FUTURE SPACE TRANSPORTATION FLPP SPRING SESSION 2026

RAVEN

COMPANY INFORMATION

Company: PIAP Space

Location: Poland

Founded: 2017

Employees: >50

Consortium:

PIAP Space
Programme leader and Payload responsible

AROBS Polska
Payload Computer provider

Creotech Instruments
Spacecraft Platform responsible

GMV Polska
Legacy GNC provider

Łukasiewicz Institute of Aviation
Propulsion solutions provider

Military University of Technology
Ground Segment responsible

Space scAvangers
ISL Protocol provider

Zaitra
Health monitoring solutions provider

ACTIVITY

Project name: RAVEN In-Space Transportation Vehicle RAVEN D1M Phase B1

Objective: The RAVEN D1M mission is the first step in the development of the RAVEN ISTV fleet. The first demo mission aims to demonstrate safe, high-precision rendezvous and proximity operations (RPO) in Low Earth Orbit as a foundation for future docking and capture capabilities. The project will validate a commercial in-orbit inspection service by delivering high-value data products to institutional and private customers. RAVEN will field-test advanced onboard autonomy and fault-handling systems to ensure maximum safety and reliability during complex orbital manoeuvres.

RAVEN

Applications: The RAVEN programme focuses on developing a modular technology stack – integrating GNC, robotics, and propulsion building blocks – to power a fleet of highly adaptable in-space transportation vehicles (ISTVs). By leveraging this scalable architecture, the RAVEN fleet will evolve through three mission tiers: from high-resolution in-orbit inspection to cooperative docking and manoeuvring, and finally to robotic capture and manipulation of uncooperative objects. This versatile approach allows RAVEN to provide a comprehensive suite of services within the in-space transportation and logistics ecosystem, ensuring a rapid response to evolving customer demands.

TECHNOLOGY AND INNOVATION

What we developed: Programme Architecture: Defined a tiered vehicle framework consisting of three distinct ISTV classes, optimised for scalability and multi-mission versatility.

Unique features: RAVEN replaces traditional, single-purpose missions with a scalable fleet paradigm based on a modular building block architecture. By integrating GNC, robotics, and propulsion as interchangeable modules, the platform achieves exceptional versatility and can be rapidly reconfigured for diverse orbital challenges. This agility allows the programme to deliver a future-proof service capable of adapting to the emerging and evolving needs of the in-space transportation and logistics market.

KEY RESULTS

- Modular avionics interface: Developed the core architecture for a universal avionics interface, enabling the seamless integration of RAVEN's GNC, robotics, and propulsion building blocks with existing satellite platforms.
- Demo mission design: Completed the conceptual design phase for the first Class-S ISTV, establishing the baseline for the upcoming demonstration flight.
- Technology roadmap: Identified and prioritized critical technologies for orbital demonstration and finalised a comprehensive development roadmap to guide the programme to full operational capability.

NEXT STEPS AND MARKET READINESS

Opportunities: Looking for ecosystem actors needing the services of visual inspection, orbital manipulation or robotics dexterity.

Target Launch: 2029 RAVEN D1M, D2 and D3 launch.

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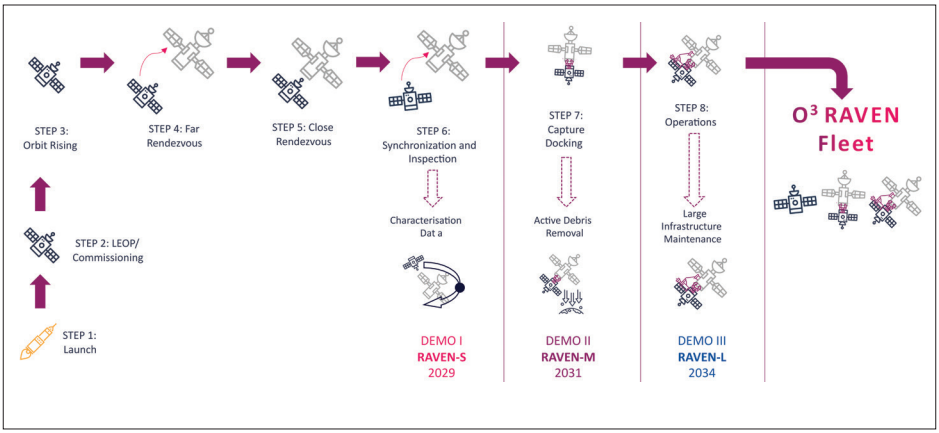
STEP 1:
Launch
STEP 2: LEOP/
Commissioning
STEP 3:
Orbit Rising
STEP 4: Far
Rendezvous
STEP 5: Close
Rendezvous
STEP 6:
Synchronization and
Inspection
Characterisation
Dat a
DEMO I
RAVEN-S
2029
STEP 7:
Capture
Docking
Active Debris
Removal
DEMO II
RAVEN-M
2031
STEP 8:
Operations
Large
Infrastructure
Maintenance
DEMO III
RAVEN-L
2034
O³ RAVEN
Fleet