

IAF BUSINESS INNOVATION SYMPOSIUM (E6)
Strategic Risk Management for Successful Space & Defence Programmes (4)

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THE ROLE OF NATIONAL SPACE POLICY IN ADDRESSING OUTER SPACE SECURITY
CHALLENGES

Abstract

With more than 5000 active space objects launched in the outer space providing numerous services for global nations, there is an ongoing need for new policies and strategies in order to mitigate potential threats. Moreover, the strategic value of outer space is under the threat of different sources, which can be divided into two main categories, namely intentional and non-intentional threats. Non-intentional threats include the mishaps such as collisions with ever increasing amount of satellites' and other space objects' debris. Currently there are millions of tiny debris in the space which proved to be very difficult to track, as well as the growing number of small inexpensive satellites launched by third parties, such as students and researchers which pose a great risk of collision. On the other hand, the intentional threats include various types of cyber attacks, such as spoofing, orbital and terrestrial jamming, anti-satellite weapons (ASATs) and blinding satellites' optics. Intentional threats raise even the more serious concerns, due to the fact that most of the satellites, especially the ones operated on technology are vulnerable to the cyber attacks. Potential cyber threats could cause catastrophic consequences by causing outages of large proportions, which could in turn affect the institutions dependent on the satellites and cause tremendous financial losses. Hence, there is an urgent need to develop a scheme to ensure the harmonization between space policies for implementation of standards and practices that will enhance the safeguarding and security of the space objects, facilities and services.

This paper provides a space threat assessment with an associated policy response. In addition, it reviews the compliance with international treaties and conventions, particularly in the field of peaceful uses of the space. Those treaties play a key role in achieving stability and sustainability of the space environment. Afterwards, the paper reviews major outer space security threats, singling out and briefly explaining the best known security omissions that have already occurred. The special attention is emphasized on both the national and international efforts to increase outer space security capabilities, to support the development of industry standards, as well as the efforts to further encourage the development of the young engineering and research professionals, especially in the fields of information security and aeronautics. Ultimately the paper proposes policy recommendations to streamline outer space security for space systems across the public and private sectors.