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Closing the pacing gap: How emerging space nations are influencing sustainability norms

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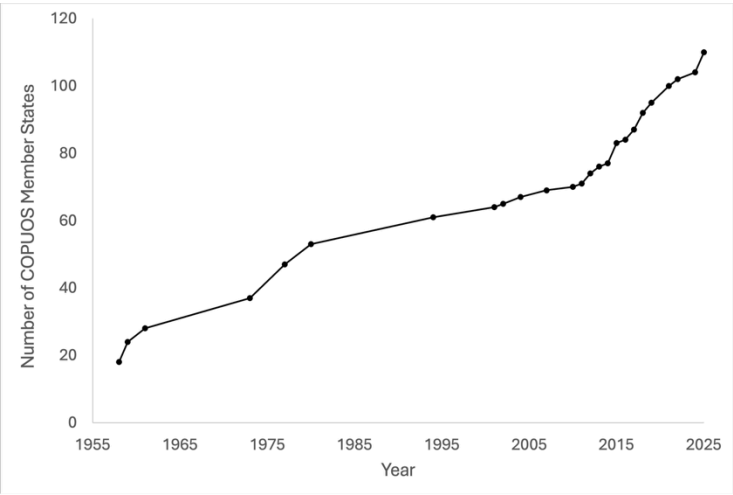
Executive Summary

The number of objects in space is threatening the long-term sustainability of Earth's critical orbits, leading to the "pacing gap." The pacing gap refers to the difference between technology and policy, as well as the gap between agreed sustainability principles and practical implementation. Emerging space nations often enter the space sector after orbital regions, spectrum bands, and governance practices are already under pressure. Across the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), the International Telecommunication Union (ITU), and international cooperation agreements, emerging space nations are helping clarify how sustainability norms can be translated into regulation, coordination, and operational practice.

Scope of the Problem

- Space sustainability spans several governance domains, each addressing different parts of the challenge.
- As the number of space actors grows, reaching consensus takes longer and translating agreed-upon guidelines into national practice can be challenging.
- The aim is not to create new rules, but to help more States implement existing and emerging norms.



Evolution of UN COPUOS membership by number of States since its inception in 1958

Policy Option #1: Support Long-Term Sustainability

Develop technical assistance, voluntary reporting tools, and peer-learning mechanisms to translate soft-law guidance into licensing, registration, debris mitigation, and end-of-life planning requirements.

Policy Option #2: Equitable Spectrum-Orbit Coordination

Strengthen regional coordination to support emerging space nations in ITU spectrum-orbit processes, including avenues such as the World Radiocommunication Conferences (WRCs).

Policy Option #3: Build Inclusive Operational Norms

Develop mission data-sharing, interoperability, and debris mitigation practices through joint working groups and early consultations.

READ THE FULL ARTICLE: HTTPS://DOI.ORG/10.38105/SPR.2JR577OEVP