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COULD INTRODUCTION OF SPACE PAYLOAD MANAGEMENT BE THE NEXT STEP TO SPACE TRAFFIC MANAGEMENT?

Abstract

Significant initiatives on space traffic management have been recently taken, essentially by developing principles of outer space transparency and confidence building measures (TCBM) beneficial to a safer conduct of space activities. The need for improved practices in space traffic management is a consequence of the increasing number of space-faring nations allowing for more types of missions, growing number of space debris, new private entrants, and rising space content in running critical national infrastructures, to name a few. These expanding space activities underscore the society's dependency on space systems and henceforth its vulnerability, calling for an improved long- term sustainability of outer space activities. But the lack of inforamation on the nature of some space payloads and their asociated missions introduce a persistent flow in succeeding to achieve a long sought stable and safer space environment. Indeed this noticeable weakness in the mentioned initiatives is not taken into account at this stage. To overcome this difficulty, a space situational awareness system (SSAS), different from the current SSA basically meant for collision avoidance, would use inspector satellites capable of approaching other satellites to identify them and gain information about their mission(s). It is proposed that such an expanded approach to traditional space traffic management could be based either on a multinational organisation (pooling some national means and resources on a voluntary basis), or on a UN steered agency (procurement and management of its own means and resources). This SSAS could be implemented in a near future, provided there is a shared political will and a recognized urgent need to do so by major space-faring nations gauging their lomg-term interests while there is still time. The space deterrence postures by dominant space powers that have been identified during the past ten years, or so, argues in favour of broadening as soon as possible the scope of the current TCBM. Although some similar mechanisms have been circulated in the past, the proposed approaches might be of renewed, if not topical, interest since, i) their possible implementation is now relevant from the technological viewpoint, and, ii) the increasing diversity of space objects, including some very agile, on a variety of orbits requires definitely new tools for a meaningful and credible space traffic management.