

MEOS™ Control



KONGSBERG

Saving cost in Ground Station Operation

MEOS™ Control allows for Ground Station operations with less personnel and improved availability compared to traditional manual operations.

MEOS™ Control is a monitoring and control system that integrates all ground station assets involved in satellite communications, including Antenna Control Units (ACUs), demodulators, modulators, frequency converters, switch matrices, and more. Rather than managing these components as stand-alone units, MEOS™ Control combines them into a unified ground system, providing a common external interface for streamlined operations and reduced personnel requirements.

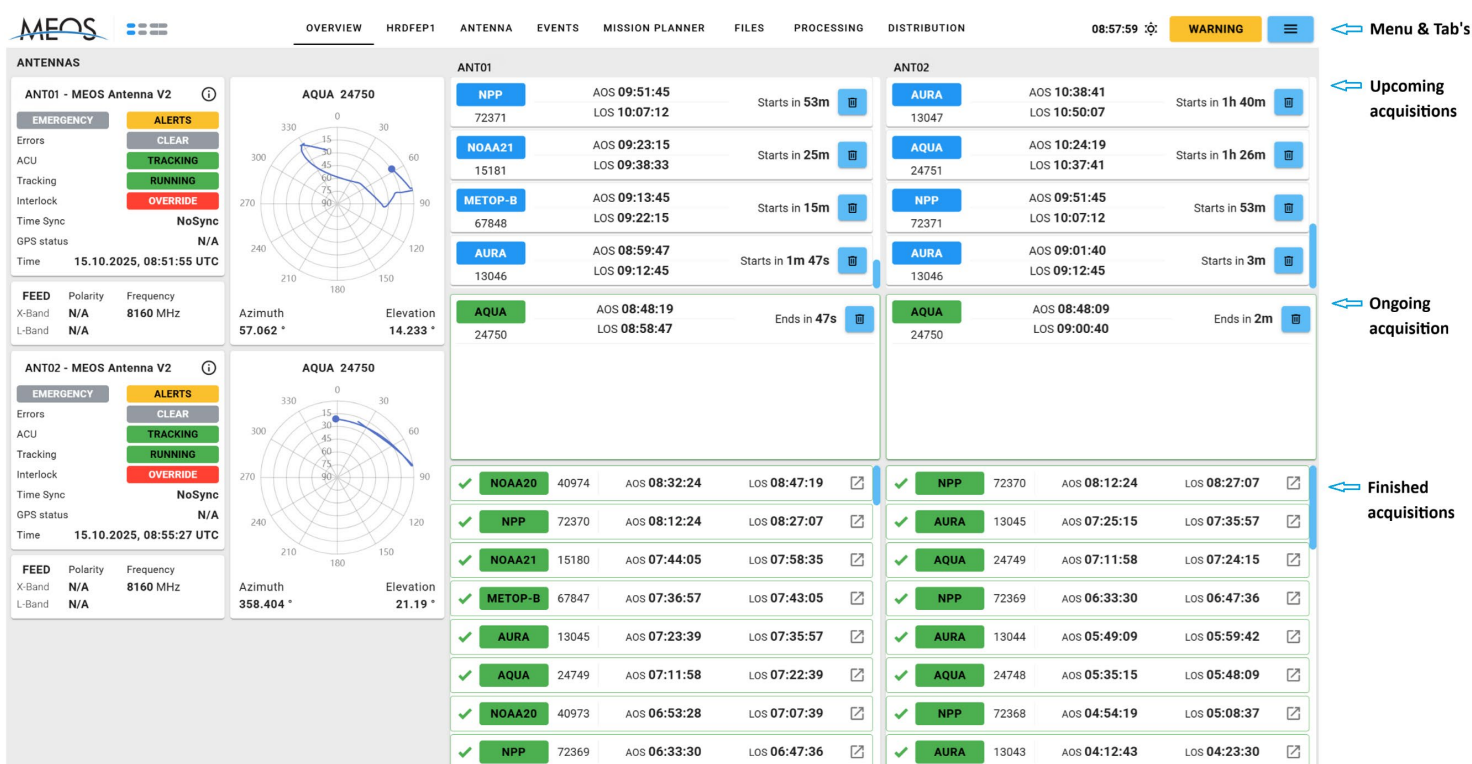
MEOS™ Control supports a range of KONGSBERG's own commercial off-the-shelf (COTS) products, as well as COTS products from third-party vendors. These units typically come with their own graphical user interface (GUI) and a defined application programming interface (API). Once integrated by MEOS™ Control, they become part of a cohesive system with a unified external API and GUI.

The system is scalable and can be tailored to support varying quantities of components, depending on customer requirements for each antenna system or ground station. Licensing governs operation, based on the type and number of integrated hardware units.

This is an example of MEOS™ Control for KONGSBERG COTS. GUI is adapted as needed for third-party units:

BENEFITS / FEATURES

- One common API and web based Graphical User Interface to all integrated products.
- Connected units appear as an integrated part of the system, thus providing one common entry point for scheduling and status information
- Activities can be scheduled immediately or time-based (ahead in time).
- Advanced declarative-based orchestration.
- Extensive quality reports summarizing past activities, incorporating status from all units into HTML/PDF reports
- Scalable architecture, allowing for new units to be added
- Deliverable as a physical server, virtual machine or docker container



THE CHALLENGE

Managing a network of satellite ground stations is inherently complex. Each site may have a unique combination of antennas, switching matrices, and receivers that can change over time. The diversity between stations, combined with a mix of local and centralized control, complicates coordination.

Operational tasks involve substantial manual effort:

- Status reports and statistics are manually collected and compiled.
- Central schedules often require manual execution at each station.
- Report generation and data aggregation for briefings are done manually at the central hub.

These inefficiencies increase workload, elevate the risk of errors, and limit operational agility.

THE SOLUTION

MEOS™ Control integrates seamlessly with ground station equipment to unify operations across the entire network. Its intuitive graphical user interfaces and remote access capabilities empower operations teams with complete system visibility and control from any connected location.

Key benefits include:

- Automated generation of system status and data quality reports
- Centralized distribution of reports to support informed decision-making.
- Significant reduction or elimination of manual tasks at both station and central levels.

RELATED PRODUCTS:

- MEOS™ Capture HRDFEP
- MEOS™ Capture HRTG - High Rate Test Generator
- MEOS™ Connect
- MEOS™ Antenna

MULTI EQUIPMENT SUPPORT

- Support for existing Ground Station Equipment
- Easy adaption to new equipment

DISTRIBUTION

- Report distribution through FTP, SFTP

SCHEDULING

- Programmatic: REST, inbox-based
- Manually, using GUI
- Automatic, based on orbit prediction for selected missions (TLE)

QUALITY REPORTING

- Real-time qualitative and quantitative statistics from all connected units
- Historical view of qualitative and quantitative statistics for previous activities from all connected units, based on satellite and orbit. Both as numeric values and graphs.
- Automatic generation of reports, including qualitative and quantitative statistics, events and plots from all connected units. Available as file or through standard web browser

GRAPHICAL USER INTERFACE (GUI)

- Modern web-based GUI application

EXTERNAL INTERFACES

- REST API (OpenAPI)
- XML based socket, with minimal bandwidth usage
- Access authentication
- MEOS™ Connect Ready

SUPPORTED EQUIPMENT

The following equipment are supported by MEOS™ Control, others on request:

Receivers

- MEOS™ Capture HRDFEP
- Safran Cortex HDR, Cortex CRT

Modulators

- MEOS™ Capture HRTG
- Safran Cortex CRT
- SatTrack Amergint

Switch Matrices

- Specialty MicroWave RF-Switch, RF-matrix
- Quintech QRM Matrix Switch, IF matrix
- Mini Circuits RF Switch

Antenna controllers

- MEOS™ Antenna
- Safran Vision, Orion, Pro
- Viasat SCC
- L3 Datron GSC, ACA, ASC
- Orbital/ CPI AEHP and AEBP

Miscellaneous Equipment

- SMP Up/Down-Converter
- Miteq 9800 converters

