User preparation towards Meteosat Third Generation (MTG) and EUMETSAT Polar System - Second Generation (EPS-SG)

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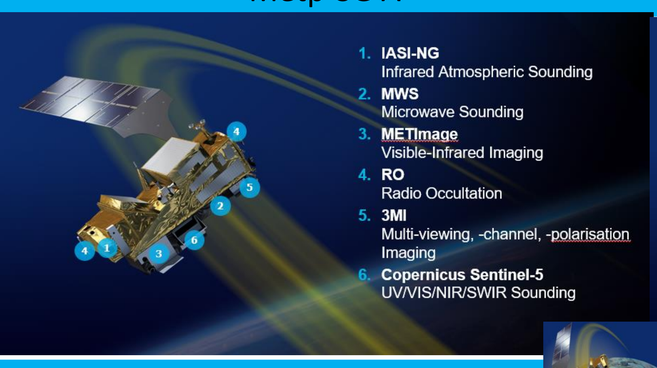
Polar Orbiting : EUMETSAT Polar System – Second Generation

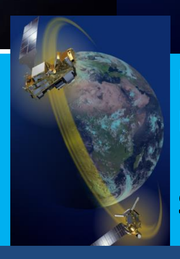
Metp-SG A



Sounding and Optical Imaging Missions

Start of operations 2024

Metop-SG B



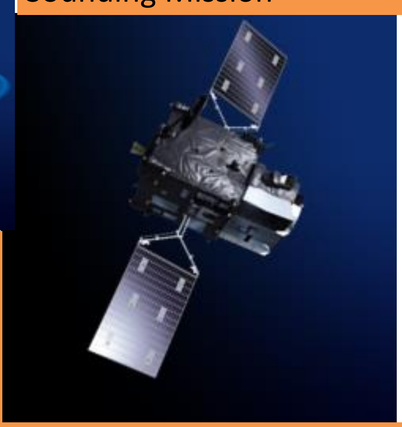
Microwave Imaging and Sounding Missions

Start of operations 2025

Geostationary : Meteosat Third Generation

Imaging Mission

Full configuration of MTG Satellites



Flexible Combined Imager (FCI)
Lightning Imager (LI)
Start of operations 2023

Sounding Mission

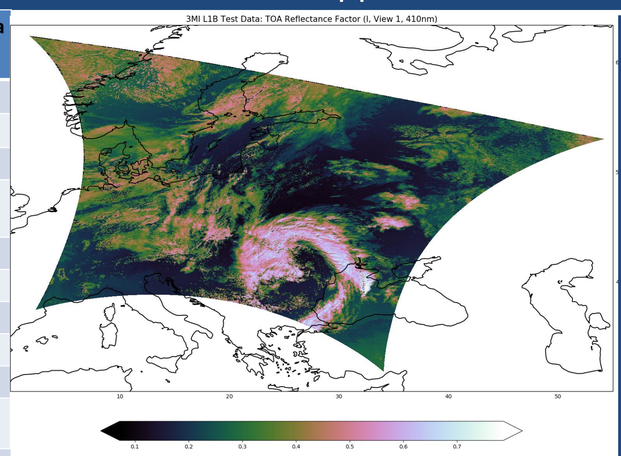
Infrared Sounder (IRS)
Copernicus Sentinel-4 (UVN)
Start of Operations 2024

Core Themes of MTG and EPS-SG User Preparation Projects

★Test Data and Format ★Science Support ★Data Access ★Training ★User Information and Communication

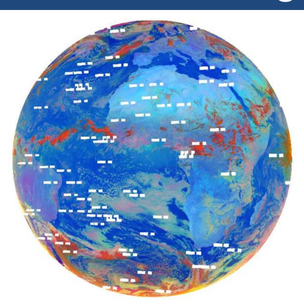
★Test Data and Format

	Product	Test Data V1	Test Data v2
SAT-A	MWS L1-L2	Delivered (December 2019)	Q4 2021
	RO	Delivered (December 2019)	Q4 2021
	METimage L1	Delivered (February 2020)	Q1 2022
	METimage L2 + CM	Delivered (June 2020)	Q1 2022
	3MI L1b	Delivered (February 2020)	Q2 2022
	3MI L1c	Delivered (April 2020)	Q2 2022
	3MI L2 + MAP	Q3 2021 (only L2)	Q2 2022
	S5 L1		Q2 2022
	S5 L2		Q2 2022
	IASI-NG L1D	Delivered (February 2020) Redelivered (June 2020)	Q4 2021
	IASI-NG L2	Delivered (April 2021)	Q4 2021
	IASI-NG L1C	Delivered (February 2021)	Q2 2022
SAT-B	MWI – ICI L1	Delivered (February 2021)	Q4 2022
	MWI – ICI L2	Delivered (February 2021)	Q4 2022
	SCA	Delivered (June 2020)	Q4 2022



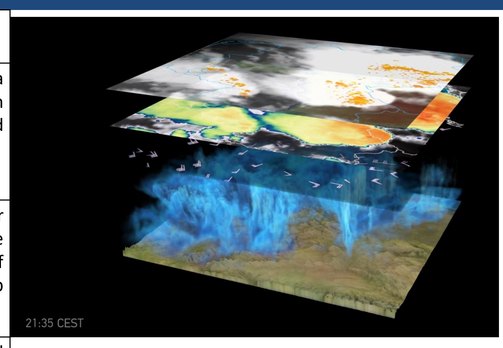
Test Data V1:Quarter of an orbit
Test Data V2: 3 full orbits, updated Product Formats and instrument development.

Test Data and Format Familiarisation



Simulation of FCI-based day-microphysics RGB including missing segments that can occur due to data packet losses

	Description of Published Test Datasets (Status: May 2021)
FCI	FCI L1c 24h test dataset based on SEVIRI proxy data (20170410), for format familiarisation and system testing; realistic format; both CharLS compressed and uncompressed Decompression software and EUMETCast simulator
	FCI L1c Enhanced and Non-Nominal test dataset for user familiarisation, based on one SEVIRI scene (20130804); realistic simulation of channels, of missing data; scaling, fires, inclusion of index map and geometric vector arrays
LI	LI L2 3x30s simulated data; initial and accumulated products; using SEVIRI scene (20130620), GLD360 and LIS data in the simulation; on FCI 2km IR grid
	LI L2 24h simulated data for format familiarisation
IRS	IRS L1B one-dwell simulated dataset, containing spectra in native and Principal Component form, for format familiarisation and system testing; format in line with current L0/1 format specification



MTG "4D Weather Cube":

Collocation and combination of proxy MTG data resulting in a "4D weather cube": four layers of information describing convective storms over Germany on 20 June 2013: at bottom, relative humidity in light to dark blue in a range 50-100%, derived from a DWD high-resolution model; above that, Meteosat-based 2D wind field and a combined infrared-visible "sandwich" product showing cool convective storm tops in red-orange hues. The top layer shows lightning flash density based on ground-based detection. The northern Alps are visible at the bottom front edge

Test data and related information available at https://www.eumetsat.int/eps-sg-user-test-data and https://www.eumetsat.int/mtg-test-data

Science Support

In 2020-2021, online User Preparation Webinars on all next-generation Observation Missions and key Applications

- ❖ Overview of measurement principles,
- ❖ L1 and L2 product generation
- ❖ Formats and dissemination
- ❖ Application perspectives

Observation Mission	Webinar Dates
IRS and IASI-NG	13-14 Oct 2020
LI	16-17 Feb 2021
SCA	20-21 May 2021
FCI and METimage	8-10 Jun 2021
3MI	14-15 Jun 2021
RO	Q4 2021
MWS, MWI, ICI	Q4 2021

Recordings, presentations, Q&A available:
MTG resources | EUMETSAT Website
EPS-SG resources | EUMETSAT Website

Data and products generated from EUMETSAT central facilities and EUMETSAT Satellite Application Facilities:
MTG Data and Products | EUMETSAT Website EPS-SG Data and Products | EUMETSAT Website

Training

Oct 2020 – Sep 2022
Pre-launch of MTG I1, Pre-launch of MTG S1,

Development of material for MTG applications and training

Expert forum – discussions, workshop
Workshops and testbeds for experts, developers, trainers (Train the Trainers phase)

- Test, proxy and simulated data will be used

Sep 2022 – Sep 2023
Commissioning of MTG I1, Pre-launch of MTG S1, Pre-launch of EPS-SG A1
Development of material for EPS-SG, MTG S1 applications and training

Expert workshops and testbeds – for developers, trainers, experts

Introducing of MTG I1 training material in courses and testbeds - for operational users – use of commissioning data of I1

Testing and training trainers on use of MTG S1 products + EPS-SG data

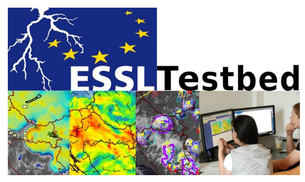
Sep 2023 – Sep 2025
Operations of MTG I1, Pre-launch of MTG I2, Commissioning & operations of MTG S1
Commissioning of EPS-SG A1, B1, operations A1

Operational users training – workshops, courses and testbeds, provision of material for self-paced training

Expert testbeds - use of commissioning data of S1, METOP-SG A1, B1

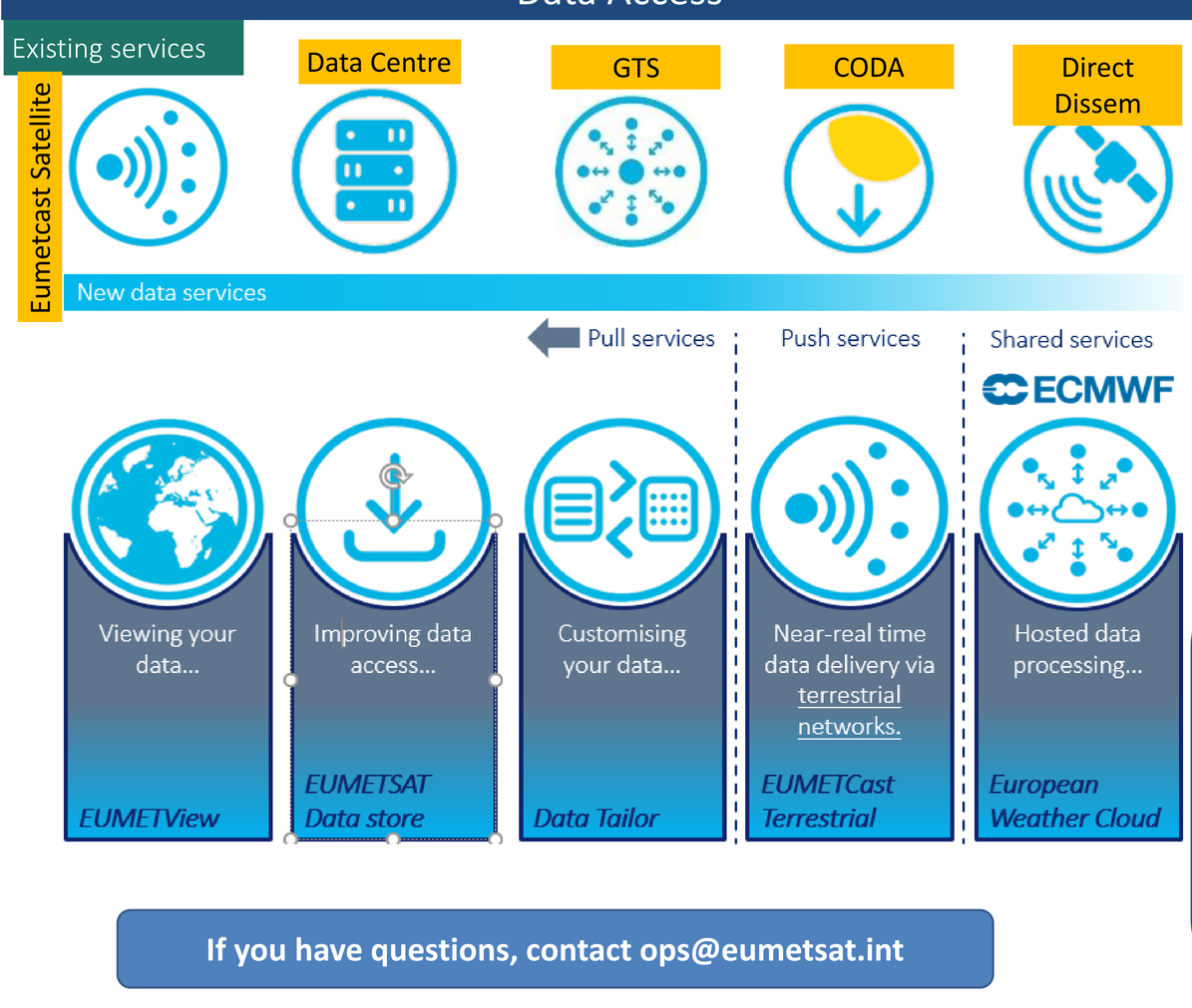
Sep 2025 -
Commissioning & operations of MTG I2,
Operations EPS-SG B1

Operational users training – workshops, courses and testbeds, provision of material for self-paced training



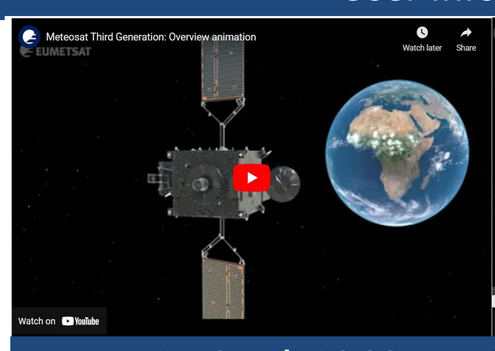
EUMETSAT-ESSL Partnership kicked off in June 2021 for training on severe convective storm analysis

Data Access



If you have questions, contact ops@eumetsat.int

User Information and Communication



Overview videos:
MTG overview video
EPS-SG Overview video

Videos on all observation missions are in the Production phase

MTG and EPS-SG User Days: 31 May – 2 June 2022, Darmstadt, Germany

Key audiences:
- ❖ **National meteorological and environmental services**
- ❖ **Research and academia**

EUMETSAT's next generation satellite programmes MTG and EPS-SG offer

- ➢ **Continuity of operations of the current missions both in geostationary (MSG) and polar platforms (Metop)**
- ➢ **Enhancements of heritage missions in terms of spatial, temporal, and radiometric performances**
- ➢ **Novel observation missions that offer potential for better characterising convection, clouds, aerosols, and atmospheric chemistry**