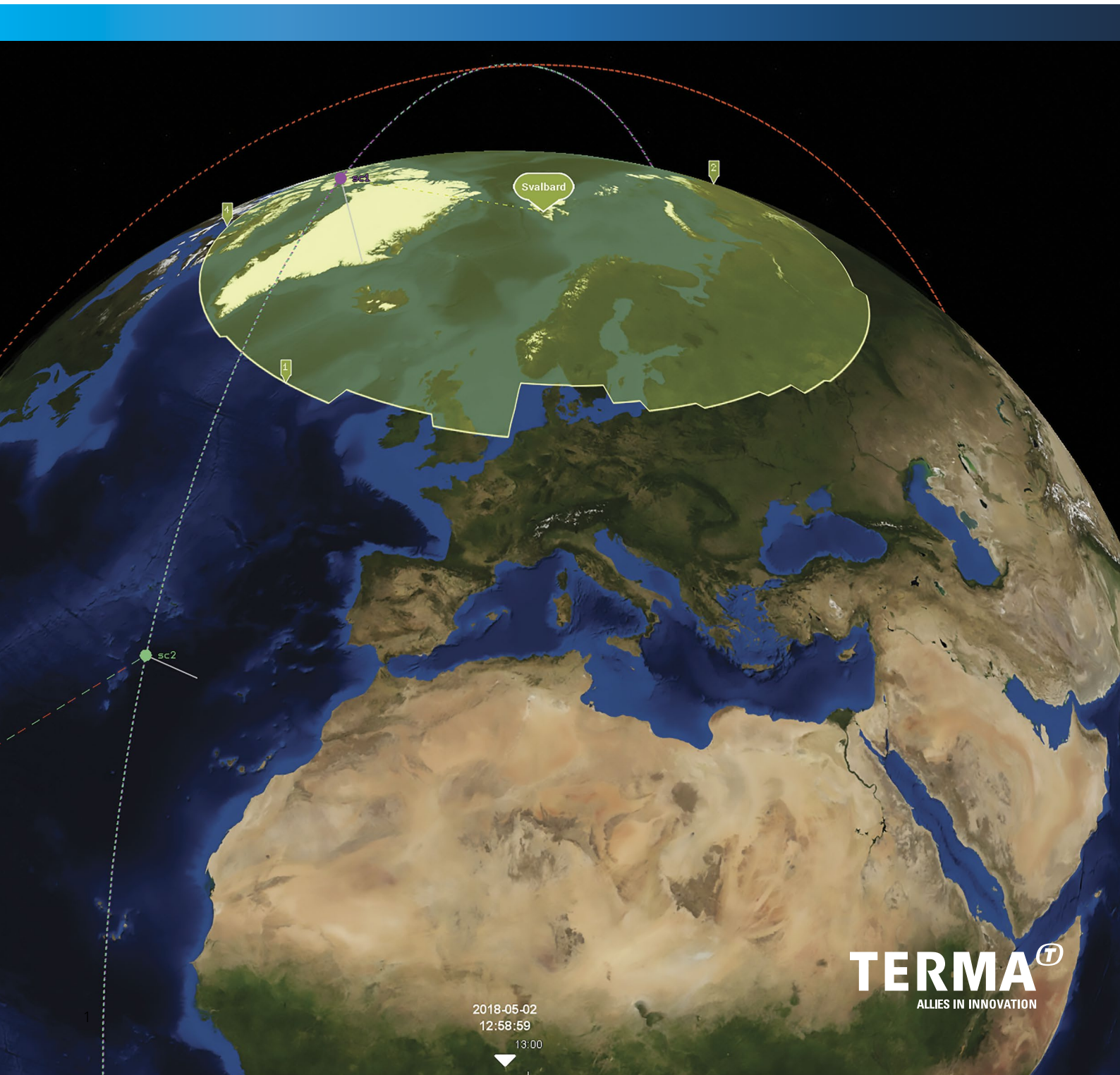




# TERMA GROUND SEGMENT SUITE

SATELLITE OPERATIONS, TESTING & SIMULATION



2018-05-02  
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**TERMA**<sup>®</sup>  
ALLIES IN INNOVATION

# Terma Ground Segment Suite

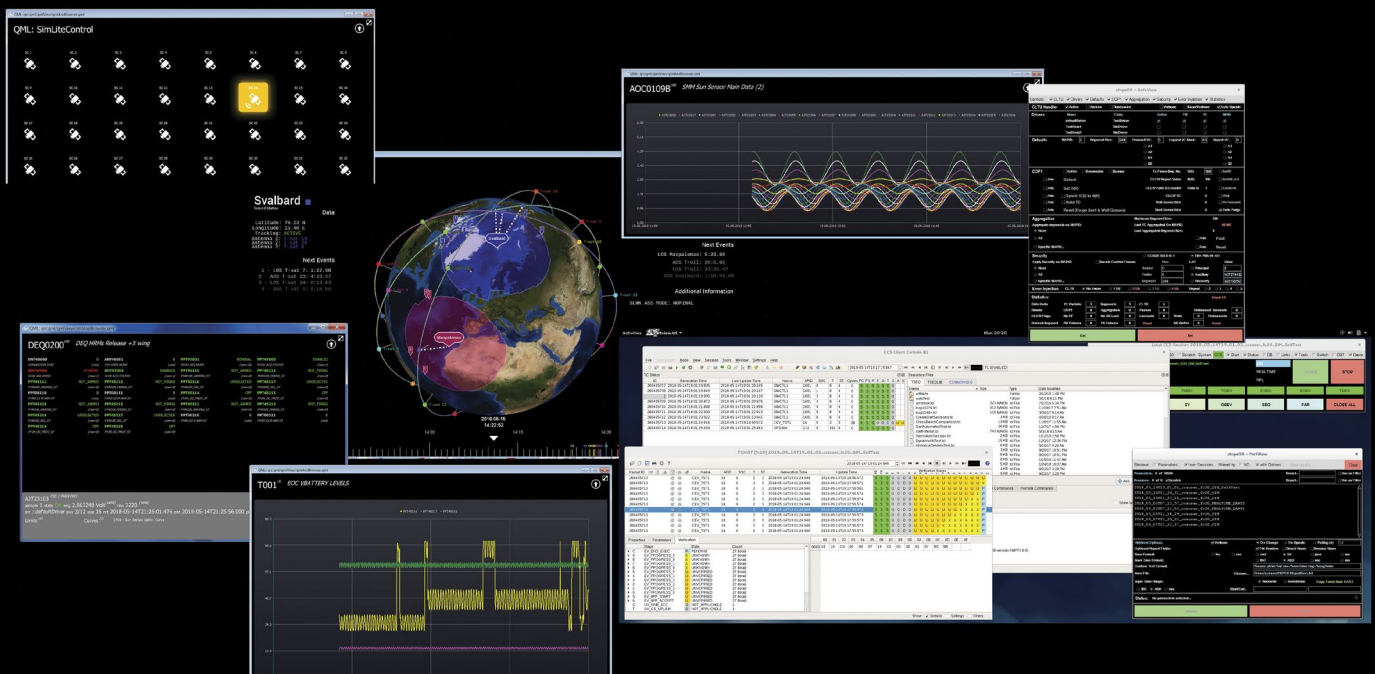
The Terma Ground Segment Suite (TGSS) provides users with a comprehensive set of products that form an **end-to-end solution** for satellite testing and operations.

**Deployed in 30+ high-end missions** (i.e. EO, Science, Telecommunications – both Civil and Military) TGSS products are robust and under constant evolution and improvement.

TGSS abides by the de-facto industry standards and is suited for **smallsats, complex spacecraft**, either **individually** or in **large constellations**.



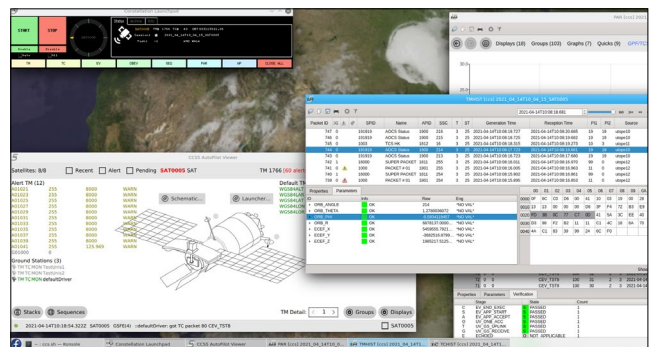
- CCS5
- TRACK
- ORBIT
- PLAN
- STAT
- UNIS
- TEMU
- TSC
- STAMP



# Operations

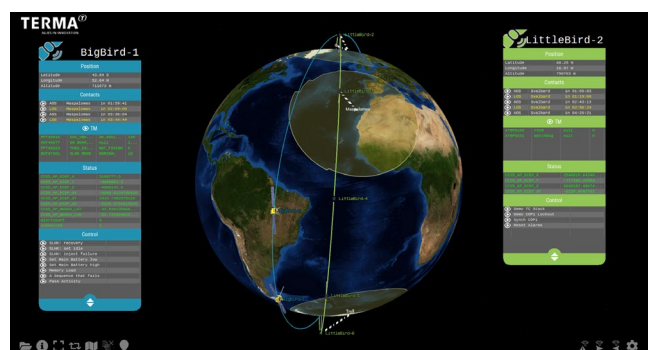
## CCS5 (Central Checkout System)

- Terma's flagship product, for monitoring and control functions for mission operations.
- Scalable from single satellites to constellations, having been deployed from regular to smallsat missions.
- Cloud compatible and compliant with all industry standards for telemetry & telecommand processing.



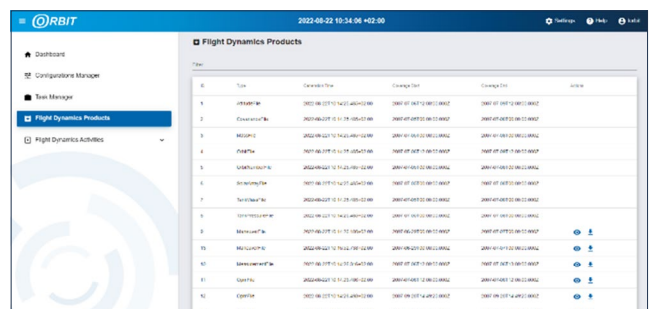
## TRACK

- TRACK is a real-time orbit visualisation and analysis tool, suitable for a spacecraft or constellation.
- It shows spacecraft orbits from TLE files as well as real-time sources.
- Capable of event determination such as ground station AOS/LOS or eclipses.



## ORBIT

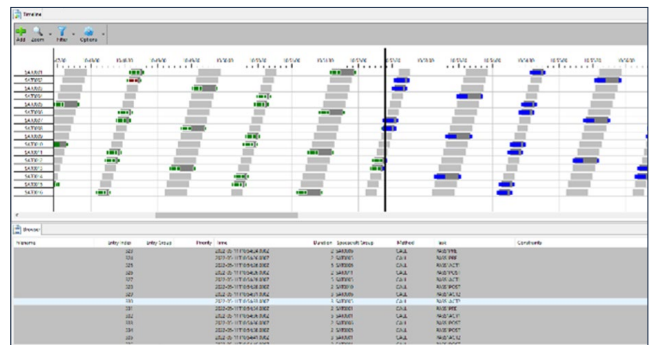
- Supports flight dynamics operations by providing software for orbit determination, propagation, and control.
- Provides spacecraft attitude control, determination, and prediction as well as slew manoeuvres components.
- Supports multiple spacecraft and automated operations scenarios.





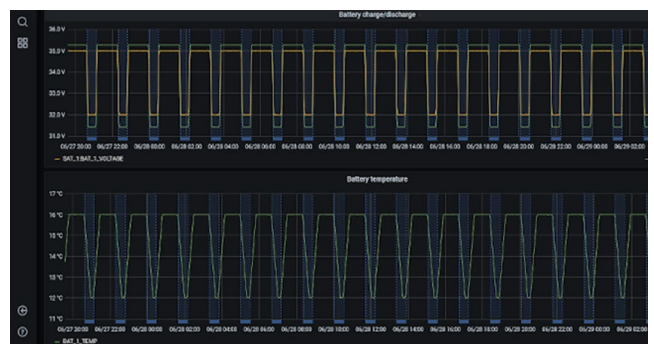
## PLAN

- Mission planning tool that computes a schedule given a set of rules and constraints (orbit, ground configuration...)
- Is constellation ready and includes conflict checking and resolution.
- The schedule generation component can be replaced with your custom algorithm.



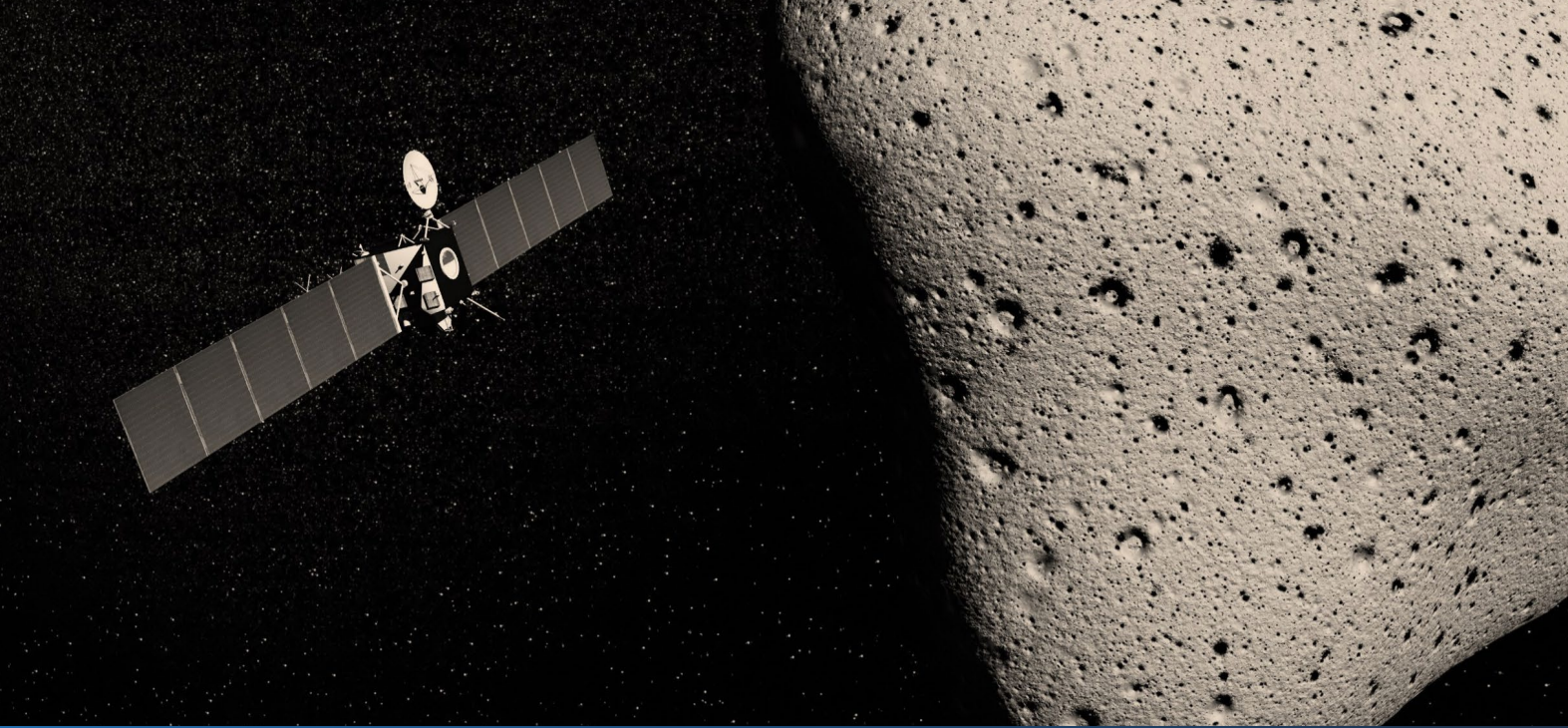
## STAT

- A mission performance analysis tool.
- Provides an efficient storage, retrieval & analysis of years of telemetry, parameters, and events.
- Provides trend analysis, anomalies, and fault detection.



## uNIS

- Gateway between the MCS and ground station networks.
- Supports CCSDS Space Link Extension (SLE) services.
- Standard means for TM frames and TC CLTUs to be transferred.



# AIT and EGSE

## TEMU (Terma Emulator)

- Terma's flagship multi-core processor emulator.
- Emulates SPARCv8 (ERC32, LEON2, LEON3, LEON4), PowerPC and ARMv7-R processors.
- Suitable for both flight software development/verification and operational simulators.

## TSC

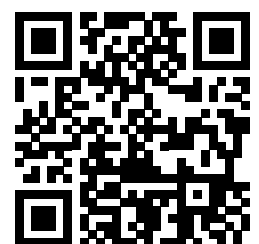
- Single user version of CCS5 – for instrument and payload level test system.
- Lightweight software with quick installation and setup.
- Automated test execution and engineer-friendly test language.

## CCS5 for AIT

- CCS5 is deployed as a multi-user spacecraft test system.
- Provides AIT support from instruments level through to complete spacecraft, allowing flexible and scalable deployments.
- Automated test execution.

## STAMP

- Tool for data acquisition, presentation, and control for thermal test campaigns.
- Advanced data presentation features.
- Supports a wide variety of heaters and data-acquisition devices.



All product data sheets can be found  
at [tgss.terma.com/products/](https://tgss.terma.com/products/)



Operating in the aerospace, defense, and security sector, Terma supports customers and partners all over the world. With more than 1,600 committed employees globally, we develop and manufacture mission-critical products and solutions that meet rigorous customer requirements.

At Terma, we believe in the premise that creating customer value is not just about strong engineering and manufacturing skills. It is also about being able to apply these skills in the context of our customers' specific needs. Only through close collaboration and dialog can we deliver a level of partnership and integration unmatched in the industry.

Our business activities, products, and systems include: command and control systems; radar systems; self-protection systems for ships and aircraft; space technology; and advanced aerostructures for the aircraft industry.

Terma has decades of hands-on know-how in supporting and maintaining mission-critical systems in some of the world's most hostile areas. Terma Support & Services offers through-life support of all our products to maximize operational availability, enhance platform lifetime, and ensure the best possible cost of ownership.

Headquartered in Aarhus, Denmark, Terma has subsidiaries and operations across Europe, in the Middle East, in Asia Pacific as well as a wholly-owned U.S. subsidiary, Terma Inc., with offices in Washington D.C., Georgia and Texas.

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