



Committee on the Peaceful Uses of Outer Space



STSC: Scientific and Technical Subcommittee

Working Group (WG) of the Whole

WG on the Use of Nuclear Power
Sources in Outer Space

WG on Space and Global Health

WG on the Long-term Sustainability of
Outer Space Activities



LSC: Legal Subcommittee

WG on the Status and Application of the
Five UN Treaties on Outer Space

WG on the Definition and Delimitation
of Outer Space

WG under the item on on potential legal
models for activities in exploration,
exploitation and utilization of space
resources



COPUOS and Space Debris

• Scientific and Technical Subcommittee (STSC)

STSC



- Space debris included in agenda of STSC from 1994
- STSC work plan 1996-1998 on developing technical report on space debris
- STSC Technical Report on Space Debris adopted in 1999
- STSC Working Group on space debris 2004-2006
- COPUOS Space Debris Mitigation Guidelines adopted in 2007
- Space debris

• Legal Subcommittee (LSC)

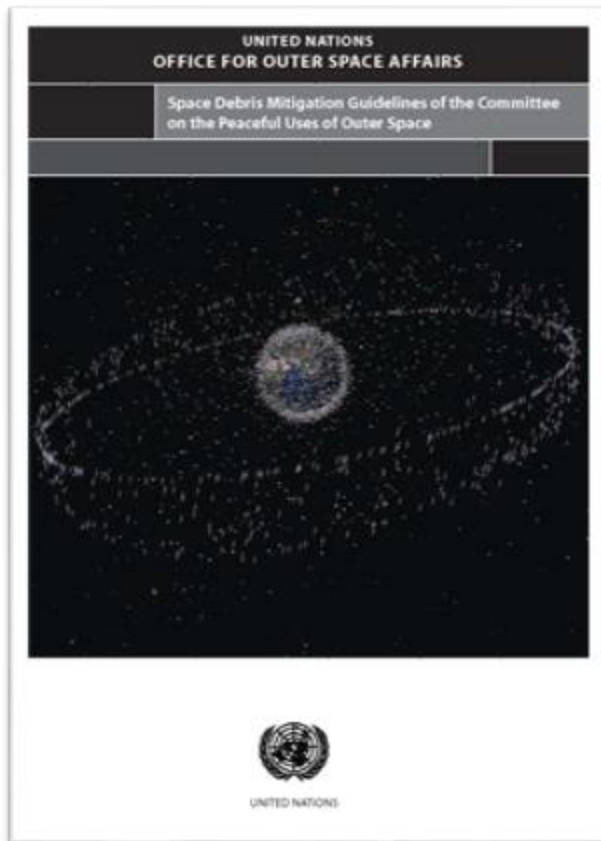
LSC



- LSC agenda item “General exchange of information on national mechanisms relating to space debris mitigation measures” (2009)
- “General exchange of information and views on legal mechanisms relating to space debris mitigation measures, taking into account the work of STSC” (from 2012)
- Compendium of space debris mitigation standards (2014)
- “General exchange of information and views on legal mechanisms relating to space debris mitigation and remediation measures, taking into account the work STSC”



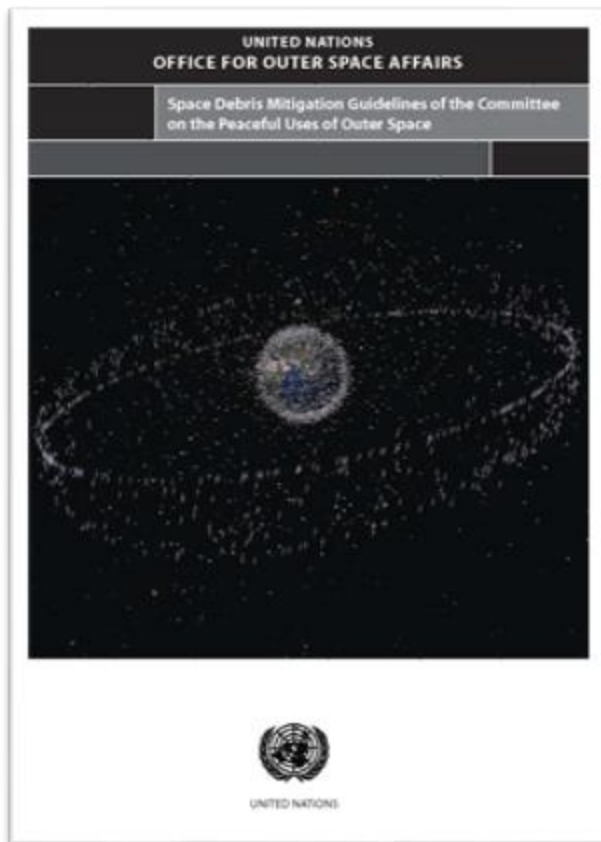
Space Debris Mitigation Guidelines of the Committee



- 2003: In meeting STSC request, IADC presents its proposal on space debris mitigation
- 2004: STSC Working Group on Space Debris is established to develop the Guidelines.
Chair: Claudio Portelli (Italy).
 - WG requests IADC to revise its proposals to reflect MS comments;
 - WG conducts a review cycle among MS and observers;
 - WG develops a revised draft of the guidelines.
- Feb 2007: STSC adopts the guidelines at its 44th session (A/AC.105/890, para. 99).
- Jun 2007: the Committee endorses the guidelines and agrees that its approval of those voluntary guidelines would increase mutual understanding on acceptable activities in space and thus enhance stability in space-related matters and decrease the likelihood of friction and conflict (A/62/20, paras. 118-119).
- 22 Dec 2007, resolution 62/217: GA endorsement of the Guidelines.



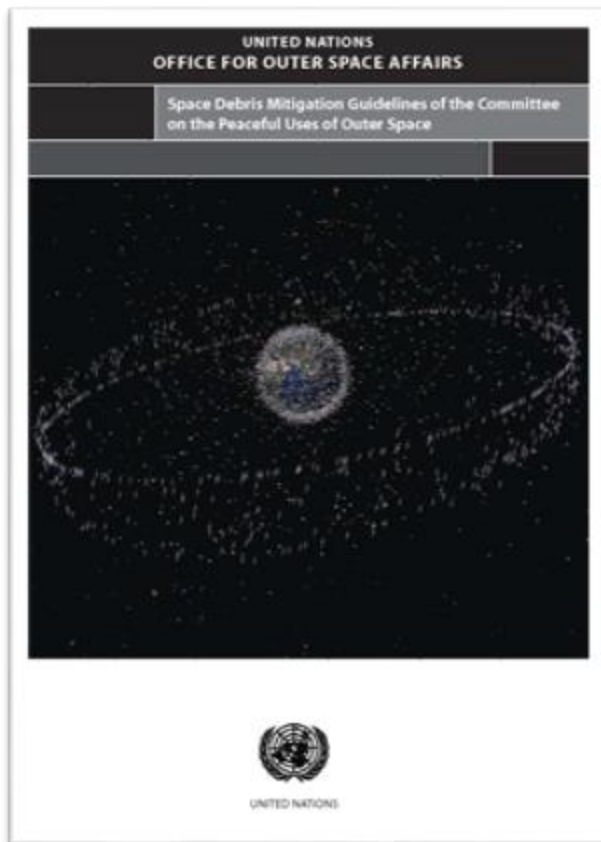
Space Debris Mitigation Guidelines of the Committee



- Guideline 1: Limit debris released during normal operations
 - mission-related objects, including, among other things, sensor covers, separation mechanisms and deployment articles
- Guideline 2: Minimize the potential for break-ups during operational phases
 - plan disposal and passivation measures
 - incorporate potential break-up scenarios in failure mode analysis
- Guideline 3: Limit the probability of accidental collision in orbit
 - estimate and limit probability of accidental collision with known objects during the system's launch phase and orbital lifetime
 - adjust the launch time or consider an on-orbit avoidance manoeuvre.
- Guideline 4: Avoid intentional destruction and other harmful activities
 - conduct at sufficiently low altitudes to limit the orbital lifetime of fragments.



Space Debris Mitigation Guidelines of the Committee



- Guideline 5: Minimize potential for post-mission break-ups resulting from stored energy
 - deplete all on-board sources of stored energy:
 - remove residual propellants, compressed fluids and discharge electrical storage devices
- Guideline 6: Limit the long-term presence of spacecraft and launch vehicle orbital stages in the low-Earth orbit (LEO) region after the end of their mission
 - debris that survives to reach the surface of the Earth should not pose an undue risk to people or property, including through environmental pollution caused by hazardous substances
- Guideline 7: Limit the long-term interference of spacecraft and launch vehicle orbital stages with the geosynchronous Earth orbit (GEO) region after the end of their mission
 - leave objects at the end of their mission in an orbit above the GEO region such that they will not interfere with, or return to, the GEO region



Research on space debris



- Compiled by the Secretariat upon the agreement by STSC that Member States and international organizations with permanent observer status with the Committee should 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 ways in which debris mitigation guidelines were being implemented
- Issued in all UN official languages on the basis of information presented by Member States
- <https://www.unoosa.org/oosa/en/ourwork/topics/space-debris/index.html>



Compendium of space debris mitigation standards

- Developed as a contribution of Canada, the Czech Republic and Germany to the Committee, and in reference to the LSC agenda item on General exchange of information and views on legal mechanisms relating to space debris mitigation measures (2014)

Part 1: National mechanisms

Part 2: International mechanisms

COPUOS Guidelines, IADC Guidelines, ESA Space Debris Mitigation Policy for Agency Projects, ISO Standards and technical reports, ITU Recommendation ITU-R S.1003.2, European Code of Conduct for Space Debris Mitigation

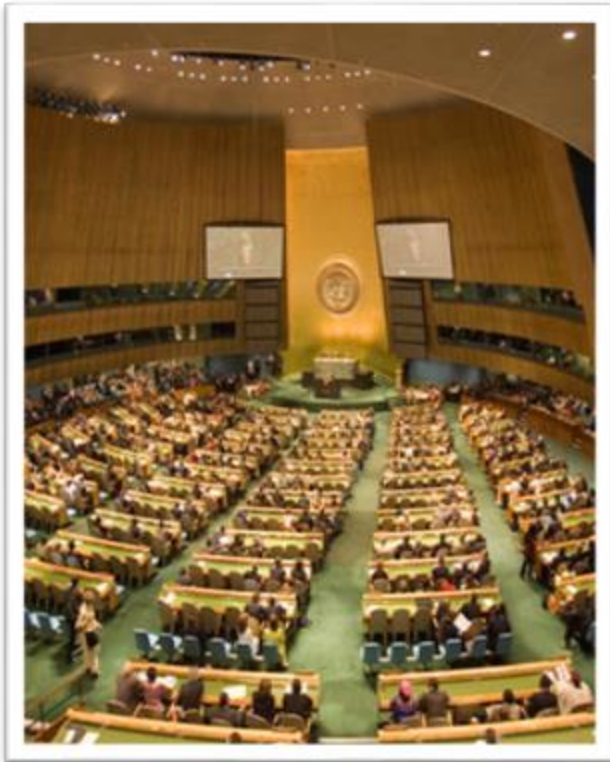
- Hosted by the Office on its website at:
<http://www.unoosa.org/oosa/en/ourwork/topics/space-debris/compendium.html>





GA Resolutions on Int'l cooperation in peaceful uses of outer space

The General Assembly,



- *Deeply concerned* about the fragility of the space environment and the challenges to the long-term sustainability of outer space activities, in particular the impact of space debris, which is an issue of concern to all nations,
- *Invites* States to implement, through relevant national mechanisms, the Space Debris Mitigation Guidelines of the Committee
- *Considers* that it is essential that States pay more attention to the problem of collisions of space objects, especially those with nuclear power sources, with space debris, and other aspects of space debris, and calls for:
 - continuation of national research on this question,
 - development of improved technology for the monitoring of space debris, and compilation and dissemination of data on space debris,
 - agrees that international cooperation is needed to expand appropriate and affordable strategies to minimize the impact of space debris on future space missions.