



PRESS RELEASE

October 2025



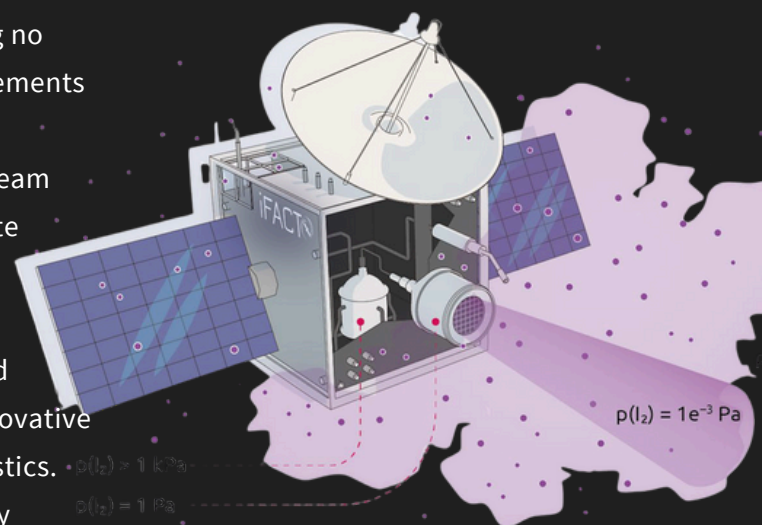
From iFACT to iFACT-MP

Seamless continuation and scaling of groundbreaking technology

iFACT: Pioneering Iodine Electric Propulsion

The **Horizon 2020 iFACT** project successfully established Europe as a leader in iodine electric propulsion. The project matured and validated a 300 W iodine EP subsystem, which demonstrated over **3,100 hours** of operation. Comprehensive tests confirmed the compatibility of iodine with spacecraft materials, revealing no critical issues that could hinder its use. Significant advancements were achieved with **C12A7 thermionic emitters**, increasing achievable current densities by orders of magnitude. The team also conducted integration and coupling tests of a complete iodine propulsion subsystem with a CubeSat platform, demonstrating system-level readiness.

To support long-term testing, iFACT designed and operated a dedicated iodine endurance test facility, featuring an innovative pumping and recovery system alongside advanced diagnostics. Beyond these technical milestones, the project successfully raised awareness of iodine propulsion, sparking increased interest and activity across both industry and academia, and **laying a solid foundation** for the next generation of European iodine propulsion research.



3,100+ hours of operation,
Europe proves iodine electric propulsion is
reliable and ready for space



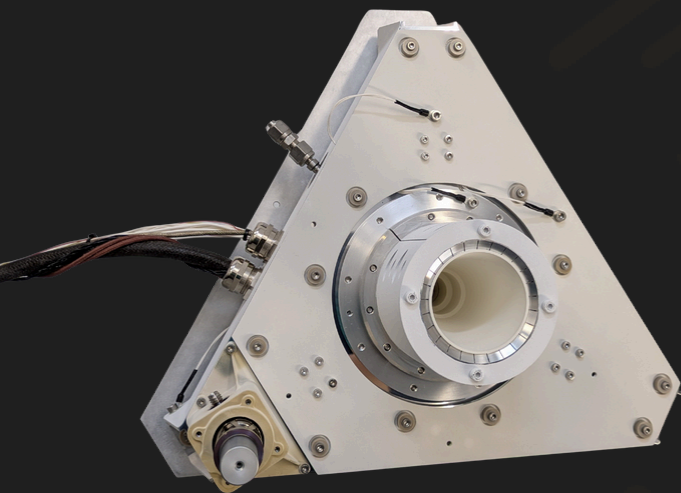
IFACT-MP: SCALING AND MATURING THE TECHNOLOGY

Building on this solid foundation, the **Horizon Europe iFACT-MP** project is taking iodine electric propulsion to the next level. The project is **upscaling the ACFT to 3–5 kW**, while refining the iodine fluidic chain with agile throttling capabilities and studying tank scalability. A new optical iodine mass flow meter is under development to ensure precise propellant monitoring. Research continues on iodine-fed C12A7 electrified cathodes to **increase the melting point and optimize surface structure**.

iFACT-MP is also maturing the platform and PPU requirements and validating the iodine-specific control and regulation strategies using a PPU Breadboard.

For the final endurance testing, Europe's largest iodine thruster test facility is being built, capable of handling up to 5 kW, cementing Europe's leadership in sustainable, high-performance electric propulsion. **Supported by the European Commission, who recognised the potential of iodine early on**, these efforts strengthen Europe's technological leadership in sustainable, cost-effective, high-performance electric propulsion, ensuring strategic autonomy and fostering innovation across academia and industry.

The thruster unit with the iodine ACFT and a noble gas fed cathode



Driving innovation and
strengthening strategic autonomy
in space

The planar iodine cathode designed to use C12A7 emitter discs

