



Anvil Secure and D-Orbit release white paper on securing satellites across the mission cycle

SEATTLE — October 23, 2025 — Cybersecurity consultancy [Anvil Secure](#) and space logistics and orbital transportation company [D-Orbit](#) have announced the publication of a new white paper exploring how cybersecurity principles apply throughout a satellite's mission cycle. The collaboration highlights the growing importance of cybersecurity in the expanding commercial space industry.

The study focuses on D-Orbit's ION Satellite Carrier, the company's orbital transfer vehicle, and its operational phases, offering guidance for small-satellite manufacturers.

"Space programs have always prioritized safety and reliability," said Alberto Volpato, Technical Director at Anvil Secure. "This work is about making cybersecurity just as routine so product teams can focus on the controls that matter most."

The white paper identifies three key areas within a manufacturer's direct control: securing radio communications, managing hosted payloads safely, and maintaining firmware integrity from build to orbit. It details mitigations for each, such as encrypting communications, validating onboard payloads, and safeguarding hardware to prevent tampering.

"ION is built for flexibility, which is why we've invested in processes that protect the platform while enabling hosted payloads and in-orbit experimentation," said Davide Avanzi, Head of Space Product Security at D-Orbit. "Our collaboration with Anvil reflects a shared commitment to bringing rigorous cybersecurity thinking into every phase of satellite operations."

The release comes in advance of the Security for Space Systems (3S) conference in ESTEC (Netherlands), November 4-6, 2025, where D-Orbit will co-organize the first European in-orbit capture-the-flag competition with the mhackeroni team, supported by the ESA Security Cyber Centre of Excellence (SCCoE) and ESA Security Office.

The white paper, *Knockin' on Space's Door*, is available now. [Download it here](#).

About Anvil Secure

Anvil Secure is an information security consulting firm dedicated to enhancing organizational resilience against cyber threats. Specializing in advanced penetration testing, application and cloud security, and embedded systems security, Anvil delivers bespoke solutions tailored to each client's unique needs.

About D-Orbit

D-Orbit is a leader in space logistics and transportation. Its ION Satellite Carrier deploys small satellites to precise orbits and can host third-party payloads and edge-computing applications. Founded in 2011, D-Orbit is the first certified B-Corp in the space sector, with operations in Italy, Portugal, the United Kingdom, and the United States.

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