

37th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Assuring a Safe, Secure and Sustainable Environment for Space Activities (4)

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DEVELOPING ADAPTIVE SPACE GOVERNANCE BASED ON TERRESTRIAL EXAMPLES

Abstract

Launch trends and space activities are constantly changing, and it is challenging to accurately predict what the space environment will look like in the future. Because of this, it is even more difficult to develop space policy and regulations that remain relevant over time. For example, the Inter-Agency Space Debris Coordination Committee put out space debris mitigation guidelines in 2002 that were based on current launch trends at the time. However, the recent rise of large satellite constellations in Low Earth Orbit has changed the launch environment dramatically and necessitated the development of a new set of regulations. In order to develop robust regulations that can keep pace with the rapid technical development of the space industry, space policymakers should utilize adaptive governance and adaptive frameworks.

These methods acknowledge uncertainty and are designed to constantly update and reevaluate in response to new information (new launch trends, improved models, etc.). By providing room for continuous adjustment, these strategies allow stakeholders to take action even when they do not initially agree on how extreme that action should be. Adaptive management and governance frameworks are already being used for terrestrial resource management with water, fisheries, and the atmosphere, and they also have a place in space policy.

This paper will provide a survey and critical assessment of the current uses of adaptive management and governance in common resources on Earth, exploring how and where they are implemented and how resilient they have proved to be. Based on these examples, the paper will also include a discussion of how these methods would best be applied to space policy. Space debris mitigation and orbital capacity, the question of what set of satellites can sustainably fit into Earth's orbit, will be used as a case study and specific example of how adaptive management and governance might be applied to a current space policy problem.