

48th SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
ACTIVITIES (D5)

Cyber-security threats to space missions and countermeasures to address them (4)

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SATELLITE SECURITY THREATS AND CYBER RISK MANAGEMENT STRATEGIES

**Abstract**

Recent years have seen significant developments in the scale and scope of cyber risks. This lecture will consider the nature of the cyber risk with respect to satellite operations, review recently reported instances of cyber events, and how the nature of cyber threats may develop in the future.

Cyber risks as a sub-category of technological risks covers major risks related to the growing centrality of information and communication technologies to individuals, businesses and governments. These include cyber attacks, infrastructure disruptions and data loss.

As satellite technology is increasingly used to link global communication networks both in space and on the ground, there are potential accumulation/aggregation of risks resulting from disruption or service interruption causing a systemic risk across multiple territories. A significant disruption to satellite services would have damaging effects on society. However, news headlines of satellites being hacked (i.e. 2011 Report to the Congress of the US-China Economic and Security Review Commission) degrade discussion in international relations by oversimplifying the topic.

This lecture will provide IAC 2015 participants a great opportunity to hear about a unique perspective of emerging security threats such as criminal interferences, cyber risks, extortion and political/terrorist risks in relation with satellites and satellites operations. Current systems appears vulnerable to a variety of attacks, and future systems may promise little improvement. Insights from major actors and stakeholders will raise awareness on a growing yet still confidential problematic.

The lecture will identify and analyse satellite security emerging threats and possible mitigations: - Identify and provide practical examples of those threats: "Security through obscurity" gave a false sense of security - Evaluate the satellite security risks against other major risks faced by satellite operators (risk map) and put them into perspective (frequency and impact) - Recap the risk management solutions already available and the ones that could be developed to reduce the risks (likelihood and impact) - Identify the residual risks that could be transferred to the insurance market - Give a panorama of insurance solutions that have been developed for other classes of risks (cyber risks insurance, political risks, kidnap and ransom, war insurance coverages...)