

Space Debris/Sustainability Activities in ESA in 2021

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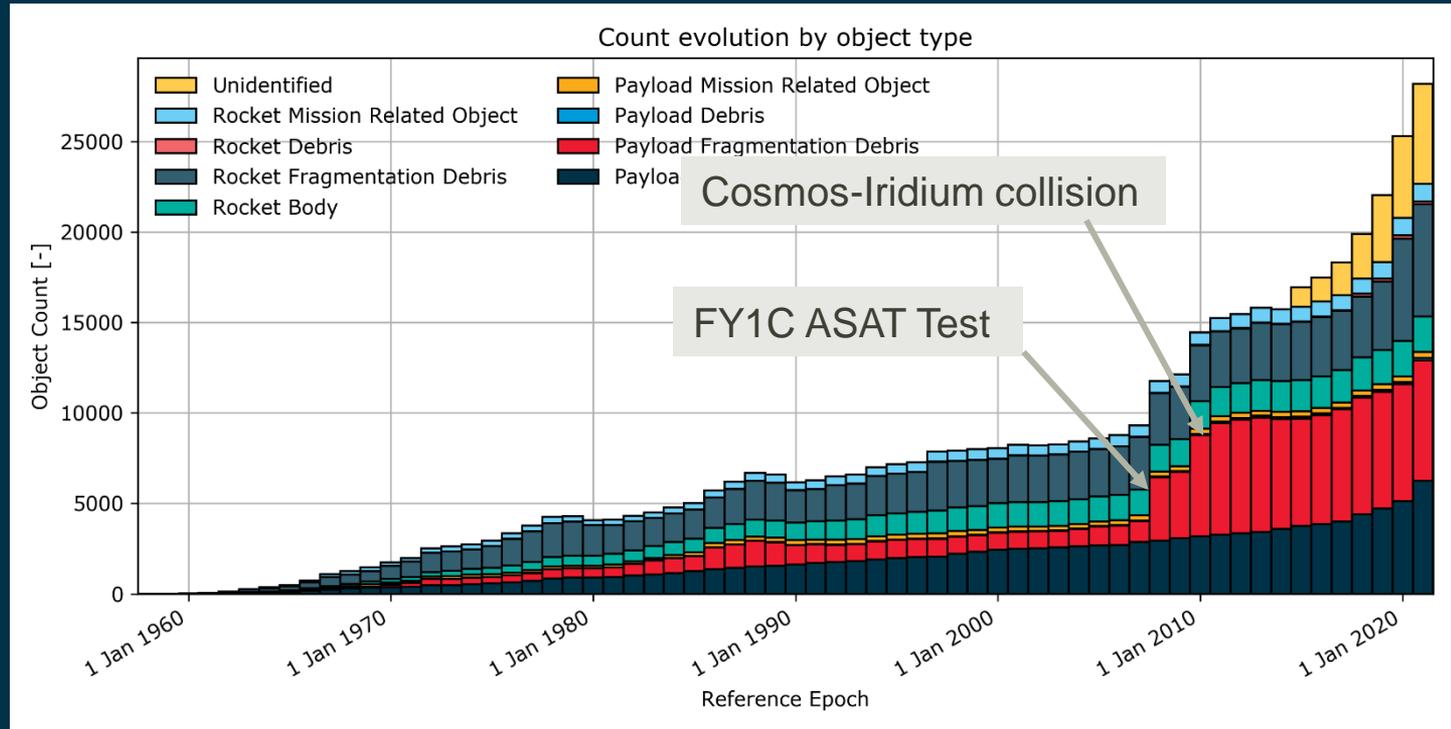
Tracked Population

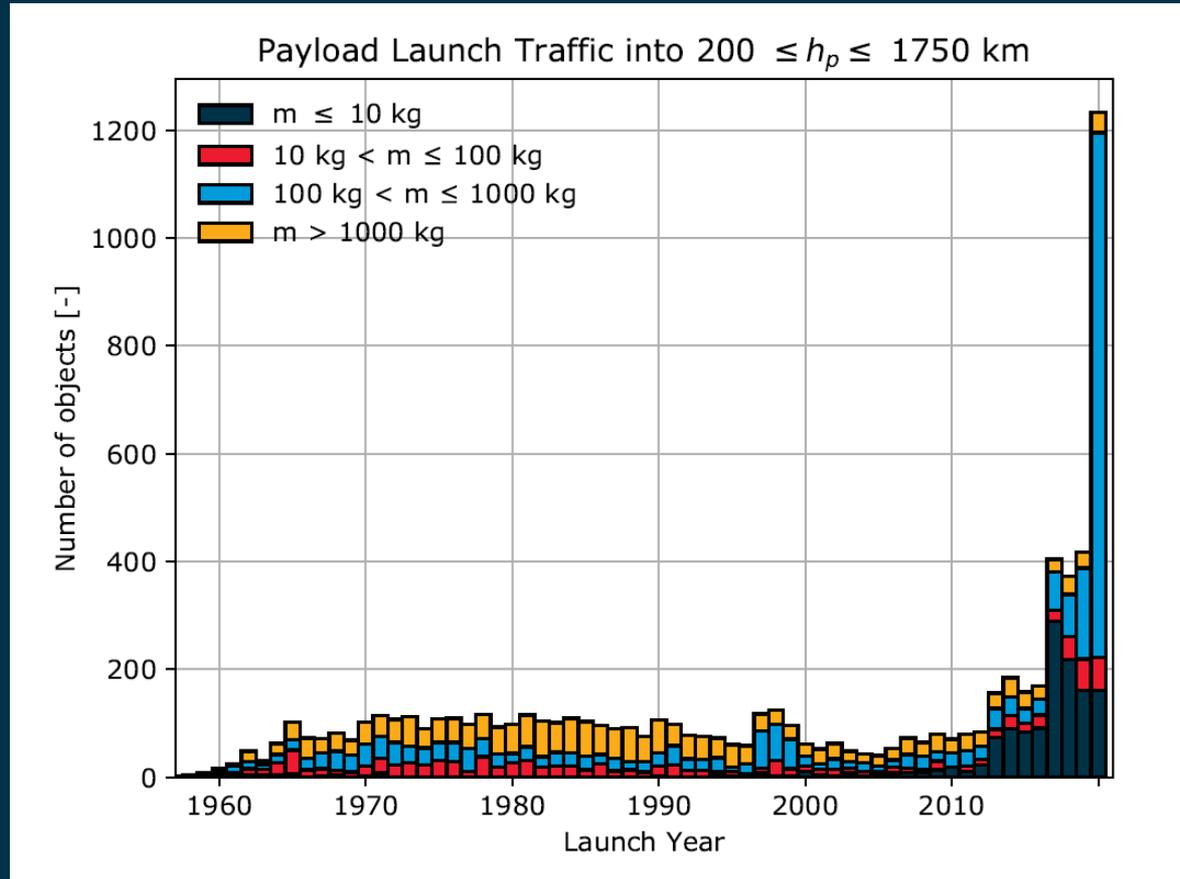
Statistics on space debris at



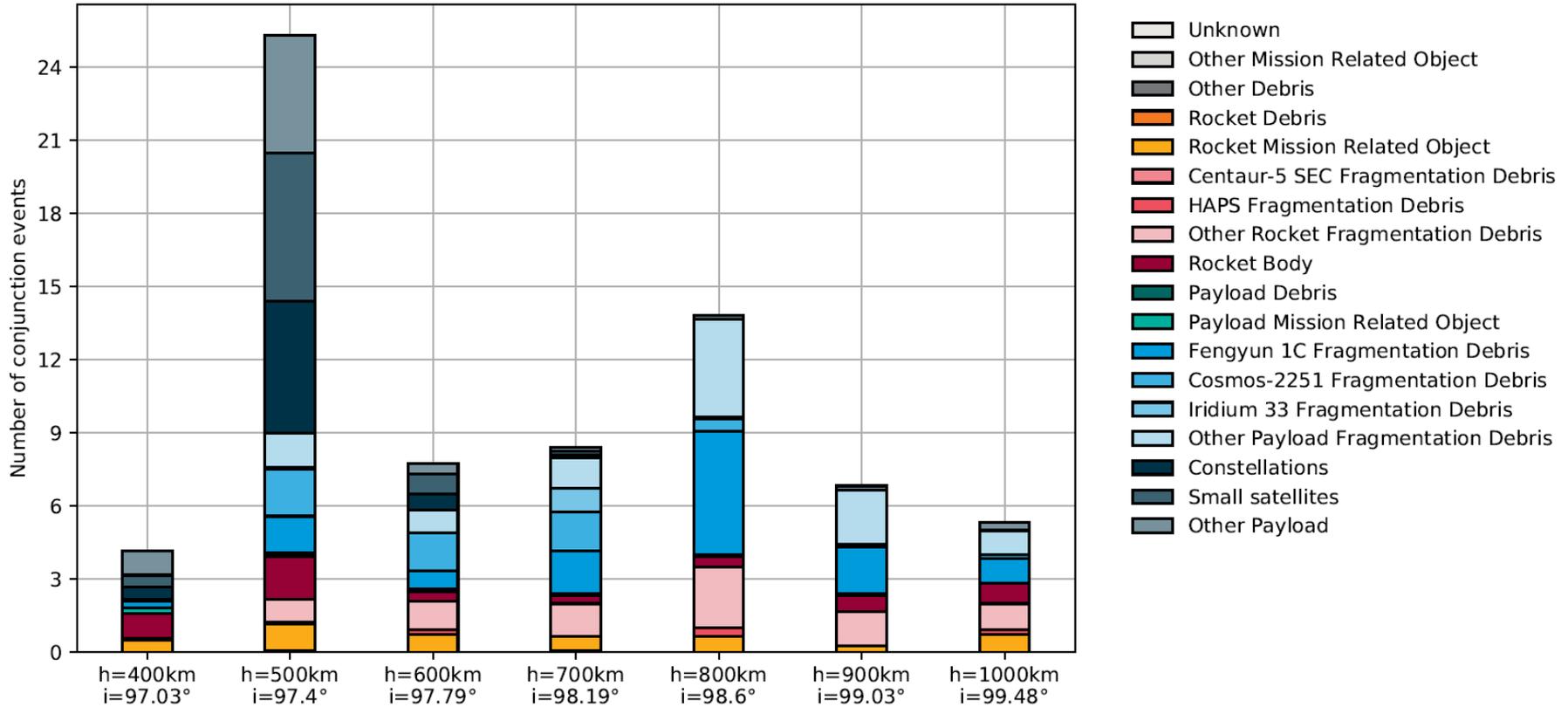
30,000

9,800t



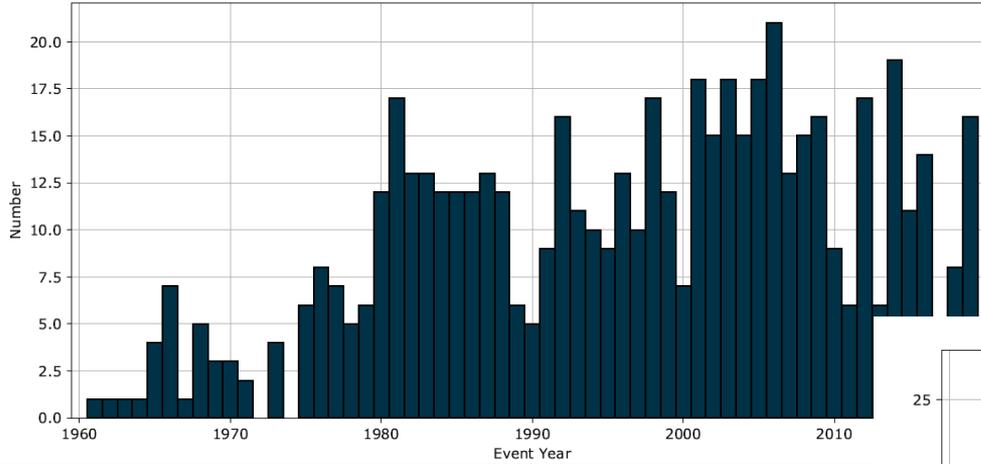


Collision Avoidance - Today

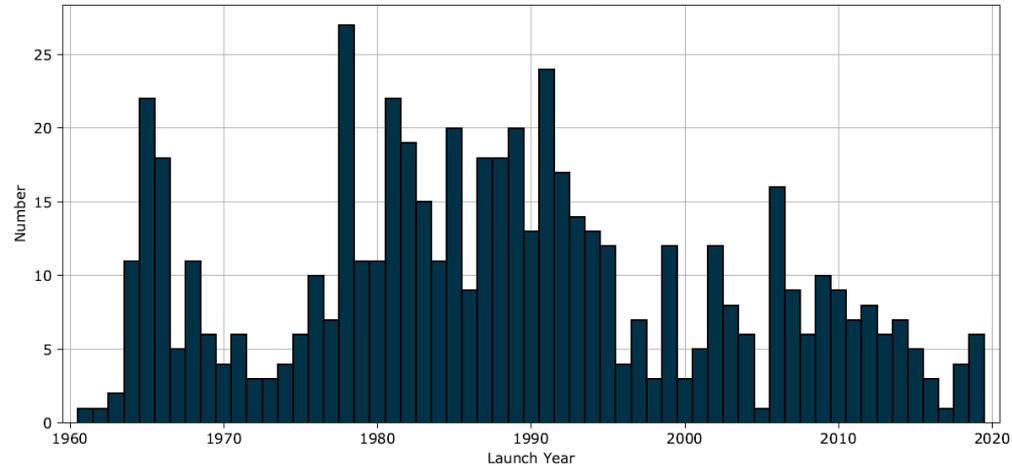


Break-Ups in Orbit Today

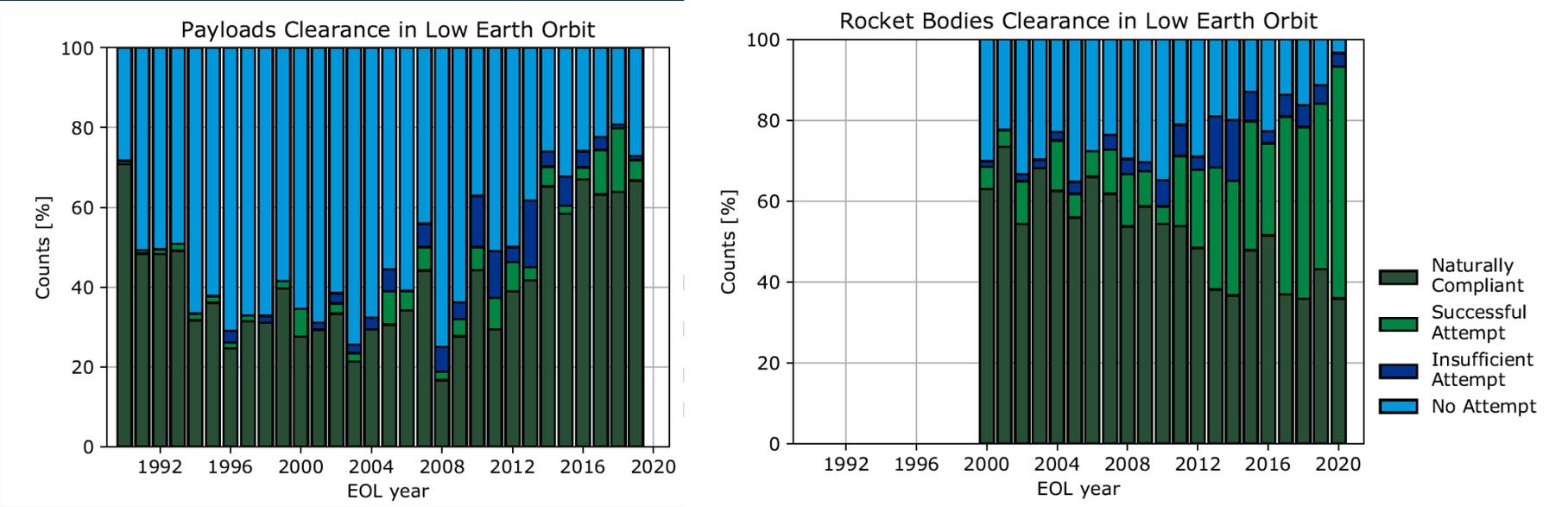
Number Fragmentation Events per Event Year



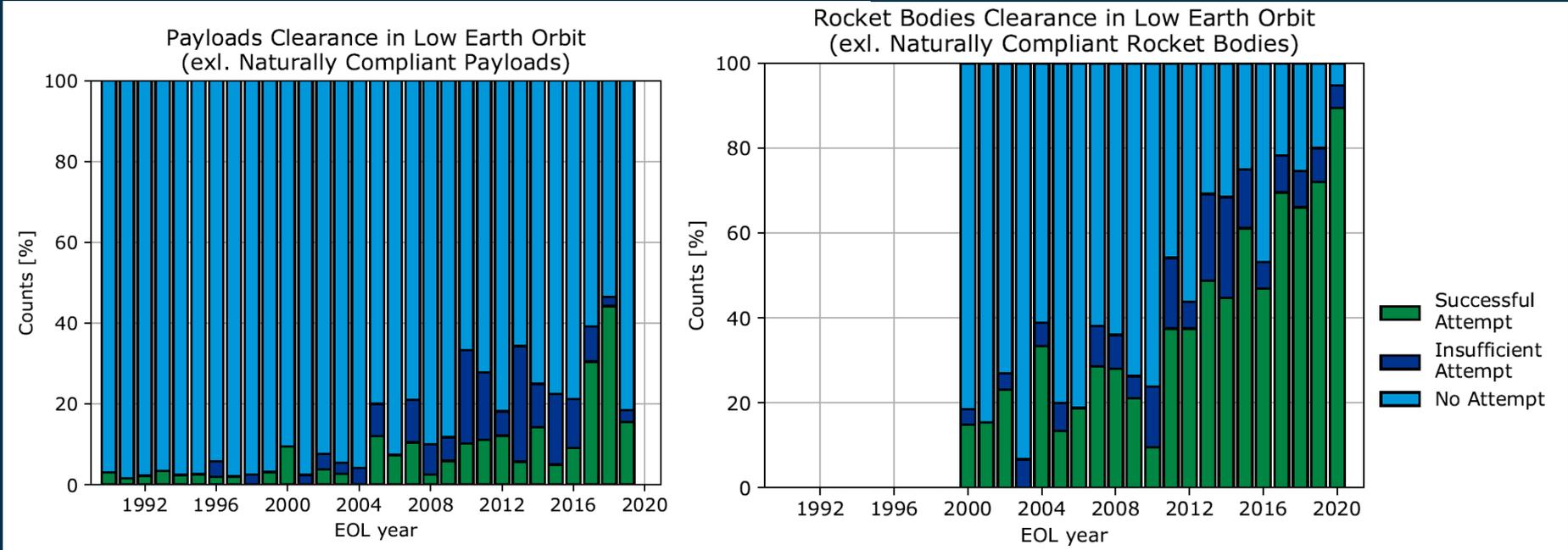
Number Fragmentation Events per Launch Year



Post Mission Disposal LEO – all objects



Post Mission Disposal LEO – objects that need to perform a disposal manoeuvre



Three Accelerators for Space in Europe



ACCELERATING

Protection of Space Assets

In the Matosinhos Manifesto, ESA Member states highlighted the potential contribution of the PROTECT Accelerator in *“safeguarding and protecting European assets from space debris and space weather interferences, in synergy with relevant national, EU or other European initiatives, at a moment when it is urgent and relevant for Europe to ensure available and resilient infrastructure and services for its society and economy.”*



Zero Debris Policy and Autonomy for Safe European Spaceflight

Ensuring the Safety of Assets in Space and On-Ground

Adding zero debris to the Earth orbital environment

Debris neutrality

by 2030

Apply Space Debris Mitigation:
>90% compliance with Post Mission Disposal for LEO, GEO and MEO

Removal of debris (failed satellites, upper stages, Mission related objects)

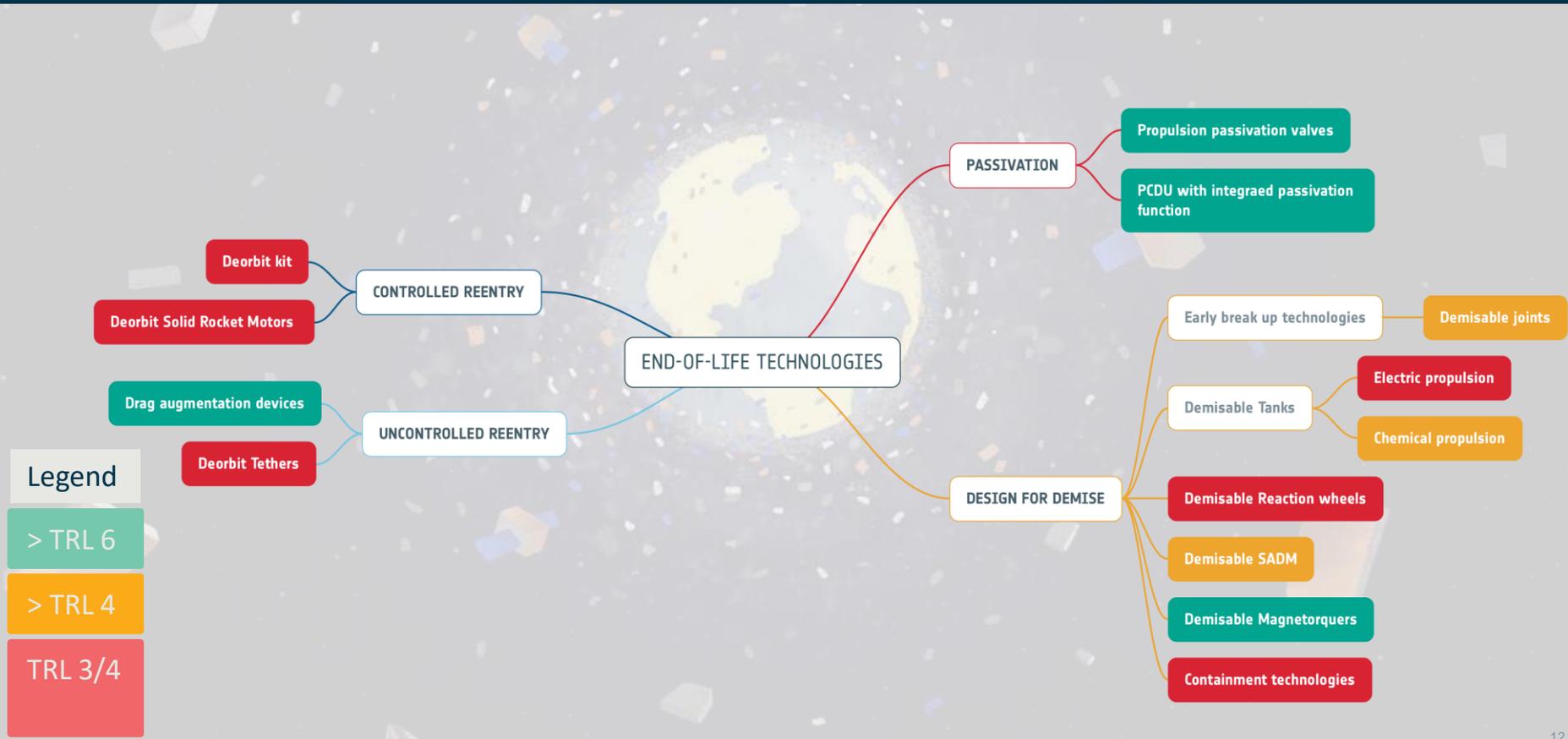
by 2050

Circular economy of space

Recycle 50% of launched mass

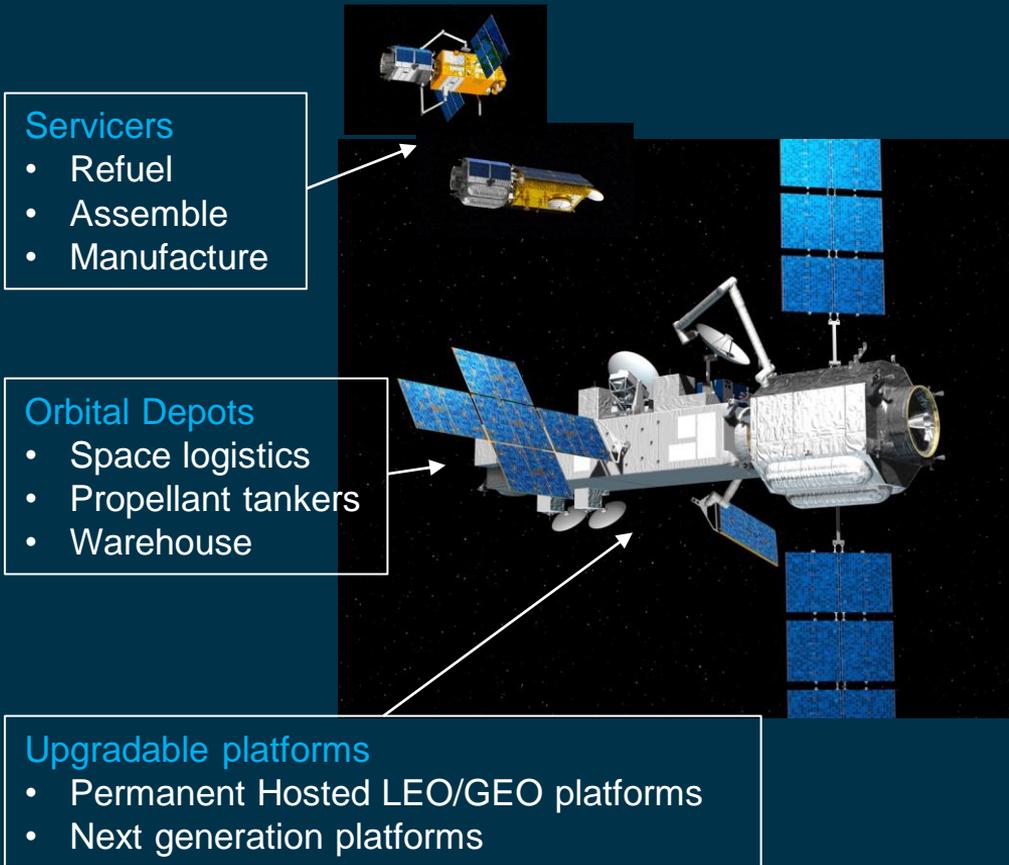
A workplan is being prepared to achieve these goals

SDM: What is being done - technologies

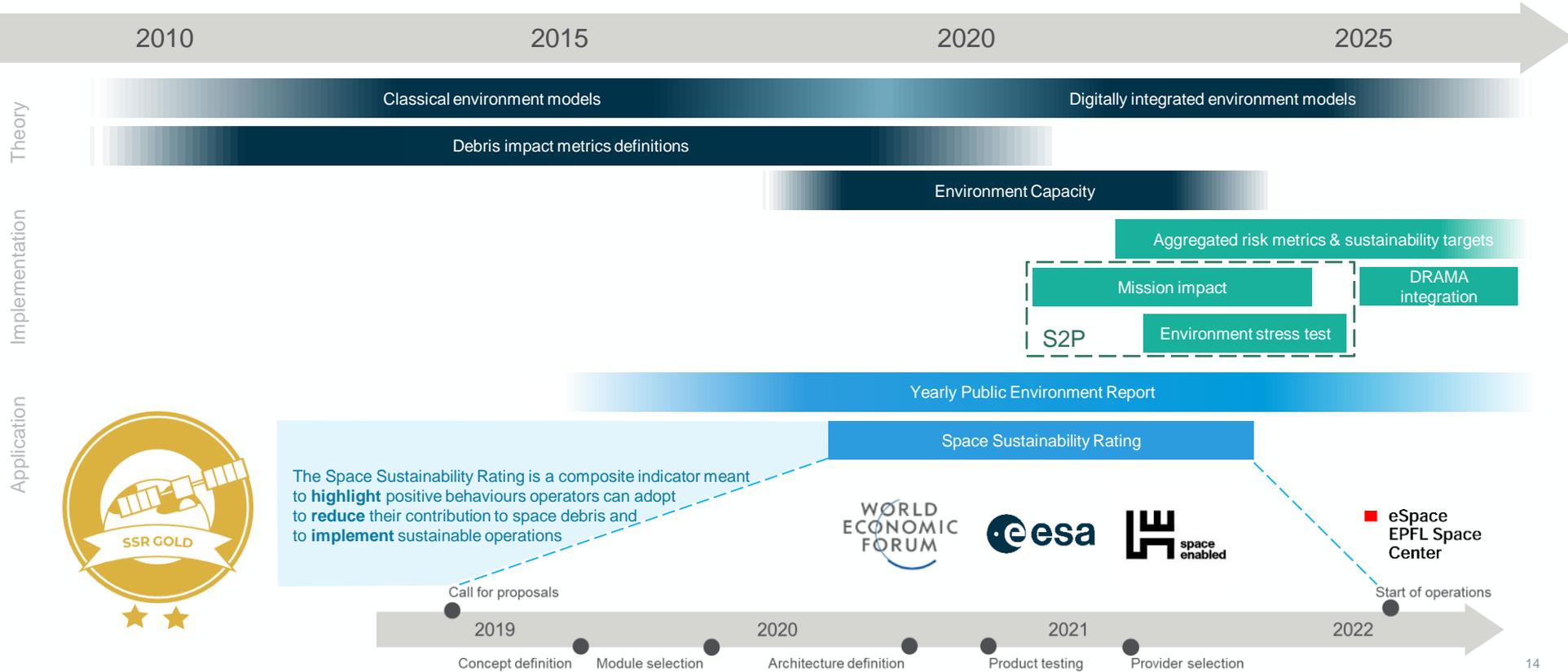


Legend

- > TRL 6
- > TRL 4
- TRL 3/4



Developments targeting impact assessments on the space debris environment



Thank You!!

