



MEOS™ Geostationary Ground Station

The MEOS™ Geostationary Ground Station is a multi-mission, flexible and modular turnkey system for acquisition, archiving, processing, analysis and distribution of meteorological data.

The MEOS™ Geostationary Ground Station supports the following satellites, sensors and transmission formats:

Satellites	Sensors	Transmissions
MTSAT	MTSAT-2 Imager	HRIT
MSG	SEVIRI	EUMETCast
FY-2	S-VISSR	S-VISSR

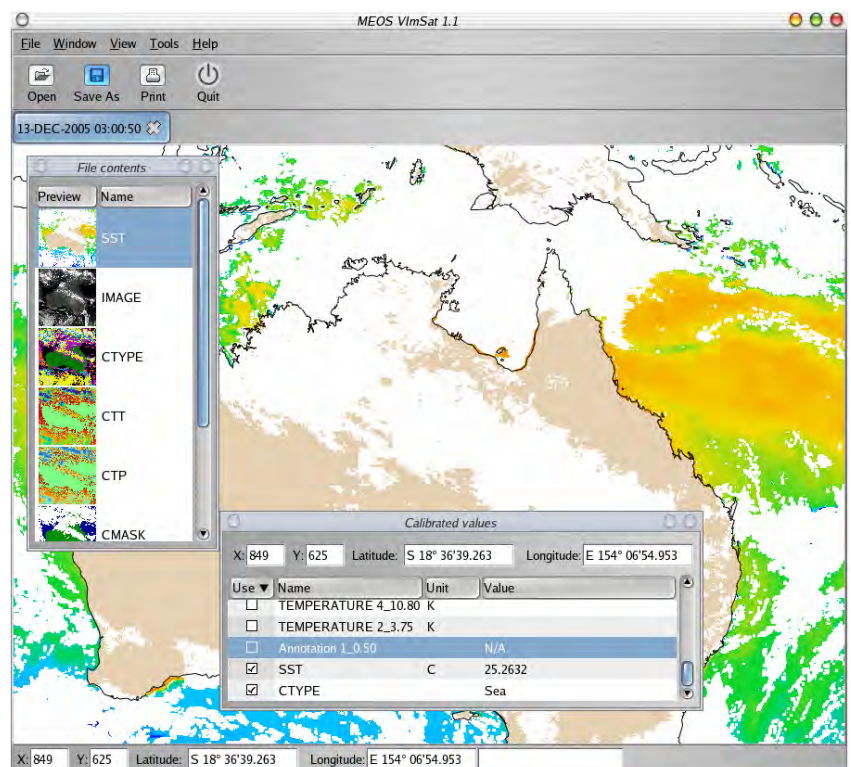
Key features & benefits

- Complete ground station
- Open architecture allows easy upgrading
- Unix/Linux based environment
- Flexible, modular and scalable design
- Multi-mission support
- Basic Package software
- Extensive training, maintenance and support program

Options

- Advanced Package Software
 - Generation of Value Added Products
- MTSAT LRIT
- Integration of customer-specific model data, in-situ and radar images into the MEOS™ Visualisation Tools

Sea Surface Temperature in VImSat



Basic Package

The Basic Package ingests data from the Front End System and provides all the necessary tools for basic processing and operation of the ground station. Data are pre-processed and stored into a Unix file system in mission specific formats or as calibrated, geocoded and map-projected products in HDF 5 format. All data is archived in a product database.

Map-projected products can be viewed with the MEOS™ visualisation software package, which is a standard feature of the Basic Package. It is a fast, operational viewer containing functions; such as interface to product archives, zooming and panning, animation, printing, image enhancements, format conversion and overlay of vector graphics and annotations.

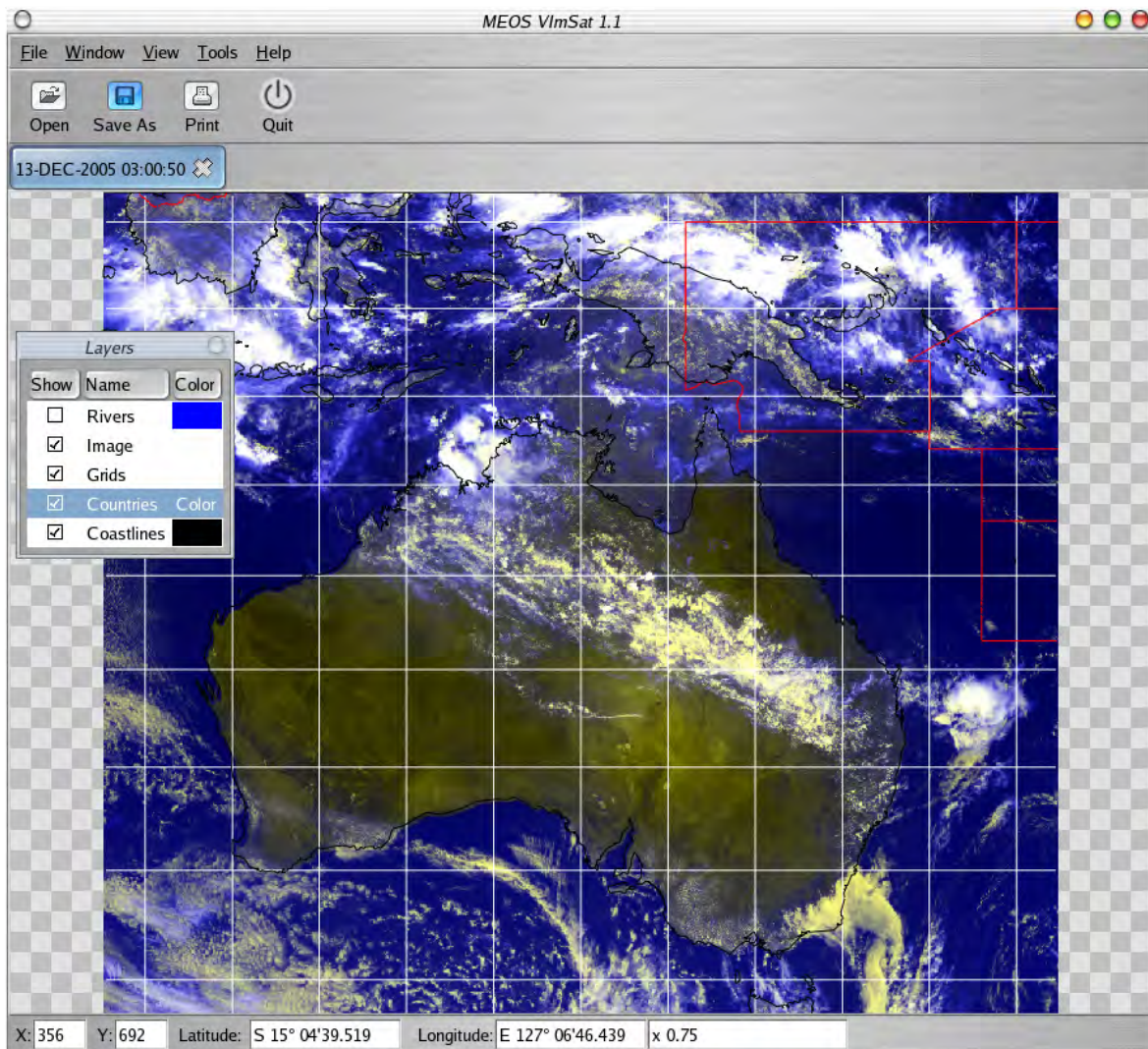
Raw data files and higher level products may be distributed over LAN/WAN to other users. All operations are automatic and easily configurable, including management of disk space and retrieval of processing parameter files.

The system has advanced capabilities for monitoring. All status information is written to disk as log reports. This gives a unique capability to do diagnostics locally as well as remotely, and to generate reception quality reports. The Basic Package contains a versatile Quick Look Viewer showing incoming data in real time, with possibility to show selected channels, perform image enhancement, view a previous dissemination and to display multiple missions.

Advanced Package

The Advanced Package is an add-on to the Basic Package and contains automatic processing of Value Added Products. The range of Value Added Products include nowcasting products, such as Cloud Type and Cloud Top Temperature, and climatological products like Sea Surface Temperature and Normalised Difference Vegetation Index.

Display Examples



Adding geographical layers in VImSat

Front End System

The system provides the functionality to receive the radio frequency and deliver data to the ingest system. The Front End System includes:

- Antenna
- Feed/downconverter
- Digital receiver/bitsynchroniser

Kongsberg Spacetec provides different antenna sizes depending on the customer's requirements:

Frequencies	L-band	Ku-Band (Europe)	C-band (Africa/America)
Antenna sizes	3.8	1 - >	2.4 - >
MTSAT	+		
FY-2	+		
MSG	*	+	+

* The MEOS™ MSG Ground Station supports reception relayed via Ku-band (EUTELSAT 9A/10A) and C-band (AtlanticBird) satellites. The ground station also supports L-band reception directly from the MSG satellite, an option which may become available in the future.

Basic Package

- Ingest of raw data to disk and pre-processing
- Production oriented Station Control System
- Local and remote operation control
- Configurable Graphical User Interface for monitoring and control of the ground station

- Archiving of raw data and products
- Advanced logging and display of site telemetry and status in real time:
 - Activity display
 - Event log display
 - Station overview display
 - Telemetry viewer display
 - Other components (customer specific graphical user interfaces)
- Quick Look Viewer
- Processing of the following products:
 - Imager, VISSR and SEVIRI:
 - Calibrated, geocoded and map-projected products
 - All map-projected products have defined projection parameters, and are stored as HDF 5 files
 - Open data access at all processing levels
- Archiving of raw data and higher order products
- Export of HDF 5 products to JPEG, PPM, PNG and GeoTIFF
- Distribution of raw data and products (FTP, and NFS)
- MEOS™ Visualisation Tool

Host Computer and Ingest System

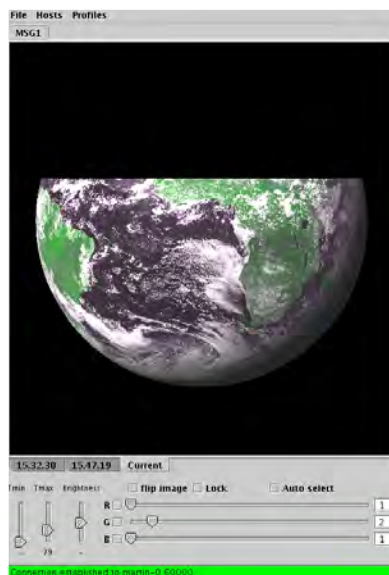
The host computer typically runs Linux operating system. It is equipped with state-of-the-art hardware, a recent model CPU, sufficient RAM for fast processing, and disk space dimensioned for the customer's data storage demands. The host computer holds the receiver and frame synchroniser board.

Additional computers can be connected in LAN/WAN if a distributed system with multiple workstations is desired.

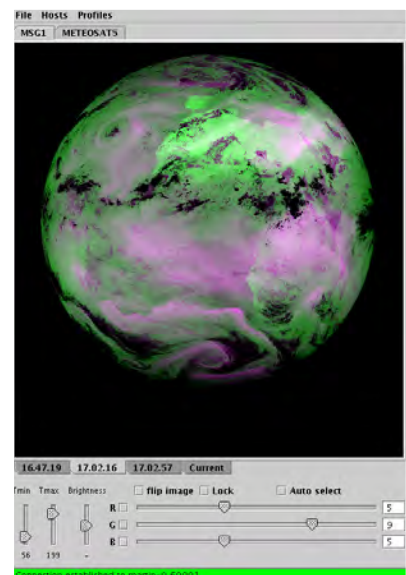
Display Examples



Example of 3.8 m L-band antenna



Quick Look Viewer - SEVIRI



Quick Look Viewer - SEVIRI

Options

The following packages are fully integrated in the MEOS™ for operational production:

• **Advanced Package - Value Added Products:**

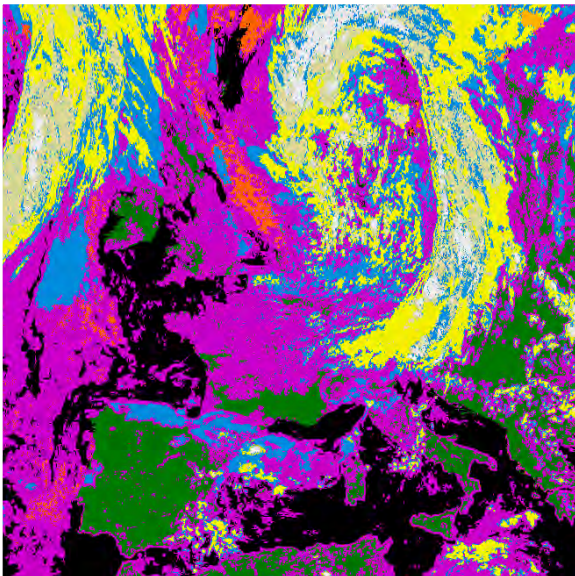
Satellites	MTSAT	FY2	MSG
Cloudmask	x	x	x
CloudType	x	x	x
CloudImage	x	x	x
CloudAmount	x	x	x
CloudMotionWind	x		
CTT	x	x	x
CTH	x	x	x
CTP	x	x	x
FogDetection	x		
SnowIndex	x	x	
SandDetection	x		
PrecipitationIndex	x	x	x
InstabilityIndex	x		
SST	x	x	x
LST	x		
NDVI	x		

Satellites	MTSAT	FY2	MSG
OLR	x		
UTH	x		
MTH	x		
TPW	x		
LPW	x		
TOZ	x		
ForestFire	x	x	
FuzzyCloudMask	x		

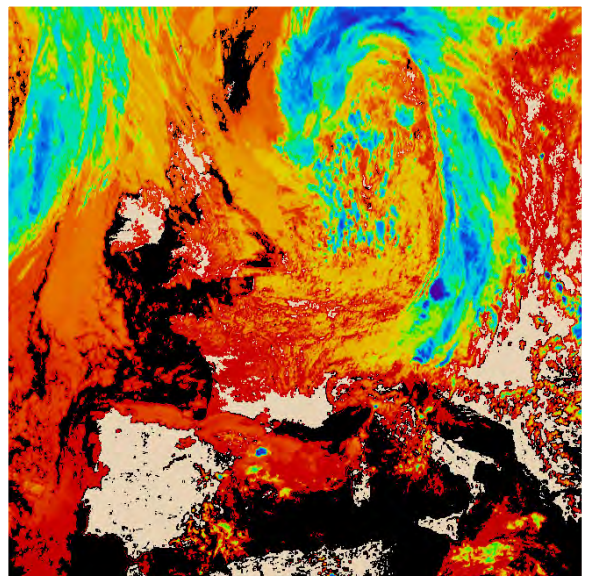
• **Additional Value Added Products**

Please consult Kongsberg Spacetec for more details or visit <http://www.spacetec.no/> .

Display Examples



Cloud Type - SEVIRI



Cloud Top Temperature - SEVIRI

Note:
MEOS is a registered trademark of Kongsberg Spacetec AS.
Specifications are subject to change without notice.

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