



# General Assembly

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**Committee on the Peaceful  
Uses of Outer Space  
Scientific and Technical Subcommittee  
Forty-fourth session  
Vienna, 12-23 February 2007**

## **Draft report**

### **Addendum**

## **V. Space debris**

1. In accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee continued its consideration of agenda item 7, "Space debris", in accordance with the workplan adopted by the Subcommittee at its forty-second session (A/AC.105/848, annex II, para. 6).
2. The representatives of Argentina, Australia, Canada, China, the Czech Republic, France, Germany, India, Italy, Japan, Malaysia, the Republic of Korea, the Russian Federation, South Africa, Ukraine and the United States made statements on the item.
3. The Subcommittee heard the following scientific and technical presentations on the item:
  - (a) "USA: space debris environment and policy updates", by the representative of the United States;
  - (b) "Activities of the Russian Federation on the space debris problem", by the representative of the Russian Federation;
  - (c) "Main 2006 space debris activities in France", by the representative of France;
  - (d) "Results of the GEO region artificial object population research and proposals for the organization of cooperative international GEO space debris monitoring", by the representative of the Russian Federation.
4. The Subcommittee had before it the following:



(a) Note by the Secretariat on national research on space debris, safety of space objects with nuclear power sources on board and problems relating to their collision with space debris, containing replies received from Member States on the issue (A/AC.105/888) and A/AC.105/C.1/2007/CRP.10;

(b) Progress report of the Chairman of the Working Group on Space Debris (A/AC.105/C.1/L.284).

5. The Subcommittee agreed that Member States, in particular space-faring countries, should pay more attention to the problem of collisions of space objects, including those with nuclear power sources (NPS) on board, with space debris and to other aspects of space debris, as well as its re-entry into the atmosphere. It noted that the General Assembly, in its resolution 61/111, had called for the continuation of national research on the question, for the development of improved technology for the monitoring of space debris and for the compilation and dissemination of data on space debris and had agreed that international cooperation was needed to expand appropriate and affordable strategies to minimize the impact of space debris on future space missions. The Subcommittee agreed that research on space debris should continue and that Member States should make available to all interested parties the results of that research, including information on practices that had proved effective in minimizing the creation of space debris.

6. Some delegations expressed the view that not only must renewed efforts be expended by the Committee on the mitigation of the production of debris, but also the Scientific and Technical Subcommittee must investigate possible ways to remove existing space debris. That would be particularly important for the more highly used altitudes of the low-Earth orbit.

7. Some delegations expressed the view that the destruction of space systems, which generated long-lived debris, was highly discouraged and should be avoided.

8. The Subcommittee noted with appreciation that a number of approaches and concrete actions, covering various aspects of space debris mitigation, had been adopted by some States, such as the reorbiting of satellites, passivation, end-of-life operations and the development of specific software and models for space debris mitigation, in accordance with the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines. The Subcommittee also noted that research was also being conducted on space debris observation technology, space debris environmental modelling and technologies to protect space systems from space debris and to limit a new generation of space debris.

9. The Subcommittee agreed that Member States and space agencies should again be invited to provide reports on research on space debris, safety of space objects with NPS on board and problems relating to their collision with space debris.

10. The Subcommittee recalled that at its forty-third session, consensus had been reached by the Working Group on Space Debris on the draft space debris mitigation guidelines, contained in document A/AC.105/C.1/L.284, and that the Subcommittee had agreed that the draft guidelines would be circulated at the national level to secure consent for approval by the Subcommittee at its forty-fourth session.

11. The Subcommittee noted that it could consult IADC periodically regarding future revisions of the IADC Guidelines due to evolving technologies and debris

mitigation practices and that the draft space debris mitigation guidelines of the Subcommittee could be amended in accordance with such revisions.

12. The Subcommittee noted that some States had implemented, through their national agencies, space debris mitigation measures consistent with the IADC Guidelines or had developed their own space debris mitigation standards based on the IADC Guidelines. The Subcommittee also noted that other States were using the IADC Guidelines, as well as the European code of conduct for space debris mitigation, as a reference in the regulatory framework established for national space activities.

13. The Subcommittee agreed that the successful approval of voluntary guidelines by the Subcommittee for the mitigation of space debris would increase mutual understanding on acceptable activities in space and thus enhance stability in space and decrease the likelihood of friction and conflict.

14. The Subcommittee agreed that the space debris mitigation guidelines developed in the Subcommittee would meet the following basic conditions:

(a) They would be technically based on the IADC Space Debris Mitigation Guidelines;

(b) They would be technically consistent with the goals and the substance of the IADC Guidelines;

(c) They would not be more stringent than the IADC Guidelines; and

(d) They would remain voluntary and not be legally binding under international law.

15. The view was expressed that a legally non-binding set of guidelines was not sufficient and that the Committee should do more to stress the importance of the guidelines in promoting the safe and peaceful use of outer space.

16. The view was expressed that the Subcommittee should consider submitting the space debris mitigation guidelines as a draft resolution of the General Assembly rather than as an addendum to the report of the Committee, in order to highlight the importance of the guidelines and the continued effectiveness of the Committee in addressing major issues affecting long-term access to outer space and its use for peaceful purposes.

17. The view was expressed that the States largely responsible for the creation of the present situation and those having the capability to take action on space debris mitigation should contribute to space debris mitigation efforts in a more significant manner than other States.

18. At its 673rd meeting, the Subcommittee considered the adoption of the draft space debris mitigation guidelines (A/AC.105/C.1/L.284).

19. The Subcommittee agreed with a proposal to amend the last sentence of section 3 of document A/AC.105/C.1/L.284 to read "It is also recognized that exceptions to the implementation of individual guidelines or elements thereof may be justified, for example, by the provisions of the United Nations treaties and principles on outer space".

20. The view was expressed that although the proposed amendment provided an explicit exception that weakened the general prohibition foreseen by the draft space debris mitigation guidelines, that delegation would not oppose consensus on the adoption of the guidelines.

21. The space debris mitigation guidelines, as amended, were adopted by the Subcommittee at its 673rd meeting. It was noted that the guidelines would be made available in all official languages of the United Nations.

22. The Subcommittee expressed its appreciation to Claudio Portelli (Italy) in his role as Chairman of the Working Group on space debris, which developed the space debris mitigation guidelines adopted by the Subcommittee.

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

23. In accordance with General Assembly resolution 61/111, the Scientific and Technical Subcommittee continued its consideration of agenda item 8, "Use of nuclear power sources in outer space", under the multi-year workplan for the period 2003-2007, adopted at its fortieth session (A/AC.105/804, annex III) and amended at its forty-second session (A/AC.105/848, annex III).

24. The representatives of Nigeria, the United States and Venezuela (Bolivarian Republic of) made statements under the agenda item.

25. Some delegations were of the view that the NPS applications used in space missions represented a key element needed to meet the challenges and objectives of space exploration.

26. Some delegations were of the view that serious consideration should be given to the possible impact that missions carrying NPS on board could have on human life and the environment.

27. The view was expressed that the use of fission reactors in outer space was a serious threat to humanity. That delegation was of the view that, while the use of NPS for interplanetary missions was feasible, provided that other options for generating nuclear power were optimized, the use of NPS in Earth orbit was not acceptable.

28. The Subcommittee noted the continuation by Member States of the NPS-based space missions Cassini-Huygens, New Horizons, Opportunity and Spirit, with rovers on Mars, and the plans to use NPS on the next generation rover on Mars in 2009.

29. The view was expressed that the tasks outlined in the timeline of the joint activities of the Subcommittee and IAEA in developing a safety framework for NPS applications in outer space, contained in annex I of document A/AC.105/C.1/L.289, could be accomplished within the shorter time frame.

30. Pursuant to General Assembly resolution 61/111, the Subcommittee, at its 662nd meeting, on 14 February, reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space under the chairmanship of Sam A. Harbison (United Kingdom). The Working Group held five meetings.

31. The Subcommittee noted with satisfaction the progress made during the intersessional period by the Working Group, in accordance with the multi-year workplan, on the development of a safety framework for NPS applications in outer space. In particular, the Subcommittee noted the preparation of a document (A/AC.105/C.1/L.289) and the participation of the Working Group at the twentieth session of the IAEA Commission on Safety Standards, held in Vienna on 21 and 22 November 2006.
32. The Subcommittee noted that, at its current session, the Working Group had updated its report entitled “Development of an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space” (A/AC.105/C.1/L.289). The finalized report (A/AC.105/C.1/2007/CRP.16) was adopted by the Working Group using interpretation facilities.<sup>1</sup>
33. At its 647th meeting, on 22 February, the Subcommittee endorsed the report of the Working Group (see annex [...] to the present report).
34. The Subcommittee endorsed the recommendation of the Working Group that, in order to prepare and publish the safety framework for NPS applications in outer space, a partnership be established between the Subcommittee and IAEA by means of a joint expert group, consisting of representatives of the Subcommittee and of IAEA. In that connection, the Subcommittee endorsed a new workplan proposed by the Working Group for the period 2007-2010.
35. The Subcommittee expressed its appreciation to the Chairman of the Working Group for his leadership in guiding the work of the Working Group.

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<sup>1</sup> The report will be made available as document A/AC.105/C.1/L.289/Rev.1.