ExoMars and beyond...

01 THE CHALLENGE

The ExoMars missions are the first of ESA's Aurora programme, aiming to investigate the Martian environment while demonstrating new technologies, paving the way for a future Mars sample return mission during the 2020s. The first mission consists of a Trace Gas Orbiter (TGO), carrying an Entry, Descent and Landing Demonstrator Module (EDM).

Critical Software was challenged to design, develop and validate numerous components of the ExoMars TGO Central Software; specifically, design using Object-oriented Programming, develop in Ada language and validate using a full numerical software validation facility. Elements included:

- GNC - implements functions required for guidance, navigation and control modes.
- SADM - supports management of Solar Array Drive Mechanism.
- APM - supplies necessary services to manage Antenna Pointing Mechanism.
- Thermal Regulation - provides key services regulating the spacecraft's thermal distribution, processing thermistor values and command heaters.
- EDM Management - implements functions required to manage the Entry and Descent Module equipment when connected to TGO.

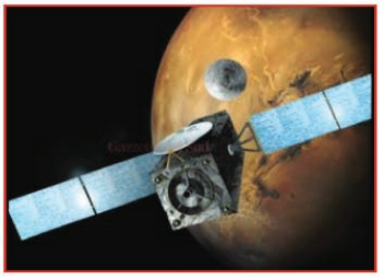
Additionally, Critical Software provided engineering support to the Thales Alenia Space France (TAS-F) Central Software team, working in-house at the TAS-F premises, developing services and application layers, and performing Functional Chain Validation activities.

02 THE SOLUTION

Critical Software provided a solution based on a high level of engineering expertise in development and Verification& Validation of critical systems, according to demanding ESA standards. The Critical Software team achieved consistent, high-quality and sustainable results, operating with a flexible approach within the workflow.

03 THE RESULTS

Critical Software achieved an excellent outcome on this project through application of objective measures, and performing all tasks on schedule as well as to the highest possible quality standards.



04 THE CLIENT

esa

ThalesAlenia Space
A Thales / Finmeccanica Company

Critical software

ABOUT CRITICAL SOFTWARE

Critical Software provides systems and software services for safety, mission and business-critical applications. We work closely with our clients, helping them to meet the most demanding standards for performance and reliability.

We were founded in 1998, with NASA our very first client. Today, we work across many international industries and have offices across the globe.

criticalsoftware.com
info@criticalsoftware.com

We are CMMI Maturity Level 5 rated.
For a list of our certifications & standards visit our website.