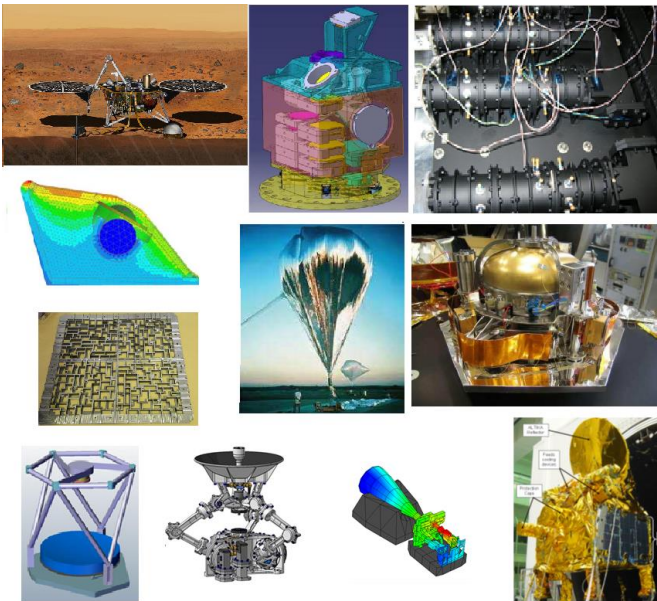


## 25 years of thermal expertise in space industry



### Architecture

Specifications, design, hardware definition & procurement, tests

### Modelling

Numerical modelling with simulation, optimisation, model correlation & reduction

### Thermal management

Thermal control technologies, heat storage systems, system modelling

### Tests campaign

Thermal measurement and characterisation, validation, exploitation

### Training

Thermal engineering courses dedicated to space industry

### A long history

Since its creation in 1992, EPSILON has collaborated with major actors from space industry: ESA, CNES, CNRS, Thales Group and Airbus Group. **Design** and **validation** of a **large spectrum of systems** and **sub-systems** have been performed: satellite, antenna, telescope, deployment mechanism, optics, thermal protection system, and electronic equipment

EPSILON meets market requirements:

- **Analysis** of thermal, electro-thermal, thermo-fluidic and thermo-mechanical phenomena on complex high technology equipment and systems
- Development of thermal and **multi-physics** simulation tools and platforms
- System optimization by **modelling approach**
- **Digital tools**

### Critical Know-How

This experience allows us to benefit from an **exceptional know-how** in understanding and mastering all the **thermal phenomena** that affect basic components such as sub-systems or even complete systems. This know-how is vital both for their design, their construction and keeping them in operation, especially in the case of systems faced **extreme environments** (Martian, solar, cryogenics...)

### Innovation

Furthermore, thanks to its R&D activities, EPSILON has developed a recognised knowledge in the whole range of **thermal control solutions**: local exchanges, heat storage, heat transport as well as the thermal interface materials and is able to design the most suitable thermal architecture for all systems.

EPSILON achieves thermal engineering:

- Expertise in **system architecture** and **optimisation**
- Numerical **modelling** and **simulations**
- **Test** definition, implementation and follow-up

And offers **tailored solutions** to answer its customers' needs and requirements.

### SOME REFERENCES

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**TAS**: Antenna for EXPRESS, K5A, Y601, ARSAT2,... programs

**COMAT**: APM 3POD

**OneWeb**

**IRAP**: SOLAR ORBITER – PAS

**THALES SESO**: MTG – Cold Optics

**CNES**: INSIGHT-SEIS, MYRIADE EVOLUTIONS, MicroCarb, OTOS

**ESA**: TPS for MARS Sample Return ERC

**ADS**: VENUS Express, MADRAS Megha Tropiques,...

**LATMOS**: EXOMARS – MOMA-GC

**SAFRAN Reosc**: SSA - MTG

**CNES**: Balloon – BSO-BPS

**CNES/ADS**: MERLIN

**TAS**: Waveguides and coaxial cables for IN7, Y601, K5A, W2A, W7, ... programs -

**TAS**: Electronic and RF equipment

### SOME CUSTOMERS

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