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ANALOGY BETWEEN AIR TRAFFIC MANAGEMENT AND SPACE TRAFFIC MANAGEMENT FROM OPERATIONAL ASPECTS

Abstract

In the last decades, we have observed the explosion of space missions in the different earth orbits, new constellations are taking place, and more spacecrafts mainly in the LEO orbit will be ready for the launch. We have faced previous challenges with mission accidents, risky orbiting and de-orbiting operations, as well as the growing number of space debris. This intricacy is raising worries about the security and safety of the space products and services chain. This is conducting us to create a proper space traffic management system taking in consideration the supply chain operations and the main scenarios that should be avoided. The technological development for aviation and space are close to each other despite the major differences in the legal regulations. This allows us to take a deeper look at the convergent points between both domains.

This paper will create an analogy between the air traffic management and space traffic management in some aspects for the purpose of a safer military and civil operations to develop shared principles and anticipate potential risks in the supply chain operations in outer space.

Key words: Space Traffic management, Air Traffic management, Supply Chain, Safety and Security, Military and Civil Operations