

Spaceborne Distributed Digital Infrastructure for Autonomous in-Orbit and Downstream Data tasking operations.

Problem.

Space Data is difficult to Access.

Space missions tend to be made for **single purpose** and not connected/connectable to other spacecrafts. There is no inter-machine **trust** or there is overtrust of same organization machines posing cybersecurity concerns.

Most satellite tend to be **underutilized** while still being in orbit and potentially gathering/computing data.

In-Space autonomous operations and flexible missions are not pursued due to an **ecosystem limitation**.

Every command and data transfer passes through ground and through intermediary high-value capture 3rd parties.

Solution.

Digital Data Exchange for Satellites.

An Open Cybersecure Protocol for **Trustless Collaborative Environment** among Satellites and Ground stations.

An ecosystem enabler of **Service and Applications** based on Data.

Satellite **p2p pure** data exchange. Encrypted, Autonomous and Accessible real-time. Energy, Logistics and Security applications. Using existing underutilized satellites idle orbiting capabilities.

For the current downstream needs and for tomorrow's in orbit autonomous operations.

Users on ground can easily create automations from a web platform and access space assets and data.

The change that we are proposing for space assets and data is like going from having your physical store 10 years ago to be on internet now. **Available, Tradable and Profitable, while being cybersecure.**

A Google-like spaceborne engine for space assets' data handling and tasking.

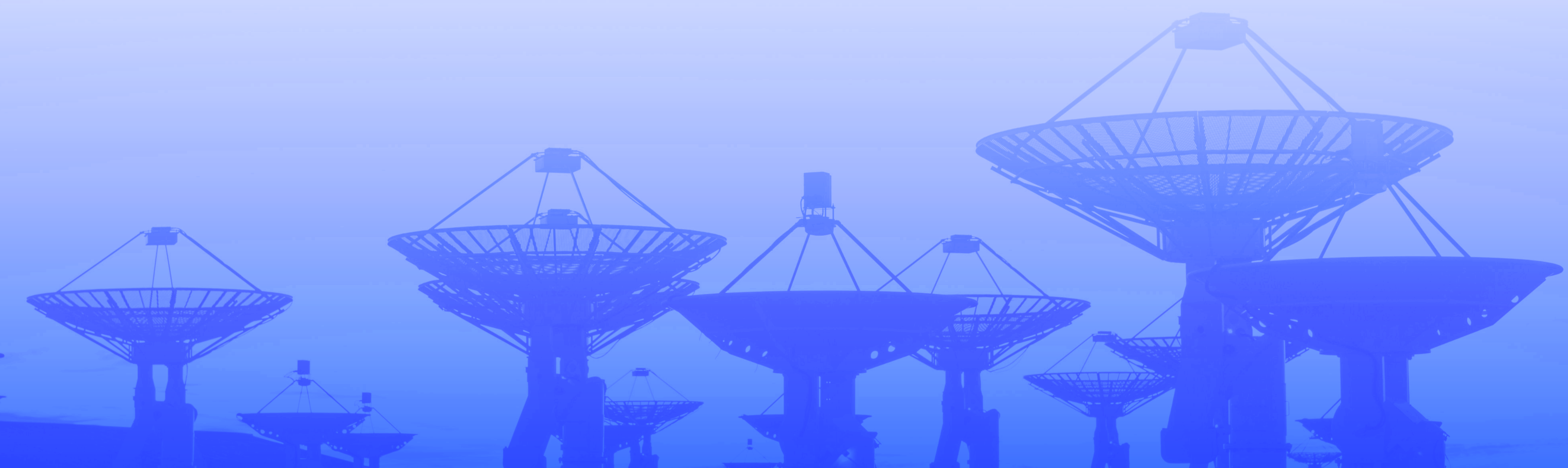
What Technology and Why it is important.

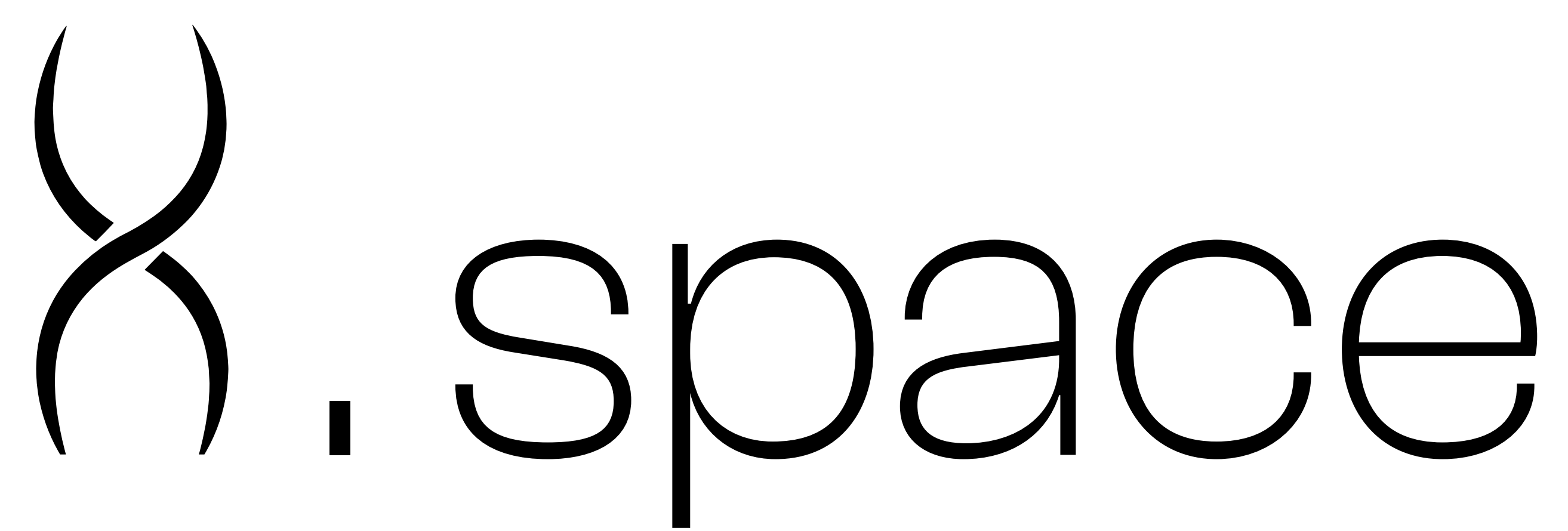
We use Zero Knowledge Proof VM technology. The system and data handling is cybersecure and tamperproof for commercial use and for distributed decision making or AI sourcing.

The impact

Make Space Data accessible to Earth and In-Orbit application, enable AI decision making. All from an easy-to-use modular platform.

Space data Accessible for everyone.





Launching in Orbit in Q1 2026.

The Horizon topics we are interested in

HORIZON-CL4-2025-02-SPACE-32

- Preparing demonstration missions for collaborative Earth Observation and Satellite telecommunication for Space solutions
- **Why?** Our project is all about making satellites work together, move decision making in space, make space and computations cybersecure. Earth Observation is where the system shines: real ground applications with in-orbit intelligence.

HORIZON-CL4-2025-02-SPACE-45 (Most fitting?)

- Supporting the AI/ML digital transition of Copernicus Services
- **Why?** We have 2 components: upstream and downstream. Our upstream digital system acts like a computation (&AI) and data exchange orchestrator, making multiple machines work together. Our downstream is composed by a modular web platform that lets users assemble satellite sources, run AI analysis on data in blocks and define usages and outputs, boosting Copernicus usage and finality; user can build workflows, create startups and monetize from space data.

HORIZON-CL4-2025-02-SPACE-41

- Copernicus Climate Change Service (C3S) evolution: new and innovative processing and methods for future Sentinels and other satellites for reanalyses
- **Why?** We can improve the ability of Copernicus' and other models to assimilate new and other satellite observations.

HORIZON-CL4-2025-02-SPACE-31

- Digital enablers and building blocks for Earth Observation and Satellite telecommunication for Space solutions
- **Why?** We can harmonize multiple mission satellites without much modifications on the orbiting systems and we can orchestrate EO decision making computations from orbit.

X – ENDER Space s.r.o.
Prague, Czech Republic
Milan, Italy



**BUSINESS
INCUBATION
CENTRE**

**Czech
Republic**

Alfredo Mensi

a.mensi@x-ender.com Director
www.x-ender.space
www.x-ender.com

