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Legal Challenges Represented by Large Satellite Infrastructures and Constellations (4)

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THE NECESSITY AND FEASIBILITY OF LEGAL AND REGULATORY FRAMEWORKS FOR
SMALL SATELLITES GOVERNANCE

Abstract

The proliferation of small satellites and proposed large constellations raise potential issues for the long-term sustainability of the near-Earth space environment. The current space treaties and soft law regime, such as IADC Space Debris Mitigation Guidelines may not be adequate to address new environmental issues raised by such systems/missions. There is a need to consider the impact of the proliferation of small satellites and such proposed/planned large constellations and identify additional legal, regulatory framework and measures that may be needed to preserve the long-term sustainability of the space environment.

The paper is to identify the necessity and feasibility of legal and regulatory frameworks that may be needed to address environmental issues caused by the proliferation of small satellites and large constellations.

Firstly, the paper identifies the trend in the proliferation of small satellites and review plans for large constellations and considers the potential risks presented by such systems.

Secondly, it tries to determine the potential inadequacies of the existing legal and regulatory systems, such as space treaties, IADC Space Debris Mitigation Guidelines, ITU regulations for the proliferation of small satellites and those large constellations. Besides, in this part II, it discusses the specific requirements relevant to small satellites governance or space traffic management in the articles of some soft rules, such as ICOC proposed by the EU, guidelines drafted by the Long-term Sustainability of Outer Space Activities Working Group in the STSC of UNCOPUOS and the 2013 TCBMs Report.

Thirdly, the paper analyzes several legal and regulatory aspects relating to small satellites governance, such as exclusive use of specific altitude regimes, mitigation requirements, electromagnetic interference and active removal of small satellites. It discusses the interaction between the general requirements contained in the above soft rules in part II, such as TCBMs, safety of operation, and the specific measures proposed in this part.

It is clear, however, that this legal and regulatory approach could result in discussions over the acceptability of risks and the distribution of costs. In the end, these difficult questions about the allocation of risks and costs require political decisions, which could be prepared and implemented in the scope of a space traffic management system internationally.