



EUMETSAT and GEANT Community Support

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*Infoshare Series on Earth Observations Support Through
NRENs - Part 2 – 27 May 2025*





**EUMETSAT –
who we are / what we do**

**EUMETCast-Terrestrial –
Data push through NREN**

Supporting users in Africa



An intergovernmental organisation with 30 Member States

www.eumetsat.int





Primary objective:

Establish, maintain and exploit European systems of meteorological satellites.

Further objective:

Contribute to the operational monitoring of the climate and the detection of global climatic changes.



Global risks perceptions highlight societal and environmental concerns

Respondents to the Global Risks Perception Survey rank failure to mitigate and failure to adapt to climate change as the number one and two long-term threats to the world and the risk with potentially the most severe impacts over the next decade.



Short term (2 years)



Long term (10 years)



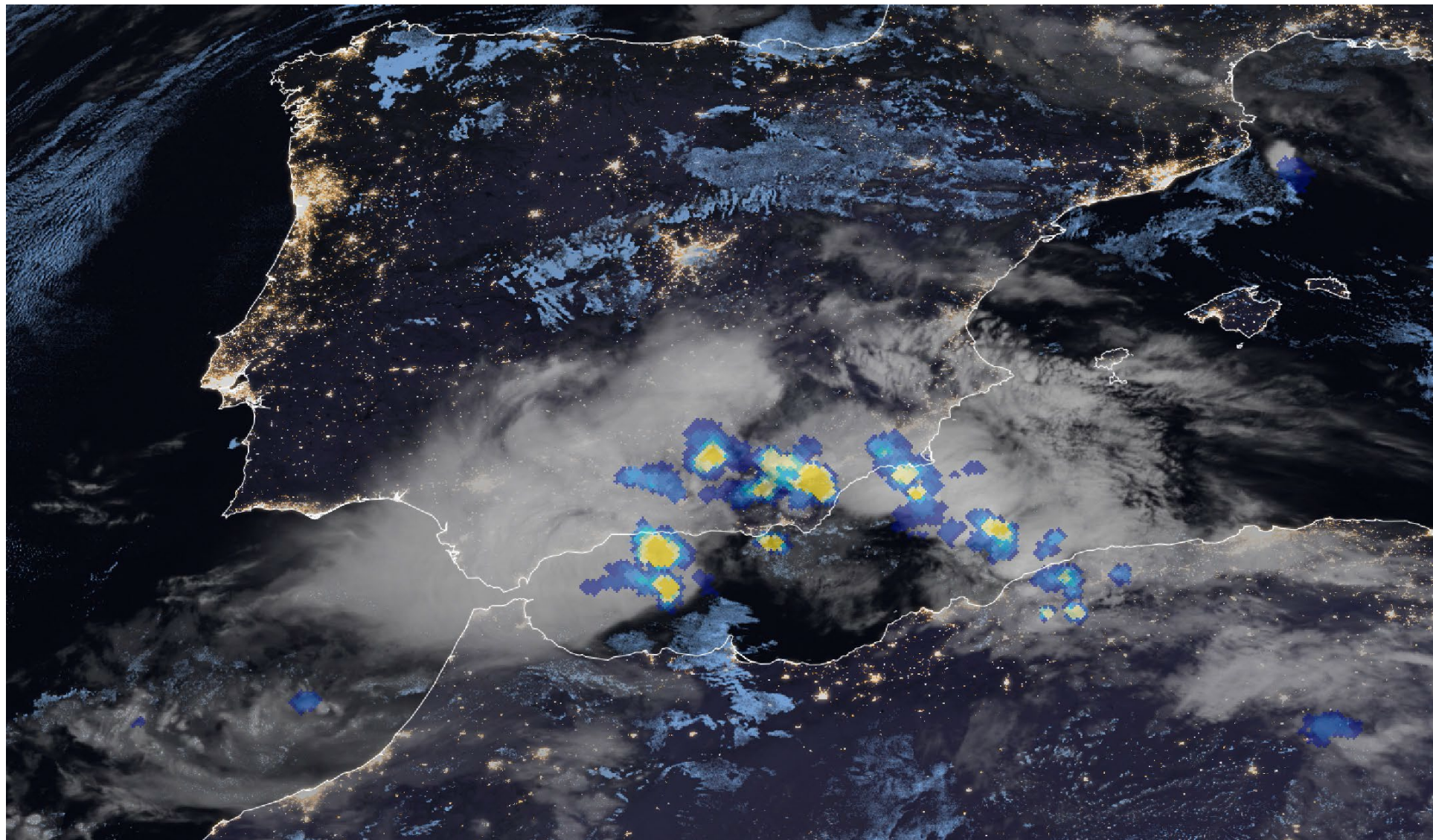
Risk categories ● Economic ● Environmental ● Geopolitical ● Societal ● Technological

Source: World Economic Forum, Global Risks Perception Survey 2024-2025



MTG FCI + LI Combined Image over Spain on 30 October 2024

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Satellites observations are key for weather forecasts

It is easy to take our daily weather forecasts for granted, but the social and economic benefits of accurate forecasts are huge – and this is largely thanks to satellites.

Over **95%** of the 40 million observations processed every day for weather forecasting are provided by satellites

Satellite Data



Errors in one-day forecasts have been reduced by **64%** thanks to data from satellites

Earlier and more accurate weather warnings



More than **85%** of data used for numerical weather modelling comes from satellites



Around 1/3 of the European economy is **weather-sensitive**

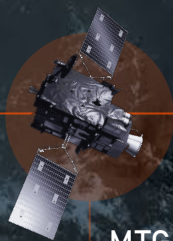
- Agriculture
- Energy
- Transport
- Search and Rescue
- Infrastructure
- Property
- Tourism
- Environmental Protection

In the EU, socio-economic benefits of weather forecasting are estimated to be up to **€61 billion/year**



Current EUMETSAT geostationary satellites

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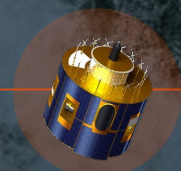


MTG-I1

3.4° W

Commissioning phase

MTG-I1 was successfully launched on 31 December 2022



METEOSAT-10

0° longitude

Full Earth Scan imagery

Provides the Meteosat primary full-disc imagery service over the European continent, Africa and parts of the Atlantic and Indian oceans.

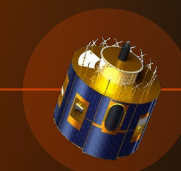


METEOSAT-11

9.5° E

Rapid Scan Service (RSS)

Delivers the Meteosat secondary RSS service over Europe and adjacent seas.



METEOSAT-9

45.6-45.9° E

Indian Ocean data coverage (IODC)

Delivers the EUMETSAT best-effort contribution to the multi-partner IODC services.



Current EUMETSAT Low-Earth orbit satellites

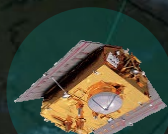
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Metop-C
SSO 98.7° inclination
EPS secondary mission
Delivers additional EPS services from 817km altitude.

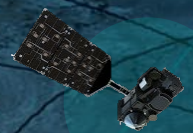


Metop-B
SSO 98.7° inclination
EPS primary mission
Delivers the primary operational EPS services from 817km altitude.

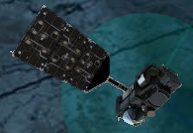


Copernicus Sentinel-6 Michael Freilich
NSO 66° inclination
Reference altimetry mission

Delivers measurements of ocean surface topography and sea state from a non-synchronous, 10-day repeat orbit at 1,336km altitude (mission partners are EUMETSAT, the European Commission, ESA, NASA/JPL and NOAA, with support from CNES)



Copernicus Sentinel-3A
SSO 98.7° inclination
Copernicus Sentinel-3 mission
Delivers Copernicus marine and near-real-time atmospheric data services from 814km altitude.



Copernicus Sentinel-3B
SSO 98.7° inclination
Copernicus Sentinel-3 mission
Delivers Copernicus marine and near-real-time atmospheric data services from 814km altitude.

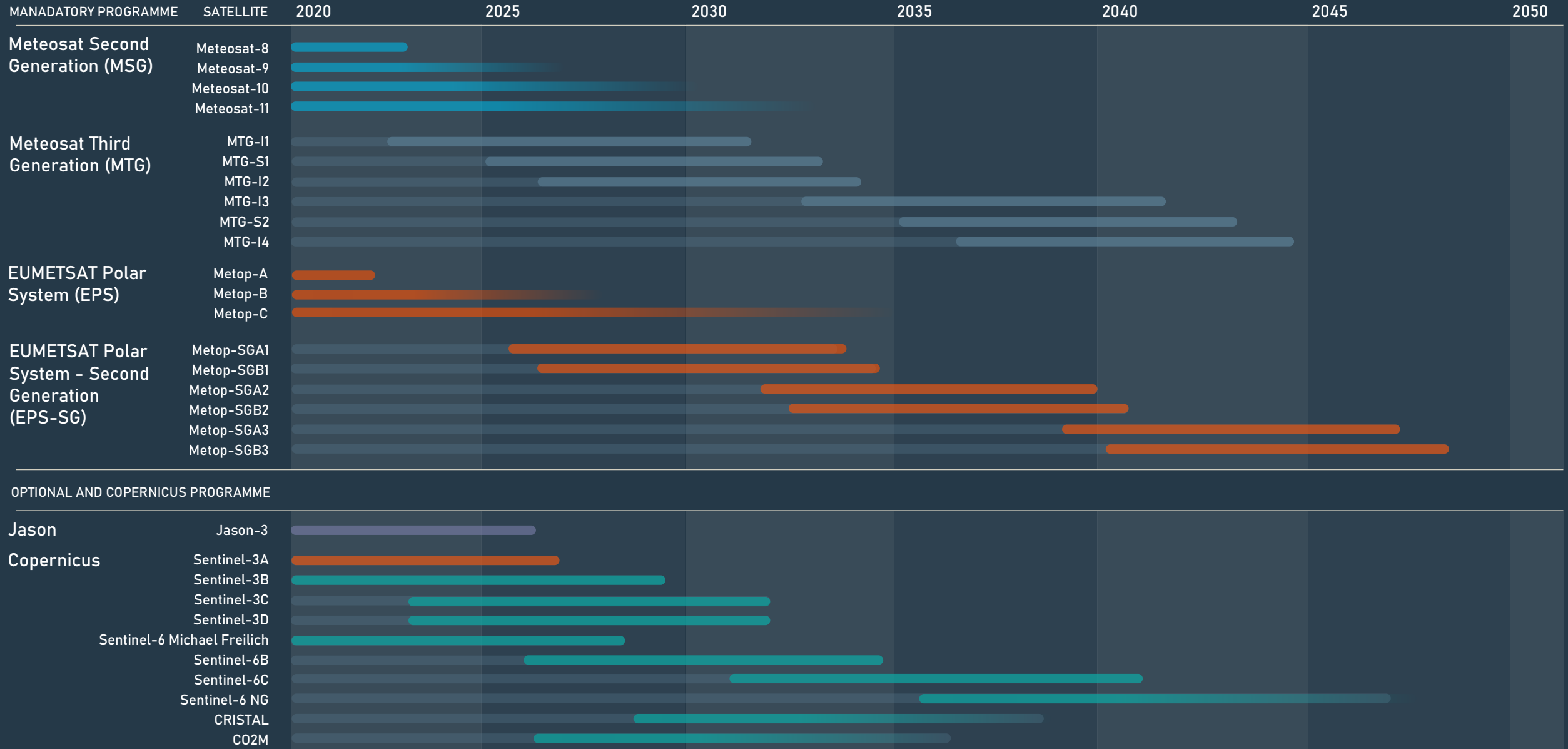


Jason-3
NSO 66° inclination
Interleaved orbit

Provide measurements of ocean surface topography and sea state from a non-synchronous, 10-day repeat orbit at 1,336km altitude (mission shared with CNES, NOAA, NASA and the European Commission).



EUMETSAT mission planning





EUMETSAT data services portfolio

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Push services



EUMETCast Terrestrial
Near-real-time data delivery
via terrestrial networks



EUMETCast Satellite

Pull services



EUMETView
Viewing your data



**EUMETSAT
Data Store**
Improving data access



Data Tailor
Customising your data



Data Centre



WEkEO



Direct dissemination

Shared services



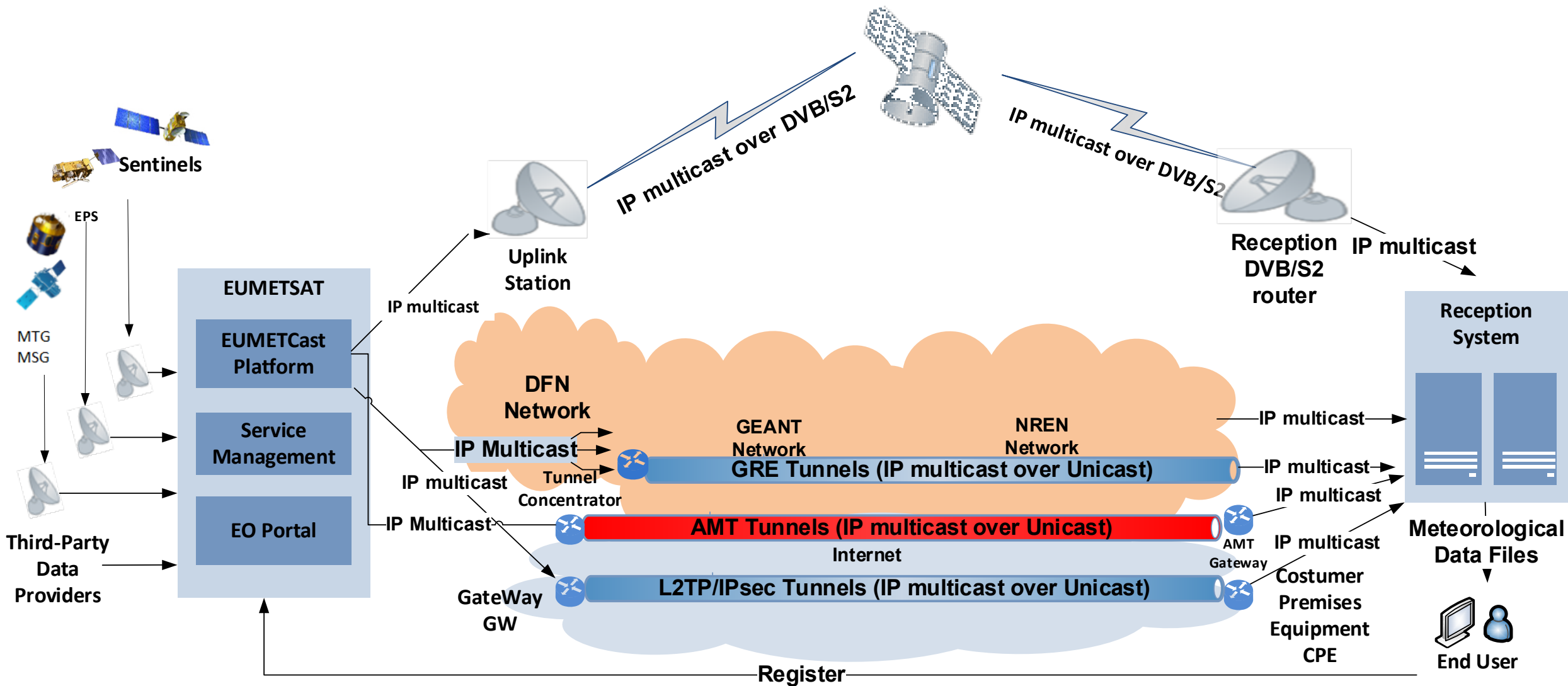
**European
Weather Cloud**
Hosted data processing



WIS



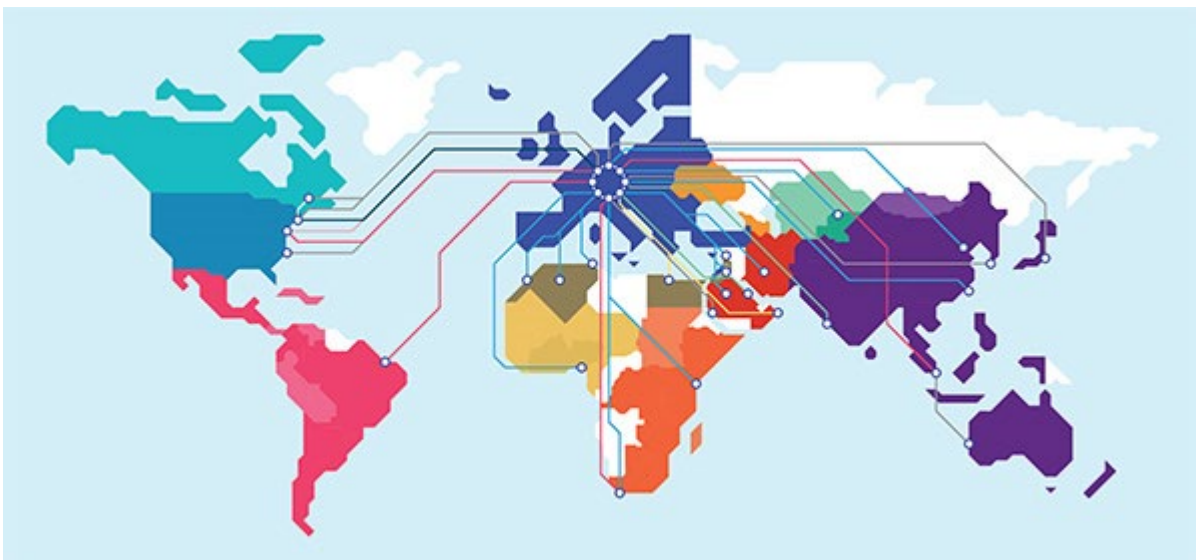
EUMETCast Satellite and Terrestrial





EUMETCast Terrestrial

- EUMETCast Terrestrial uses regional and national research and education network (NREN) terrestrial lines
- It is a backup to the EUMETCast satellite reception, and it also provides extra data which is not available in the EUMETCast Satellite
- Enables near-real-time time access for users around the globe

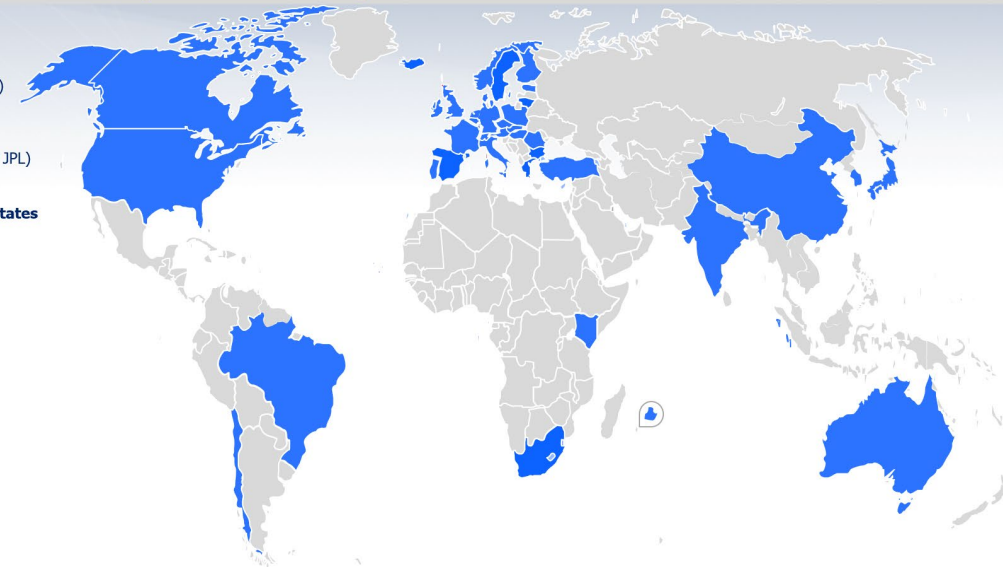


Terrestrial Users (October 2024)

Partners:
Australia (NCI)
Brazil (INPE)
China (NSOAS)
India (ISRO & NCMRWF)
Japan (JAXA)
South Korea (KMA)
UK (ECMWF)
USA (NOAA-STAR/NASA JPL)
Canada (SSC)

EUMETSAT Member States
28/30

Other countries:
Chile
Kenya
Mauritius
South Africa
Serbia



- A static public IP address needed with some firewall rules updated
- MSG (0-degree + RSS + IO DC): 10 Mbps
- MTG FCI normal resolution: 25 Mbps
- MTG FCI high resolution: 25 Mbps

Long term commitment to cooperate with Africa
=> **Ease access and exploitation of the satellite data**

COOPERATION

Institutional framework for cooperation with EU, AUC & WMO

EUMETSAT assets for Africa

Data coverage

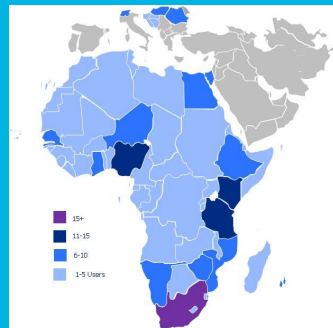
Long term perspectives
-> 2040

Data policy

Free for African
NMHS

Data access

EUMETCast-Africa



Training

4 training centres:

- IMTR, Nairobi
- EAMAC, Niger
- SAWS, South Africa
- DMN, Morocco

User engagement

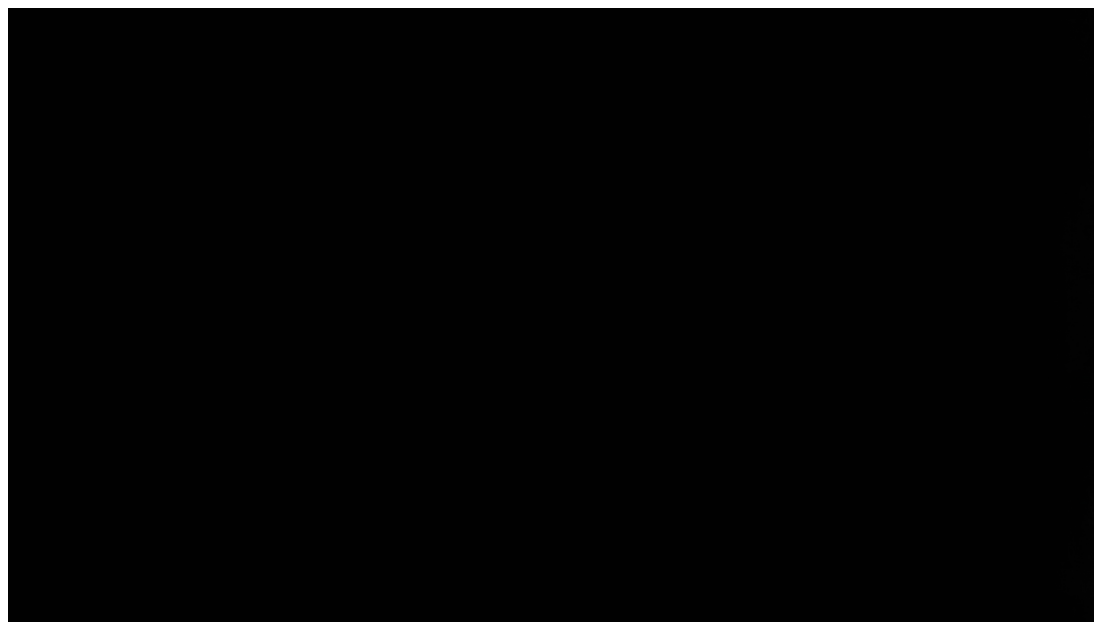
- Help Desk
- User Forum
- RAIDEG - WMO RA-I Expert group

Contribution to Capacity Building initiatives/projects

Support African weather, climate and environment services in response to African needs and policies

Concrete projects:
PUMA, AMESD, MESA, SAWIDRA, GMES&Africa, ClimSA

- 6 March 2025: release on EUMETCast Africa the customized pre-operational MTG FCI data service for Africa with RGBs

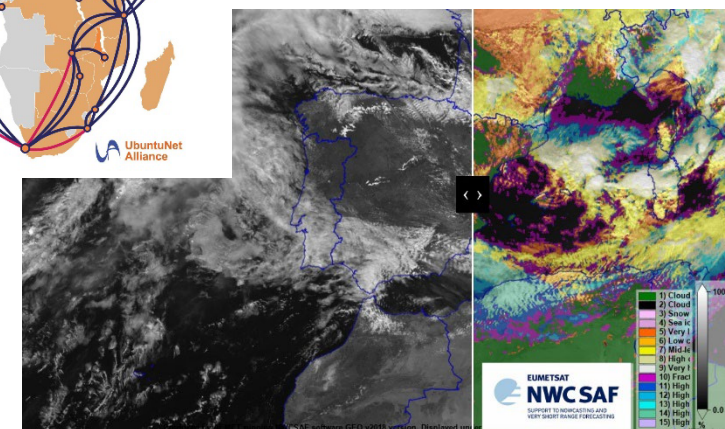
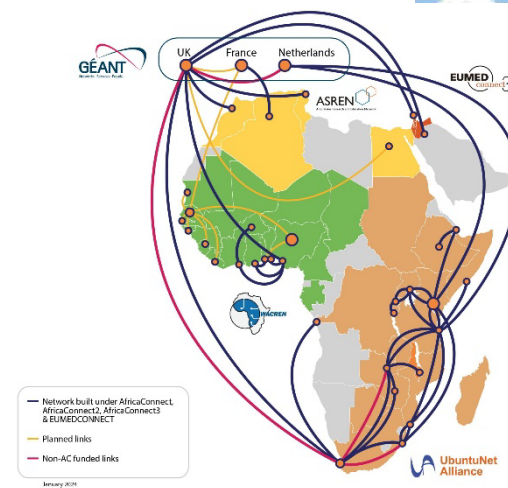


- PUMA-2025 stations are being deployed (by AUC/ClimSA) and tested with new MTG data





- Data access
 - Consolidate existing infrastructure
 - Further upgrade of **PUMA-2025 stations** for Early Warning applications
 - Upgrade and maintenance of the **four RARS-Africa**
 - Provide new access mechanism
 - **EUMETCast-Terrestrial** (for all MTG data) via NRENs (WACREN, UbuntuNet)
 - **Cloud-computing** for Nowcasting





Thank you!
Questions are welcome.