STAMP

SYSTEM FOR THERMAL ANALYSIS, MEASUREMENT, AND POWER SUPPLY CONTROL

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3D synoptic image of the SMOS satellite in STAMP
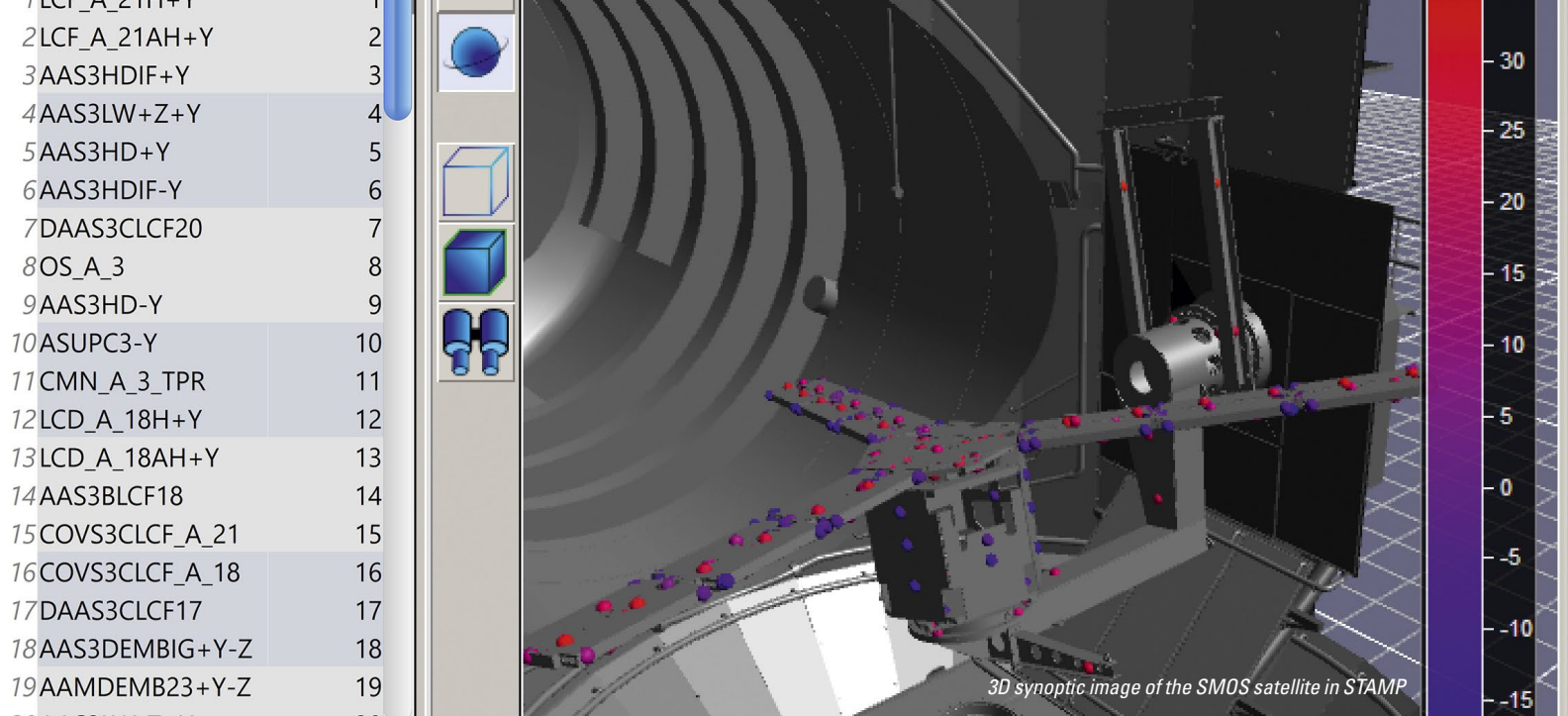
STAMP – System for Thermal Analysis, Measurement, and Power Supply Control

STAMP is a powerful data acquisition, presentation, and control system for conducting large-scale thermal test campaigns. It offers reliability, flexibility, user-friendliness, and a high overall capacity, allowing large teams of operators and customers to efficiently work together on the test.

STAMP was originally developed for thermal testing of spacecraft for the European Space Agency (ESA). Over the years, many spacecraft have been successfully tested using STAMP, such as XMM, Rosetta, ATV, MetOp, Galileo, AMS, EarthCARE, JUICE,, etc.

Its flexibility and robustness means it is also a good choice for other situations in which a large volume of data must be acquired and presented with a high degree of reliability.

Operational Capabilities

STAMP is designed to control thermal testing completely from one operating room, with your customer following the tests from close by or remotely through a remote client. It has a broad range of support to help your facility run tests smoothly and reliably. STAMP supports many drivers for a wide range of devices. Drivers for new instruments can be added without changing the existing software. The system thus fits into an existing infrastructure without interfering with existing operations.

The system runs on both Windows and UNIX (including Linux). Modern design sensibilities include support for the full Unicode character set, IPv6, 64-bit, touch screens, smart card login, and GPU-accelerated rendering.

Acquisition

STAMP supports simultaneous acquisition from numerous data sources of varying types and acquisition of tens of thousands of channels simultaneously. It can acquire data of any scalar type, including temperatures, voltages, currents, flow rates, pressures, valve states, switch states, etc. Existing drivers are available for various devices, e.g. Keithley and Keysight instruments, and OPC.

Heater Control

STAMP has the ability to control large numbers of heaters and power supplies. Supported control modes include fixed setpoint, thermostatic modes, and setpoints derived from (real or virtual) sensors acquired elsewhere.

Presentation

STAMP includes a comprehensive set of presentations. These include a powerful set of graphs, table-based presentations, alarm-generating presentations, 2D synoptics, 3D synoptics, and the ability to send data to third-party tools. Presentations allow for both real-time and historical data to be presented. In addition to presenting the data in its raw (acquired) form, data can be manipulated using mathematical formulae, allowing for unit conversion, calibration correction, data reduction, and other desired operations.

Remote Access

In addition to presentation inside the facility, STAMP also allows for external users to remotely monitor the system via a secure remote server. Sophisticated user permissions settings allow different users different access to configuration, sensors, models, etc. STAMP can notify operators of alarm conditions via SMS.
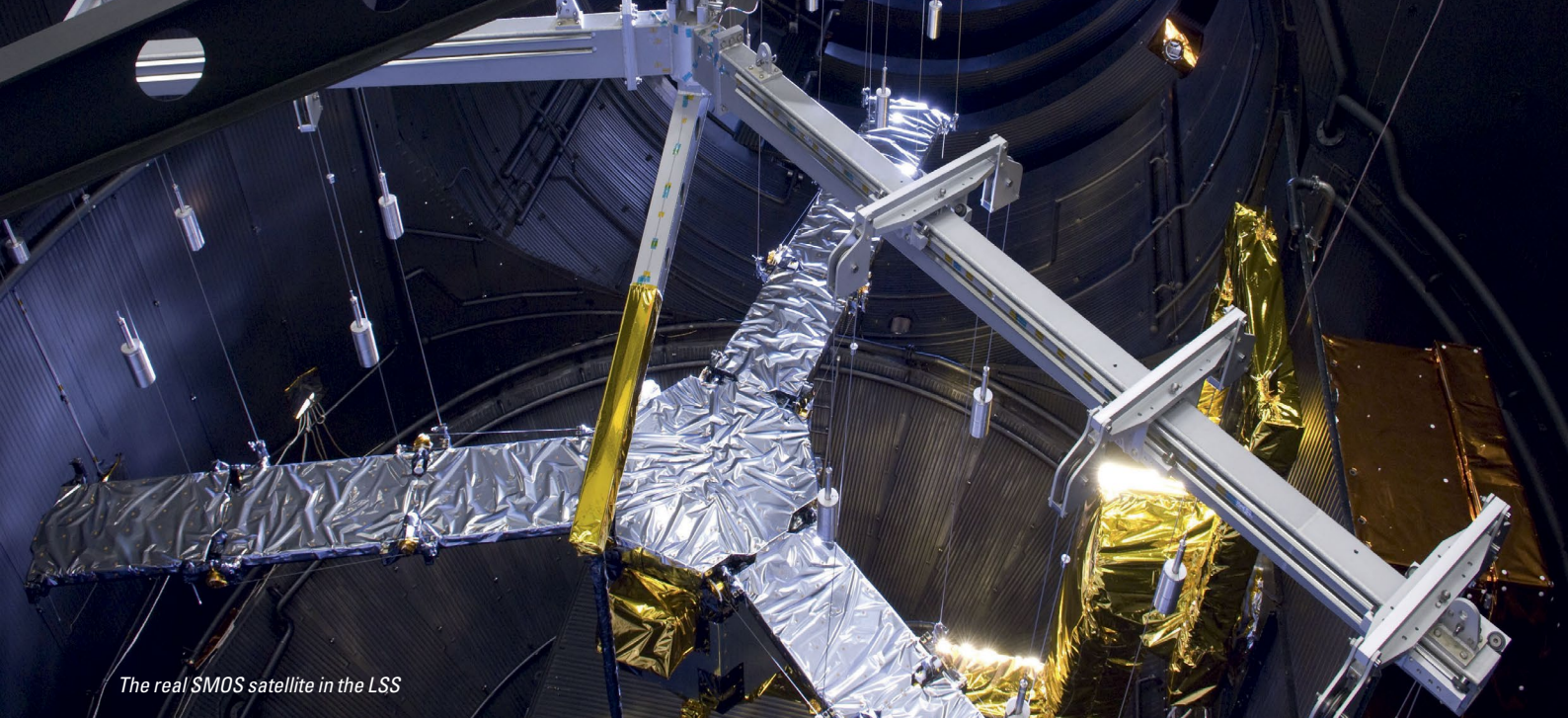
The real SMOS satellite in the LSS

Access to the remote access server is controlled using both trusted certificates and passwords. The remote presentation client allows all of the common STAMP presentations to be run at any location in the world that has internet. And in off-line mode, data that was downloaded earlier can be analyzed without requiring an internet connection.

Reliability

STAMP is designed to conduct test campaigns on spacecraft costing hundreds of millions of euros. Care has been taken to ensure that data is neither lost nor misrepresented on screen.

To ensure reliability:
- STAMP can survive temporary network or server outages without losing data
- All configuration changes are logged and full history is available for inspection
- There is a central alarm console that shows all alarms from all running STAMP modules
- A central process monitors all modules on status and reachability. Missing modules are restarted automatically
- Hot fail-over configurations are supported to allow uninterrupted testing
- Low and high alarm conditions on sensor values can be specified for warning levels, alarm levels, slope levels, and even expected future alarms (extrapolated from the data).

Doing Business with Terma

With the first equipment launched in 1972, Terma is among the most experienced European providers of mission-critical products, software, and services for space missions.

Terma excels in state-of-the-art niche technology and robust operational systems for the space industry. Working in close collaboration with customers and leading industry bodies, we develop advanced, mission-specific solutions. Our solutions include customized systems for space science, earth observation, navigation, and telecommunication programs.

Key Benefits

- Proven technology - build on 20+ years of use within ESA
- Acquisition of tens of thousands of channels simultaneously from many different sources
- Sophisticated presentations in numerous formats, on any number of presentation screens
- Secure remote application to allow test monitoring in real-time at any location in the world
- Fits into an existing infrastructure without interfering with existing operations
- High degree of reliability.

STAMP is part of Terma's TGSS, a suite of applications that cover ground segment spacecraft AIT and Operations needs.

Connect to **tgss.terma.com** for more information.
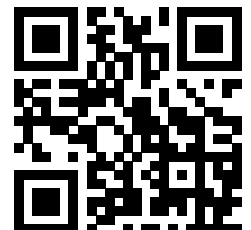
Operating in the aerospace, defense, and security sector, Terma supports customers and partners all over the world. With more than 1,700 committed employees globally, we develop and manufacture mission-critical products and solutions that meet rigorous customer requirements.

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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