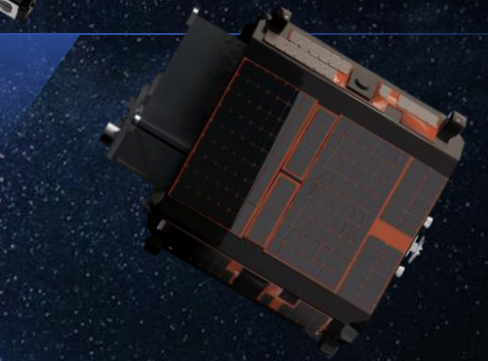




D-ORBIT
NEW SPACE SOLUTIONS

CLEAN SPACE INDUSTRY DAYS 2023

**D-Orbit In-Orbit Servicing: A
Customer-Driven Development
Approach**



D-ORBIT

Leader in Space Logistics and Orbital Transportation

280+ people and growing



D-Orbit SpA
Production and HQ,
Como, Italy

D-Orbit PT
Critical software and
new space subsidiary,
Lisbon, Portugal

D-Orbit Inc.
Commercial subsidiary,
Washington DC, USA

D-Orbit UK, Ltd
AI Data Processing &
Robotics, Space
Safety, Responsive Launch
Harwell, UK



TODAY



Last-mile delivery solution
for satellites and advanced
infrastructure services

World's first
to provide in-space satellite
transportation for paying
customers



TOMORROW



Next-gen in-orbit
services across entire
satellite lifecycle

World's first
to demonstrate satellite-as-
a-service capabilities in
space

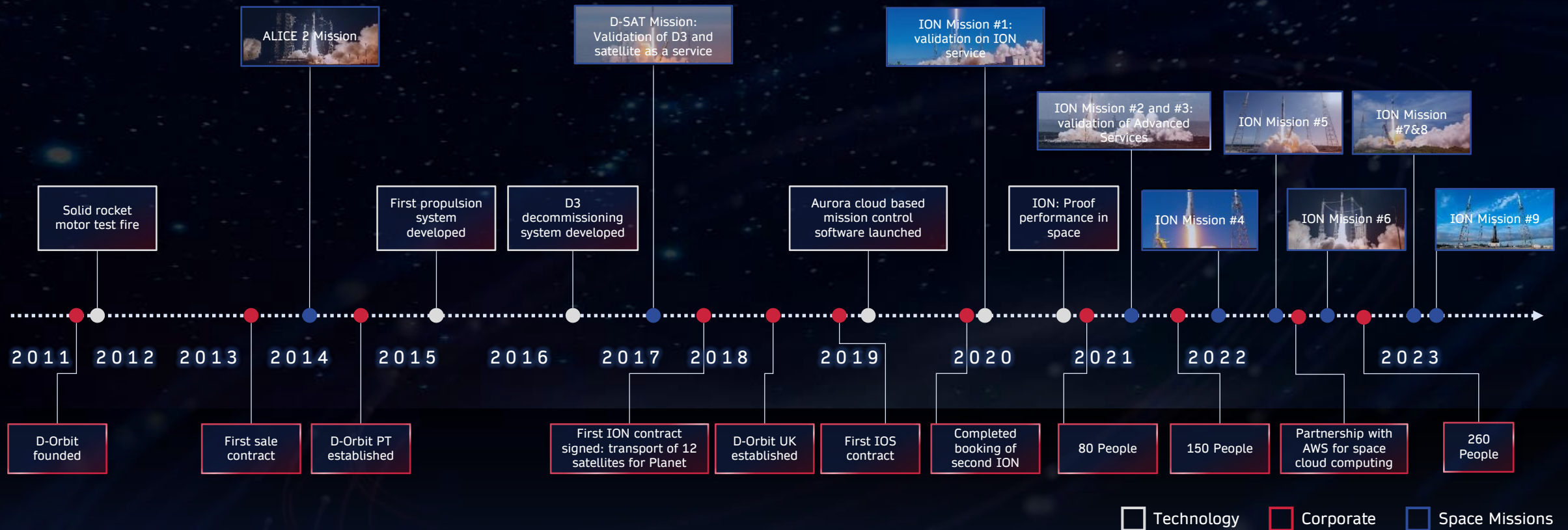


BEYOND



In-orbit recycling, manufacturing
& infrastructure

D-ORBIT STORY



D-ORBIT IS IN START-UP PHASE FOCUSING ON INITIAL R&D ACTIVITIES

CONSTELLATIONS START HAVING TRACTION: **D-ORBIT BEGINS GAINING CREDIBILITY**

Our Heritage

Ten Orbital Transportation Missions to date and a Growing Degree of Complexity

2020

1 ION LAUNCHED

First successful commercial orbital transportation mission in the space industry

- 12 Satellites deployed
- 2 Hosted payloads tested in orbit

2021

2 IONs LAUNCHED

Successful testing in orbit of innovative plug-and-play system for hosted payloads

- 26 Satellites deployed
- 15 Hosted payloads tested in orbit

2022

3 IONs LAUNCHED

ION performs the first RAAN shift maneuver in orbit ever performed by an OTV*

- 15 Satellites deployed
- 5 Hosted payloads tested in orbit

2023

4 IONs LAUNCHED
As of April

First launch featuring two IONs

- 5 satellites deployed, 9 to be deployed
- 7 hosted payload tested in orbit, 3 to be tested

TESTING FOR FUTURE SERVICES

- Orbital maneuvering
- Full cargo validation
- Propulsion subsystems tested

- Earth Observation payload
- Satellite for rent
- Propulsion characterization
- Laser communication – space to ground
- Orbital data-center / in-orbit edge computing
- Drag sail

- Orbital data-center / in-orbit edge computing advanced functions

- Orbital data-center / in-orbit edge computing advanced functions



* Note: Orbital Transfer Vehicle

CUSTOMERS



PIONEER IN SPACE LOGISTICS

D-ORBIT OF TODAY...

- Pioneer and leading commercial provider of in-orbit “last-mile” delivery, able to deploy satellites across all orbits
- ION – the proprietary motorised OTV (Orbital Transfer Vehicle) – is a multi-purpose spacecraft
 - Only commercial OTV that has demonstrated capability to perform all manoeuvres
 - Launching and commissioning in LEO up to 200kg, compatible with most launchers
- Unique proven capabilities, large backlog and strength of relationships with launch suppliers = High revenue visibility
- Already offering advanced services (Validation, Demonstration, Edge Computing, Satellite-As-A-Service)

MULTIPURPOSE &
MODULAR PLATFORM
ENABLING MANY
HIGH-MARGIN SERVICES



ION Orbital Transfer Vehicle
(4th Generation)

...IS ENABLING D-ORBIT OF TOMORROW

FROM 2023

ION ADVANCED SERVICES



- SATELLITE FOR RENT
- SPACE CLOUD COMPUTING

FROM 2026

IOS: IN-ORBIT-SERVICING



- LIFE EXTENSION
- RE-POSITIONING
- VISUAL INSPECTION
- DECOMMISSIONING

- Once each ION completes its primary mission of deploying passenger satellites it then joins D-Orbit’s growing fleet of multi-purpose spacecrafts to undertake high margin secondary missions
- D-Orbit’s constellation delivers advanced services enabled by logistics business at marginal extra cost
- Capabilities needed already embedded in current ION design (e.g. edge computing; AI)

IN-ORBIT SERVICING: THE NEXT MARKET



01



REPOSITIONING

Moving existing satellites from one orbit to another orbit to extend useful life / allow for re-purposing

02



REFUELING

Life of modular satellites can be extended via refuelling or component replacement (e.g. battery)

03



VISUAL INSPECTION

Close approach to existing satellites to inspect their status

04



MAINTENANCE

Solving malfunctions in satellites in-orbit with the use of an ION (space toolbox) allowing to extend useful life

05



EMERGENCY

Rescuing satellites launched or drifting into the wrong orbit

06



DECOMMISSIONING

Disposing of satellites properly at the end of their life- "active debris removal"-

A large and currently actionable market opportunity, with services already demanded by many operators and derisked by ION

Our Space Logistics Roadmap



GEA: General Expansion Architecture

EXPANDING D-ORBIT'S REACH

Next Generation of Spacecraft Infrastructure



Powered by electric propulsion

In-orbit servicing and active debris removal

Scalable and modular

High Level Requirements

The Spacecraft



<1 year time to service from launch
>7 years service lifetime
< 6 months from standby to service



>6 deg inclination change / year
>7 years life extension
>180 deg rephasing / year



< 0.05 degree attitude accuracy
<0.1 degree attitude stability
No interruptions



Compatible with most common GEO spacecraft platforms through their launch adaptor ring
not relying on ascent engine

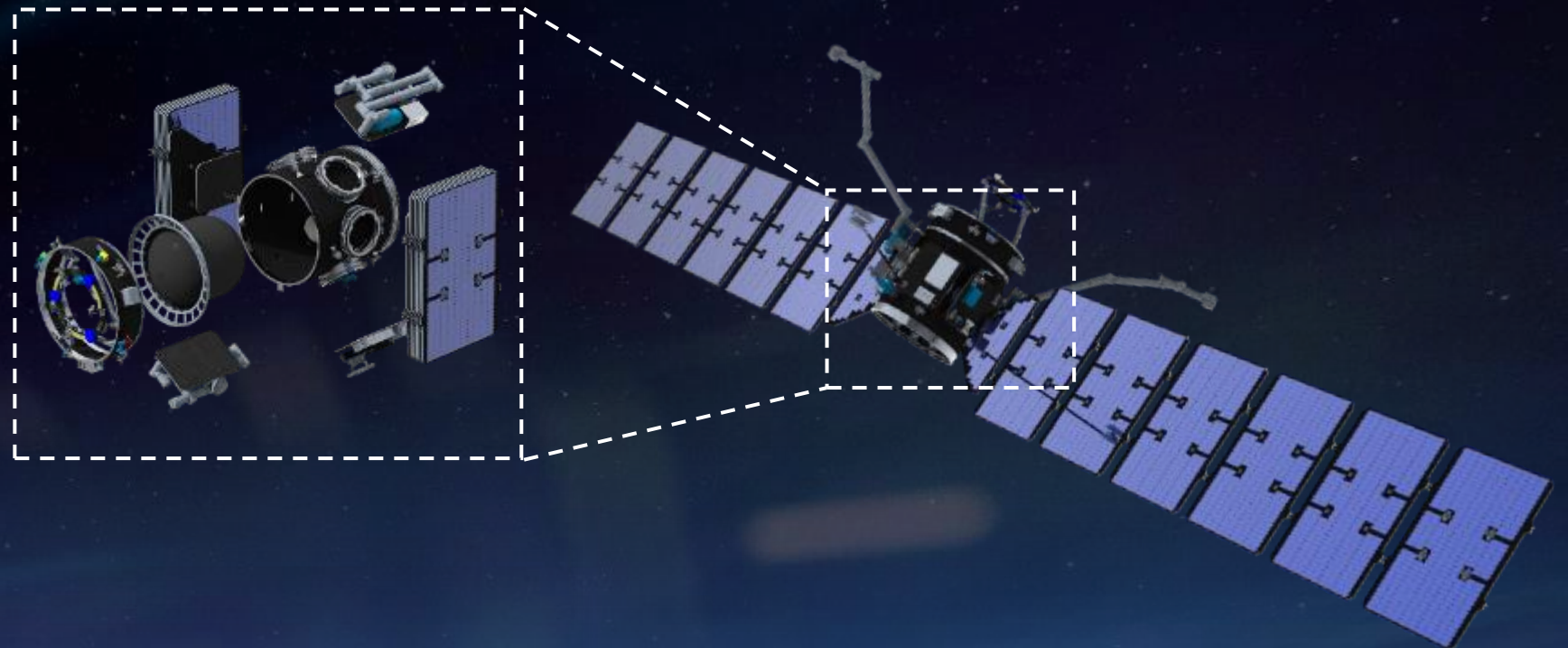


Serviceable - Refuelable –
Assembly/Disassembly-friendly
– Refurbishable – Reconfigurable

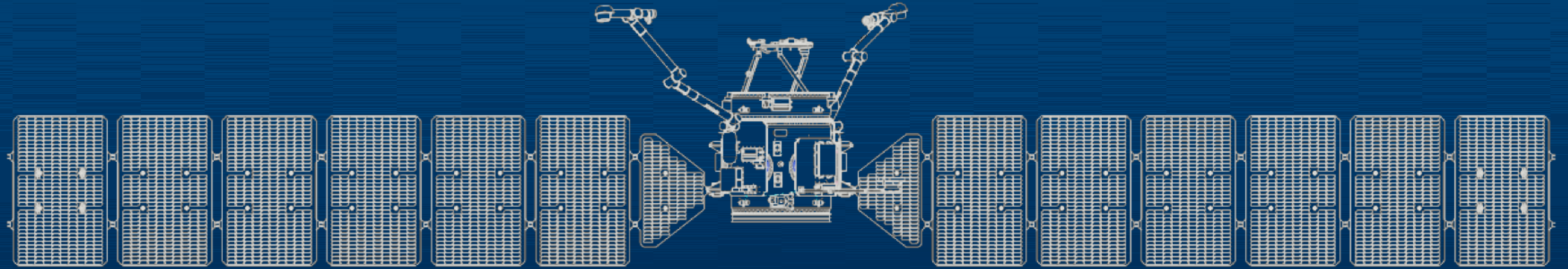
MODULAR ARCHITECTURE WITH LAUNCH MASS RANGING FROM 1 TO 15 TONS

- Designed for fast configurability and assembly
- Intrinsically serviceable
- Multi-mission, multi-environment through physical re-configuration

- Transportation ✓
- Hosting Payload ✓
- Repositioning ✓
- Refuelling ✓
- Visual Inspection ✓
- Maintenance ✓
- Emergency ✓
- Decommissioning ✓



SOL



< 2500 kg



Vision Camera
+ LIDAR



Capture Arm +
Interface Ring



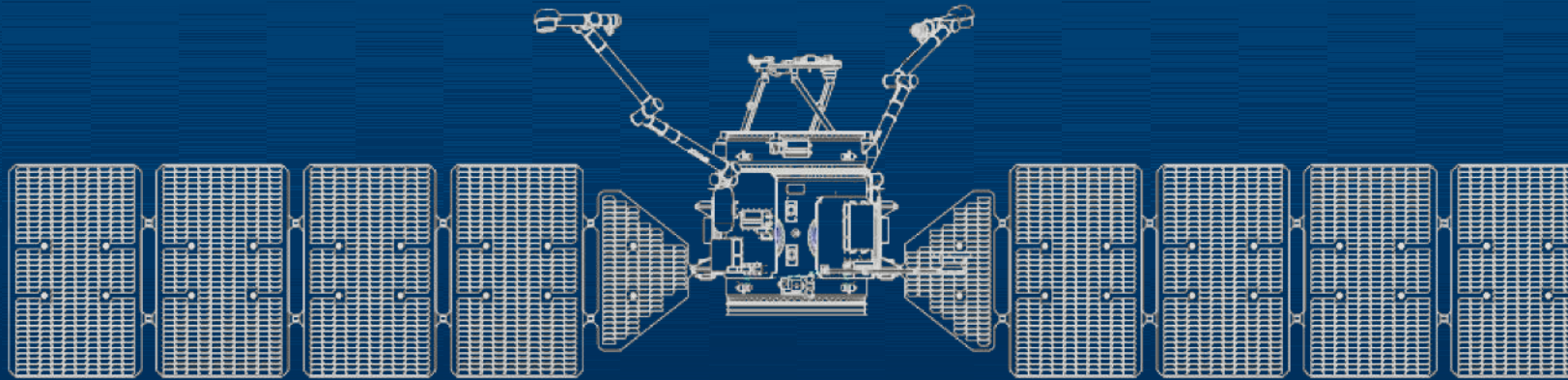
8 years lifetime



Ride-share capability (up to 1.4 tonnes)
+ Up to 2 Inclination Changes (6 degrees) services of 3500kg target
+ 7 years of life extension



PROXIMA



< 1800 kg



Vision Camera
+ LIDAR



Capture Arm +
Interface Ring



8 years lifetime



Specialised for 7 years of life extension



FULLY COMMITTED TO IN-ORBIT SERVICING



In Development
since 2021



Launch
in 2027



Demonstration
in 2027



Commercial Deployment
in 2028

Full fleet deployment foreseen by 2030

CREATING A CIRCULAR ECONOMY

Becoming its own first customer to demonstrate the concept



Every new spacecraft launched can:

- Rely on assets already in orbit to save on launch mass, including:
 - Swapping/Reusing Modules from existing GEAs that still have enough lifetime left in them
 - Extracting propellant on existing GEAs that will not be used
 - Combining with an existing GEA to expand capabilities
- Carry modules for existing platforms in orbit to extend their life / fix a failure / expand their capabilities

**D-ORBIT WILL BE A CUSTOMER OF ITS OWN
IOS CAPABILITIES**

SERVICE ROLL-OUT

Service model is flexible and customer driven.

Different arrangements are in discussion with customers:

- One-off contracts for specific assets (i.e. life extension of a GEO telecom spacecraft, disposal, etc)
- Multi-spacecraft servicing agreement (i.e. relocation / inclination reduction of 2 or 3 assets in GEO per year to extend the life of a fleet)
- Fleet-wide dedicated servicer on stand-by in case of need (relocation, inspection, repair, disposal, etc)
- Subscription-model to ensure availability of service (shared between multiple customers) when needed

Model will evolve as the service matures.

READY FOR THE NEXT PHASE OF GROWTH...



D - O R B I T
NEW SPACE SOLUTIONS

