



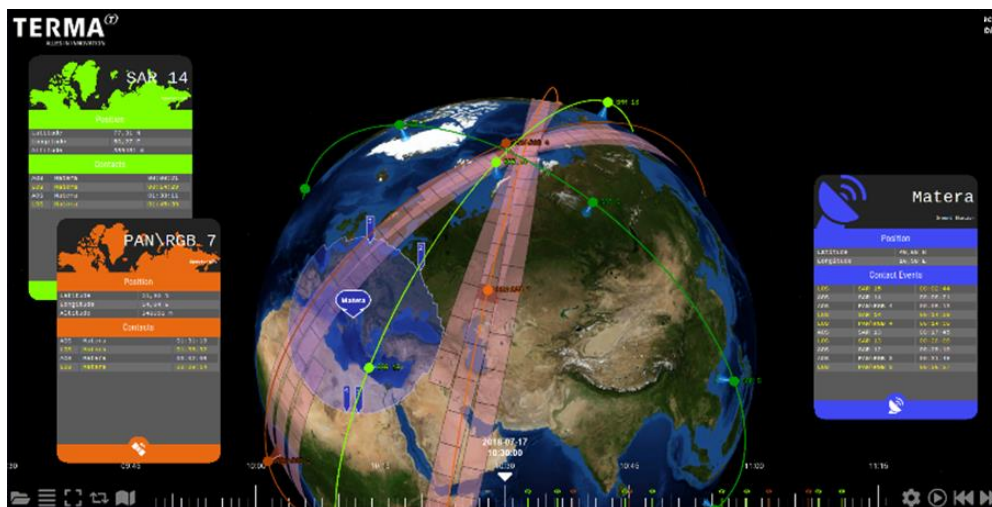
OPERATIONAL SIMULATORS

TERMA S/C Operational Simulators

A Spacecraft Operational Simulator is a simulation – or **digital twin** - of a real spacecraft including all its subsystems. These are used in a variety of applications.

Spacecraft Operational Simulators are used for:

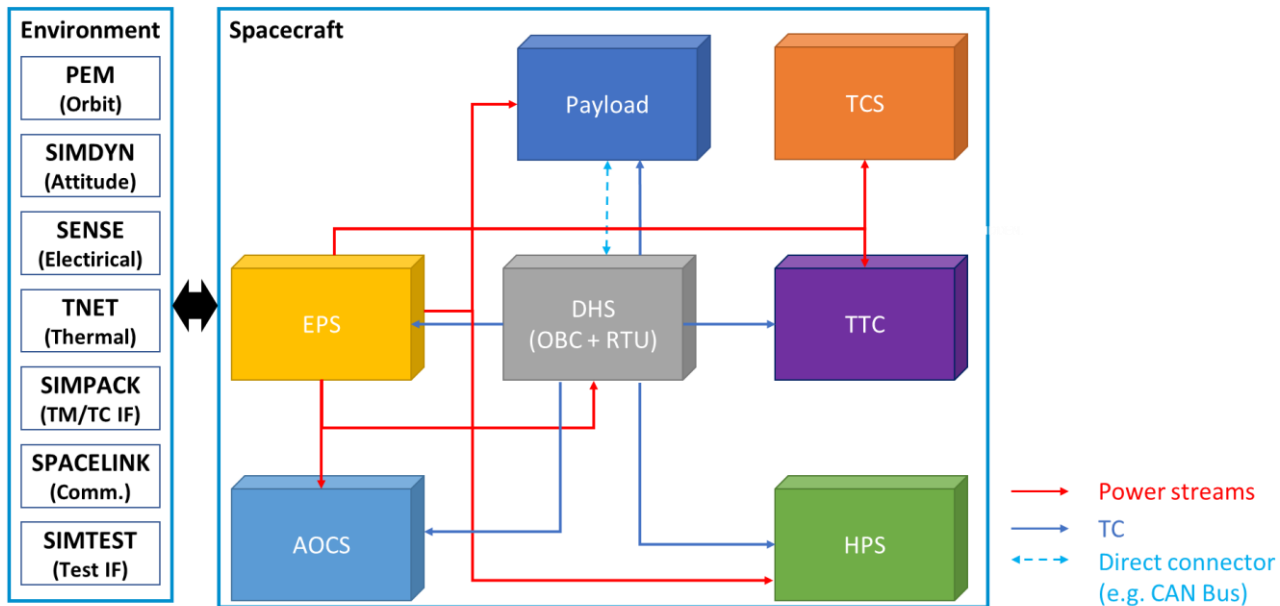
- ✓ for **verification** of the mission control facilities,
- ✓ for **training** of the operational staff,
- ✓ and **validation** of the operation procedures.
 - ✓ Command sequence confirmation;
 - ✓ Operational training;
 - ✓ Operational rehearsals;
 - ✓ Operational analysis.



TERMA combines both, **COTS libraries and infrastructure** (e.g. SIMULUS) as well as **own developed Models and Software** (e.g. the *TEMU* Emulator).

- Simulators cover the simulation of
 - the **spacecraft platform**,
 - the **payload**,
 - the **ground stations**, and
 - the **physical environment** around the spacecraft

Spacecraft Operational Simulators



- Simulators include the MIB/SDB and **accept all relevant Telecommands (TC)** and **generate all corresponding Telemetry (TM)** including the FDIR behavior.
- Terma’s Simulators include its own developed market-leading Emulator *TEMU* in order to emulate the state-of-the-art On-board processor(s) capable of running any On-board Software.

TERMA has more than **20 years heritage in building spacecraft simulators** for both, the commercial EO domain and institutional science missions including deep space.

Project Name	Short Description
Galileo CSIM Maintenance	Maintenance of CSIM in GCS
NAOS Operational Simulator	A SIMLUS based operational Simulator for the NAOS Mission
BMOTT	MSG Operational Simulator Development and maintenance
Euclid Operational Simulator	Operational Simulator for the ESA Euclid program
Sentinel-4 Instrument Environment Simulator	Development of models for Sentinel-4 UVN ICU
SARah SMU and uRTU models	Development of SMU and MicroRTU models for SARah
Sentinel-1 Operational Simulator	Operational Simulator for Sentinel 1A, 1B and later 1C and 1D
Integral/XMM	Upgrade of Integral 7 XMM Operational Simulators to SIMSAT 4
MTG SMU Model	Development for MTG Operational Simulator
EXOMARS Operational Simulator	Operational Simulator Development for EXOMARS 2016 Mission

You are interested in a Spacecraft Simulator for your single Spacecraft or Constellation?

Reach out to us for further information: terma.space@terma.com