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THE IOAG WORKING GROUP ON SUSTAINABILITY OF OPERATIONS IN SPACE (SOS WG):
FINDINGS AND RECOMMENDATIONS IN THE DOMAINS OF SPACE DEBRIS, COLLISION
AVOIDANCE AND END-OF-LIFE ACTIVITIES

Abstract

In June of 1999 the space operations leadership of seven space agencies met at European Space Agency (ESA) Headquarters to discuss steps which could be taken to facilitate international space operations strategic planning, including interoperability, which would result in more effective and efficient utilization of combined agency resources. Out of that International Operations Plenary the Interagency Operations Advisory Group (IOAG) was chartered.

Since then, the IOAG has enabled international cross support for many missions through establishment and implementation of preferred standards, services and architectures for international space operations and cross support.

Considering that there is a rapid increase in the population of operational satellites, especially on the non-institutional side, with new types of operations (cubesats, constellations, maneuvering satellites, . . .), and that there is a growing population of debris in Space and the catalogs will contain smaller debris the

IOAG established the Space Operations Sustainability Working Group (SOS WG) in 2019

The objective of the SOS WG is to analyze the situation of how operations are conducted in Space and the trends related to the new users and the new usages of Space, to:

- Verify understanding of the new or increasing risks to be considered in various domains of the operations in Space;
- Identify the international organizations that already address at least part of these challenges;
- Analyze what they adequately cover or what could be improved;
- Formulate recommendations/requests for endorsement by the IOAG

In 2021 the SOS WG published a first report covering findings and recommendations in the domains of space debris and collision avoidance and end of life activities. This report was extended to cover the domain of spectrum and interferences which was released in 2022 together with small updates in the other domains.

Following an introduction of the IOAG and the SOS WG this paper will summarize the work done by the SOS WG in all domains and expand the key findings in the domains of space debris, collision avoidance and end-of-life activities and related recommendations to Space Agencies, operators and designers of satellites, maintainers of catalogues, launch service providers, research, academia, IADC, ISO and national and international regulators, satellite designers and operators.

Whereas the SOS WG considers it beneficial to achieve adherence to the outlined recommendations by as many operators as possible it is essential that future policies, plans, and procedures consider the variety of satellite organization types and ability to comply.