

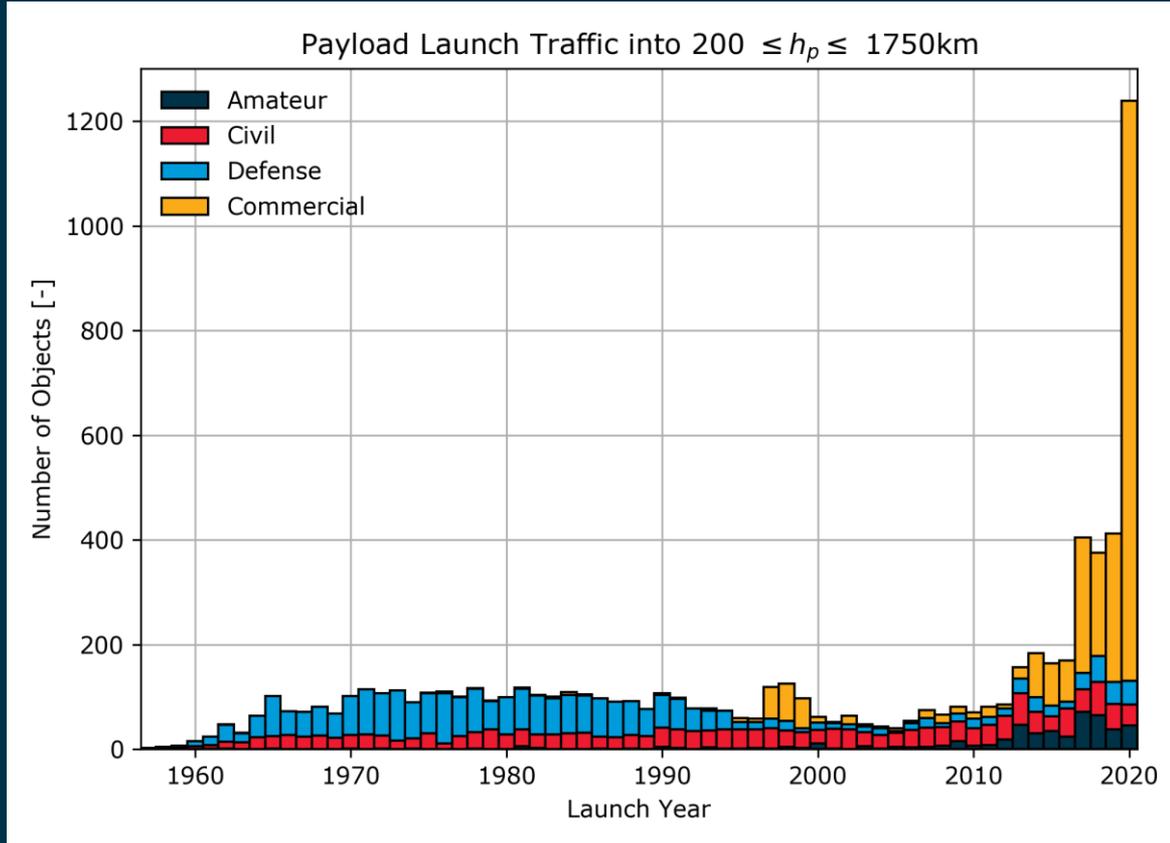
Space Debris/Sustainability Activities in ESA in 2020

April 21, 2021

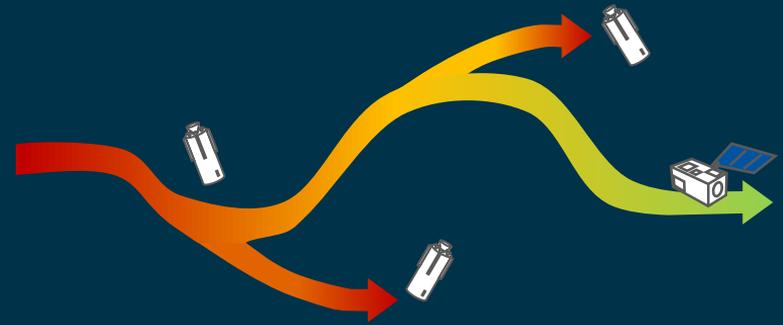
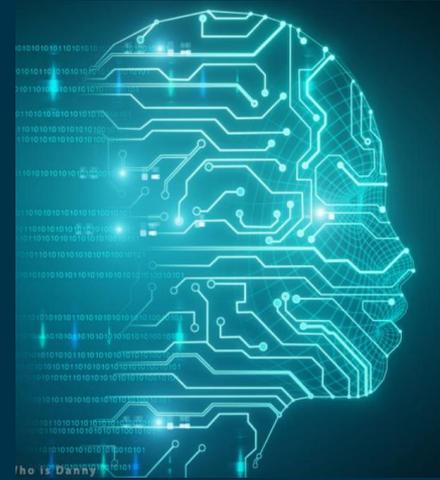
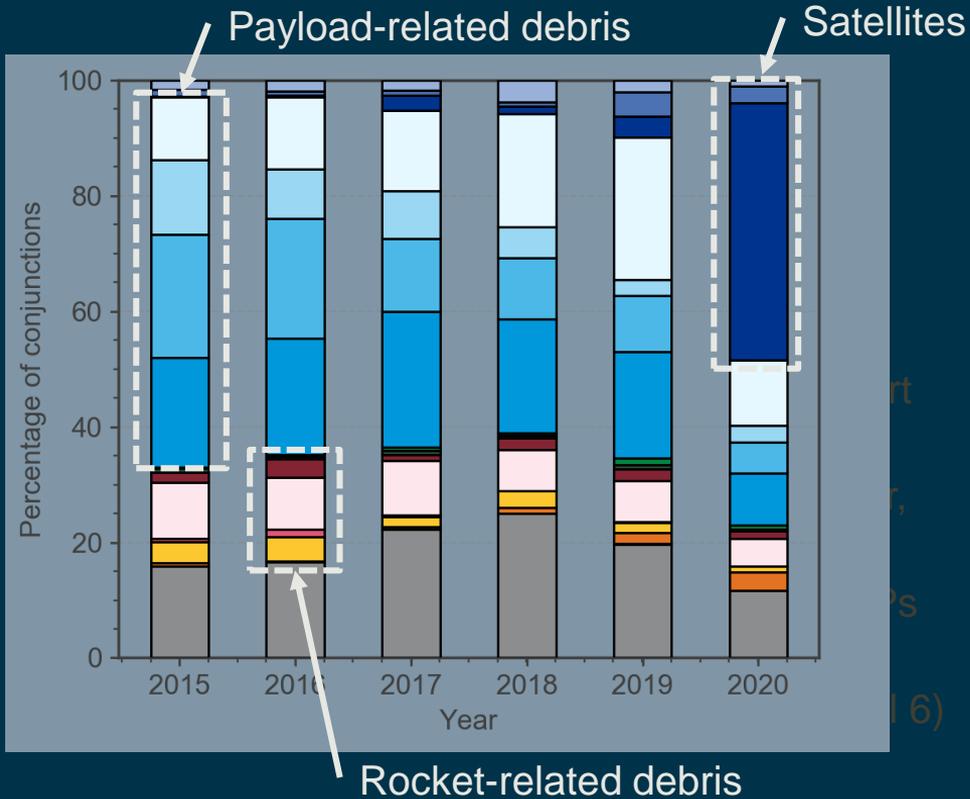
8th European Conference on Space Debris

Holger Krag, Tim Flohrer, Luisa Innocenti, Francesca Letizia





Space Traffic Management Solutions





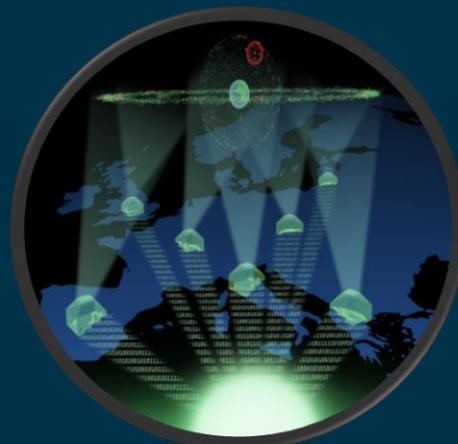
Robotic Telescope



Laser Testbed



Phased Array Demonstrator



Processing S/W

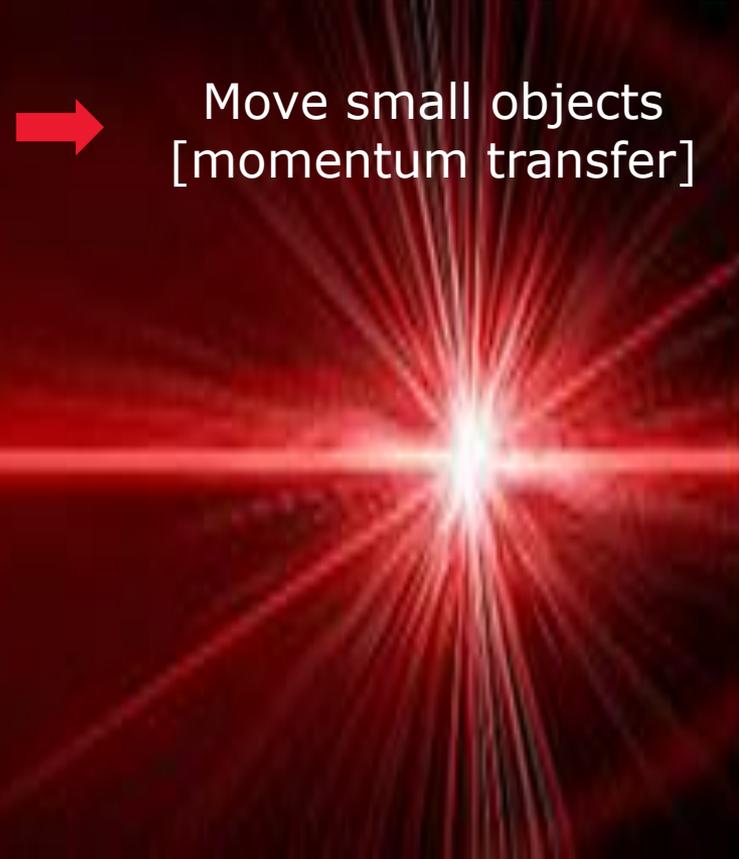
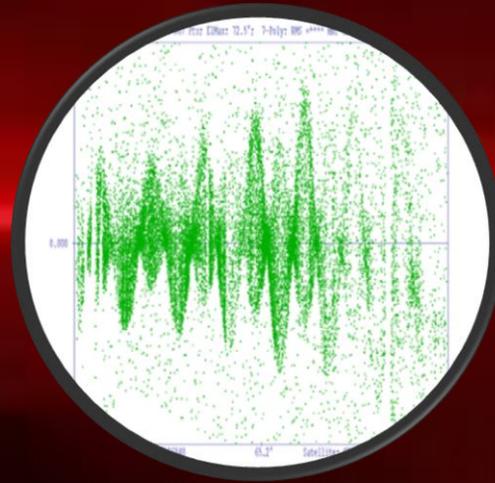
Tracking non-cooperative targets



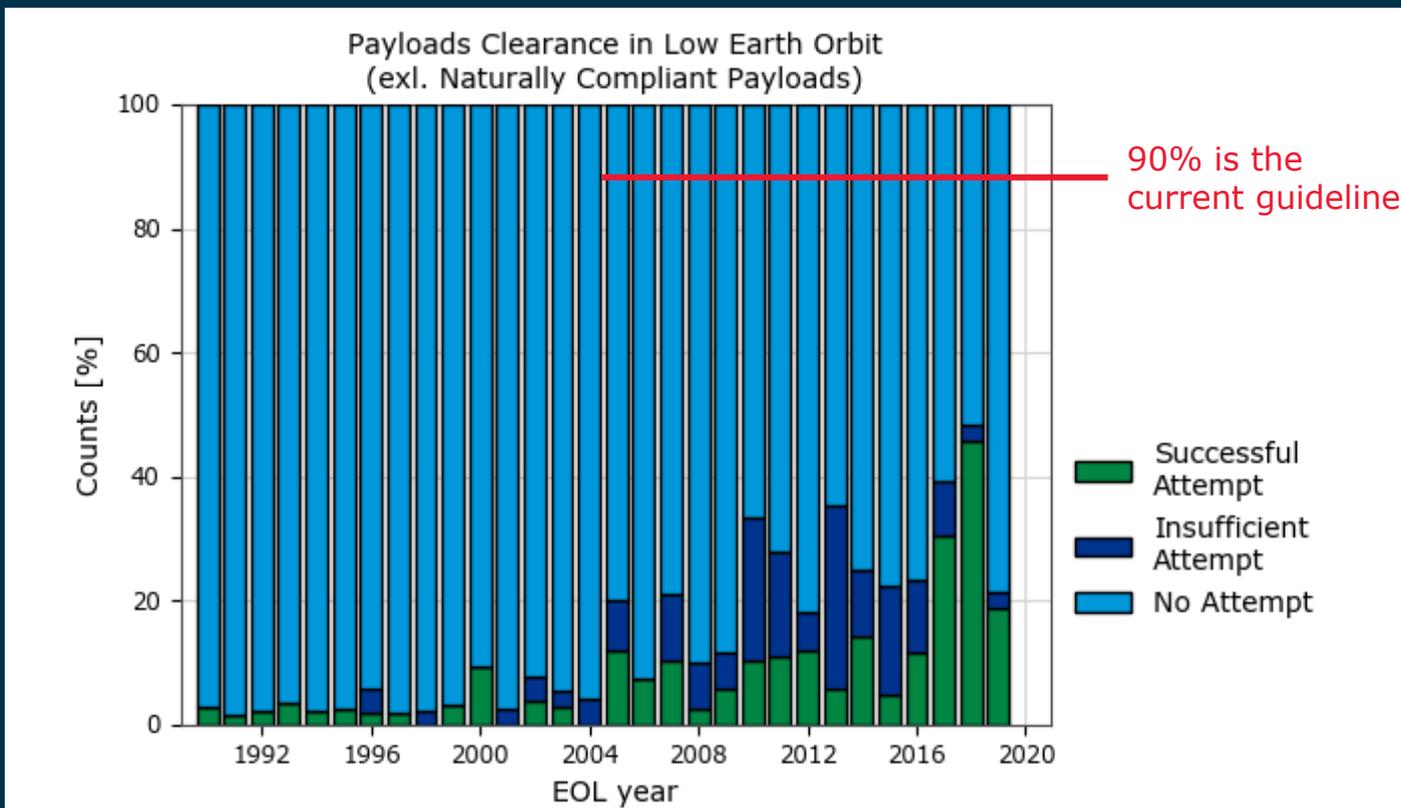
Increase accuracy of orbit information



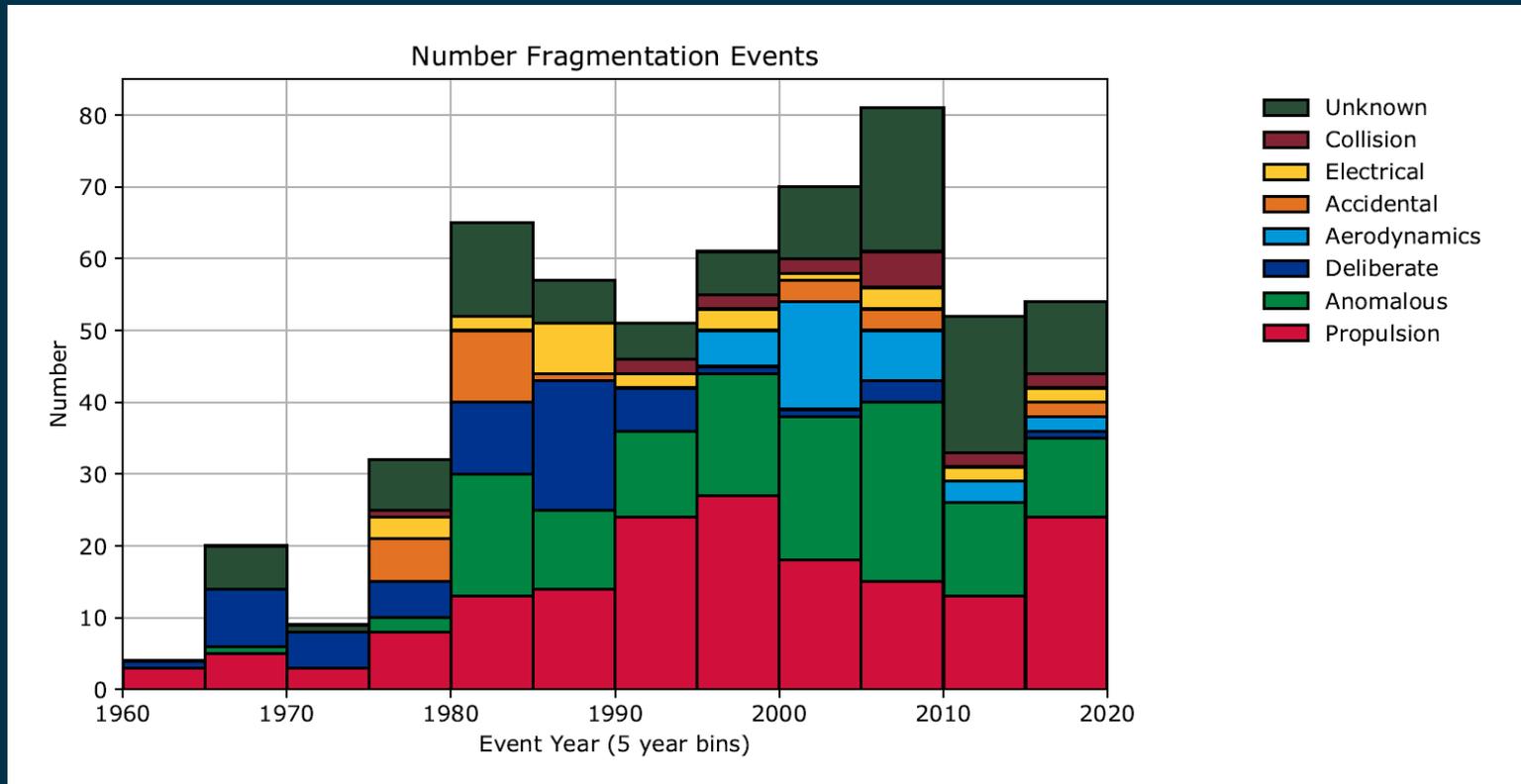
Move small objects [momentum transfer]



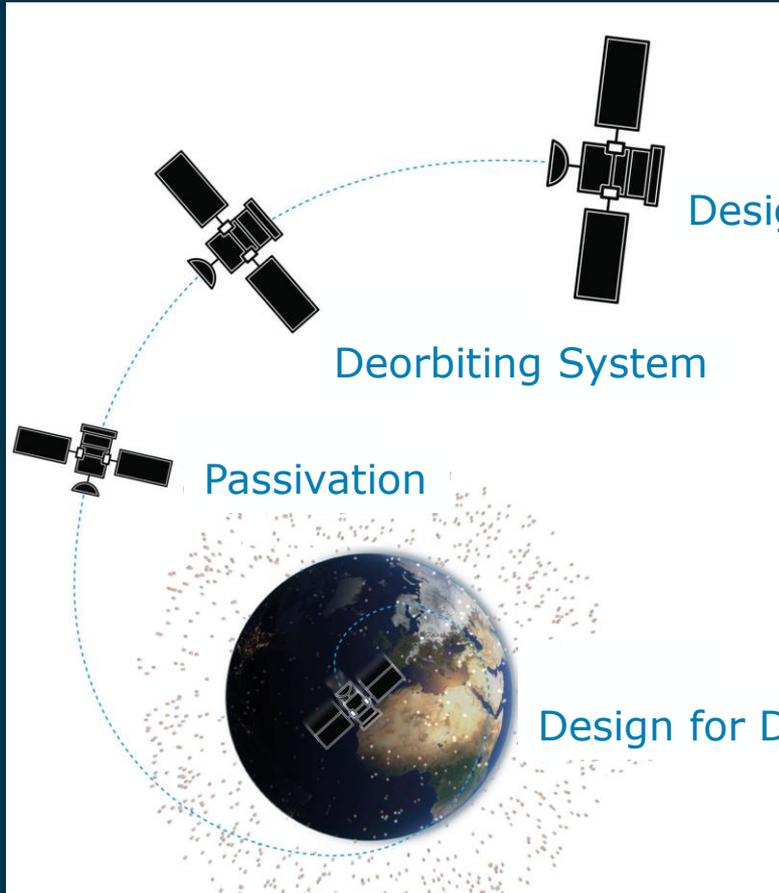
Post Mission Disposal Today



Break-Ups in Orbit Today



Cleanspace Mitigation Technology

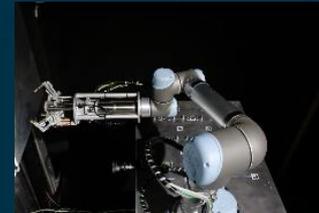
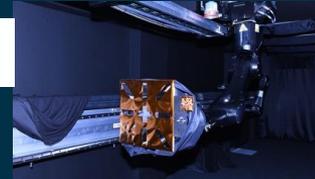


Design for Removal

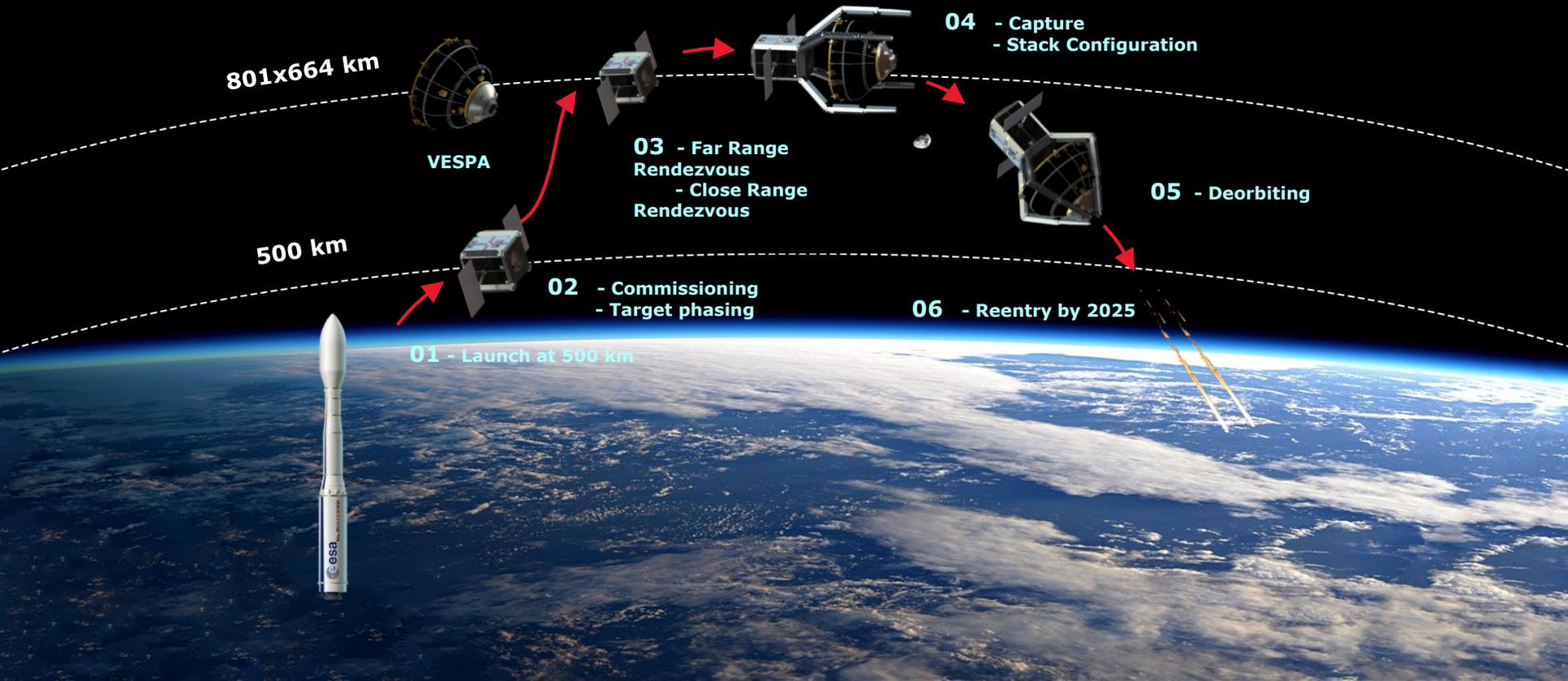
Deorbiting System

Passivation

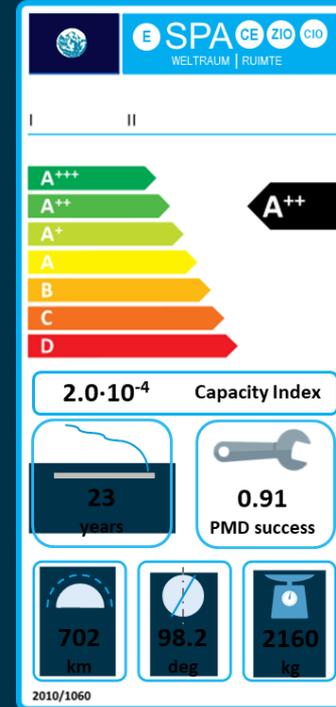
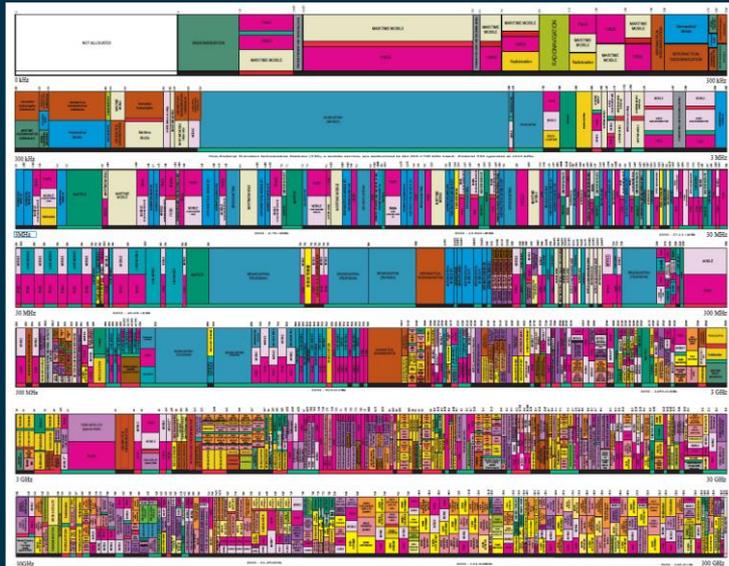
Design for Demise



Clearspace-1: Active Removal Contract Signed



Capacity: typology & orbital regimes of artificial space objects compatible with a **stable evolution** of the environment



Space Sustainability Rating



Preliminary concept definition

Host agency selection

Module selection



Modelling refinement

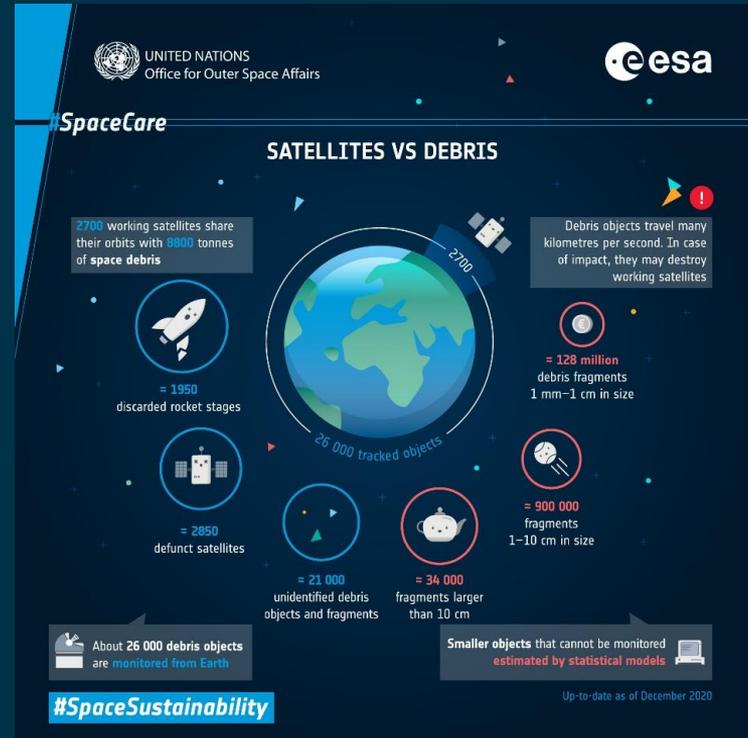
Architecture definition

Architecture finalisation

Alpha-testing
i.e. application to missions from the consortium (ESA, MIT)

Beta-testing
i.e. application to commercial actors





<https://www.unoosa.org/oosa/en/informationfor/media/unoosa-and-esa-release-infographics-and-podcasts-about-space-debris.html>