United Nations A/AC.105/C.1/L.411/Add.1

General Assembly

Distr.: Limited
31 January 2024

Original: English

Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
Sixty-first session
Vienna, 29 January–9 February 2024

Draft report

Addendum

III. Space debris

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

2. 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 the European Space Agency and COSPAR also made statements.

3. 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).

4. 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).

5. 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.

6. 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 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.

7. 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.

8. 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.

9. 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.

10. 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.

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

12. 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.

13. 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.

14. 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.

15. Some delegations welcomed the establishment by ESA 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.

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

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

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.