

Orbital systems

Satellites

Transversal competencies

HEATSELF

HEATSELF is an industrial SME specialized in the development and production of thermal solutions.

HEATSELF employs electrically conductive polymers with PTC (Positive Temperature Coefficient) effect able to emit heat using the surrounding temperature without using any electronic control system.

COMPETENCIES & CAPABILITIES

The material used to for the HEATSELF products is thermo-sensitive and is able to dilate or contract depending on the surrounding temperature. This result is obtained thanks to HEATSELF's know-how in the production of polymers with an electrical impedance varying with temperature. The advantage of using HEATSELF's technology for industrial applications is the use of materials able to adjust the amount of energy needed to maintain industrial processes. In order to monitor R&D and production, HEATSELF set up an electro-thermal characterization laboratory and a performance test bench to assess products over time. HEATSELF now also has the necessary tools to simulate temperature variations in a climatic chamber.



HEATSELF

PRODUCTS & SERVICES

HEATSELF offers different types of self-regulating heating components, cable solutions, foils, wire for industry applications.

Heating cables that are commonly used to prevent frost or low temperature in pipes to avoid ice. They can be cut to length.

The self-regulated heating cable has to managed itself its power. For this reason, the cable must have a PTC (Positive Temperature Coefficient) effect: The electrical resistance increases with the temperature so power decreases when temperature increases.

This technology has been chosen to eliminate all regulation systems and electronics.

Benefits: Substantial competitiveness gain is expected from this technology, quite reduced efforts for propellant line on ATC, thermal design, integration and procurement.

MAJOR SPACE PROJECTS & REFERENCES

FSRH, Flexible Self Regulating Heating cable: Program with ESA and Thales Alenia Space in pre-development of NEOSAT.

DISTRIBUTED THERMAL SENSOR: Invitation to Tender (ITT) followed by TDE with ESA 2019: a demonstrator of a new type of smart temperature sensor, this system will provide a continuous temperature profile, richer in thermal information by TDR, Time Domain Reflectometry. HEATSELF designs thermosensitive polymer materials. Also HEATSELF manufactured a specific heater for propellant line of satellite 1W@0°C and 0.1W@40°C under 100Vdc.

R&T CNES, 2D self-regulated flexible heater for satellite equipment: feasibility followed by de-risking program TRL 5 maturity in progress (2024).

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TURNOVER 0.7 M€

WORK FORCE 4

SPACE TURNOVER 0.3 M€

SPACE WORK FORCE 2