

IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Current Developments in Space Law with Special Emphasis on National Space Legislation (7)

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REGULATING SPACE DEBRIS: A COMPARATIVE STUDY OF SUSTAINABILITY
REQUIREMENTS IN NATIONAL SPACE LICENCING LAWS

Abstract

Our expanded activities in the near-Earth environment have had devastating environmental consequences due to the increase in space traffic and resulting space debris. Between 1994 and 2018, the orbital debris population is estimated to have increased seven-fold, to approximately 1.25 billion pieces. Collisions between satellites and debris, or between pieces of debris, can be catastrophic to the critical technologies upon which we depend. Additionally, advances in satellite technology have led to a decrease in size from several hundred kilograms to less than 1kg and smaller than 2.5cm³, thereby reducing the cost of access to space, but increasing the difficulty of tracking objects in space. The expectation is that in the next ten years, the current population of approximately 3,500 active satellites will increase to 100,000. This trajectory of human activity in space poses an enormous challenge to long-term sustainability in space.

International space law places the onus on States to “authorise and continually supervise” space activities, but it’s up to States to interpret how they will do this. In the US blanket approvals are given to launches for “mega-constellations” of satellites. The 2019 Guidelines for the Long-term Sustainability of Outer Space Activities adopted by the UN Committee on Peaceful Uses of Outer Space are a step in the right direction, but implementation by States is voluntary. In an age of commercialisation of space, States may be driven to legislate for competitiveness rather than sustainability.

This paper compares different approaches taken in four jurisdictions to integrating sustainability measures into national space licencing laws: Australia, New Zealand, the UK and the US. We identify which models prevail in each system, the impact of the LTS Guidelines, and how local space licencing laws could better respond to the need to preserve the space environment. Conclusions are drawn as to what models might be useful for States which are developing new space licencing laws and regulations, or updating existing ones.

Comparative law runs the risk of drawing generalised conclusions which may not be easily or appropriately applicable in other jurisdictions from those compared. Key to our conclusions is therefore a careful consideration of whether the internal space governance system of a State is centralised or decentralised, and whether there is a tendency towards the civil law tradition or the common law tradition within the legal system of a State.