outbreak management: AI-driven space application in a smart city platform – the Brazilian case”, by the representative of Brazil.

218. The Subcommittee noted that the General Assembly, in its resolution 78/72, requested the Office for Outer Space Affairs to strengthen, within existing resources, 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”.

219. In that regard, the Subcommittee noted with satisfaction that the United Nations/World Health Organization International Conference on Space and Global Health had been co-organized by the Office for Outer Space Affairs, the World Health Organization and the United Nations Conference on Trade and Development, in collaboration with the Government of Switzerland and the Space and Global Health Network and with the support of ESA, as the first major event since the adoption of General Assembly resolution 77/120, and that it had been attended by major stakeholders in the fields of space and global health. The Subcommittee noted that participants in the Conference had recommended, inter alia, the creation of a short-term action plan and a longer-term strategy for the implementation of actions supporting the General Assembly resolution on space and global health.

220. The Subcommittee heard a status report by the Coordinator of the Space and Global Health Network and noted that two meetings of the Network had been held on 5 and 6 February 2024 on the margins of the sixty-first session of the Subcommittee, at which the Coordinator had also presented the Network’s plan of activities for 2024, which included:

(a) A special session on space and global health and a workshop on interoperability during the Geneva Digital Health Day, held on the sidelines of the Geneva Health Forum in May;

(b) A hackathon on health and Earth observation, organized at the end of May in cooperation with ESA;

(c) Activities on space and global health during the AI for Life conference in December.

221. The Subcommittee was informed of the development of a platform as recommended by the General Assembly in its resolution 77/120 (para. 11). The

platform was developed by the Geneva Digital Health Hub with financial support from the Swiss Agency for Development and Cooperation, and was already accessible as a smartphone app called “Implementome”.

222. The Subcommittee expressed its appreciation to the Office for Outer Space Affairs for facilitating the work of the Space and Global Health Network within existing resources.

223. The Subcommittee noted a broad array of activities relevant to space and global health in areas such as telemedicine, space life sciences, space technologies, 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.

224. The Subcommittee acknowledged the contribution of space science, space data, space technology and space applications to the prevention and control of diseases, the promotion of human health and welfare, the addressing of global health issues, the monitoring of air and water pollution, the advancement of medical research, the advancement of health practices and the provision of health-care services to individuals and communities, including in rural areas with limited access to health care.

225. The view was expressed that there was a need to improve, in an equitable and sustainable manner, intersectoral coordination and cooperation to carry out effective capacity-building activities at all levels related to the application of space science and technology in the field of global health.

## **XI. Use of nuclear power sources in outer space**

226. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 14, entitled “Use of nuclear power sources in outer space”.

227. The representatives of China, France, Indonesia, Mexico, the Russian Federation, the United Kingdom and the United States made statements under agenda item 14. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

228. The Subcommittee had before it the following documents:

(a) Draft implementation plan to achieve the objectives of the Working Group on the Use of Nuclear Power Sources in Outer Space under its five-year workplan for the period 2024–2028, prepared by the Chair of the Working Group on the Use of Nuclear Power Sources in Outer Space ([A/AC.105/C.1/L.413](#));

(b) Conference room paper submitted by the United States entitled “Evolution of NASA’s Nuclear Flight Safety program to infuse risk leadership and assurance framework concepts” ([A/AC.105/C.1/2024/CRP.22](#));

(c) Conference room paper submitted by ESA entitled “Implementation of the guidelines from the international Safety Framework for Nuclear Power Source Applications in Outer Space for ESA space missions – preliminary Nuclear Launch Safety Authorisation Process (NLSAP)” ([A/AC.105/C.1/2024/CRP.24](#));

(d) Conference room 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 collect information under the objectives of the workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space” ([A/AC.105/C.1/2024/CRP.31](#)).

229. Some delegations expressed the view 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 in developing legal and regulatory instruments for the safe use of nuclear power sources in outer space.

230. Some delegations expressed the view that the use of nuclear power sources in outer space should be carried out in a safe and responsible manner.

231. The view was expressed that the use of nuclear power sources in outer space should always be safeguarded, supervised and monitored by relevant international organizations, such as IAEA, to ensure the safety, security and peaceful purposes of outer space for human development globally.

232. The view was expressed that the joint application of the Principles and the Safety Framework remained a sufficient and valuable tool for States and international intergovernmental organizations in their efforts to develop and use nuclear power sources in outer space while fully respecting safety measures. The delegation expressing that view was also of the view that there was currently no need to revise either the Principles or the Safety Framework.

233. Some delegations expressed the view that space nuclear power source applications had been used in the exploration of space since the dawn of the space age, enabling missions of scientific discovery to destinations across the solar system, opening up the solar system to exploration and allowing the observation and understanding of dark, distant planetary bodies that would otherwise be unreachable. Similarly, embarking on a new era for space exploration depended on mass-efficient, high-energy solutions to power deep-space vehicles, operate in harsh environments and increase mission flexibility. As such, the use of nuclear power sources for the in-space propulsion of spacecraft offered potential with regard to crew and cargo missions to the Moon, Mars and beyond, and scientific missions to the outer solar system, enabling faster and more robust human and robotic missions.

234. The view was expressed that, at a time when deep-space exploration had become an increasingly topical issue, as evidenced by a number of space missions and projects, commitment to promoting the highest safety and security standards for the use of nuclear power source applications in outer space should remain the key priority. The delegation expressing that view recalled that in the preamble of General Assembly resolution 47/68, in which the Assembly adopted the Principles, it was stated that nuclear power sources were particularly suited to and even indispensable for certain deep-space exploration missions but must be used responsibly and in strict compliance with the highest standards of safety and security.

235. The Subcommittee noted that international cooperation was essential for sharing knowledge, understanding and best practices related to the implementation of the Principles and the Safety Framework acquired by States and international intergovernmental organizations using nuclear power source applications. In that regard, the Subcommittee welcomed the work of the Working Group on the Use of Nuclear Power Sources in Outer Space under its new five-year workplan for 2024–2028 and under the able chairmanship of Leopold Summerer (Austria).

236. The Subcommittee also noted that the Working Group provided an important mechanism for the sharing of information in order to promote the further understanding and awareness of effective processes to ensure the safe use of nuclear power in space by conducting its work under the three core objectives of the five-year workplan, namely: (a) to promote and facilitate the implementation of the Safety Framework for Nuclear Power Source Applications in Outer Space (objective 1); (b) to collect and analyse relevant technical information about potential future uses of nuclear power sources in outer space, in particular those involving nuclear reactors (objective 2); and (c) to discuss the implications of the analysis described in objective 2 with respect to further work of the Working Group and recommend suitable actions to the Subcommittee (objective 3).

237. The Subcommittee further noted that it was important for the Working Group, with a view to advancing its objectives under the five-year workplan, to invite more



member States and international intergovernmental organizations, in particular IAEA, to join the Working Group and share their views, plans and experiences, and for the Working Group to agree on appropriate activities to collect information on potential future uses of nuclear power sources in outer space. Those efforts should also involve States wishing to acquire nuclear power source capabilities in the near future.

238. The view was expressed that there was a need for further work on the safety aspects of space systems using nuclear power sources, in particular nuclear fission reactors and new types and uses of radioisotope power systems. The delegation expressing that view was also of the view that the Working Group, under its new workplan, should consider those areas of work and explore viable options for gathering information and for the exchange of knowledge, including with private commercial entities.

239. The view was expressed that the safety of humans and the environment should remain the highest priority when nuclear power source applications were used in outer space.

240. The view was expressed that research on the development and use of nuclear power sources in outer space should remain closely aligned with the current objectives of the Working Group. The delegation expressing that view recalled the provisions of the Outer Space Treaty and reiterated the importance of carrying out space activities exclusively for peaceful uses.

241. The Working Group on the Use of Nuclear Power Sources in Outer Space held four meetings. At its 1011th meeting, on 8 February, 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**

242. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 15, 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.

243. The representatives of China, India, Indonesia, Pakistan and South Africa made statements under agenda item 15. 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.

244. The Subcommittee heard a technical presentation entitled “The Radiocommunication Assembly (RA-23) and the World Radiocommunication Conference (WRC-23): results and future agenda”, by the observer for ITU.

245. In accordance with the invitation extended by the Subcommittee at its sixtieth session, in 2023 ([A/AC.105/1279](#), para. 267), 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.1/2024/CRP.19. The Subcommittee invited ITU to continue to submit reports to it.

246. Some delegations expressed the view that the geostationary orbit was a limited natural space resource that played an indispensable and important role in supporting commercial and socioeconomic development, and that it should be made available on an equitable basis to all States, irrespective of their technical or socioeconomic development, and governed by the relevant provisions of the ITU Constitution, the ITU Radio Regulations and the Outer Space Treaty.

247. The view was expressed that the role of ITU in seeking to make rational use of geostationary orbit resources, and its efforts to improve the equitable availability of those scarce resources for all States, were commendable.

248. The view was expressed that use of the geostationary orbit provided crucial socioeconomic support by enabling the use of applications and technologies that supported programmes such as telemedicine, tele-education, disaster management and risk mitigation, as well as the provision of maritime weather alerts and public transportation information, all of which addressed specific needs of the various sectors of society through the provision of communications services wherever terrestrial communication systems had not yet adequately penetrated.

249. The view was expressed that the geostationary orbit was a limited natural space resource with strategic and economic value and, owing to its specific characteristics and conditions and its unique place in outer space, it required a specific technical and governance mechanism to effectively and adequately allocate its rational use between States.

250. Some delegations expressed the view that the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee (A/74/20, annex II) played a role in ensuring the equitable and effective use of the radio frequency spectrum and orbital zones used by satellites, although more efforts were needed. The delegations expressing that view also urged States to continue working towards the effective implementation of the Guidelines.

251. The view was expressed that, while the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee protected the geostationary orbit region, more efforts were required in order to ensure that the geostationary orbit, as a scarce resource, continued to be adequately and equitably managed. In addition, there was a call for greater coordination between the Committee and ITU to streamline discussions on issues related to the utilization of the geostationary orbit, in order to ensure that all States members of the Committee agreed on geostationary usage practices and to thus ensure its rational, balanced, efficient and equitable allocation and use.

252. The view was expressed that the current framework of ITU posed regulatory challenges with regard to use of the geostationary orbit and that some specific regulations created difficulties for the unbiased distribution of that limited resource. As such, obtaining equitable access to frequency and orbital resources presented a significant challenge for new entrants to the commercial space industry. The delegation expressing those views also highlighted that procedures within the framework of ITU for attaining allotments, use of the “first-come, first-served” principle, the practice of conducting operations to temporarily fill slots in order to comply with the rules but then manoeuvre geostationary satellites to more permanent locations, thus blocking orbital slots from others, and the harmful interference caused by large constellations in low Earth orbit, all served to unreasonably restrict the equitable and rational use of the geostationary orbit for all States.

253. The view was expressed that it should be determined whether there was a need to create specialized working groups and intergovernmental panels tasked with finding joint solutions to the challenges associated with the shared use of geostationary orbits.

### **XIII. Draft provisional agenda for the sixty-second session of the Scientific and Technical Subcommittee**

254. In accordance with General Assembly resolution 78/72, the Subcommittee considered agenda item 16, entitled “Draft provisional agenda for the sixty-second session of the Scientific and Technical Subcommittee”.

255. The Subcommittee noted that the secretariat had scheduled its sixty-second session to be held from 3 to 14 February 2025.

256. The Subcommittee agreed that the following items would be proposed to the Committee for inclusion in the agenda of the Subcommittee at its sixty-second session:

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.  
(Work for 2025 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))
11. Future role and method of work of the Committee.
12. Space and global health.
13. Use of nuclear power sources in outer space.  
(Work for 2025 as reflected in the multi-year workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space (see para. 241 above and annex III, para. 6))
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.  
(Single issue/item for discussion)
15. Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges.  
(Single issue/item for discussion)
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.

257. The Subcommittee agreed to include the item entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” on

its provisional agenda for its sessions in 2025, 2026, 2027, 2028 and 2029 as a single issue/item for discussion. The Subcommittee agreed that, under that item at its session in 2029, it would consider and decide whether to retain that item on its provisional agenda.

258. The Subcommittee noted that the scope of the agenda item entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” was to be closely linked to its title, within the mandate of the Committee and the remit of the Subcommittee.

259. 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-second session of the Subcommittee, in 2025, was to be organized by IAF on the topic “Space for climate action”.

## Annex I

### Report of the Working Group of the Whole

1. In accordance with paragraph 10 of General Assembly resolution 78/72, the Scientific and Technical Subcommittee, at its sixty-first session, reconvened its Working Group of the Whole.
2. From 30 January to 8 February 2024, the Working Group held ten 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-second session of the Scientific and Technical Subcommittee.
4. The Working Group noted that the zero draft of the Pact for the Future had been issued on 26 January 2024 by the co-facilitators of the preparatory process for the Summit of the Future, appointed by the President of the General Assembly, and that the zero draft contained section 5.10, on outer space (paras. 145–148 of the zero draft) as part of its chapter 5, entitled “Transforming global governance”. The Working Group also noted that information on the preparatory process for the Summit of the Future was contained in the letters of the co-facilitators dated 26 January 2024.
5. The Working Group recalled that at its sixty-sixth session, the Committee requested the Scientific and Technical Subcommittee to consider at its sixty-first session, under the item entitled “Future role and method of work of the Committee”, the scope, duration and title of an agenda item related to dark and quiet skies and large constellations, with a view to recommending the item to the Committee at its sixty-seventh session, for inclusion on the agenda of the Subcommittee.
6. The Working Group agreed that the title of the agenda item would be “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges”.
7. At its 10th meeting, on 8 February, the Working Group agreed on the following proposed actions to be taken by the Subcommittee:
  - (a) Agree to include the item entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” on its provisional agenda for its sessions in 2025, 2026, 2027, 2028 and 2029 as a single issue/item for discussion;
  - (b) Agree that, under that item at the Subcommittee’s session in 2029, the Subcommittee would consider and decide whether to retain that item on its provisional agenda;
  - (c) Note that the scope of the agenda item entitled “Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges” was to be closely linked to its title, within the mandate of the Committee and the remit of the Subcommittee.
8. The Working Group had before it the conference room paper on a consultation mechanism for lunar activities, submitted by the delegation of Romania (A/AC.105/C.1/2024/CRP.30).
9. The Working Group noted that informal consultations led by the delegation of Romania had been held on the establishment of an action team to study a potential

consultative mechanism for lunar activities within the framework of the Committee. The Working Group noted the importance of that matter and the desirability of having a dedicated forum to further assess lunar and cislunar coordination and consultation activities. The Working Group requested the delegation of Romania to submit its proposal on the establishment of an action team within the framework of the Committee to the Legal Subcommittee at its sixty-third session, in 2024, under the Legal Subcommittee's agenda item on the future role and method of work of the Committee, for further discussion, so that the final decision could be made by the Committee at its sixty-seventh session, in 2024.

10. The Working Group of the Whole noted that, in accordance with General Assembly resolution 78/72, the Scientific and Technical Subcommittee would submit to the Committee its proposal for the draft provisional agenda for the sixty-second session of the Subcommittee, to be held in 2025.

11. The Working Group considered the list of substantive items contained in the provisional agenda for the sixty-first session of the Subcommittee ([A/AC.105/C.1/L.412](#)) and recommended that the same substantive items be considered at the sixty-second session of the Subcommittee, to be held in 2025, with the addition of an item entitled "Dark and quiet skies, astronomy and large constellations: addressing emerging issues and challenges".

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 International Astronautical Federation would organize a symposium to be held at the sixty-second session of the Subcommittee. The Working Group agreed that the topic of the 2025 symposium should be "Space for climate action".

13. At its 10th meeting, on 8 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 10 of General Assembly resolution 78/72, the Scientific and Technical Subcommittee, at its sixty-first session, reconvened its Working Group on the Long-term Sustainability of Outer Space Activities.
2. The Working Group held meetings from 30 January to 8 February 2024, with Umamaheswaran R. (India) as Chair.
3. The Working Group had before it:
  - (a) Working paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities containing summaries of implementation experiences, opportunities for capacity-building and challenges (A/AC.105/C.1/L.410);
  - (b) Conference room paper submitted by Canada containing an update on implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.4);
  - (c) Conference room paper submitted by the United Kingdom containing an update on its reporting approach for the voluntary implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.21);
  - (d) Conference room paper submitted by the Islamic Republic of Iran on bridging the gap and empowering States in pursuit of space sustainability (A/AC.105/C.1/2024/CRP.25);
  - (e) Conference room paper submitted by India containing a proposal for a new guideline for the long-term sustainability of outer space activities (A/AC.105/C.1/2024/CRP.32);
  - (f) Conference room paper submitted by Portugal containing a report on the technical preparatory symposium of the United Nations/Portugal Conference on Management and Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.34);
  - (g) Conference room paper submitted by the Moon Village Association containing a written contribution for the Working Group on the Long-term Sustainability of Outer Space Activities (A/AC.105/C.1/2024/CRP.5);
  - (h) Conference room paper submitted by SGAC containing information on a proposed intergenerational pact for space sustainability (A/AC.105/C.1/2024/CRP.13);
  - (i) Conference room paper submitted by EAS, ESO, For All Moonkind, IAU, the Open Lunar Foundation, SKAO and SWF containing information on the protection of astronomy and science on the Moon (A/AC.105/C.1/2024/CRP.14);
  - (j) Conference room paper submitted by COSPAR, For All Moonkind, IAU and SGAC, also on behalf of the Lunar Policy Platform, containing information on promoting the long-term sustainability of lunar activities through good practices encouraging due regard for lunar science and ethics (A/AC.105/C.1/2024/CRP.15);
  - (k) Non-paper by India containing a proposal for a way ahead for the Working Group on the Long-term Sustainability of Outer Space Activities;
  - (l) Non-paper by the United Kingdom containing a proposal for a potential approach to understanding challenges and developing recommendations on the long-term sustainability of outer space activities;
  - (m) Non-paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities containing possible decisions to be taken by the Working Group at the sixty-first session of the Subcommittee.

4. The Working Group noted that, in addition to the new documents before it at the present session, documents from past sessions, including [A/AC.105/C.1/L.367](#) and [A/AC.105/2019/CRP.16](#), remained relevant to its work.
5. 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 informal consultations on the margins of the session.
6. The Working Group reaffirmed the need to structure its work, giving equal importance and an equitable amount of time to each of the elements of its terms of reference ([A/AC.105/1258](#), annex II, appendix, paras. 4 and 6).
7. The view was expressed that there was a need to agree on criteria for and establish proper procedures to facilitate consideration of proposals for new draft guidelines.
8. The Working Group noted with satisfaction the workshop that it had held on 6 February 2024, and that the report on the workshop would be made available following the sixty-first session.
9. The Working Group noted that the working paper by the Chair ([A/AC.105/C.1/L.410](#)) contained summaries that did not represent a consensus by the Working Group with regard to content or language formulation and that the document could be better aligned with the agreed mandate of the Working Group.
10. The Working Group agreed to hold an informal online meeting in April or May 2024 to discuss approaches to categorizing challenges to the long-term sustainability of outer space activities, with a view to including the ideas of all member States. That informal meeting would be used to seek feedback on approaches before future meetings.
11. The Working Group requested the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities to coordinate with the Chair of the Committee and the secretariat to make arrangements for the Working Group to be able to meet during the sixty-seventh session of the Committee, in June 2024, making use of available interpretation services.
12. Some delegations expressed the view that one possible recommendation could be that the Working Group encourage continued reporting of experiences, practices and lessons learned in relation to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee ([A/74/20](#), annex II) through the use of non-papers and conference room papers and, ultimately, in the proposed information repository.
13. The view was expressed that despite the fact that implementation of the Guidelines was voluntary, some key elements were crucial for the implementation of the Guidelines, in particular data and information, knowledge and technology, and infrastructure and technical resources.
14. The Working Group agreed that, during its meetings at the sixty-seventh session of the Committee, in June 2024, it would work through the challenges to the long-term sustainability of outer space activities, including categorization of the challenges, without prejudice to the prioritization of challenges. The intention would be to develop a common understanding of the challenges and potentially uncover new challenges not previously discussed.
15. The Working Group requested that the content of document [A/AC.105/C.1/L.410](#) be revised and/or updated by the Chair, with the support of the secretariat, on the basis of the discussions held during the present session, and be made available in the six official languages of the United Nations in advance of the sixty-seventh session of the Committee, with a view to developing possible recommendations. It was noted that members of the Working Group should send any related written comments to the Chair and the secretariat no later than 5 April 2024, so that they could be included in the new document.
16. On 8 February 2024, 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 10 of General Assembly resolution 78/72, the Scientific and Technical Subcommittee, at its 995th meeting, on 29 January 2024, 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).

3. The Working Group had before it the documents listed in paragraph 228 of the present report.

4. The Working Group met both in informal and formal meetings during the sixty-first session of the Subcommittee to discuss the documents before it, and recalled that during 2023 it had held an intersessional meeting to discuss ways of implementing the five-year workplan.

5. The Working Group recalled that 2024 marked the fifteenth anniversary of the adoption of the Safety Framework for Nuclear Power Source Applications in Outer Space by the Scientific and Technical Subcommittee at its forty-sixth session, in February 2009. The Working Group further recalled the subsequent agreement to the Safety Framework of the Commission on Safety Standards of the International Atomic Energy Agency (IAEA) at its twenty-fifth meeting, in April 2009. In that connection, the Working Group recalled that the Safety Framework was widely accepted and had proved valuable to Member States in developing and applying their national systems for ensuring the safe use of nuclear power sources (NPS) in outer space. Other Member States and international intergovernmental organizations that were not currently involved in utilizing nuclear power sources in outer space had acknowledged and accepted the usefulness of the Safety Framework for examining how to ensure the safe use of such applications.

6. The Working Group agreed to implement its five-year workplan by conducting the following work for the period 2024–2028:

2024 Conduct intersessional work by holding teleconferences and meetings, as necessary, in order to prepare for activities to be implemented under the workplan. Invite IAEA to continue to participate in the work of the Working Group.

Define, discuss and plan appropriate activities to collect information about potential future uses of NPS in outer space, including with IAEA.

Request the Secretariat to invite States members of the Committee and international intergovernmental organizations to collect and make technical presentations pursuant to objectives 1 and/or 2 of the workplan.

2025 Conduct intersessional work by holding teleconferences and meetings, as necessary, in order to prepare for activities to be implemented under the workplan. Receive technical presentations pursuant to the invitation extended in 2024. In its report to the Subcommittee, the Working Group will:

(a) Summarize the technical presentations received on plans, progress to date and any challenges faced or foreseen in implementing the Safety Framework;

- (b) Summarize the technical presentations received on potential future uses of NPS in outer space, particularly those involving nuclear reactors;
- (c) Identify significant challenges as referred to in subparagraph (a) above that should be addressed in the presentations planned for 2026 by member States and international intergovernmental organizations;
- (d) Identify safety implications of the information identified under subparagraph (b) above and discuss approaches to address them.

Request the Secretariat to invite States members of the Committee and international intergovernmental organizations to collect and make technical presentations pursuant to objectives 1 and/or 2 of the workplan.

2026 Conduct intersessional work by holding teleconferences and meetings, as necessary, in order to prepare for activities to be implemented under the workplan. Receive technical presentations under the same arrangements as in 2025. In its report to the Subcommittee, the Working Group will:

- (a) Summarize the technical presentations received on plans, progress to date and any challenges faced or foreseen in implementing the Safety Framework;
- (b) Summarize the technical presentations received on potential future uses of NPS in outer space, particularly those involving nuclear reactors;
- (c) Identify significant challenges as referred to in subparagraph (a) above that should be addressed in the presentations planned for 2027 by member States and international intergovernmental organizations;
- (d) Identify safety implications of the information identified under subparagraph (b) above and discuss approaches to address them, including options for further work of the Working Group and for recommendations to the Subcommittee.

Request the Secretariat to invite States members of the Committee and international intergovernmental organizations to collect and make technical presentations pursuant to objectives 1 and/or 2 of the workplan.

2027 Conduct intersessional work by holding teleconferences and meetings, as necessary, in order to prepare for activities to be implemented under the workplan. Receive technical presentations under the same arrangements as in 2026. In its report to the Subcommittee, the Working Group will indicate its recommendation as to whether the current workplan should be extended and, if it is not to be extended, prepare a draft report summarizing:

- (a) The technical presentations received and the challenges identified during the course of the workplan;
- (b) The analysis described under objective 2;
- (c) Eventual recommendations for further work of the Working Group and suitable actions.

2028 If the workplan has not been extended, finalize the report.

7. The Working Group agreed that one of the possible methods for collecting information under the objectives of the workplan, and as a way to invite more member States and international intergovernmental organizations to join the Working Group

and share their views, plans and experiences, could be the use of a dedicated list of questions in the form of a questionnaire. The Working Group noted that the preliminary set of questions to collect information, as contained in conference room paper A/AC.105/C.1/2024/CRP.31, would be further elaborated during the intersessional meetings of the Working Group, facilitated by the secretariat.

8. The Working Group agreed to hold an intersessional meeting, facilitated by the secretariat, on the margins of the sixty-seventh session of the Committee, preferably on 20 and 21 June 2024, with a view to finalizing the preliminary set of questions, which could eventually form an appendix to the next report of the Working Group to the Subcommittee. The Working Group also agreed to hold an intersessional meeting in the third quarter of 2024.

9. The Working Group agreed that another possible method of collecting information under the objectives of its workplan was to hold a dedicated workshop with IAEA.

10. The view was expressed that in furthering the objectives of its workplan and in agreeing on appropriate activities to collect information about potential future uses of NPS in outer space, including from non-governmental and commercial sector entities, the Working Group should take into account that gathering such information from those entities should be done under the auspices and responsibility of States.

11. The Working Group agreed that, should its implementation plan as contained in paragraph 6 above be endorsed, it would request the secretariat to invite States members of the Committee and international intergovernmental organizations to collect and make technical presentations pursuant to objectives 1 and/or 2 of the workplan at the next session of the Subcommittee.

12. 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](http://www.unoosa.org/oosa/en/COPUOS/stsc/wgnps/index.html)).

13. The Working Group requested the secretariat to invite States members of the Committee and international intergovernmental organizations to provide the details of focal points of contact for the Working Group.

14. The Working Group noted that in order to encourage informal discussions and enhance exchanges among member States, the secretariat should, when practicable, seek measures to avoid scheduling informal meetings of the Working Group concurrently with plenary meetings and instead utilize designated time slots before the morning meetings and during the lunch break for informal meetings.

15. At its 4th meeting, on 8 February, the Working Group adopted the present report.

---