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Policy, Legal, Institutional, Economic and Security Aspects ofDebris Mitigation, Debris Remediation and STM (8-E9.1)

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A COMPARATIVE STUDY OF SPACE SUSTAINABILITY BEST PRACTICES, STANDARDS AND GUIDELINES

Abstract

Now more than ever, the space sector is conscious of the risks posed by space debris, and importantly, is demonstrating real commitment towards preserving the outer space environment. In recent years, we have seen the development of various best practices, guidelines and standards intended to improve safety and sustainability in the way we design, operate, and dispose of spacecraft. These have evolved at both national and international level, and have set precedence towards different targets, behaviours and means of performing space activities in a responsible manner.

Over a nine-week period, the UK Space Agency and The Aerospace Corporation conducted a study to compare and contrast the following six well-recognised space sustainability best practices, standards and guidelines:

- U.S. Government Orbital Debris Mitigation Standard Practices (ODMSP)
- IADC Space Debris Mitigation Guidelines
- ISO 24113:2023 Space Systems - Space Debris Mitigation Requirements
- SSC Best Practices for Space Operations Sustainability
- UNOOSA Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space
- FCC Mitigation of Orbital Debris in the New Space Age

The main output of this study is an Excel-based tool developed to allow detailed comparisons to be made across these documents. This paper presents the insights drawn from these comparisons, which drill down into specific topics and components of the publications. Examples include re-entry, post-mission disposal, on-orbit explosion prevention/passivation, and object collision risk; to name a few.