

SPACE DEBRIS SYMPOSIUM (A6)

Political, Economic and Institutional Aspects of Space Debris Mitigation and Removal (Joint with Space Security Committee) (6)

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TOWARDS A EUROPEAN COLLISION WARNING AND AVOIDANCE CENTRE

Abstract

As the number of satellite launches increases, space debris has become a significant issue for satellite manufacturers, owners and operators. Timely and accurate information regarding possible collisions or near misses is critical not only to avoid spacecraft damage, but also to avoid unnecessary maneuvers or spacecraft downtimes. However, the technical and administrative infrastructure to solve such a global problem is probably beyond the means of any single government.

While there are various sensors in Europe to identify and track space debris, there seems to be limited coordination and cooperation between these largely national assets. In this study, we review current space surveillance assets based in Europe and/or operated by European entities and review the chain of operations from debris tracking to risk assessment and maneuver planning. We then describe a possible European Collision Warning and Avoidance Centre with the aim of providing timely and accurate conjunction analyses and passing the information on to satellite operators. Given the limitations of land-based sensors, we outline space-based alternatives to complement the existing sensor network. We finally propose an operational structure and provide a cost estimate for such an architecture.