



STATE SPACE CORPORATION

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# **Legal perspectives of space operations and sustainability of outer space activities**

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# **I. Long-term sustainability of space activities is...**



**THIRD UNITED NATIONS CONFERENCE  
ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE**

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## **The Space Millennium: Vienna Declaration on Space and Human Development\***

*The States participating in the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held in Vienna from 19 to 30 July 1999,*

### **I**

*Reaffirming* the aims and principles of the Charter of the United Nations, the principles of international law and the relevant resolutions of the General Assembly,

*Having in mind* that humans have always gazed at the sky with wonder and that from such was born the curiosity that drove early astronomers to study the movements of celestial bodies, from which the foundations of modern space science and technology were laid,

*Recognizing* the importance of space science and space applications for the fundamental knowledge of the universe, education, health, environmental monitoring, management of natural resources, disaster management, meteorological forecasting and climate modelling, satellite navigation and communications, and the major contribution that space science and technology make to the well-being of humanity and specifically to economic, social and cultural development,

*Considering* that space transcends national boundaries and interests, permitting the development of global solutions to address common challenges and providing a vantage point from which to view planet Earth,

*Noting* the positive developments in international relations since the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, held in Vienna from 9 to 21 August 1982,<sup>1</sup>

***The Space Millennium: Vienna Declaration on Space and Human Development  
(UNISPACE III, held in Vienna from 19 to 30 July 1999)***

The States participating in UNISPACE III,

*Noting* the benefits and applications of space technologies in addressing the unprecedented challenges to *sustainable development*, and noting also the effectiveness of space instruments for dealing with the challenges posed by the pollution of the environment, depletion of natural resources, loss of biodiversity and the effects of natural and anthropogenic disasters,

*Emphasize* that the shared objective of *sustainable development* for all countries will require timely and effective action to achieve the stated goals and that such an endeavour will provide ample scope for space science and technology to play their proper role as major contributors to people's well-being.

***UN Doc A/AC.105/C.1/L.354 (WP by the Chair of the Working Group on the LTSSA)***

***Para II.15:***

*The LTS (LTSSA) process is based on the understanding that outer space should remain an **operationally stable, safe and conflict-free environment for current and future generations, open for peaceful purposes and international cooperation.***

## **II. LTS and international space law**

- The five space treaties do not directly address the problem of the long-term sustainability of space activities
- General principles of the ISL – including free and non-discriminatory exploration and exploitation of outer space (Article I OST) and responsibility of states for all national space activities (Article VI OST) – form a basis for further elaborations.

## ***The Outer Space Treaty (OST)***

### **Article IX:**

In the exploration and use of outer space, including the moon and other celestial bodies, *States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty.*



## **III. LTS and the UN COPUOS**

In 2010 the Scientific and Technical Subcommittee of the UN COPUOS established a *Working Group on the Long-Term Sustainability of Outer Space Activities* to:

- identify areas of concern for the long-term sustainability of outer space activities,
- propose measures that could enhance sustainability, and
- produce voluntary guidelines to reduce risks to the long-term sustainability of outer space activities.

***Complementarity of the WG on LTS and the GGE on TCBMs:***

The WG - technically based, bottom-up approach

The GGE - political top-down approach

***The WG established four Expert Groups:***

- Expert Group A: Sustainable Space Utilization supporting Sustainable Development on Earth
- Expert Group B: Space Debris, Space Operations and Tools to support Collaborative Space Situational Awareness
- Expert Group C: Space Weather
- Expert Group D: Regulatory Regimes and Guidance for Actors In the Space Arena

## ***The WG faced some obstacles...***

- lack of coordination and cooperation among the Expert Groups, each of them developing own guidelines but not actually knowing about the progress of neighbouring groups
- LTS guidelines should not be limited only to the reflection of separate national practices, but also propose international mechanisms of interaction and exchange of information to ensure truly global space situational awareness
- non-binding nature of the drafted document

# *The Vienna consensus!*

A/71/20

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## **Annex**

### **Guidelines for the long-term sustainability of outer space activities: first set<sup>a</sup>**

#### **A. Policy and regulatory framework for space activities**

Guidelines 1, 2, 3 and 4 provide guidance on the development of policies, regulatory frameworks and practices that support the long-term sustainability of outer space activities for Governments and relevant international intergovernmental organizations authorizing or conducting space activities.

##### **Guideline 1**

**Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities**

1.1 States should adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities, taking into account their obligations under the United Nations treaties on outer space as States responsible for national activities in outer space and as launching States. When adopting, revising, amending or implementing national regulatory frameworks, States should consider the need to ensure and enhance the long-term sustainability of outer space activities.

1.2 With the increase in outer space activities by governmental and non-governmental actors from around the world, and considering that States bear international responsibility for the space activities of non-governmental entities, States should adopt, revise or amend regulatory frameworks to ensure the effective application of relevant, generally accepted international norms, standards and practices for the safe conduct of outer space activities.

1.3 When developing, revising, amending or adopting national regulatory

## ***Guidelines for the long-term sustainability of outer space activities***

### ***Working paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities***

(A/AC.105/C.1/L.354 of 20 June 2016)

#### **Para 2:**

The guidelines themselves are not legally binding under international law, but any action taken towards their implementation should be consistent with the applicable principles and norms of international law.

Nothing in these guidelines should be interpreted as a revision, qualification or reinterpretation of these principles and norms.

## ***LTS guidelines endorsed by COPUOS (1):***

### **A. Policy and regulatory framework for space activities**

#### **Guideline 1**

Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities

#### **Guideline 2**

Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer space activities

#### **Guideline 3**

Supervise national space activities

#### **Guideline 4**

Ensure the equitable, rational and efficient use of the radio frequency spectrum and the various orbital regions used by satellites



## ***LTS guidelines endorsed by COPUOS (2):***

### **B. Safety of space operations**

#### **Guideline 12**

Improve accuracy of orbital data on space objects and enhance the practice and utility of sharing orbital information on space objects

#### **Guideline 13**

Promote the collection, sharing and dissemination of space debris monitoring Information

#### **Guideline 16**

Share operational space weather data and forecasts

#### **Guideline 17**

Develop space weather models and tools and collect established practices on the mitigation of space weather effects

***LTS guidelines endorsed by COPUOS (3):***

**C. International cooperation, capacity-building and awareness**

**Guideline 25**

Promote and support capacity-building

**Guideline 26**

Raise awareness of space activities

***LTS guidelines endorsed by COPUOS (4):***

**D. Scientific and technical research and development**

**Guideline 27**

Promote and support research into and the development of ways to support sustainable exploration and use of outer space

**Guideline 28**

Investigate and consider new measures to manage the space debris population in the long term

***LTS guidelines (topics) to be agreed upon by COPUOS (1):***

**= Preambular text and guidelines still under discussion**

- Background
- Scope and implementation

## *LTS guidelines (topics) to be agreed upon by COPUOS (2):*

### A. Policy and regulatory framework for space activities

- **Guideline 6** Enhance the practice of **registering** space objects
- **Guideline 7** Provide, in national legal and/or policy frameworks, for a **commitment** to conducting space activities solely for **peaceful purposes**
- **Guideline 8** Implement operational and technological measures of self-restraint **to forestall adverse developments** in outer space
- **Guideline 9** Implement policy aimed at precluding **interference with the operation of foreign space objects** through unauthorized access to their on-board hardware and software
- **Guideline 10** Refrain from intentional **modifications of the natural space environment**

## *LTS guidelines (topics) to be agreed upon by COPUOS (3):*

### B. Safety of space operations

- **Guideline 11** Provide contact information and **exchange information on space objects and orbital events**
- **Guideline 14** Perform **conjunction assessment** during all orbital phases of controlled flight
- **Guideline 15** Develop practical approaches for **pre-launch assessment of possible conjunctions** of newly launched space objects with space objects already present in near-Earth space
- **Guideline 18** Ensure the **safety and security of terrestrial infrastructure** that supports the operation of orbital systems and respect the security of foreign space-related terrestrial and information infrastructures
- **Guideline 19** Ensure the **safety and security of terrestrial infrastructure** that supports the operation of orbital systems
- **Guideline 20** Develop and implement **criteria and procedures** for the preparation and conduct of space activities aimed at the **active removal of space objects** from orbit
- **Guideline 21** Establish **procedures and requirements for the safe conduct, in extreme cases, of operations resulting in the destruction** of in-orbit space objects
- **Guideline 22** Develop **criteria and procedures for the active removal of space objects** and, under exceptional circumstances, for the intentional destruction of space objects, specifically as applied to non-registered objects  
Guideline 22 Develop criteria and procedures for the active removal of space objects and, under exceptional circumstances, for the intentional destruction of space objects, specifically as applied to non-registered objects

***LTS guidelines (topics) to be agreed upon by COPUOS (4):***

**C. International cooperation, capacity-building and awareness**

- **Guideline 23** Promote and facilitate international cooperation in support of the long-term sustainability of outer space activities
- **Guideline 24** Share experience related to the long-term sustainability of outer space activities and develop new procedures, as appropriate, for information exchange

***LTS guidelines (topics) to be agreed upon by COPUOS (5):***

D. Scientific and technical research and development

E. Implementation and updating

- **Guideline 29** Establish normative and organizational frameworks for ensuring effective and sustained implementation of the guidelines and subsequent activity on their review and enhancement



**The concept of a United Nations space data platform –  
a unified *Centre for Information on Near-Earth Space  
Monitoring* under the auspices of the United Nations**

(Working papers of the Russian Federation

A/AC.105/C.1/L.338 of 2013;

A/AC.105/C.1/2014/CRP.17,

A/AC.105/C.1/2015/CRP.32)

## **IV. LTS guidelines implemented at the national level**



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## **V. Perspectives of LTS and recommendations**

1. **COOPERATION:** Active participation of all interested states and international bodies in the development of LTS
2. **DIALOGUE:** Constructive discussion and promotion of the second set of LTS guidelines
3. **ACTION:** National implementation of the LTS guidelines endorsed by COPUOS

**Thank you for your attention!**

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