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Assuring a Safe, Secure and Sustainable Environment for Space Activities (4)

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STRATEGIES IN SUPPORT OF A SAFE, SECURE AND SUSTAINABLE SPACE ENVIRONMENT

Abstract

The space sector is rapidly evolving towards a new paradigm, characterised by an intensification of space activities worldwide, the emergence of new concepts, new actors/players, new technologies, new modes of operation and new safety critical missions. Even though innovative technologies and services clearly bring great benefits to all humankind, they also pose a challenge, and threats, to the long-term sustainability of outer space. The direct consequence of these developments is a significant increase in Space Traffic, In-Orbit Collision Risks and Space Debris thus challenging the Safety of Space Activities and Access to Space (for all).

Presumably, few space enthusiasts would now deny/argue that there is a growing problem with space debris, particularly in low Earth orbit (LEO). The huge rise in the number of currently active satellites, mainly due to mega-constellations, along with obsolete spacecraft and a myriad of other no longer operational objects, result in an increase of close approaches and in-orbit collision risks.

Hence, The Kessler Syndrome - as Space Traffic is an imminent threat to human space exploration.

A Space Traffic Management (STM) system is crucial to protect our satellites – despite Space Debris Management (SDM) being even more urgent to be accurately monitored and modelled, also due to Space Surveillance and Tracking (SST) and Space Situational Awareness (SSA) related issues.

This paper will examine the progress being made within UN COPUOS, focusing on the Long-Term Sustainability (LTS) of Outer Space Activities' follow-up processes and the Guidelines agreed upon. It will also showcase Portuguese strategies supporting the goal of a safe, secure and sustainable space environment - and briefly address Space Insurance related issues.