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Exolaunch



You Are "Space" Cool! But How Crucial Is It to Be Responsible? — Strategizing the Bridge Between Designed Solutions and Transformational Responsible Behaviors

The 21st century has shown that SPACE IS FOR (nearly) ALL with many novel space technology solutions, capabilities, and stemmed business models championing space activities these days. "The speed and complexity of developments have outpaced our systems for cooperating and coping" [1]. How positive is this trend?

Space activities are unlocking a number of impactful opportunities and technology-enabled benefits [2], but equally require full accountability for what space actors undertake, unconditional consciousness, and reciprocal responsibility against the others, including toward the future generations. While the growth of the space economy is an absolutely vital indicator highlighting its indisputable value [3], it also shows the risks at stake when non-sustainably revolutionizing the way space actors are conducting activities in space.

What we undertake today has long-term consequences for the future, including for access to space and the quality of the operating environment. The more we demand of ourselves when conducting space activities, the more guarantees we have for space to remain operational in the long run and capable of being used for the benefit of all. Also, we need to examine whether the traditional and commonly perceived use of space instead of a responsible, accountable and conscious behavior when conducting space activities fosters a default consumer behavior? The patterns we have observed lately evidence a growing number of commercially aggressive space activities where space sustainability merely vests with certain non-binding statements and declarations often used for positioning purposes of concerned stakeholders.

We lack a clear roadmap for all that would streamline the efforts to be taken to ensure the safe, sustainable, and secure space activities. With an absolute minimum set of responsible behaviors to be identified, we should continue with distilling the scope of actions for desirable and therefore expected behavior, directing the actors to aim higher and commit more. We must outline the gap between the actions taken if pursuing the minimum pathway and the desired one to particularly highlight the deviation in consequences.

While all space actors must be equally accountable irrespective of their nature, size, level of maturity, heritage, and capabilities, we can't talk about identical requirements to be posed to them. The efficient legal regime requires a holistic approach covering all space actors while on implementation and execution levels foreseeing a differentiated treatment that considers the capabilities of diverse actors and efforts each stakeholder should invest into a responsible and sustainable evolutionary trajectory of the space environment.

Space sustainability can't tolerate any more delays; to find a consensus around the proportionality regime engaging and committing the global stakeholders, it is a high time for stakeholders to be proactive setting the benchmarks and shaping the best practices based on transformational ethical considerations and patterns of responsible behaviors. Space actors should bear in mind the consequences space activities will have on the future if not conducted responsibly.

The space sustainability discussions are relatively young and often exclude those whom the implementation policies might affect in the future. The space sustainability governing architecture is split in puzzles without being challenged to be transformed into an inclusive live commitment. And this is where we must face the problem. Here are some of the multiple dedicated efforts launched over the last years:

- Space Debris Mitigation Guidelines (IADC & UN COPUOS)
- UN COPUOS Guidelines for the Long-term Sustainability of Outer Space Activities
- Artemis Accords
- ESA Green Agenda, Space Environmental Report, Statement for a Responsible Space Actor and Zero Debris Chapter
- EU (draft) Space Law and certain national or regional regulations touching on these issues directly or indirectly
- NASA's Space Sustainability Strategy (in progress)
- WEF Space Sustainability Rating & Space Sustainability Monitor
- AIAA Satellite Orbital Safety Best Practices
- Certain space-sustainability elements in domestic or regional strategies and some countries working on dedicated space sustainability strategies
- Multiple internal institutional policies, guidelines and instructions

All the above listed are united by a tacit acknowledgment that the way we conduct space activities these days endangers our common future. Technological advancements are going way faster than a legal architecture framing them and the development of enforced solutions to serve as an action plan, including the mandatory rules of reference, for preserving long-term sustainability.

They touch on a broad range of critical topics that all together constitute the realm of space sustainability. From space debris mitigation to space sustainability awareness to space traffic coordination (management) and beyond, leveraging different parts of the space environment.

Shall we do more or shall we do better?

Shall we go beyond or shall we go more in-depth?

Shall we wait for global mutually inclusive commitment or start acting now within the scope we envision is necessary?

There is no reason to wait for the mandatory rules or the worst scenario to start acting responsibly. We always have an "opportunity to put us in a better path" [4]. The backbone of responsible behaviors is in each one of the stakeholders.

[1] UN Summit of the Future https://www.un.org/en/summit-of-the-future

[2] WEF Six ways space technologies benefit life on Earth, www3.weforum.org/docs/WEF_GFC_Six_ways_space_technologies_2020.pdf

[3] WEF Space Economy, www.weforum.org/agenda/2024/04/space-economy-technology-invest-rocket-opportunity/

[4] UN Summit of the Future https://www.un.org/en/summit-of-the-future