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Author: Mr. Martin Losekamm
Technische Universität München, Germany

Mr. Jacob Hacker
The University of Sydney, Australia
Ms. Nikita Sardesai
The University of Sydney, Australia
Ms. Anja Nakarada Pecujlic
University of Vienna, Austria
Mr. Adam Vigneron
Space Generation Advisory Council (SGAC), Canada

LEGAL AND POLITICAL IMPLICATIONS OF FUTURE ON-ORBIT SERVICING MISSIONS

Abstract

Recent technological advances and proposed future missions in the field of On-Orbit Servicing (OOS) of satellites and other space infrastructure have significantly increased the need for a stringent legal and political framework for the industry on an international level. In particular, the threat of a critical density of space debris in Low Earth Orbit (LEO) has brought urgency to the development of technologies to remove or manipulate decommissioned or malfunctioning objects in orbit. To identify benefits of OOS and Active Debris Removal (ADR), as well as to assess the intricacies of international relations between space-faring nations, a working group was formed during the Space Generation Congress 2014 in Toronto, Canada. The working group examined the political implications of the development of an international OOS legislation through the process of a simulated regulatory hearing.

This paper summarises the current state of the OOS industry and planned future missions, as well as their primary and secondary stakeholders and possible concerns. To gain a more accurate perspective of the latter, a simulated hearing for OOS licensing was conducted. Based on the results of the discussions therein, probable challenges and the benefits of domestic and international regulation were highlighted. A review of these challenges and benefits resulted in several recommendations from the authors, outlining methods to ensure the practicality of OOS and ADR and to encourage the licensing and regulation of such activities.

The recommendations include the international regulation of OOS and ADR activities that should be considered by the United Nations; the licensing of OOS missions by government agencies; and the need for governmental support to create sustained demand for these services. Particular emphasis is laid on measures to prevent the weaponisation of space, as these were found to be critical for the initiation of international collaboration.