INTERNATIONAL ASTRONAUTICAL FEDERATION

Space Traffic Management

The IAF initiative

Status of Working Group #4.3

Technical regulations

Effective compliance to Technical Regulations

Special Session

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Membership

WG#4.3:

Name	First name	Country
Alary	Didier	France
Eder	Valentin	Austria
Hermoso	Jose Maria	Spain
Kawamoto	Satomi	Japan
Lecas	Morgane	Austria
Lemmens	Stijn	Germany
Martinez	Peter	USA
Yang	Kuan	China
Spencer	David B.	USA

Effective compliance to Technical Regulations. What are the rules ?

Space debris mitigation guidelines and associated rules have been studied since the formation of international technical committees in the 1990s, such as the I**nteragency Space Debris Coordination Committee** (IADC).

Despite this **fundamental** work, the initiatives from **groups of private companies** and the technical work within the **ISO**, there is no unique and undisputed, technically precise reference applicable to all space missions of **ALL** countries.

Empowered by the Outer Space Treaty (OST) of 1967, each nation remains free and **independent** to select its own national debris mitigation standards, policies, and regulations.

As a consequence, **differences do exist today** in the technical references that need to be complied with when an organization is requesting a license from a registering nation to fly in space.

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Why are the rules so important ?

The compliance with regulation is of paramount importance for the long-term **sustainability** of space activities, primarily to reduce and control the generation of debris in space, especially in these times where Space is attracting so many entrepreneurs.

The most important technical factor is the **success rate of the post-mission disposal**, which is far from approaching 100%.

The **capacity to avoid collisions** is also a strong driver, and with the rising of large constellations, we may think that some space layers have a **finite capacity**.

This has to be managed by **governments or international bodies**, it cannot be managed by Standard Development Organizations nor by private consortia.

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Current state of the art

- **Regulation shopping** is today “normal” work to secure a private investment,
- The current **UN register** is not adequate for operational aspects of space safety,
- The **post-mission disposal** (PMD) success rate is not reaching the requested levels,
- The **liability coverage** by an insurance company is not requested everywhere,
- Space **RF interference** is not punished
- ...

In a nutshell, there is no international consensus on systemic risk in space, no international monitoring organization (as for Nuclear), and no international consensus on approaches to space security.

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Next steps

- ➔ Encourage a harmonization of basic measures across multiple jurisdictions to discourage **regulatory shopping**
  - ◆ make national policies conform to UN COPUOS LTS
  - ◆ shared common technical requirements (ISO can help)
  - ◆ common and unique licensing process

No compliance, no launch

- ➔ Improve SST accuracy and conjunction manoeuvre timeline, reduce false alarm warnings, promote just in time systems
- ➔ Improve the **post mission disposal success rate**
- ➔ Prepare for debris removal, define an "**ADR ready**" standard
- ➔ Think about an **ecotax** (Pigouvian tax)