

Abstract

IRENESAT-ORBITAL - Innovative system for biological and pharmaceutical experimentation in microgravity

IRENESAT-ORBITAL is the SPACE FACTORY investment for a proprietary micro-satellite, integrating **IRENE®** technology and “**MiniLab**” proprietary laboratories, with autonomous space re-entry and re-use capability that will perform **the world’s first commercial service for scientific experiments in microgravity conditions.**

The system provides greater flexibility and strategic mobility of the offer even in a multi-market approach, overcoming that of potential competitors which are instead limited to an orientation towards a single market or segment, with a lesser diversification effect.

SPACE FACTORY has created the **IRENE® technological platform** which represents a unique solution in the world to equip space systems with the capacity for autonomous and controlled re-entry from space, their recovery (**thus also contributing to the problem of space debris**) and reuse.

Following the successful sub-orbital flight mission of the MIFE demonstrator last November 23, 2022, IRENE® technology has achieved a TRL 7.

Space Factory has developed an innovative mini-laboratory (10x10x20 cm.), called **MiniLab 1.0**, which allows scientific and biological experiments to be carried out in orbit. Currently the MiniLab 1.0 has a TRL 9.

In the last two years, 4 launches have been successfully carried out on the International Space Station (ISS), of which 2 in January 2024, of experiments contained in the MiniLabs.