

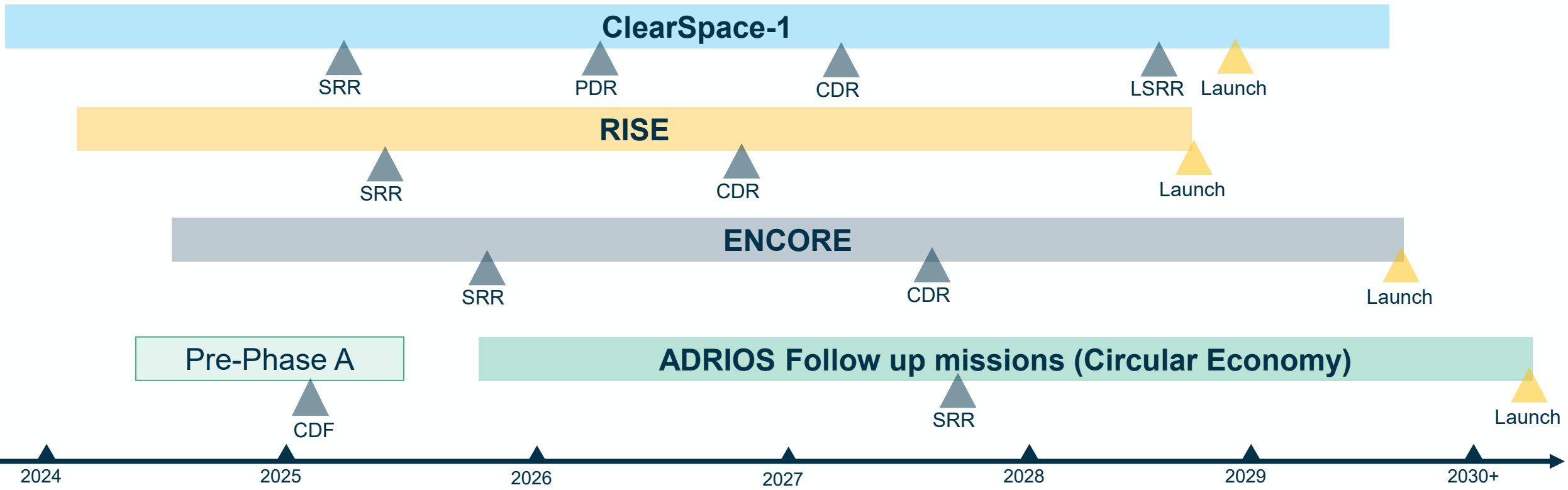
Commercial aspects in the ADRIOS Programme

Dr. Christian Steimle
D/OPS
ESA ESTEC

05/12/2024

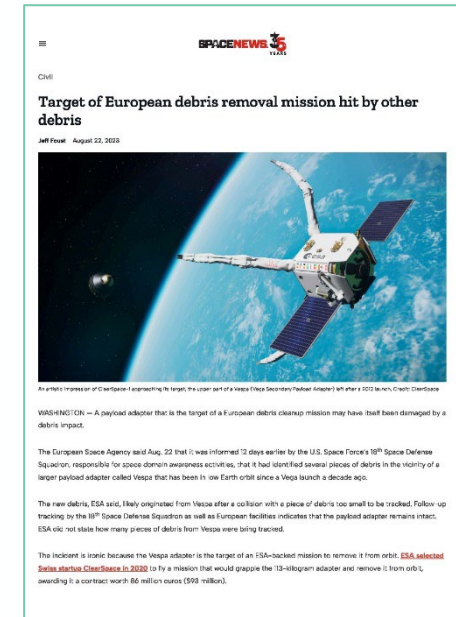
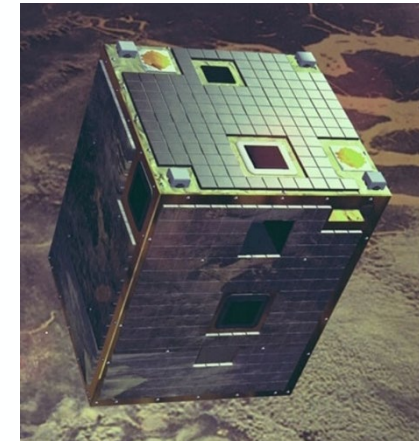
ADRIOS Overview

- Demonstrate and consolidate European leadership on ADR and IOS
- Enable development of ADR and IOS markets
- Capacity building in support of the development of a Circular Economy in Space



ClearSpace-1 aims to demonstrate the active removal of a non-cooperative space object to **develop the technological basis for a commercial service for the active removal of space debris.**

- First European mission to remove a non-cooperative space object
- ESA-led mission in close collaboration with industry
- Contract covers Phase A to E2 (end to end)
- Development of commercial service expected after the mission
- Market stimulation by regulatory push



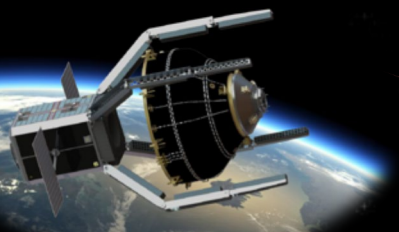
RISE aims to bring together a **service provider** and a **customer** for the verification of life extension of a satellite through Attitude and Orbital Control Takeover (AOCS Takeover) in geosynchronous graveyard orbit (GGO).



- Industry led mission – industry defining the mission and system requirements
- First European Mission for AOCS Takeover
- Contract covers Phase A to E (end to end)
- Following the verification in graveyard orbit, ESA role ends, industry to continue with commercial service
- Requires customer participation in development, and customer satellite in GGO

ADRIOS Future Vision

DEBRIS REMOVAL



CS-1 Mission

TRANSPORTATION



PoC In-Space
Transportation

INSPECTION



e.inspector

AOCS TAKEOVER/
LIFETIME EXTENSION



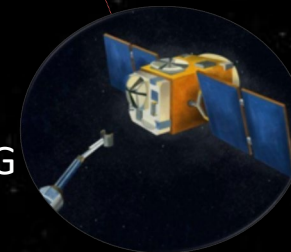
RISE Missions

ENCORE Mission

REFURBISH-
MENT



ASSEMBLING /
MANUFACTURING



RECYCLING



ADRIOS

Circular Economy