

IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY OF SPACE ACTIVITIES  
(E9)

Policy, Legal, Institutional, Economic and Security Aspects of Debris Mitigation, Debris Remediation and  
STM (1-A6.8)

Author: Mr. J Patrick Mathewson  
Astroscale Ltd, United Kingdom, p.mathewson@astroscale.com

Prof. Michael Mainelli  
United Kingdom, michael\_mainelli@zyen.com

Mr. Charles Vermont  
United Kingdom, c.vermont@ahj-ltd.co.uk

Ms. Morgane Lecas  
Astroscale Ltd, United Kingdom, m.lecas@astroscale.com

Mr. David Eagleson  
International Institute of Air and Space Law, Leiden University, United Kingdom, dte24@cantab.ac.uk

Mr. Hugh Selka  
United Kingdom, Hugh.Selka@cityoflondon.gov.uk

IN-ORBIT SERVICING AND INSURANCE MARKETS: A SYMBIOTIC APPROACH

**Abstract**

The space industry stands at the precipice of a new paradigm of in-orbit servicing. Space debris and an increasingly congested orbital environment have been a key driver in the development of In-Orbit Services (IOS). Additionally, the 7500 active satellites and 36,500 debris objects larger than 10cm have dramatically influenced more established markets, such as the market for space insurance. This paper seeks to understand the relationship between these two mature and nascent markets, their impact on each other, and what that co-dependence might imply for national industrial policy.

The emergence of IOS is underpinned by key technological trends, an influx of funding from private and public capital markets, and driven by new entrants- start-ups with next generation business models and mission architectures. Simultaneously, as nations define their strategies for leadership in these nascent markets, some are exploring links to established industries and native capabilities. For example the UK government has expressed interest in leveraging its established reputation as a leader in insurance and financial markets to become the global hub for the insurance of space assets. The following paper will aim to explore complementarities between the development of the IOS market and the rehabilitation of space insurance markets. The analysis will draw on primary source engagements with government, insurance and IOS providers. Insurance markets will be considered broadly, but specific attention will be paid to third party liability insurance. From the perspective of a national space strategy, it will examine how each has the potential to accelerate and expand the market share of the other. Finally, the paper will conclude with a set of policy recommendations on how to successfully execute this strategy and reflect on what lessons might apply to other nations and industry contexts.