

ClearSpace and Debris Removal

Clean Space Industry Days

Oct-2022



We bring servicing to orbit

Aviation, road transportation or shipping have maintenance and servicing integrated in their ecosystem, but the space industry still applies a launch, single use and discard approach.

In-orbit servicing (IOS) is a **key enabler** for the future of the space industry.
We build the roadmap for sustainable space.

ADRIOS / ClearSpace-1

Debris Removal Mission

Ω
OMEGA



CLEARSPACE-1
THE FIRST MISSION TO REMOVE
DEBRIS FROM LOW EARTH
ORBIT TO FLY BY 2026

*"ClearSpace initiative is one of the most **important, inspiring and exciting** projects since the launch of the Apollo missions."*

OMEGA President and CEO –
Raynald Aeschlimann



ADRIOS / ClearSpace-1

End-to-End Demonstration



1. Commissioning

Launch

2. Rendezvous & Capture an ESA owned object

3. Deorbit

Demonstrate the full value chain of a satellite removal and lays the foundation for large object removals.



 Target object

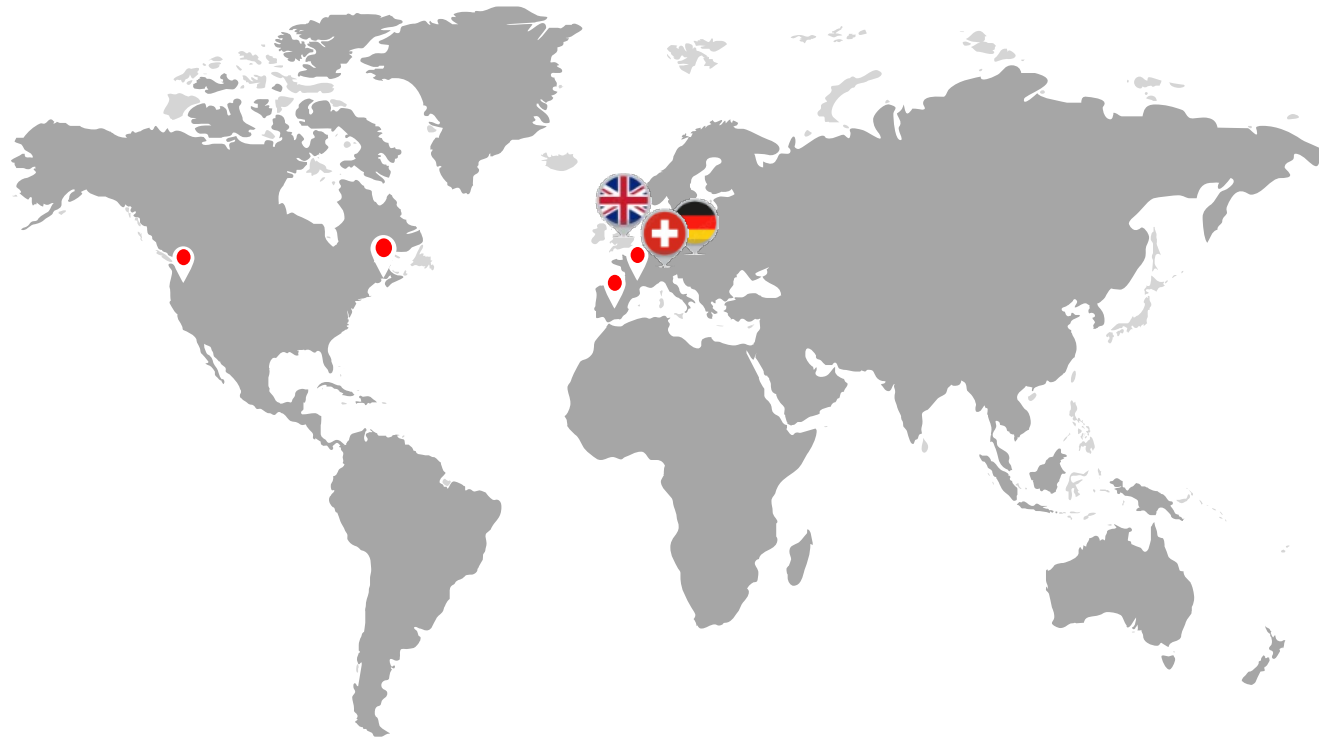


ClearSpace servicer

A Swiss-based company quickly expanding globally



A few bright minds behind our mission



80

ClearSpace
Team
Swiss Office
UK Office
Germany Office

4

Experienced
board
members

60+

Talented
and Proven
Engineers

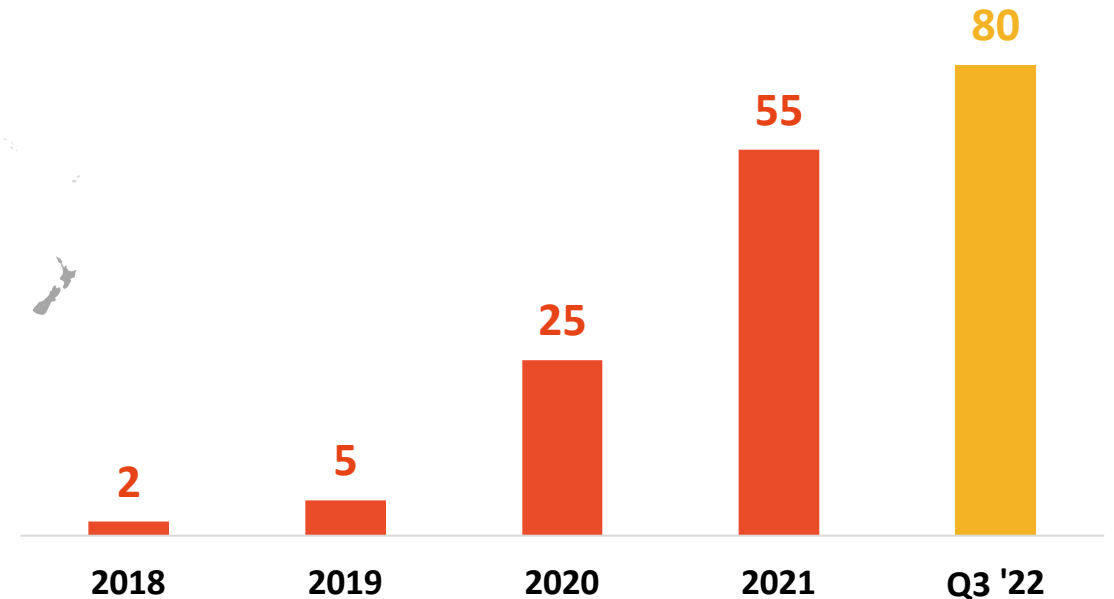
780+

Years of combined
experience in space
engineering

Team joined from



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Confidential, do not distribute without permission



CLEAR Mission

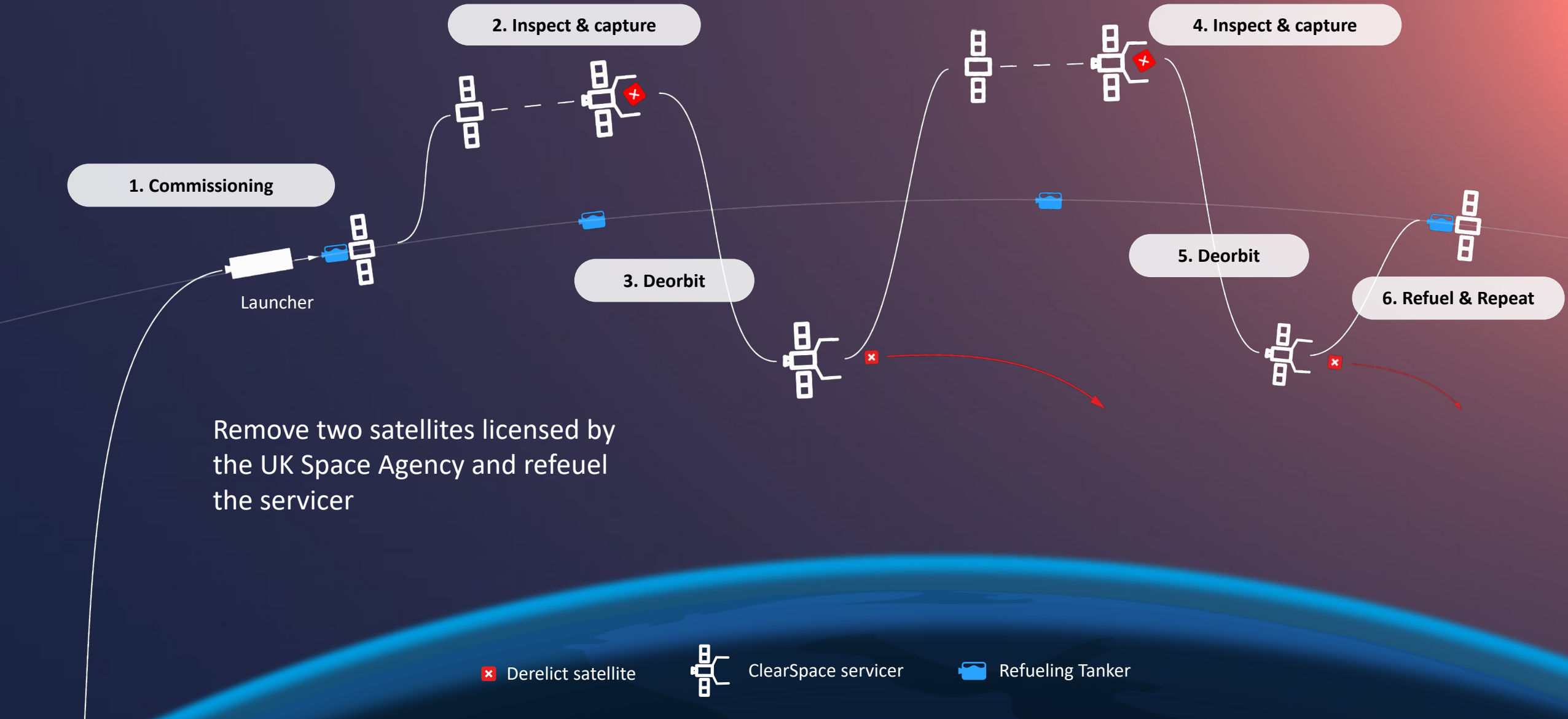
UK Space Agency Debris Removal Mission

**UK MISSION TO REMOVE 2x DEAD UK SATELLITES
DOWNSELECTED FOR PHASE B
FLY BY 2026**



CLEAR Mission

UK Space Agency Debris Removal Mission





Unique proprietary technologies to deliver services in orbit

ClearSpace capability focus: technology, systems engineering and operations

Sensors

Low-cost space-grade
sensors
Compression algorithms



Navigation

Deep neural networks
Proximity operations



Robotics

Capture and stabilization
Space robotics
Docking interfaces



Integration

Mission design
Systems engineering
Testing



Operations

Ground system design
Mission operations



ClearSpace's Enabling Core Technologies (IPR)

ClearSpace's System-Level Capabilities

In-orbit servicing, the backbone of the space economy

Overview of ClearSpace's current in-orbit services

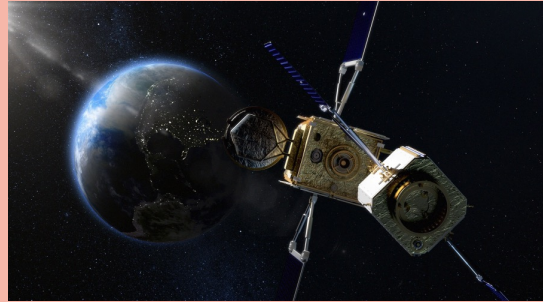
Active Debris Removal (ADR)

Failed satellites
Spent rocket bodies



Mission Extension

Attitude control
Station-keeping
Refueling



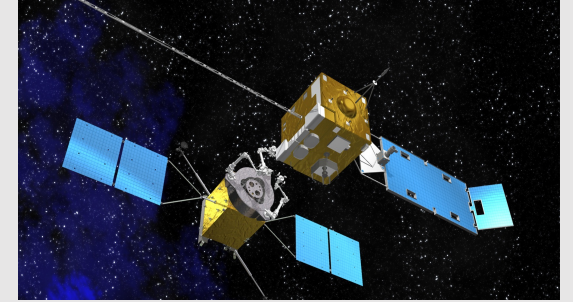
Transport Logistics

Last-mile deployment
Relocation



Repair & Construction

Inspection
Component replacement
In-space manufacturing

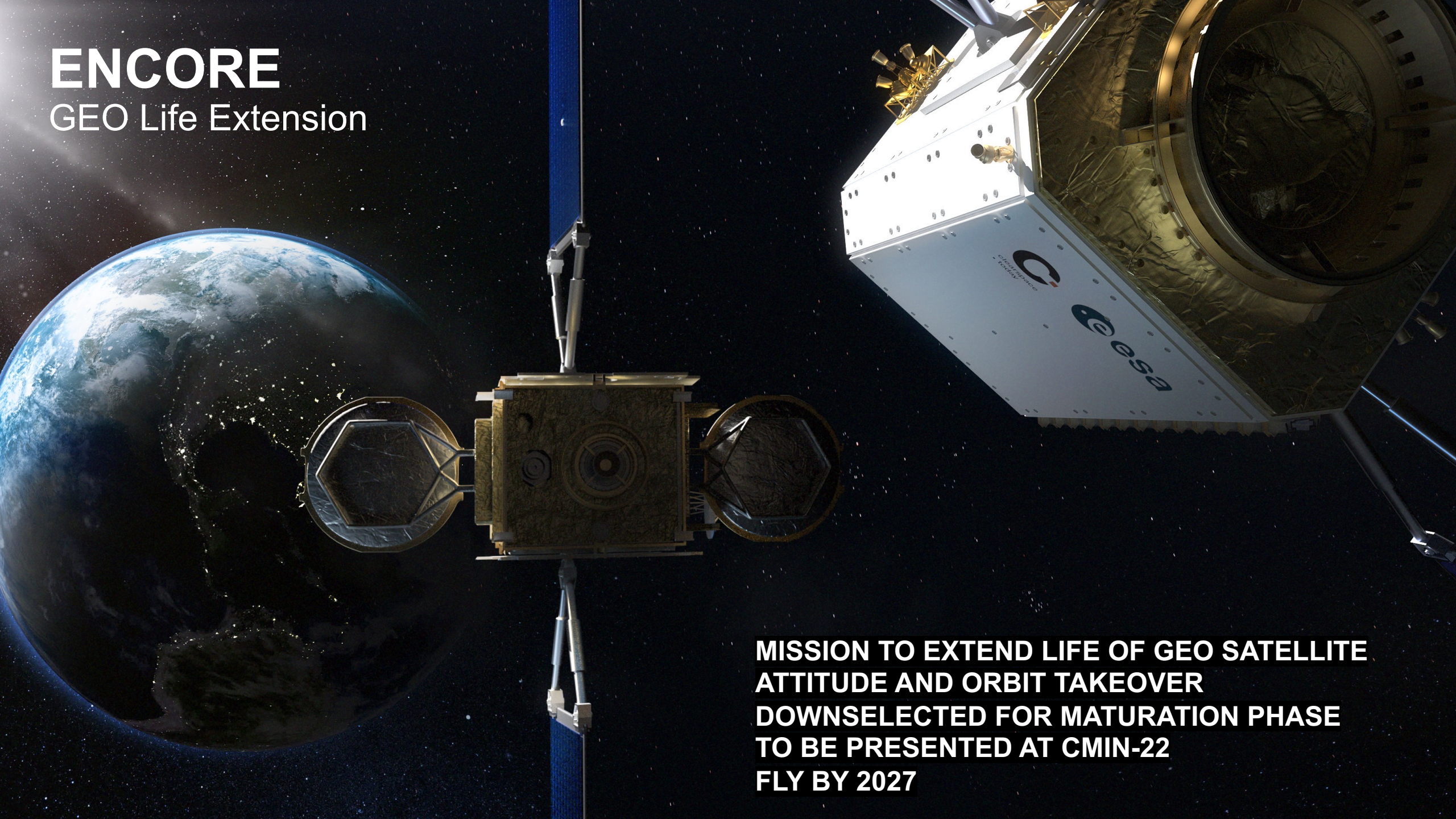


In-orbit servicing is a rapidly growing market with projected revenue of \$14.3 Billion by 2031*

*NSR In-Orbit Services Report 2022: Satellite Servicing, ADR, and SSA, 5th Edition (IoSM5)

ENCORE

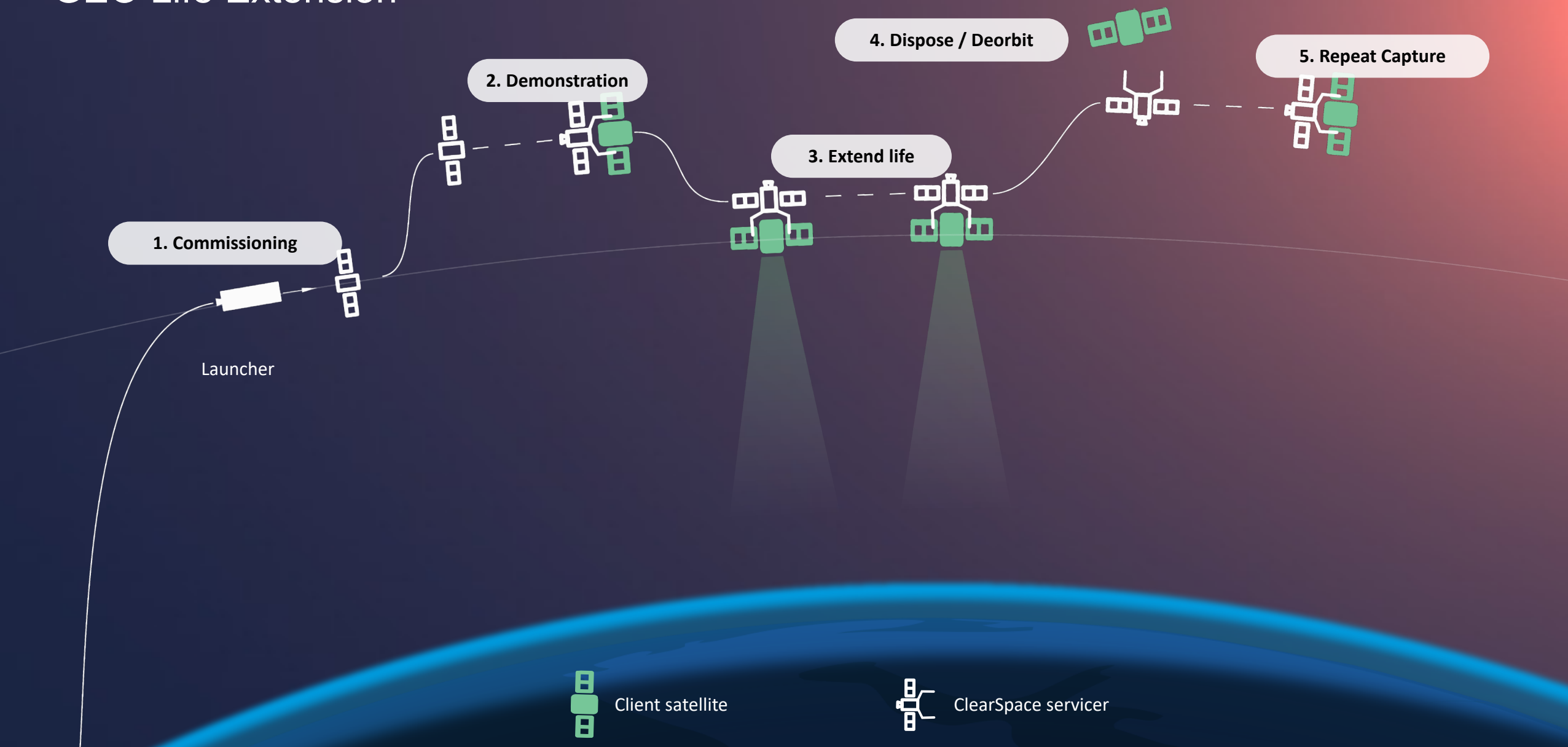
GEO Life Extension



**MISSION TO EXTEND LIFE OF GEO SATELLITE
ATTITUDE AND ORBIT TAKEOVER
DOWNSELECTED FOR MATURATION PHASE
TO BE PRESENTED AT CMIN-22
FLY BY 2027**

ENCORE

GEO Life Extension



Thank You

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Thank you!