



WAYFINDER

MISSION BOOKLET



Mission name: Wayfinder

Carrier name: ION SCV Astounding Alexandra

Fino Mornasco, Italy, March 30, 2026 – On March 30, 2026, D-Orbit, a global leader in space logistics and orbital transportation, launched **Wayfinder**, the **22nd commercial mission** of its orbital transfer vehicle (OTV), **ION Satellite Carrier (ION)**, aboard **SpaceX's Transporter-16 mission**.

The OTV was launched from **Space Launch Complex 4E (SLC-4E)** at **Vandenberg Space Force Base** in California at **4:02:00 PT (11:02 CEST)**. Following liftoff, **ION SCV Astounding Alexandra** was released into a Sun-synchronous Orbit at an altitude of approximately 510 km.

ION Satellite Carrier is a versatile space vehicle capable of **transporting and releasing satellites into distinct orbital slots**. It can also accommodate third-party payloads, including innovative technologies, research experiments, and instruments requiring **in-orbit testing**. Additionally, ION can support **edge computing and space cloud services**, providing satellite operators with advanced storage and computational capabilities in orbit.

D-Orbit's mission control team is now conducting the **Launch and Early Orbit Phase (LEOP)**, setting the stage for the upcoming operational phase.



Photo credit: SpaceX

A note about the name of the satellite carrier

The name of the satellite carrier is "ION Astounding Alexandra", a combination of the acronym "ION", which stands for "InOrbit NOW", and the satellite's first name. This format follows the naming conventions of naval vessels used in navies around the World. The name "Carlus" was drawn at random from a bowl containing the names of all D-Orbit's employees. The company will continue to follow this procedure in the future to honor the skills, energy, passion, and commitment to its people.



ION SCV Astounding Alexandra and team



Name of payloads: Camões, Bessa, Saramago, Pessoa

Form factor: 4x 8U

POC: info@lusospace.com

LusoSpace's ambitious plan includes the development and deployment of a 12-satellite constellation, each equipped with cutting-edge VDES (VHF Data Exchange System) payloads. This constellation aims to revolutionize maritime connectivity by providing significantly higher bandwidth than current AIS (Automatic Identification System) applications, enhanced data integrity, and a promising leap forward in maritime communication and safety. Camões, Bessa, Saramago and Pessoa will join PoSAT-2 (currently in Space), and are the first satellites that begin the Lusíada constellation formation. The satellite's payload features a next-generation VHF radio capable of encoding and decoding AIS and VDES messages, complemented by a deployable VHF antenna activated after the LEOP (Launch and Early Orbit Phase). The payload is managed by the spacecraft's onboard computer, which stores data received via the VHF link and transmits it to maritime control centers. Additionally, it enables the transmission of critical information to vessels, such as navigational warnings and updates. The satellite's core system manages spacecraft operations, including attitude control, S-band communication for monitoring, and command and control functions throughout its lifetime.

COMPANY PROFILE Website: www.lusospace.com

Founded in 2002, LusoSpace was the first space startup in Portugal. Ivo Yves Vieira, LusoSpace's main co-funder and CEO, participated in 1993 in the first Portuguese satellite, PoSAT-1, with the ambition to contribute to space industry growth and development in Portugal. LusoSpace has been growing 20% on average and increased its competencies and capabilities holding several testing equipment and two clean rooms.

Photo credit: Lusospace



Name of payload: QubitCore

Type of payload: Quantum Communication Demonstrator

POC: CEO's Office
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QubitCore is a CubeSat-compatible quantum key distribution (QKD) payload designed for space-based quantum communication missions. The payload integrates a miniaturized entangled photon source, two quantum receiving modules (as polarization state analyzer), and an onboard time-tagging unit implemented in the FPGA logic in a compact architecture. The FPGA hosts both the time-tagging unit logic and a MicroBlaze soft-processor, which functions as the payload processing unit. Each receiving module includes a dedicated optical design and four single-photon detectors for coincidence and correlation measurements. The Entanglement-based BBM92 QKD protocol is fully implemented and optimized for space operation. QubitCore is designed as a self-contained payload suitable for CubeSat platforms, enabling secure key distribution experiments and demonstrations in orbit.

COMPANY PROFILE Website: qubitrium.tech

Founded to develop advanced quantum technologies on the cusp of the second quantum revolution, Qubitrium offers solutions to problems in the fields of quantum communication and quantum sensing. While providing services to develop and manufacture advanced quantum products, we also prepare training programs in quantum technologies for industrial organizations. We are developing the building blocks of the quantum internet for use in space and on earth, such as entangled photon sources, single-photon detectors, and time-stamping modules. At the same time, we are conducting advanced R&D work on quantum memories, diamond defect-based sensors, magnetometers, and quantum Position, Navigation and Timing (PNT) solutions with strategic partners from Europe, the US, the Middle East, South East, and Central Asia, and Türkiye.

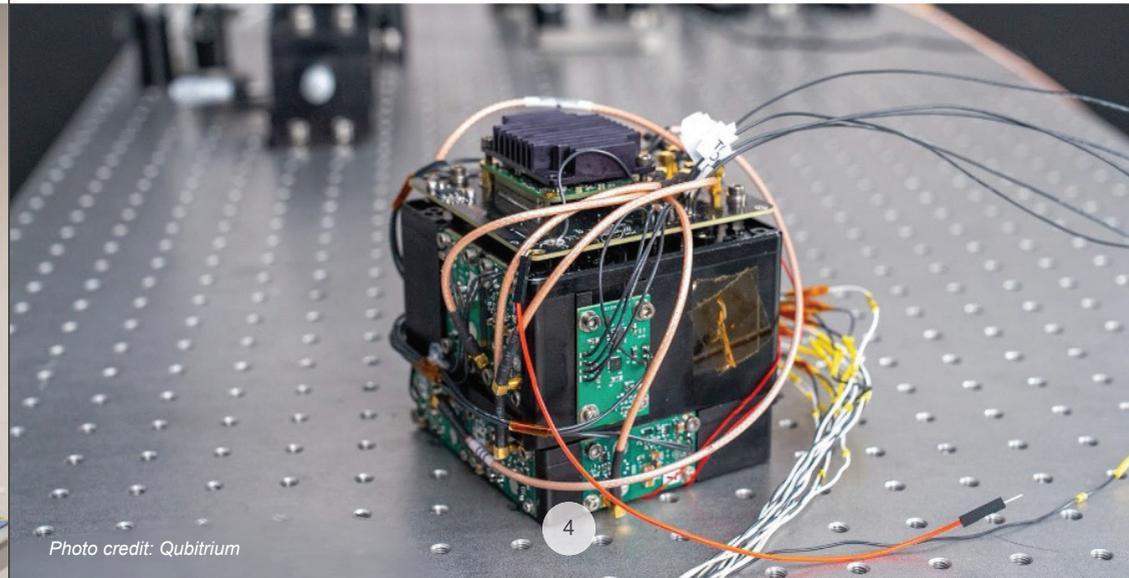


Photo credit: Qubitrium



Name of payload: Camera SpaceMast

Type of payload: Deployable Mast System

POC: Martin E. Zander
Martin.Zander@dlr.de

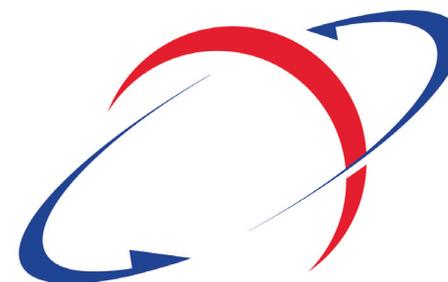
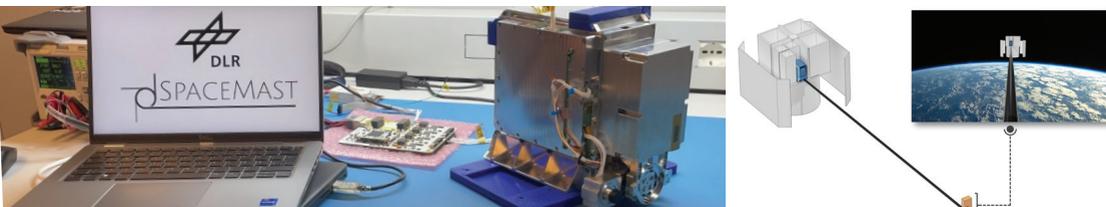
The mission demonstrates the in-orbit deployment and retraction of the Camera SpaceMast, an ultra-lightweight deployable carbon composite mast system developed for space applications. Operating as a hosted payload, the system deploys two cameras using a 3.5-meter rollable mast, positioning them at that distance from the hosting orbital transfer vehicle (OTV) to provide a unique external perspective of the spacecraft during operations. The primary objective is to validate the reliable deployment and retraction of the mast system in orbit and thereby generate flight heritage for the technology. The deployment process will be monitored by sensors integrated into the SpaceMast system and by cameras on the hosting platform and at the mast's tip. In addition to verifying the mechanical functionality, the mission will demonstrate the system's imaging capabilities: operating similar to a "space selfie-stick," the extended camera will capture video footage and images of the OTV and the deployment of customer payloads such as CubeSats, including wide-angle views of spacecraft operations with Earth in the background.

COMPANY PROFILE

Website: leichtbau.dlr.de/aus-klein-mach-gros-erprobung-neuartiger-raumfahrt-solarmodule-im-parabelflugspace

DLR SpaceMast is being developed as part of a spin-off initiative focusing on ultra-lightweight deployable carbon mast systems for space missions. The combination of rollable structures, mechanisms and interfaces allow instruments such as cameras, antennas, solar arrays, or sails to be compactly stowed during launch and deployed in orbit. Such systems offer major advantages for space missions where mass and volume are critical constraints. Deployable mast technologies like DLR's SpaceMast can support improved satellite communication, additional power generation, and new capabilities for satellite inspection, monitoring or deorbiting. The development of this technology is led by the DLR Institute of Lightweight Systems at the German Aerospace Center (DLR), which focuses on advanced lightweight structures and materials for aerospace and other high-performance engineering applications. The DLR SpaceMast project is supported by a DLR technology transfer program (DLR Innovation and Transfer) together with an EXIST Research Transfer project funded by the German Federal Ministry for Economic Affairs and Energy (BMWE). This support enables the development of a prototype and an in-orbit demonstration to gain flight heritage, with the long-term goal of spinning off DLR SpaceMast as an independent startup.

Photo credits: DLR SpaceMast



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