



DELTA SPACE LEONIS S.R.L.

COMPANY PRESENTATION

Delta Space Leonis S.r.l. is an aerospace company founded in 2021 to make the access to space easier, cheaper and closer to people and nations.

We want to provide low-cost space services using PicoSatellites.

Delta Space is developing the physical infrastructure for a Low-Earth-Orbit constellation intended to provide services for IoT applications.

The constellation will be used to monitor, acquire data and operate a variety of devices and sensors for a wide range of applications that include **agriculture** (field and livestock

monitoring, irrigation system actuation), **energy** (diagnostic and optimized operation of oil rigs, solar and wind farms), **transportation** (containers or vehicles tracking), **environmental monitoring** and data collection (oceans, rivers, forests, infrastructures) for research purposes or prevention/detection of critical situations.

The project consists of 3 elements: the **satellites**, the **Deployer**, and the **ground stations**.

The former consists of PocketQubes, the smallest standardized type of picosatellite currently operational. These are eight times smaller than a CubeSat and, due to lower construction and launch costs, they are expected to become widespread in the coming years, especially thanks to the miniaturization of the components which will ensure an increase in performance.

The dispenser (or **Deployer**), the device that deploys the satellites in orbit, is the second piece of the puzzle. Unlike all the competitors, Delta Space aims at developing a **proprietary deployer**, a key aspect to reduce the launch costs of the constellation and ensure independent access to space.

Thanks to the reduced dimensions of the satellites, a higher, with respect to CubeSat, deployment rate of the constellation will be achieved. At last, miniaturized ground stations will be designed to exchange data with satellites.

In addition to the physical infrastructure in space, Delta will design a transmission module; this device, which can be used as a plug-in for existing equipment or integrated directly by the manufacturers, will ensure a bidirectional link between the IoT systems and the constellation. The whole data, to be sent to the devices or received by them, will be handled by an accessible and user-friendly virtual environment capable of elaborating the information and identifying strategies to improve the efficiency of the processes under analysis.

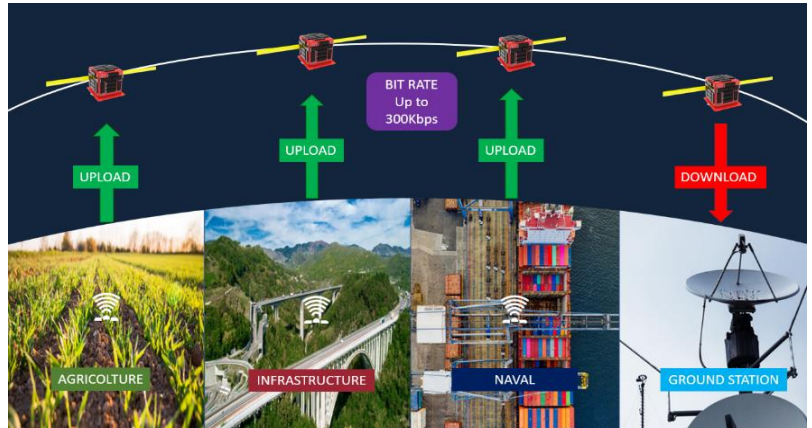
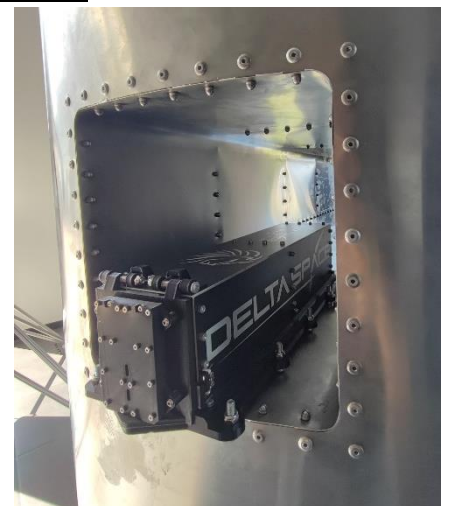


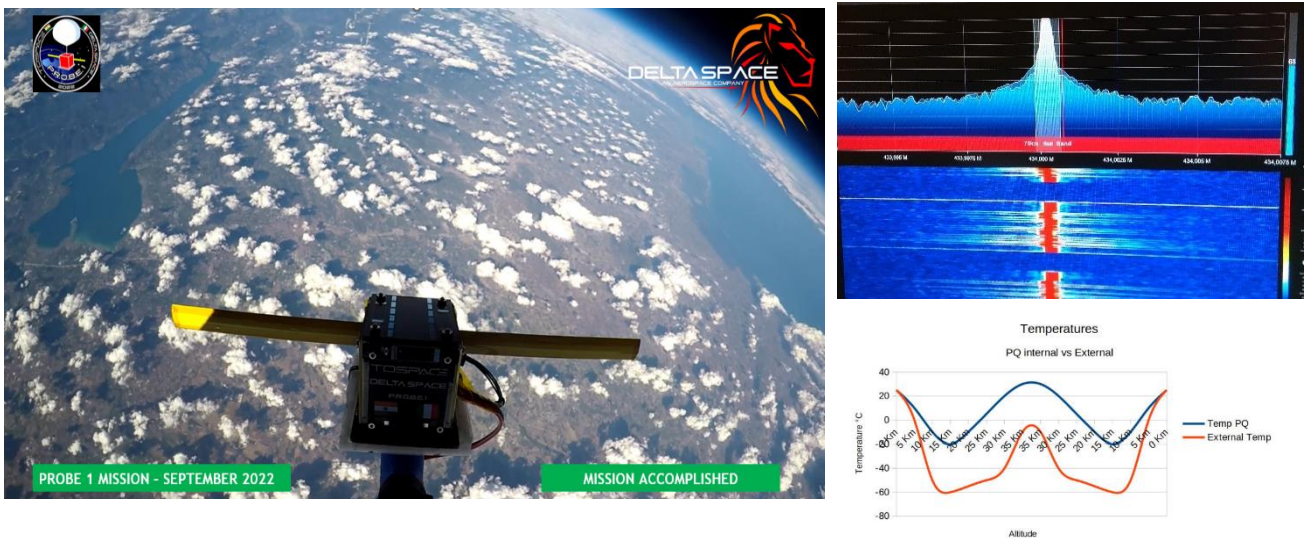
Figura 1 – Delta Space PocketQube 1U



P.R.O.B.E. 1

In view of the development of the constellation, a successful stratospheric launch was carried out in September 2022 to simulate the spatial conditions and in particular those related to the low orbit LEO distance, about 450km. Antennas were installed in Turin and the Balloon was launched from Como, flew over the entire Po Valley and landed in Ferrara. During this flight, tests of reception and transmission from sensors to satellite were simulated, exchanging simple data such as temperature.

The test gave excellent results, validating both the satellite subsystems and the Ground Station.



CONCLUSION

Vision: Delta Space will offer satellite connectivity for IoT sensors and Low-Cost Platforms for In-Orbit services.

Mission: Delta Space will achieve that goal investing in the miniaturization of components for Nano and Pico Platforms.

Product: PocketQube satellites constellation.

Services: Low-Cost satellite **connectivity for sensors** and **Launch Services** with proprietary Deployer.

The constellation is under development and we are opening a round of investments to get into orbit within a year.

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