Space Debris/Sustainability Activities in ESA in 2023

January 30, 2024

61st UNCOPUOS Scientific and Technical Subcommittee

Holger Krag

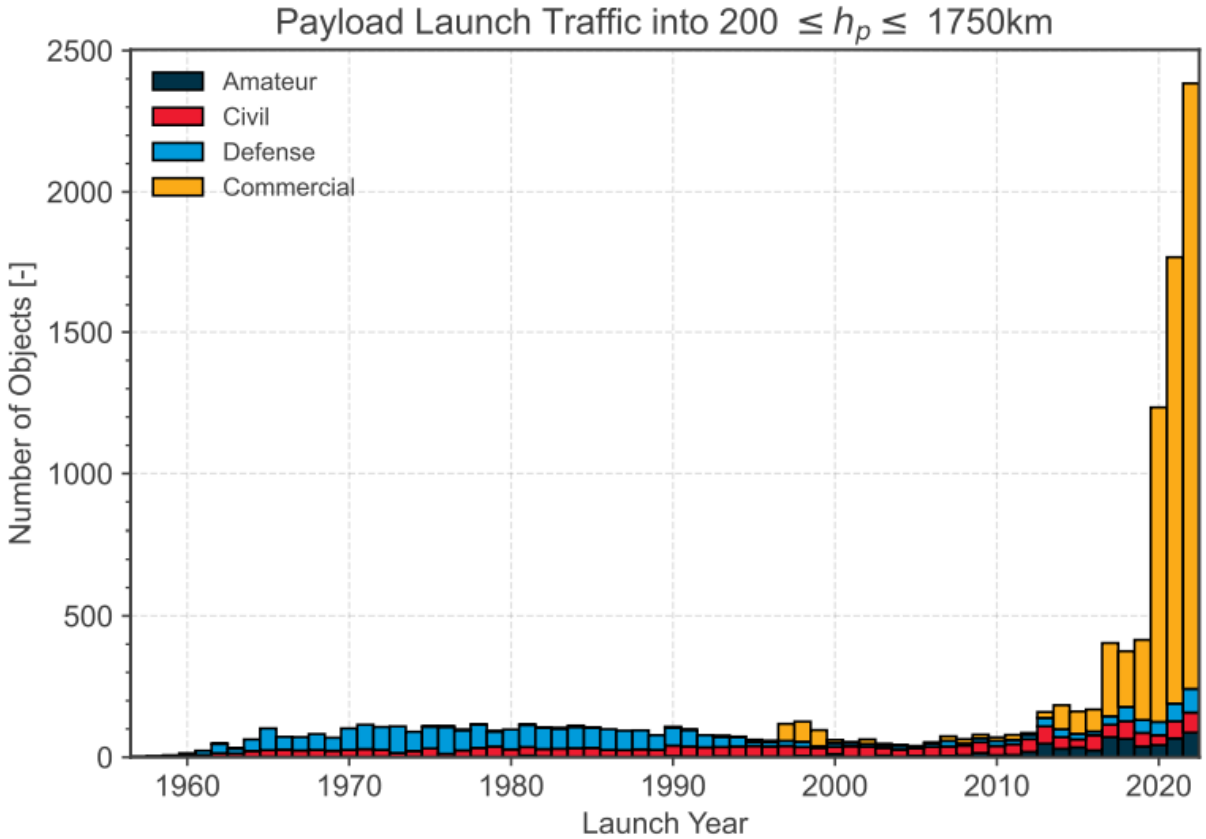
Use of the Environment

Statistics on space debris at

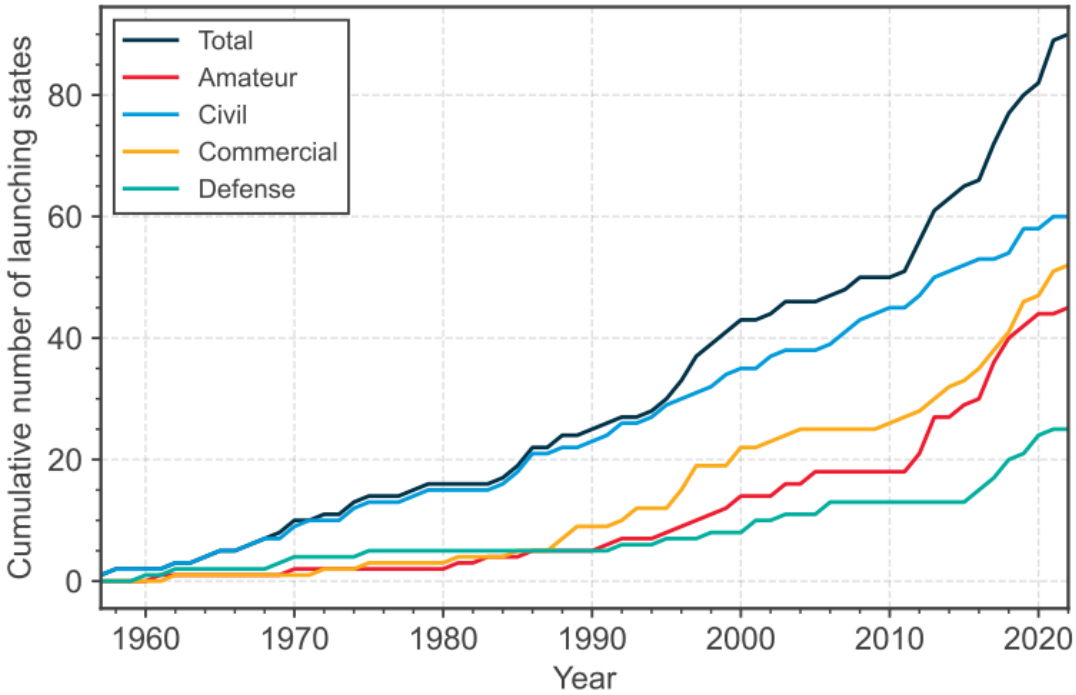
Tracked:

35,000

11,500t

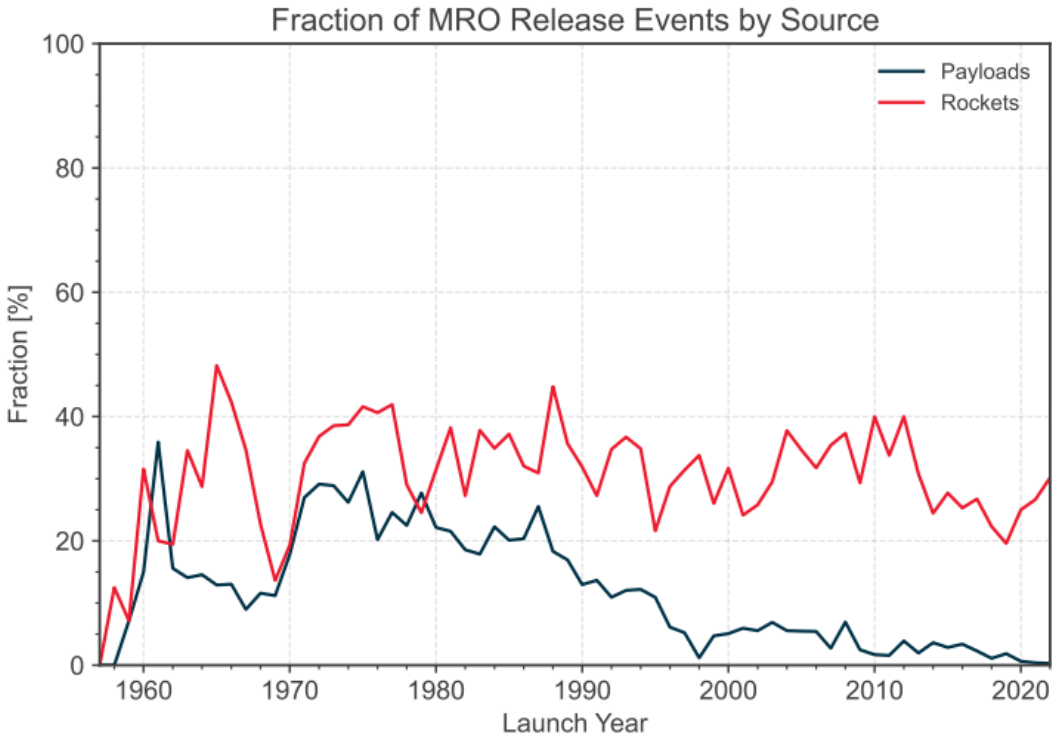


Registration of Space Objects

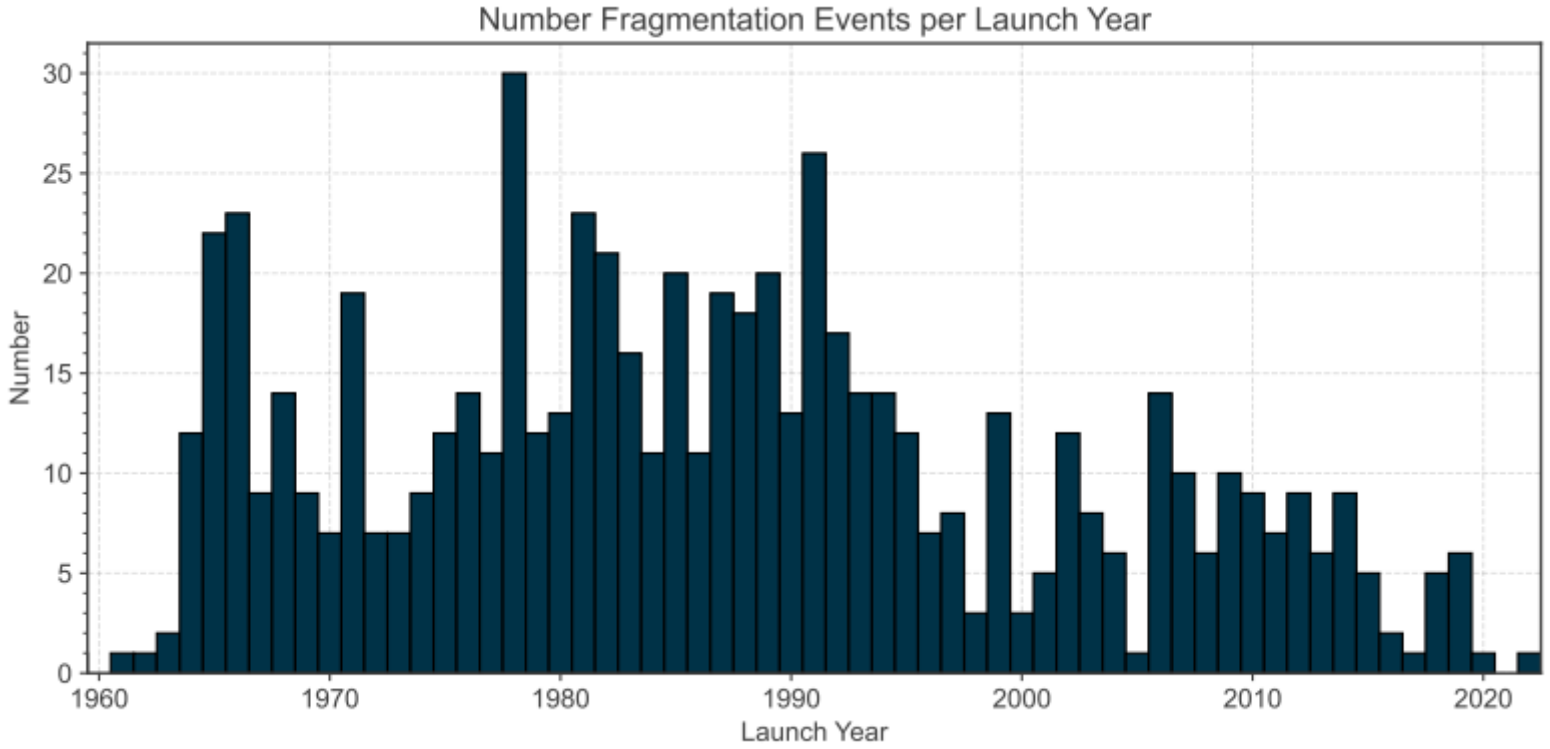


Launching States with at Least One Registered Object

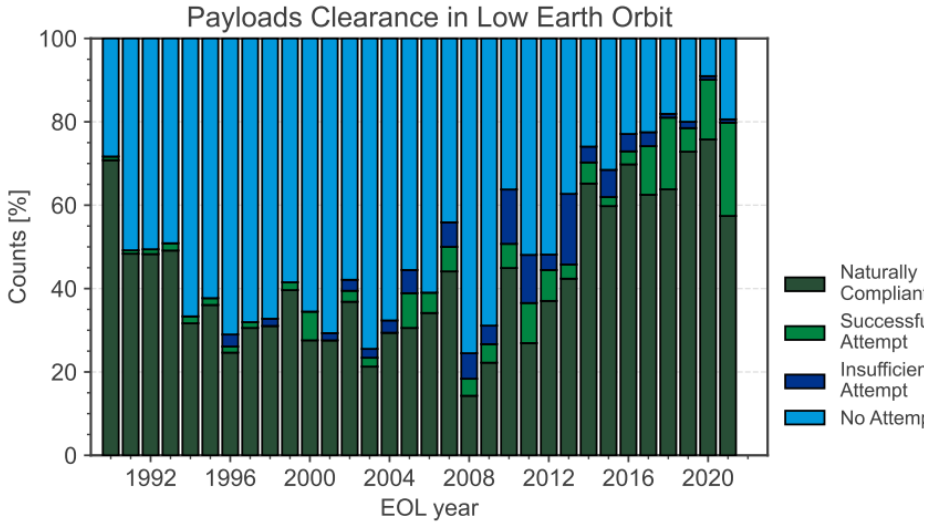
Release of Mission-related Objects



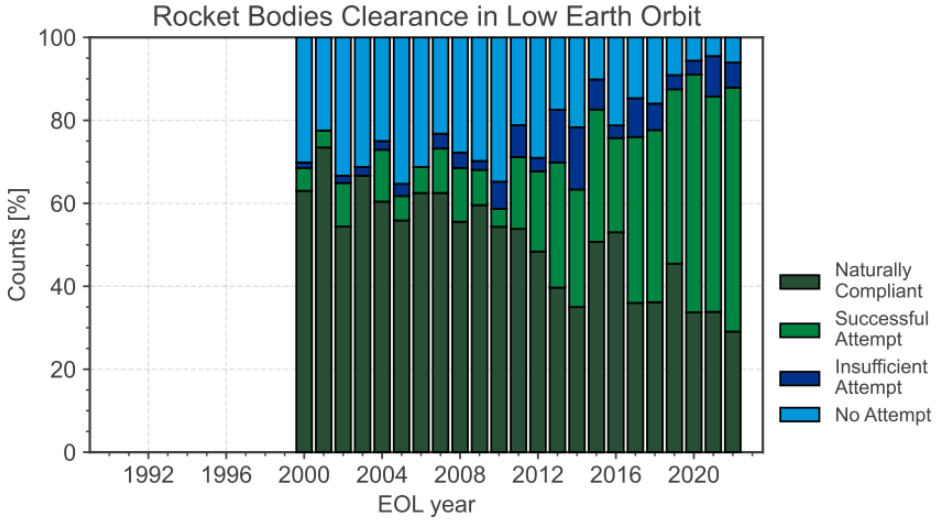
Break-Up Events



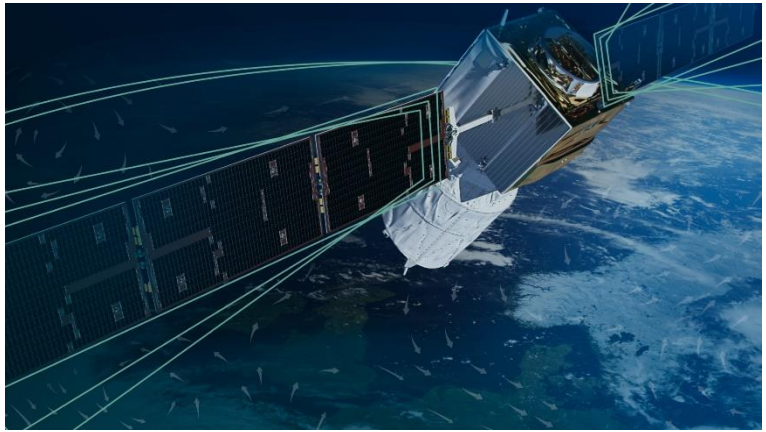
Post Mission Disposal LEO – all objects

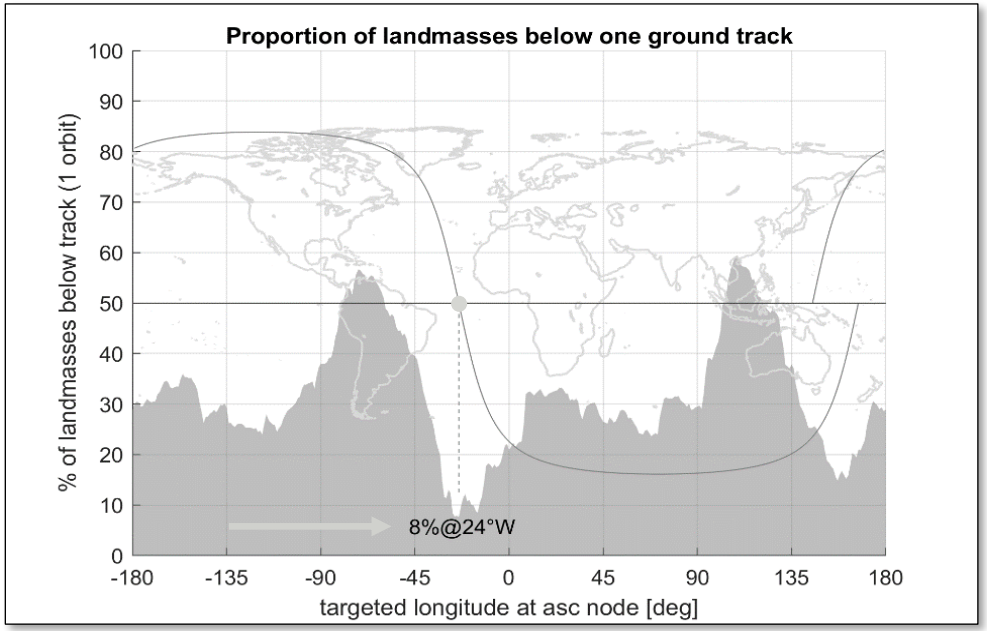


(a) Relative clearance of LEO_{IADC} by payloads.



Aeolus Assisted Re-entry

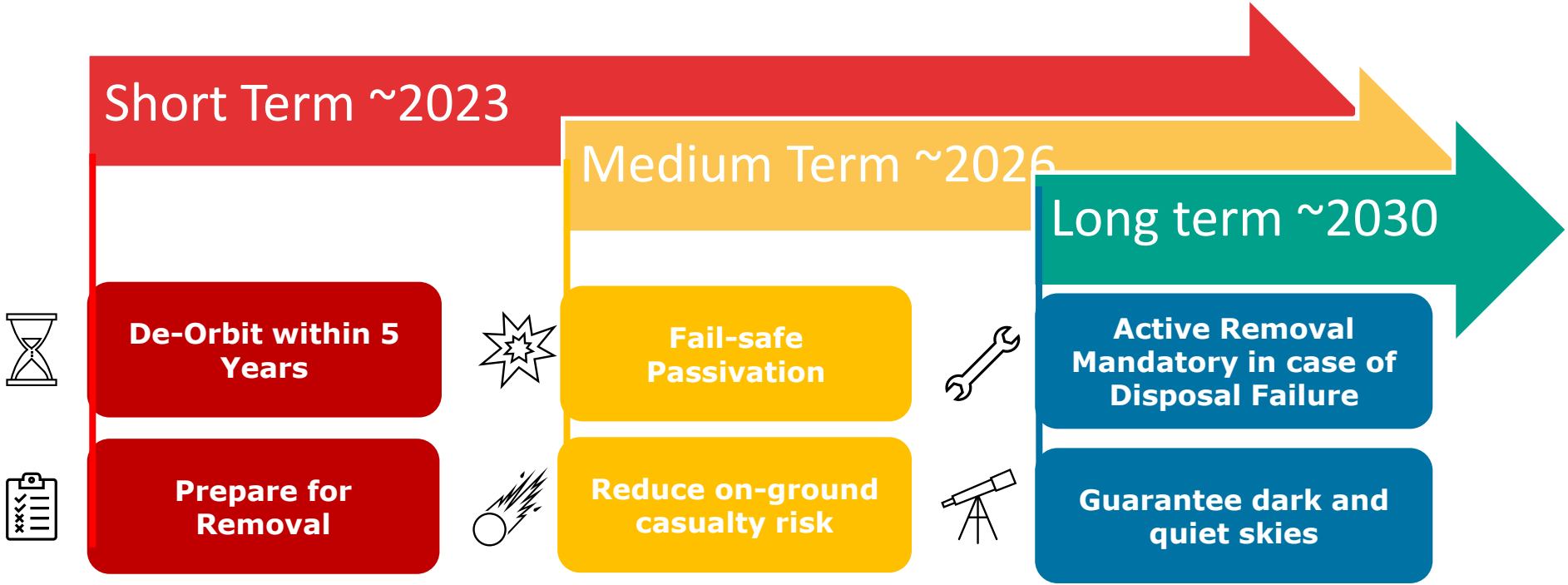




- **Launch:** 22nd August 2018
- **Orbit**: Altitude: 320 km, inclination: 97deg,
- **Designed Mission Life**: 3 years [until end 2021]
- **Goals:** To improve the quality of weather forecasts by providing global measurements of horizontal wind profiles

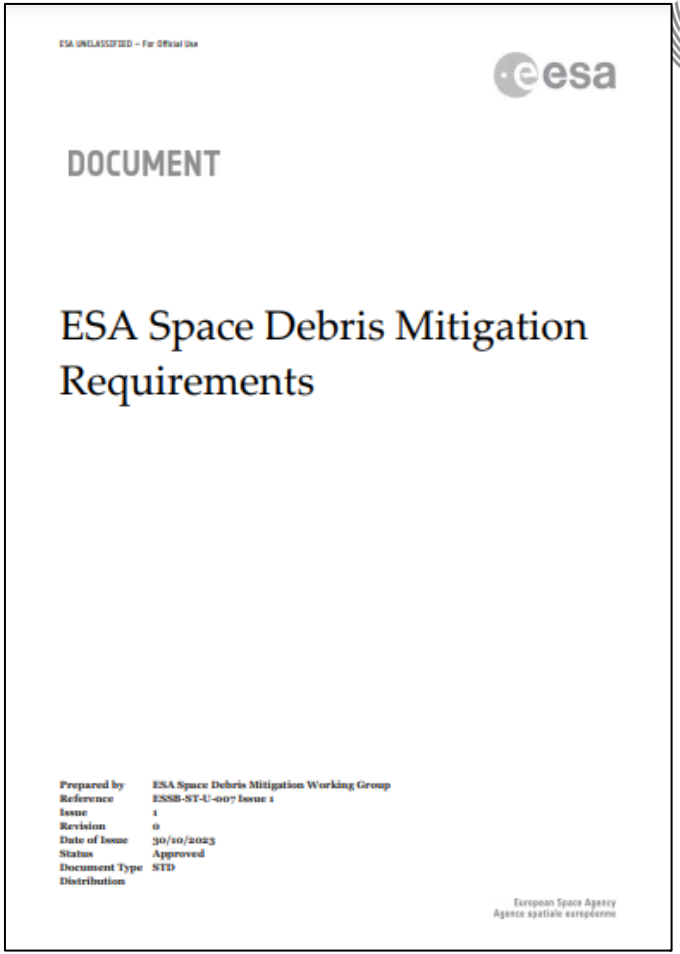
- Mission not designed for a controlled re-entry. Assisted re-entry lowers perigee enough to ensure re-entry over ocean area

Zero Debris Approach



New ESA standard 2023

- ESSB-ST-U-007
- https://technology.esa.int/upload/media/ESA-Space-Debris-Mitigation-Requirements-ESSB-ST-U-007-Issue1.pdf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DOCUMENT

ESA Space Debris Mitigation Requirements

Prepared by	ESA Space Debris Mitigation Working Group
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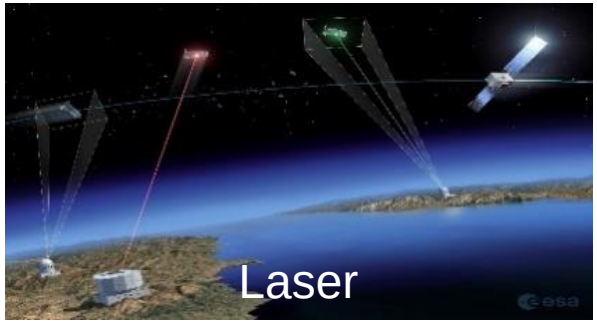
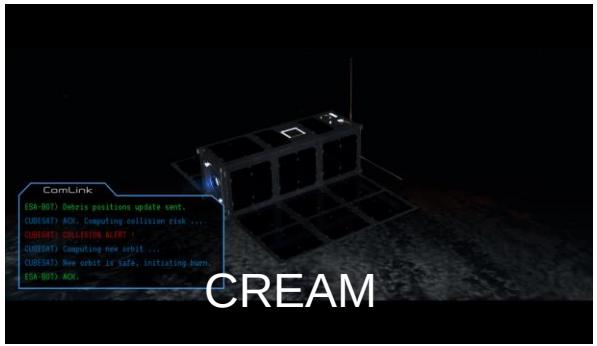
Agence spatiale européenne

ESA Space Safety – Space Debris Key Projects





ESA Space Safety – Space Debris Key Projects

Zero Debris Charter

Objective

Demonstrate the intention of the actors of the European and global space sectors to act collectively towards jointly defined, ambitious, meaningful and measurable targets, paving the way for collaborative capacity building activities.

Process

Co-development based on a ‘draft zero’ prepared by ESA

Two phases: written feedback and in-person workshops

Co-development partners

All interested actors (incl. public, private, academic and non-profit). ESA will be a partner among others.


Thank You !!