

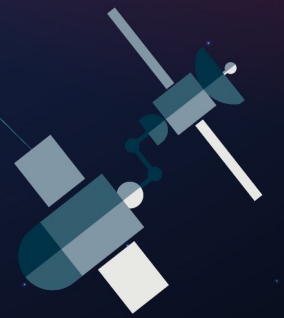
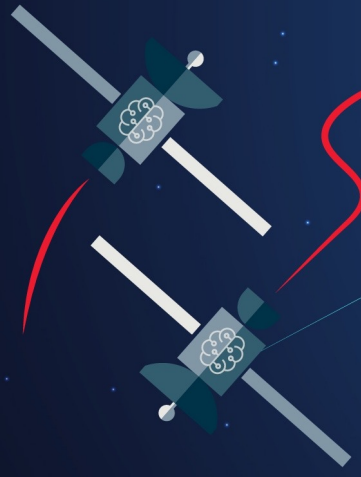
Introducing the Zero Debris Charter

Quentin Verspieren

PROTECT Accelerator Coordinator

Directorate of Operations

The PROTECT Accelerator



The PROTECT Accelerator

The PROTECT Accelerator was established to connect space and non-space actors beyond ESA to protect European assets from space hazards, including debris and space weather interferences, in synergy with relevant national, EU or other European initiatives.

Implemented by the ESA Directorate of Operations, it aims to leverage the capabilities and solutions developed by the Space Safety Programme (S2P) to foster collaborative capacity building activities with all relevant actors of the European and global space sectors for the achievement of a Zero Debris future by 2030 and to ensure the availability of space weather services in Europe.



Council at Ministerial Level 2022

ESA encouraged by Member States to implement “a Zero Debris approach for its missions; and to encourage partners and other actors to pursue similar paths, thereby collectively putting Europe at the forefront of sustainability on Earth and in space, while preserving the competitiveness of its industry”

ESA/C-M/CCCXIII/Res.1.36



ESA Space Debris Mitigation Standard & Policy

New state-of-the-art technical requirements, applicable to ESA missions, in a step-by-step approach to implement a Zero Debris by 2030.



Zero Debris Charter

Engaging like-minded actors of the space sector in a collective effort towards space safety and sustainability



Zero Debris Technical Booklet

List of needs, technical solutions and contributions gathered through the Zero Debris community to achieve the jointly defined sustainability targets by 2030

Purpose

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



Announcement at the Paris Air Show in June 2023

Zero Debris Charter: building a pro-active community



Objectives

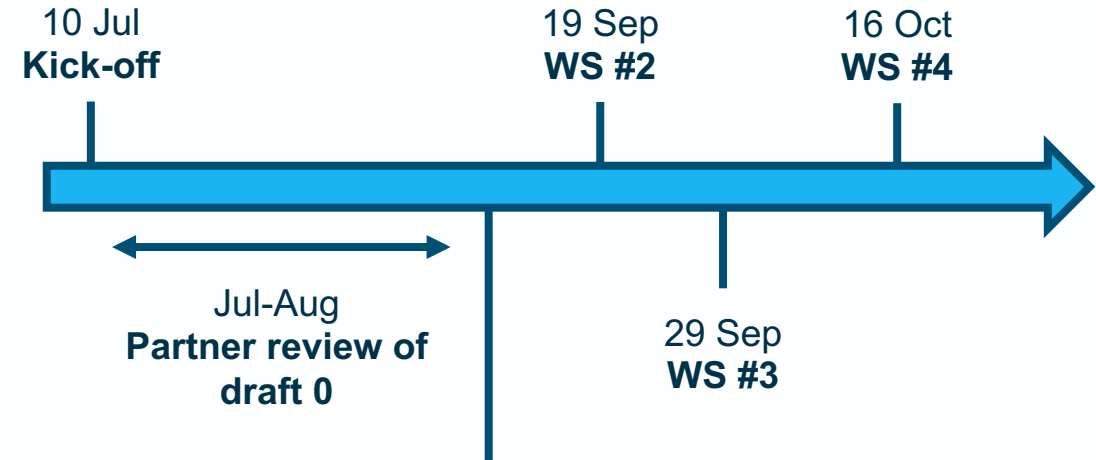
- Building a community of pro-active actors in Europe and beyond, committed to space safety and sustainability.
- Laying the foundation of ambitious collaborative capacity building activities.

Co-development process

- Collaborative and open to all.
- 30+ active participants (legacy and New Space, institutional, academic, etc.) and 100+ closely following.

Charter's contents

- Ambitious guiding principles.
- Jointly-defined ambitious and measurable targets for 2030.
- Commitment to work collaboratively towards the achievement of the targets.
- *Not legally binding*

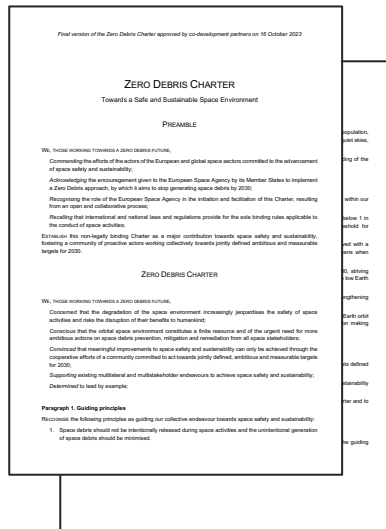


4 Sep: Zero Debris Charter Co-development Workshop #1

Zero Debris Charter Co-development Workshop #4



Zero Debris Charter completed: what next?



- Zero Debris Charter completed on 16 October 2023
- Released to the public on 6 November 2023
- Period to register intent to sign: 6 November to TBD
- Signing ceremonies in first half of 2024
- **2024 to 2030, and beyond: collective work!**



Zero Debris Charter: preview



3 guiding principles

Intentional release and unintentional generation of debris

Adverse effects of debris, including re-entry and DQS

Constant and collaborative improvement of knowledge on space debris

5 targets for 2030

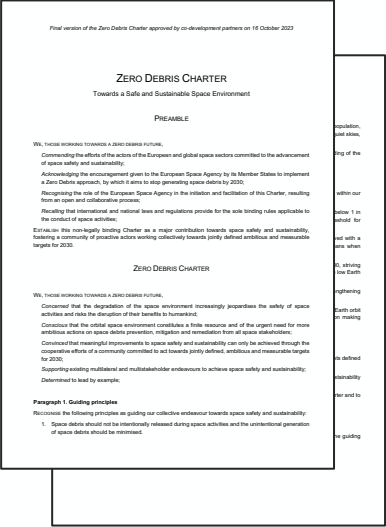
Probability of space debris generation through collisions and break-ups

Probability of successful clearance of LEO and GEO

Casualty risk from re-entering objects

Information sharing and space traffic coordination

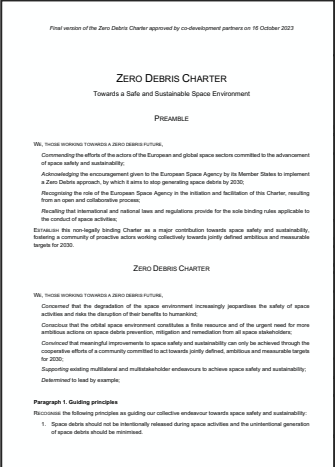
Debris identification and tracking





- 1. Bridging high-level orientations and concrete technical developments**
(principles and targets)
- 2. Involving public and private actors alike**
(government, inter-governmental, industry of all sizes, academia)
- 3. Only the first step: active follow-up to achieve the targets**
(regular exchanges, technical booklet, collaborative roadmap)

Zero Debris Charter: stay posted



Stay posted for the Charter's release!

On 6 November 2023 on the ESA website

