



General Assembly

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**Committee on the Peaceful
Uses of Outer Space**

**Inter-Agency Space Debris Coordination Committee
proposals on space debris mitigation: comments received
from member States of the Committee on the Peaceful Uses
of Outer Space**

Note by the Secretariat

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I. Introduction

1. At its forty-sixth session, the Committee on the Peaceful Uses of Outer Space noted that, in accordance with General Assembly resolution 57/116, of 11 December 2002, the Scientific and Technical Subcommittee had continued its consideration of the item on space debris in accordance with the work plan adopted at its thirty-eighth session (A/AC.105/761, para. 130). The Committee noted with satisfaction that, in accordance with that work plan, the Inter-Agency Space Debris Coordination Committee (IADC) had presented its proposals on debris mitigation (A/AC.105/C.1/L.260), based on consensus among the IADC members, at the fortieth session of the Subcommittee. According to its work plan, the Subcommittee had begun its review of the IADC proposals and discussed means of endorsing their utilization.
2. The Committee requested all its member States to study the IADC proposals and to provide their comments to the Office for Outer Space Affairs before the forty-first session of the Subcommittee, in 2004.
3. In paragraph 20 of its resolution 58/89 of 9 December 2003, the Assembly agreed that the Subcommittee, at its forty-first session, could establish a working group to consider comments from member States of the Committee on the IADC proposals. The working group could consider further progress on the subject, including continuing discussions on means of endorsing utilization of the IADC space debris mitigation guidelines (A/AC.105/C.1/L.260, annex).
4. The present document was prepared by the Secretariat on the basis of information received from member States.

II. Replies received from member States

India

[Original: English]

1. Post-mission disposal of satellites in the geosynchronous region (para. 5.3.1)

1. The IADC proposals stated that the recommended minimum increase in perigee altitude at the end of re-orbiting was:

$$235 \text{ km} + (1,000 \cdot C_R \cdot A/m)$$

that recommendation did not specify the limits of eccentricity of the orbit, after re-orbiting. A high eccentricity may have effects on the orbit to lower the perigee. The limits of eccentricity from this angle may have to be discussed and determined.

2. Paragraph 5.3.1 of the IADC proposals, on the geosynchronous region, stated that “operators should avoid the long-term presence of launch vehicle orbital stages in the geosynchronous region”. There are currently only one or two launch vehicles in the world that can take satellites to the geostationary Earth orbit directly by using the final propulsion stage of the launch vehicle. Once the injection velocity and flight path angle are achieved for the last stage of the launch vehicle and the satellite, it may not be possible to alter the orbit of the spent stage of the launch

vehicle to meet the above guidelines. In addition, a large number of in-orbit break-ups were caused by such launch vehicle stages. The phrase “long-term presence” was not precisely defined in terms of number of years. The feasibility of implementation of such a recommendation may have to be studied.

3. The International Telecommunication Union (ITU) guidelines for the disposal of spacecraft in the geostationary orbit (ITU-R recommendation S.1003 entitled “Environmental Protection of the Geostationary Orbit”) recommended that the satellite orbit should be raised to no less than 300 km fixed altitude above the geostationary orbit. That recommendation was simple. The minimum perigee altitude for the present and foreseeable size of a satellite to be placed in the geostationary orbit recommended in the IADC guidelines was lower than the minimum perigee altitude recommended in the ITU guidelines. In the light of the above, it is suggested that the IADC and ITU recommendations should be harmonized in terms of the definition of the maximum altitude of disposal orbit and that that altitude should be set at 300 km above the geostationary orbit.

2. Guidelines for the disposal of spacecraft in low-Earth orbit region (para. 5.3.2)

4. The IADC guidelines indicated that a space system at the end of its mission should be left in low-Earth orbit so that the atmospheric drag would restrict the orbital lifetime to a limited number of years. Twenty-five years is recommended as a reasonable and appropriate lifetime limit for such disposal.

5. Considering that a number of nuclear-powered satellites, having completed their missions, are in the low-Earth orbit region as space debris, it should be made clear whether the above recommendation applies to such nuclear-powered space debris. If the recommendation is applicable to such satellites, it is also not clear whether it will be safe in future for a nuclear-powered satellite to re-enter low-Earth orbit when its mode of disintegration may not be clear. Those issues may have to be considered and an appropriate recommendation made.

3. General

6. India greatly appreciates the contribution made by IADC, which is an international forum of governmental bodies on the subject of space debris, to the consideration of the subject of space debris in preparing the document on space debris mitigation guidelines, based on consensus among IADC members. The efforts made by the experts in preparing the document are commendable. India will provide further clarification of its comments, if required, and will participate in the discussions to resolve the issues raised.

Italy

[Original: English]

Taking into account its national experience with the re-entry of the BeppoSax satellite and with reference to paragraph 5.3.2 of the IADC space debris mitigation guidelines, the Government of Italy suggests that, whenever the risk of an uncontrolled space system at re-entry is found to be very high, for example, higher than a one in ten thousand probability, the launching State should inform the

relevant air traffic and maritime traffic authorities, as well as the country focal points, of the re-entry time and trajectory evolutions until re-entry occurs.

Turkey

[Original: English]

The proposals of IADC on space debris mitigation have been carefully studied by the Information Technologies and Electronics Research Institute of the Scientific and Technical Research Council of Turkey. Given the fact that the highest risk in outer space is being posed by nuclear reactors, Turkey is of the opinion that the control and limitation of the usage of nuclear systems in outer space should be enhanced as much as possible.
