

IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)  
Remediation of Space Debris: A Fundamental Legal Challenge? (7)

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SPACE DEBRIS: BETWEEN UNITY AND FRAGMENTATION – RISK AS A STATIC PRINCIPLE  
WITH DYNAMIC OUTCOMES

**Abstract**

This paper analyses the interrelationship between science, risk, international law and active debris removal, with the aim to contribute to the progressive development of international law. A large number of disciplines now studies space debris remediation. Broadly speaking, on the one hand, specialised scientific and technical literature provides ever-deeper insight into factual properties of debris remediation. On the other, legal and policy scholarship attempt to analyse, define and qualify the issue with proper concern for its multifaceted societal context. Although these efforts form an indispensable part of the international community's quest for effective debris governance schemes, the insights from these varied fields of inquiry are mutually integrated to only a limited degree, while significant division often remains as well within respective disciplines. Recent difficulties in achieving consensus on relevant matters within COPUOS, as well as criticisms of a perceived firewall between its Subcommittees, are illustrative of the above dynamic. Evidently, this may pose obstacles to the creation of an informed, uniform and therefore, it is held herein, more effective regulatory regime. As part of a comprehensive analytical and theoretical framework currently under development, this paper posits the common construction of risk and its management as central to the asymptotic realisation of uniformity in standards concerning space debris and its removal. To begin, the paper analyses the theoretical connection between science and law – between scientific facts and legal facts – in combination with a look at examples from practice, including COPUOS and the IADC, as well as case law. The second part explores scientific insights into debris remediation to uncover the proper extent of the notion of risk in this area. The risk-based perspective appears to emerge therefrom as fundamental. The third section therefore casts light on how risk management mechanisms have been embedded within various areas of international law, as well as on difficulties and opportunities in relation thereto – including margins of discretion in authorization and supervision pursuant to Article VI of the Outer Space Treaty, and in environmental impact assessments (EIAs). Risk further emerges as a static principle with dynamic outcomes that may inform unity – a principle thus particularly suited to the highly contingent conditions attending space activities around Earth. Before concluding, the paper employs an additional comparative view to explore some legal mechanisms – including incorporation and reference clauses, delegation, cumulative effects doctrine – that might contribute to uniformity in standards and their enforcement.