



Magdrive Signs Contract with D-Orbit
to Test Their Electrical Propulsion System

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Innovative Magdrive Rogue Thruster to be Demonstrated on D-Orbit's ION Satellite Carrier with ESA's ScaleUp Program Support

Logan, Utah, August 5, 2024: On the first day of the Small Satellite Conference in Logan, Utah, [Magdrive](#), a space startup focusing on innovative electrical propulsion systems, and [D-Orbit](#), market leader in the space logistics industry, announced a **collaboration for Magdrive's first in-orbit demonstration mission of the Magdrive Rogue propulsion thruster**, slated for a June 2025 launch.

*"We are very excited to show the industry the potential of our Magdrive system" says **Mark Stokes, CEO of Magdrive**. "This mission is the first step to unlocking entirely new capabilities in high cadence avoidance manoeuvres, sustained RPO, and anti-SDA activity for defense in space. We are also extremely grateful to have the support of ESA via their ScaleUp programme for making this mission possible."*

The Magdrive Rogue is a **next-generation electrical propulsion system**, providing thrust of up to 30 mN with the same high specific impulse as existing electric propulsion systems. **Magdrive will be deploying two Rogues onboard D-Orbit's ION platform** to showcase its ability to scale multiple units as an array to serve satellites of any mass class.

The Magdrive Rogue couples its high thrust with the high efficiencies that electric propulsion systems are known for, creating a game changer for the industry. The fundamental difference is the use of a solid metal propellant instead of a gas (i.e. Hall Effect Thrusters), and the use of internal energy storage to ionise the solid metal into a hot plasma for a higher thrust performance.

Magdrive Rogue will be tested onboard D-Orbit's proprietary OTV, ION Satellite Carrier. With its proven heritage of 13 successful orbital transportation missions to date, and over 40 hosted payloads already tested in orbit, **Magdrive identified ION as the ideal technology to test their electrical propulsion system**.

*"We are thrilled to collaborate with Magdrive on this mission, leveraging our proven ION platform to demonstrate the potential of the Magdrive Rogue thruster," said **Matteo Lorenzoni, VP of Commercial Strategy at D-Orbit**. "We are also excited to support the ESA ScaleUp program through ION; the initiative truly exemplifies*



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ESA's dedication to fostering advancements and innovations in the space industry and perfectly fits within ION's scope and capabilities."

This mission is supported by **ESA's "ScaleUp" programme**, which enables SMEs to rapidly commercialise their products for the space industry.

*"I am pleased to see this deal happen between Magdrive and D-Orbit through ESA's ScaleUp programme," said **Philip Thomas, Head of ScaleUp Programme Division**. "I trust this collaboration will prove fruitful and help both companies achieve even bigger milestones."*

About Magdrive

Dr Thomas Clayson and Mark Stokes founded Magdrive in 2020, with a mission to revolutionise in-space travel.

The 10,000 sq ft lab is based at the Harwell Science Campus in Oxfordshire and is considered to be one of the UK's leading space start-ups. They are backed with over £8m in grants from ESA, Innovate UK, UK Space Agency and the European Innovation Council.

The Magdrive system is a high-power pulsed plasma thruster. It works by storing up energy internally, in order to deliver high power pulses to detonate a solid metal propellant into a plasma. The technology is scalable, and work has begun on larger and more powerful thruster designs capable of servicing spacecraft classes of 500kg and upwards.

www.magdrive.space

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About D-Orbit

D-Orbit is a market leader in the space logistics and transportation services industry with a track record of space-proven services, technologies, and successful missions.

Founded in 2011, D-Orbit is the first company addressing the logistics needs of the space market. ION Satellite Carrier, for example, is a space vehicle that can transport satellites in orbit and release them individually into distinct orbital slots, reducing the time from launch to operations by up to 85% and the launch costs of



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an entire satellite constellation by up to 40%. ION can also accommodate multiple third-party payloads like innovative technologies developed by startups, experiments from research entities, and instruments from traditional space companies requiring a test in orbit. The whole, fully redundant ION can be rented for edge computing applications and space cloud services to provide satellite operators with storage capacity and advanced computing capabilities in orbit.

D-Orbit's roadmap includes becoming a relevant player in the in-orbit servicing market, which is forecasted to become one of the largest, growing markets within the space sector.

With offices in Italy, Portugal, the UK, and a new US team which will focus on bus design and manufacturing, D-Orbit is the first certified B-Corp space company in the world.

www.dorbit.space

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About ESA's "ScaleUp" programme

The ScaleUp programme is a key element of ESA's commitment to accelerating space commercialisation for a green and digital Europe and supporting the growth of private investment in space. It promotes game-changing New Space innovation by providing start-ups with technical, financial and business support, and help businesses access global markets and investors to accelerate growth.