

# **3<sup>rd</sup> ICAO / UNOOSA Aerospace Symposium**

**Emerging space activities and civil aviation – challenges and opportunities**

**Vienna, 29-31 August 2017**

## **Panel 4**

**Perspectives on Air Traffic Management and Future Potential  
Space Traffic Management**

**The specific framework for space activities and perspectives on  
future regulatory and practical developments**

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# The specific framework of space activities

- UN General Assembly establishes an **Ad hoc Committee** on the Peaceful Uses of Outer Space (COPUOS) in **1958** with a mandate to report on, *inter alia*, “the nature of legal problems which may arise in the carrying out of programmes to explore outer space” (General Assembly Resolution 1348 (XIII))
- UN General Assembly turns COPUOS into a **permanent body** in **1959** (General Assembly Resolution 1472 (XIV))
- COPUOS drafts the “**Declaration of Legal Principles** Governing the Activities of States in the Exploration and Use of Outer Space”, adopted by the UN General Assembly in **1963** (Resolution 1962 (XVIII)), laying down the basic legal principles for space activities
- Based on the 1963 Resolution, COPUOS drafts the “**Treaty on Principles** Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies” (**Outer Space Treaty, OST**), which was opened for signature in January 1967 and entered into force in October **1967**

# 2017 – 50 years of the Outer Space Treaty



Signing ceremony of the OST  
Washington, 27 January 1967  
(Credit: UN Photo)



First meeting of  
UNCOPUOS

(Credit: UN Photo)

# No space activities outside state responsibility

## Article VI OST

States Parties to the Treaty shall bear **international responsibility for national activities in outer space**, including the Moon and other celestial bodies, **whether such activities are carried on by governmental agencies or by non-governmental entities**, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. **The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.** When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

# The specific framework of space activities

- In addition to the **1967 Outer Space Treaty**, four spec. treaties were drafted by COPUOS until 1979, further specifying and expanding upon the principles laid out in the OST
  - **1968 Astronaut Rescue and Return Agreement (ARRA)**
  - **1972 Liability Convention (LIAB)**
  - **1976 Registration Convention (REG)**
  - **1984 Moon Treaty (MOON)**
- These five treaties make up the core of the legal framework governing space activities
- Furthermore, a number of politically binding Resolutions on specific issues (e.g. remote sensing, use of nuclear power sources, registration practice, national space legislation, etc.) were developed, supplementing the core of the legal framework
- The law-making process has moved from negotiating legally binding treaties to developing non-legally binding resolutions, guidelines and technical standards

## Foundational principles: CC and OST

Both the **Chicago Convention** and the **Outer Space Treaty** outline the foundational principles of their respective legal disciplines

Principle	Chicago Convention (CC)	Outer Space Treaty (OST)
Scope of application	Applicable to civil aircraft, excludes state (military, custom and police services) aircraft (Art. 3 CC)	Applicable to any kind of activities of State Parties in the exploration and use of outer space (Art. XIII OST)
Sovereignty	Recognition of territorial sovereignty (Art. 1 & 2 CC)	No nat. appropriation of outer space (Art. II OST); jurisdiction and control over nat. objects (Art. VIII OST)
Access	Prohibited areas (Art. 9 CC)	Free access (Art. I OST)
Nationality / Jurisdiction & Control	Single state (Art. 17 & 18 CC)	Jurisdiction and control by one „launching state“ (Art. VII OST)

# Foundational principles: CC and OST

Both the **Chicago Convention** and the **Outer Space Treaty** outline the foundational principles of their respective legal disciplines

Principle	Chicago Convention (CC)	Outer Space Treaty (OST)
Registration / transfer of registration	National registration and possible transfer of registration (Art. 19 CC)	Registration in a <b>nat. registry</b> (Art. VIII OST) / <b>UN-Register</b> (Art. III REG); transfer of registration only possible between the launching states
Dispute settlement	Formal procedure (Art. 84 & 85 CC)	-
Further development	Amendment process (Art. 94 CC); Standards and recommended practices (SARPs) (Art. 37 CC)	Amendment process (Art. XV OST)
Institutional arrangements	Creates an intergovernmental organization, ICAO, with an Assembly and a Council (Art. 43-66 CC); with a regular procedure for the adoption of int. standards and procedures	-

## Operational traffic rules: CC and OST

- The Chicago Convention goes further in defining **Rules of the Air** (Annex 2) and **Air Traffic Services** (Annex 11) that enable an operational air traffic management system (detailed in the *Procedures for Air Navigation Services – Air Traffic Management, PANS-ATM*)
- Air traffic management, as outlined in PANS-ATM, contains provisions and procedures regarding, *inter alia*:
  - Safety management of air traffic services
  - Air traffic flow management
  - Air traffic services
  - Coordination between air traffic services units
  - Emergencies, communication failures and contingencies
- **No comparable rules** to be found in the **OST** and the other UN treaties on outer space, but new developments with the **STSC Working Group on the Long-Term Sustainability of Outer Space Activities (LTS)**



## 12 agreed upon LTS guidelines

### **Between the 12 agreed upon guidelines are inter alia the following topics:**

- Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities
- Supervise national space activities
- Promote the collection, sharing and dissemination of space debris monitoring information
- Sharing of operational space weather data and forecasts
- Research/support of ways to support sustainable exploration and use of outer space
- Investigate/consider new measures to manage the space debris population in the long term

# LTS open issues / further guidelines under discussion

## Guideline topics for further discussion are inter alia:

- Enhance the practice of registering space objects
- Commitments in national policy of conducting space activities solely for peaceful purposes
- No intentional modification of natural space environment
- Policies precluding interference with foreign objects (unauthorized access)
- Information on space objects and orbital events
- Safety and security of terrestrial infrastructure
- Criteria and procedures for active removal of space objects from orbit
- Criteria and procedures for active removal under exceptional circumstances (spec. non-registered objects)
- **Normative and organizational frameworks for ensuring effective and sustained implementation of the guidelines**

# Working Group on the Status and Application of the Five United Nations Treaties on Outer Space

- Established in 2001 by the LSC with a mandate including **“the status of the treaties, review of their implementation and obstacles to their universal acceptance, as well as promotion of space law”** (A/AC.105/763, para. 118)
- **Reports annually on the status of international agreements** relating to activities in outer space
- Reviews the status of the five United Nations treaties on outer space **through a set of questions**, aimed at highlighting possible shortcomings, uncertainties and ambiguities in the treaties and draw the State Parties’ attention to it. **Current topics include the legal regime and global space governance, provisions related to the Moon and other celestial bodies, international responsibility and liability, registration of space objects and international customary law in outer space**
- Constitutes the **mechanism for UNISPACE+50 thematic priority 2** (Legal regime of outer space and global space governance: current and future perspectives)

## **Thematic priority 2: Legal regime of outer space and global space governance: current and future perspectives**

**Objective:** Promote the universality of the 5 UN Space Treaties

State of affairs / Relation to other international instruments / Effectiveness /

Identifying areas of additional regulation

**(a) Developing the questionnaire** - Perspective up to 2018

**(b) Studying potential future legal and institutional initiatives** –

Space law as a relevant part of global space governance

**(c) Studying legal mechanisms to foster an internat. regime of responsibility/liability**

- Perspectives of space traffic management
- Enhanced information on objects and events
- Avoidance of in-orbit-collisions and interference

**(d) Identifying by 2018 criteria for a guidance document 2020**

**(e) Considering means of strengthen the LSC** – Closer cooperation with STSC

**Mechanism:** WG Status and Application of the Five United Nations Treaties

## **Thematic priority 2: Legal regime of outer space and global space governance: current and future perspectives**

**Working method:** 3 clusters (A/AC.105/1122, Annex I, para. 7)

### **Cluster 1:**

Use **set of questions** of the working group to assess state of affairs of the 5 UN treaties, analyse effectiveness, status, scope and possible gaps in the legal regime. Assess customary law perspectives relating to international space law, as well as substantive, operational and conceptual gaps in the legal regime.

### **Cluster 2:**

Observe progress of **LTS Working Group of STSC, as well as thematic priority 3** (Enhanced information exchange on space objects and events), with a view of connecting these results with objectives (c) of thematic priority 2. Also important in the context of strengthening LSC and establishing closer cooperation with STSC.

→ Reflection on: traffic information / collision avoidance instruments

→ Compare navigation services in air traffic management

## **Thematic priority 2: Legal regime of outer space and global space governance: current and future perspectives**

**Working method:** 3 clusters (A/AC.105/1122, Annex I, para. 7)

### **Cluster 3:**

Identify **approaches and criteria for developing a guidance document** with the aim of promoting the universality of the five United Nations treaties on outer space:

- Explore ways and means to encourage COPUOS Member States to become parties to the OST
- Promote the increase of membership of COPUOS
- Develop the document in combination with other tools (e.g. online tools on the UNOOSA website, issuance of a report in the six official UN languages)
- Observe progress and outcome of past LSC working groups (e.g. concept of “launching state”, registration practice, national space legislation, etc.)
- Consider capacity-building and technical assistance of UNOOSA in the field of international space law and policy as fundamental tools in these efforts

## **Thematic priority 2: Legal regime of outer space and global space governance: current and future perspectives**

### **Timeline for Cluster 3 guidance document** (A/AC.105/1122, Annex I, para. 8)

**2018:** Identify and agree on the key points for the guidance document and the online tool under cluster 3, including on efforts to strengthen capacity-building and assistance, on the basis of a proposed outline to be presented by the Chair in close consultation with the Secretariat

**2019:** On the basis of a proposal by the Chair, in close consultation with the Secretariat, review the draft guidance document and tools for the universality of the five United Nations treaties on outer space, in particular on the enhancement of accession to the Outer Space Treaty and membership of the Committee

**2020:** Finalize the guidance document and tools under cluster 3. Decide on any further consideration of topics identified under clusters 1-3, as appropriate, and identify the most suitable mechanism within the Legal Subcommittee for this purpose

# Perspectives on the further development of the legal framework of space activities

## Two-tiered approach to further develop the legal framework of space activities:

1. Preserve, strengthen and universalize the legal framework established by the five United Nations treaties on outer space, containing the basic principles governing space activities, as the overarching structure of international space law
2. Further develop the legal regime **organizationally and regulatory** through guidelines, technical standards, “best practices”, etc. in order **to move towards an operative-administrative system under the treaties**, able to adopt to changing conditions



# Aspects on future institutional developments

## Pending ideas for future challenges

- Strengthening COPUOS and UNOOSA

*The Committee further noted that UNISPACE+50 offered a unique opportunity for countries to reflect on the achievements of the more than 50 years of space exploration and look towards the future, **strengthening the mandates of the Committee on the Peaceful Uses of Outer Space, its subsidiary bodies and the Office for Outer Space Affairs**, as unique platforms for international space cooperation... (COPUOS Report 2017, A/72/20, para. 323)*

- International space monitoring platform (Proposal of the Russian Federation)

*It is possible to envisage a whole range of States and other legal entities joining forces on a multilateral and/or bilateral basis to analyse and exchange specific information. [...] Hypothetically, **the most feasible idea seems to be the creation of a single monitoring centre**... (Working paper at COPUOS in 2012, A/AC.105/2012/CRP.19, para. 30)*

- Global space organization

*There is no single global institution which fully oversees all space-related matters, which has the authority to take effective decisions and actions on behalf of humankind as well as to exercise coordination over all activities in the space sector on a global scale. [...] [I]t makes sense that **a single international organisation is created** to regulate space activities in holistic manner in consultation and collaboration with other specialised agencies of the UN and other stakeholders. (Prof. Dr. Ram Jakhu, Presentation at the High-Level Forum Preparatory Meeting, Vienna, 2015)*