



THERMADIAG

MONITORING OF HIGH-TEMPERATURE PROCESSES



SOFTWARE SOLUTIONS FOR HIGH TEMPERATURE PROCESS MONITORING AND MULTI-SENSOR DATA ANALYSIS

A CEA-DRF-IRFM startup



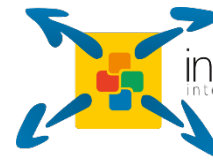
CEO: Victor MONCADA

GENERAL INFORMATION

- ▶ *Spin-off : CEA-DRF-IRFM (Cadarache, FR)*
- ▶ *Creation:* November 2015
- ▶ *Localization:* Meyreuil (13), FR
- ▶ *Staff:* 1

CA 2016: 130 K€

CA 2017: ~200 K€



incubateur impulse
inter-universitaire



ACTIVITY

- ▶ Thermavip software platform and technical support for multi-sensor data analysis in high temperature processes

MARKETS

- ▶ **Magnetic confinement fusion**
- ▶ **Steel industry**
- ▶ Petrochemistry
- ▶ Glass industry
- ▶ Plastics industry
- ▶ Cement industry

Context: Research on the Magnetic Confinement Fusion at CEA Cadarache (FR)

TOKAMAKS: HIGH TEMPERATURE MACHINES

High heat flux, accelerated ageing and damaging of inner materials:

- Infrared surveillance of inner components
- Tore Supra: 100MB/s of very complex videos to analyze

How to perform qualitative/quantitative analysis of massive and complex amount of data

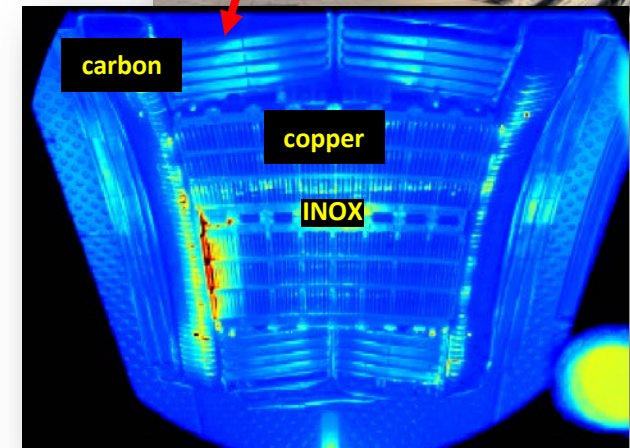
DEVELOPMENT OF THE THERMAVIP SOFTWARE

Developed since 2008

Exploitation of infrared/visible imaging data for:

- 1 Physical understanding
- 2 Real-time material safety
- 3 Increasing inner components lifespan

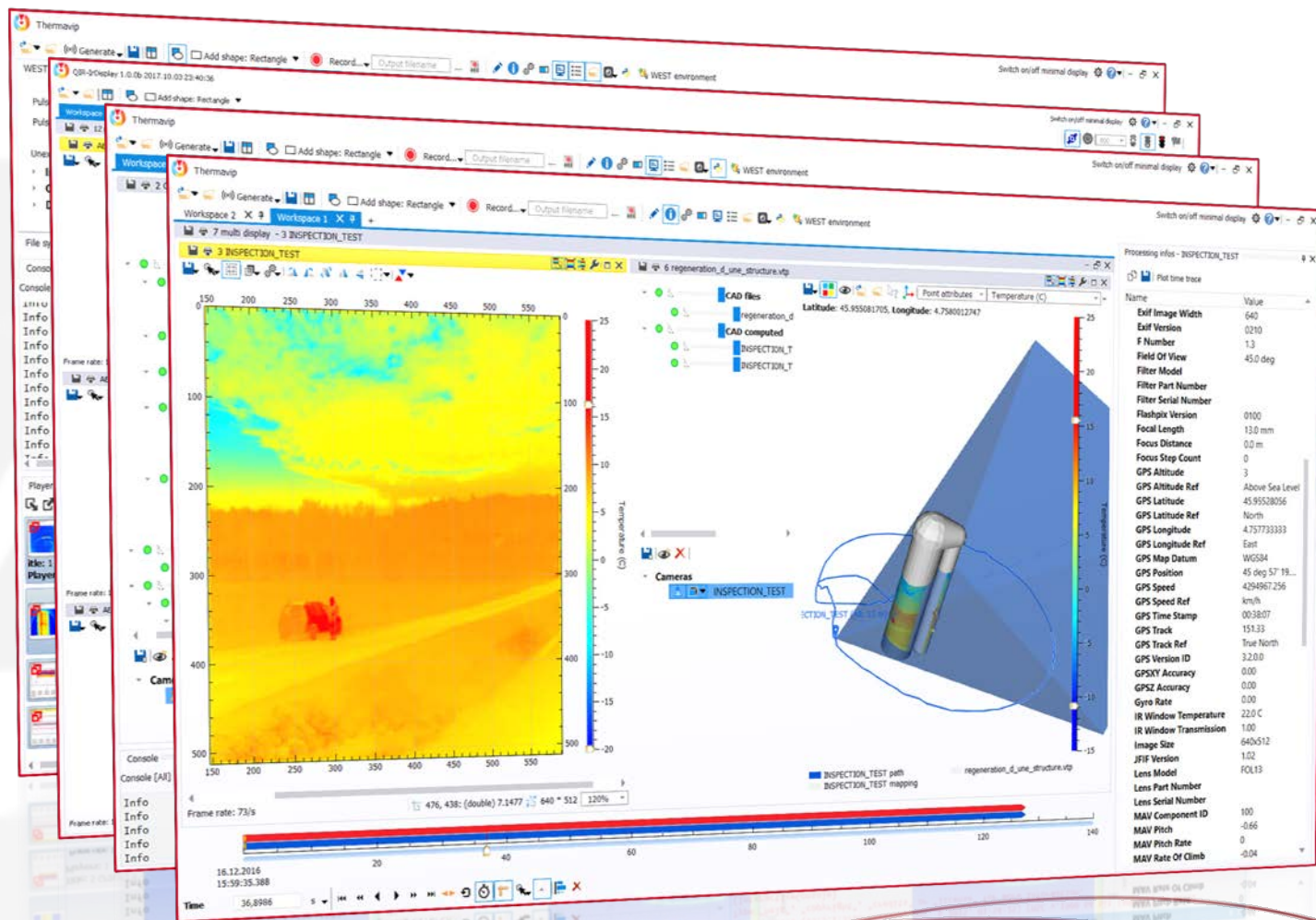
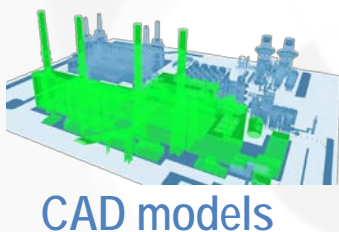
View of Tore Supra's inner components



Infrared image of a heating antenna
Temperature range: 150 – 2000 °C

ThermaVIP software suite

- 1 THERMAVIP- OFFLINE ANALYSIS
- 2 THERMAVIP- REAL-TIME ANALYSIS
- 3 THERMAVIP- TOKIDA 3D
- 4 THERMAVIP- AERIAL SURVEILLANCE





Licences: Thermavip & « On the shelf » modules

Customized software suite for process monitoring and multi-sensor data analysis



Software integration

- Software integration of Thermavip into your sensor environment
- Development of on-demand modules



Advice and expertise

- Support for Imaging diagnostics exploitation
- Support for sensor data archiving and scientific databases management



Technical support

- Application management
- End-user and developer training

Thermavip for collaborative projects

- ▶ **Source Sharing** – access to Thermavip & modules sources
- ▶ **Co-Developments** – mixed developments / mixed licenses



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