

COPUOS Activities

Working Group on the Long-term Sustainability of Outer Space Activities

Report to IAA Space Debris Committee October 19, 2019

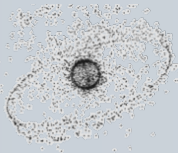
T. Schildknecht





UN COPUOS LTSSA

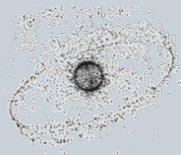
- 2010 Working Group on the Long–Term Sustainability of Outer Space Activities (LTSSA) established
- 2012–2014 Four expert groups (experts from governments, industry, academia)
 - A — Sustainable space utilization supporting sustainable development on Earth
 - B — Space debris, space operations, and tools to support collaborative space situational awareness
 - C — Space weather
 - D — Regulatory regimes and guidance for new actors in the space arena
- 2014–2018 Working group taking over again (official delegation members)
- 2016 COPUOS **consensus on first 12 guidelines** of a compendium
(COPUOS report A/71/20)
- 2018 COPUOS **consensus on preamble and 21 guidelines**, 7 guidelines with no **consensus** (A/AC.105/2018/CRP.20, A/AC.105/2018/CRP.21)
“The Committee noted that the Working Group had discussed, but had not been able to reach consensus on how to refer the preamble and guidelines on the long–term sustainability of outer space activities to the General Assembly.”
(COPUOS takes decisions by absolute consensus of its member States; currently 92)



UN COPUOS LTSSA – Expert Group B

Expert Group B, Issues for further consideration (by the STSC)

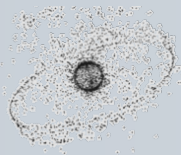
- A. Technical developments and possibilities regarding **space debris removal**
- B. **On-orbit servicing**
- C. Ensuring **information consistency and transfer reliability**



UN COPUOS LTSSA Guidelines

Policy and regulatory framework for space activities

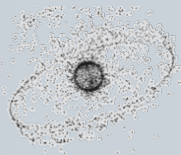
- **A.1** Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities
- **A.2** Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer space activities
- **A.3** Supervise national space activities
- **A.4** Ensure the equitable, rational and efficient use of the radio frequency spectrum and the various orbital regions used by satellites
- **A.5** Enhance the practice of registering space objects



UN COPUOS LTSSA Guidelines

Safety of space operations

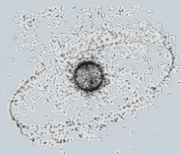
- **B.1** Provide updated contact information and **share information on space objects and orbital events**
- **B.2** **Improve accuracy of orbital data** on space objects and **enhance** the practice and utility of **sharing orbital information** on space objects
- **B.3** Promote the collection, sharing and dissemination of **space debris monitoring information**
- **B.4** **Perform conjunction assessment** during all orbital phases of controlled flight
- **B.5** Develop practical approaches for **pre-launch conjunction assessment**



UN COPUOS LTSSA Guidelines

Safety of space operations

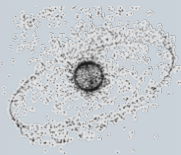
- **B.6** Share operational space weather data and forecasts
- **B.7** Develop space weather models and tools and collect established practices on the mitigation of space weather effects
- **B.8** Design and operation of space objects regardless of their physical and operational characteristics (small-size objects: “same rules for all”)
- **B.9** Take measures to address risks associated with the uncontrolled re-entry of space objects
- **B.10** Observe measures of precaution when using sources of laser beams passing through outer space



UN COPUOS LTSSA Guidelines

International cooperation, capacity-building and awareness

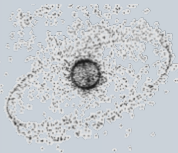
- **C.1** Promote and facilitate international cooperation in support of the long-term sustainability of outer space activities
- **C.2** Share experience related to the long-term sustainability of outer space activities and develop new procedures, as appropriate, for information exchange
- **C.3** Promote and support capacity-building
- **C.4** Raise awareness of space activities



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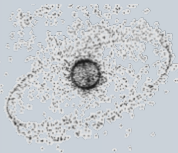
Scientific and technical research and development

- **D.1** Promote and support research into and the development of ways to support sustainable exploration and use of outer space
- **D.2** Investigate and consider **new measures to manage the space debris population in the long term**



UN COPUOS LTSSA Draft Guidelines

- Provide, in national legal and/or policy frameworks, for a **commitment to conducting space activities solely for peaceful purposes**
- Take measures to identify, mitigate and manage the **risk to terrestrial infrastructure** that supports the operation of orbital systems [, launch vehicles and spacecraft]
- Observe procedures for preparing and conducting operations on **active removal** [and intentional destruction] of space objects
- Develop procedures for outer space activities involving **non-registered objects**
- Observe measures for the safe conduct of **proximity space operations**
- Observe measures of precaution when using of natural **space environment modification** techniques for peaceful purposes
- Raise awareness of the need to exclude the use of **information and communications technology** products compromising the safety and security of space objects and related equipment



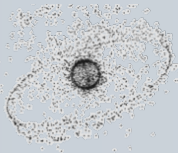
UN COPUOS LTSSA – Way Forward?

2018 COPUOS

- mandate of LTSSA WG ended
- agreed that LTSSA be permanent agenda item of STSC
- No consensus on way forward, options (inter alia)
 - extend mandate of WG (to finalize 7 GL with no consensus)
 - *new working group on safety and transparency (Swiss proposal)*

2019 COPUOS STSC

- no consensus to forward 21 GL to UN GA
- *“working meeting” to identify possible topics (for a “future mechanism”) at margins of COPUOS 2019 (Swiss initiative)*



UN COPUOS LTSSA – Way Forward?

2019 COPUOS

- 1–day meeting hosted by Switzerland:
Possible further work on the long–term sustainability of outer space activities
 - Topic 1 – *Options for collaborative information sharing and exchange with the aim of ensuring the safety and sustainability of space operations*
 - Topic 2 – *Challenges posed by large constellations*
 - Topic 3 – *Issues associated with rendezvous and proximity operations, including active debris removal and on orbit servicing activities*
 - Topic 4 – *Concepts of international coordination of space traffic*
- **21 GL adopted!** (A/74/20, para 163 and Annex II)
- **Decided to establish a new working group on the topic under the Scientific and Technical Subcommittee** (A/74/20, para. 165)