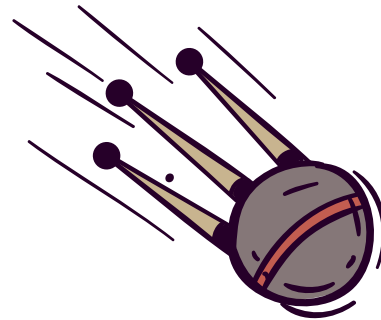


GUIDELINES FOR THE LONG-TERM SUSTAINABILITY OF OUTER SPACE ACTIVITIES

NOVEMBER 2020



ABOUT

The Guidelines for the Long-term Sustainability [LTS] of Outer Space Activities are a set of 21 voluntary best practices negotiated and adopted by consensus at the UN Committee on the Peaceful Uses of Outer Space (UN COPUOS). The guidelines touch on a range of activities aimed at enhancing sustainability of the space environment, safety of space operations, international cooperation, capacity-building, and scientific and technical research.

Although voluntary, the guidelines do become legally binding as states adopt the recommended measures through national legislation and regulations.

The guidelines are considered a “living document” that will be updated periodically.

THE LTS GUIDELINES AND SPACE SECURITY

The guidelines represent the most significant international agreement to advance the governance of space security in decades. Adherence to the guidelines can significantly decrease the risk of catastrophes in outer space, even as the number of uses, users, and objects in space increases.



The guidelines make a critical link between the three pillars of space security: safety, sustainability, and the security of space systems and actors. Although the content is focused on safety and sustainability – in line with the mandate of COPUOS, which is strictly limited to the peaceful uses of outer space – the preamble to the LTS guidelines states that the guidelines are premised on the idea that the “interests and activities of States and international intergovernmental organizations in outer space, as they have or may have defence and national security implications, should be compatible with preserving outer space for peaceful exploration and use.”

However, consensus was not reached on an additional set of less developed and controversial guidelines that dealt more directly with security and dual-use space technology. This set may form the basis of future negotiations.

BACKGROUND

The advancement of voluntary guidelines for the long-term sustainability of outer space activities has been a priority at UN COPUOS since 2010. Over nine years, the LTS working group of the Scientific and Technical Subcommittee of COPUOS developed guidelines based on prevailing best practices. The first set of 12 guidelines was finalized in 2016, the second set of nine guidelines in 2018. All these guidelines were formally adopted by the UN COPUOS plenary in 2019. However, the Plenary was not able to reach consensus on a final report that referred the preamble and guidelines to UN General Assembly.

Work to advance LTS at COPUOS continues, including the provision of support for states to integrate the guidelines into national laws, policies, and frameworks; and then to progress toward implementation.

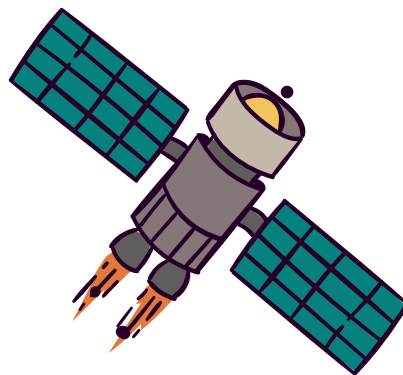
Guideline	Summary
A. Policy and regulatory framework for space activities	
A.1	Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities
A.2	Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer 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
B. 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
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
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
C. 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
D. Scientific and technical research and development	
D.1	Promote and support research on 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
Guideline 30	Design and operation of space objects regardless of their physical and operational characteristics
Guideline 31	Take measures to address risks associated with the uncontrolled re-entry of space objects
Guideline 32	Observe measures of precaution when using sources of laser beams passing through outer space

* As contained in report A/AC.105/2018/CRP.20 "Guidelines for the Long-term Sustainability of Outer Space Activities," Conference room paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities, June 2018. The guidelines have been referred to the UN General Assembly for adoption.

CHALLENGES

Ensuring that the guidelines produce the intended positive impact on space security will be challenging.

- **Interpretation:** The wording of the guidelines is broad and leaves much room for interpretation. This wide scope allows actors with vastly different technical capabilities to begin implementation. However, the value of the guidelines as an international standard and a tool for coordination could be diluted.
- **Implementation:** The guidelines will only have an impact if they are implemented and followed by most, if not all, state actors. Several states have already amended or adopted new national regulations to conform to the guidelines. Now more states must follow.
- **Verification:** There is no mechanism to either compel or verify implementation of the guidelines. However, more states are choosing to include progress in such implementation in their reports at COPUOS. An independent Space Sustainability Rating system is being developed by a group that includes the European Space Agency, Massachusetts Institute of Technology, University of Texas at Austin, and Bryce Space and Technology.



RESOURCES AND FURTHER READING

LTS guidelines, Annex II, <https://www.amazon.com/Space-21st-Century-Innovation-Sustainability/dp/1532784422>.

Michael Simpson, Ray Williamson & Langdon Morris, eds., *Space for the 21st Century: Discovery, Innovation, Sustainability* (Aerospace Technology Working Group, 2016), <https://www.amazon.com/Space-21st-Century-Innovation-Sustainability/dp/1532784422>. See especially Part I: The Multilateral Effort to Assure Space Sustainability.

The seven guidelines that have not been fully developed or achieved consensus can be found here: https://www.unoosa.org/res/oosadoc/data/documents/2018/aac_1052018crp/aac_1052018crp_21_0_html/AC105_2018_CRP21E.pdf.



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