



FFPLUS SUCCESS STORY: BUSINESS EXPERIMENTS

HPC FOR RADIO FREQUENCY SUBSYSTEMS

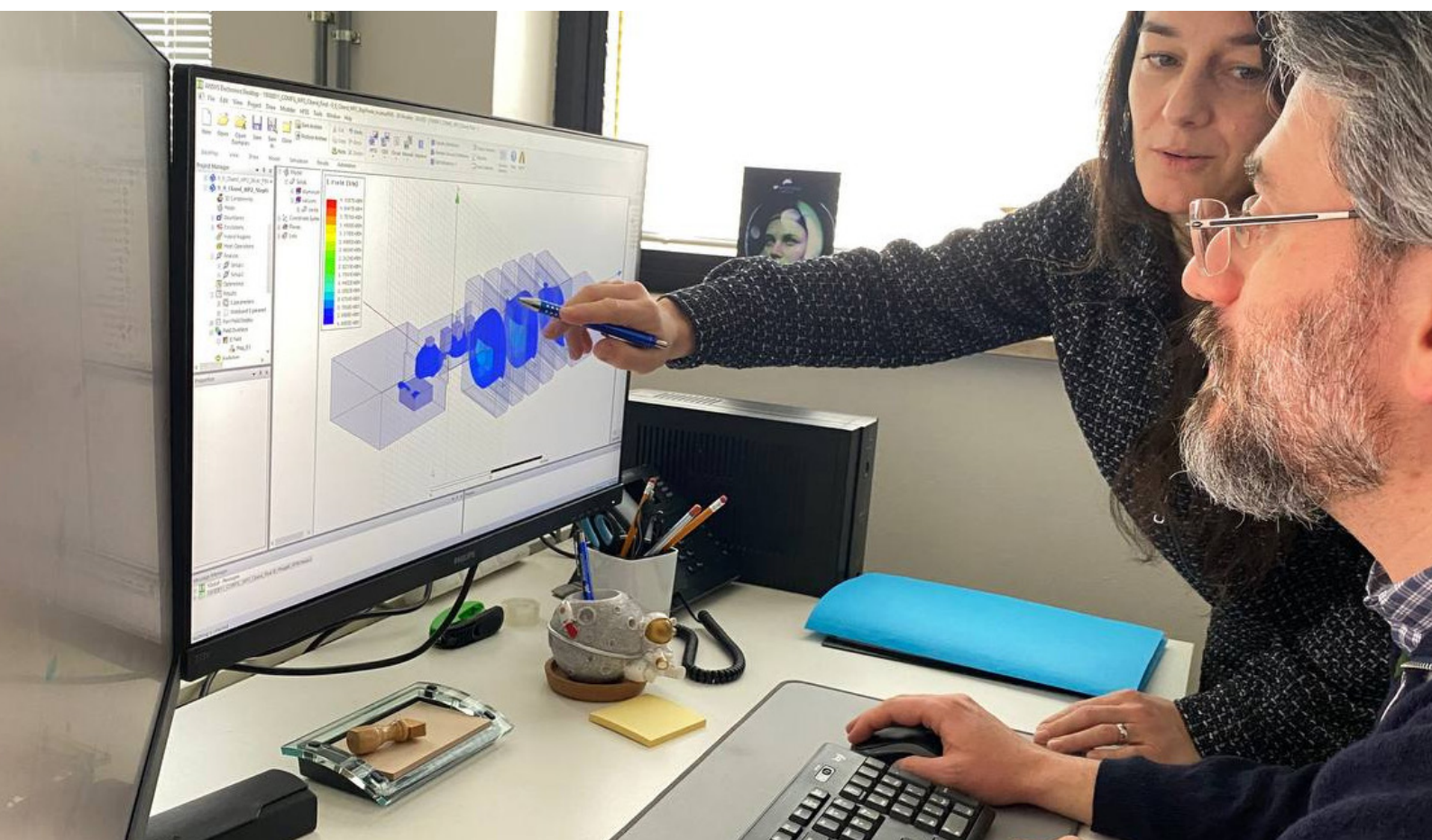
ORGANISATIONS

RF Microtech is an Italian SME developing next generation antennas, filters and communication subsystems for space, satellite and aerospace applications currently in deployment across Horizon Europe and European space programmes. **Open Engineering** develops advanced simulation software for virtual engineering and product optimisation. Its OOFELIE platform enables large-scale digital testing and design validation.



THE CHALLENGE

RF Microtech needed to design increasingly compact and complex communication subsystems capable of operating reliably in demanding aerospace and space environments. Traditional engineering workstations could not process the largest simulation models efficiently, limiting design accuracy and slowing innovation. HPC enabled analysis of more design options, reduced development risk and minimised dependence on costly physical prototypes.



Technology used: HPC, Structural Mechanics
Industry Sector: Aerospace

THE SOLUTION

The HoRuS experiment created an HPC-enabled design workflow running on the Leonardo supercomputer. Open Engineering integrated its OOFELIE platform with advanced simulation tools, allowing engineers to evaluate thermal, mechanical and communication performance within a single environment.

By exploiting EuroHPC's Leonardo supercomputer, the computational workflows supported much larger models, faster virtual testing and more informed engineering decisions before manufacturing began.

THE IMPACT

The project strengthened RF Microtech's ability to develop advanced communication subsystems for space and aerospace applications through an HPC-enabled design workflow capable of analysing larger and more detailed simulation models. Access to the Leonardo supercomputer enabled engineers to evaluate more design alternatives, identify performance issues earlier and optimise products before manufacturing.

By combining advanced simulation software with scalable EuroHPC resources, the company can accelerate product development while reducing engineering effort and technical risk. Faster access to high-fidelity simulation results improves confidence in design decisions and supports the development of more sophisticated products within commercial timescales. The capability enhances RF Microtech's competitiveness in the European space, satellite communications and aerospace sectors, where performance, reliability and time-to-market are critical. Reduced dependence on physical prototyping also lowers development costs and shortens validation cycles.

BENEFITS

- 50% reduction in design time for advanced space communication filters
- 50% reduction in aerospace engineering design costs
- 25% reduction in overall development costs
- Larger simulations analysed beyond previous capability limits
- New HPC-enabled specialist engineering services has created future commercial opportunities



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