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Policy, Legal, Institutional, Economic and Security Aspects of Debris Mitigation, Debris Remediation and
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THE GOVERNANCE OF DEBRIS IN SPACE (GODS) INDEX

Abstract

The global governance of outer space is increasingly fragmented. It includes an exponential number of bilateral treaties, executive agreements, and memoranda of understanding. Drawing from polycentricity theory (Ostrom 1990), some analysts expect that these bilateral arrangements will foster the development of robust norms regulating the mitigation, monitoring and removal of space debris (eg: Tepper 2014; Migaud et al. 2021). Bilateral arrangements are, after all, easier to conclude and revise than their multilateral counterparts.

However, there is a lack of empirical analysis assessing how these bilateral arrangements tackle the problem of space debris. Most of the literature remains focused on a few multilateral institutions, even though a forest is hidden behind those trees. One of the most ambitious empirical efforts to date was undertaken by the American Institute of Aeronautics and Astronautics, analyzing "76 space governance documents" (Oltrogge and Christensen 2020). Yet, this AIAA analysis covers only a fraction of existing bilateral arrangements.

To fill this gap, we collected 1,131 bilateral space arrangements. The compilation of these documents was the culmination of years of research, partnering with numerous organizations, submitting formal information requests to various governments, and collaborating with multiple archive centers.

Our team of legal analysts then meticulously coded this corpus to distill norms related to space debris. These norms include: 1) definitions of debris; 2) commitments to mitigate debris; 3) procedures for debris monitoring; 4) protocols for on-orbit emergencies; 5) liability statements in case of collision; 6) commitments to debris removal; 7) commitments to conduct debris-related research; 8) commitments to exchange data; and 9) references to multilateral institutions governing debris management.

From this dataset, we created the Governance of Debris in Space (GODS) index by categorizing various coded items into thematic dimensions, which were then weighted according to their relevance in space debris management.

The analysis yields several insights for the space community, including: 1) bilateral cooperation appears easier to reach on SSA than on fundamental research; 2) there are significant inconsistencies in how space debris is defined; 3) numerous developing countries are active on this issue; 4) the most comprehensive agreements have emerged in the last five years.

The GODS index will be made publicly available at the Congress. It promises to enrich theoretical debates on the polycentric governance of space debris, points to urgent areas of collaboration, and serve as a valuable policy toolkit, offering easy access to best practices in the domain.