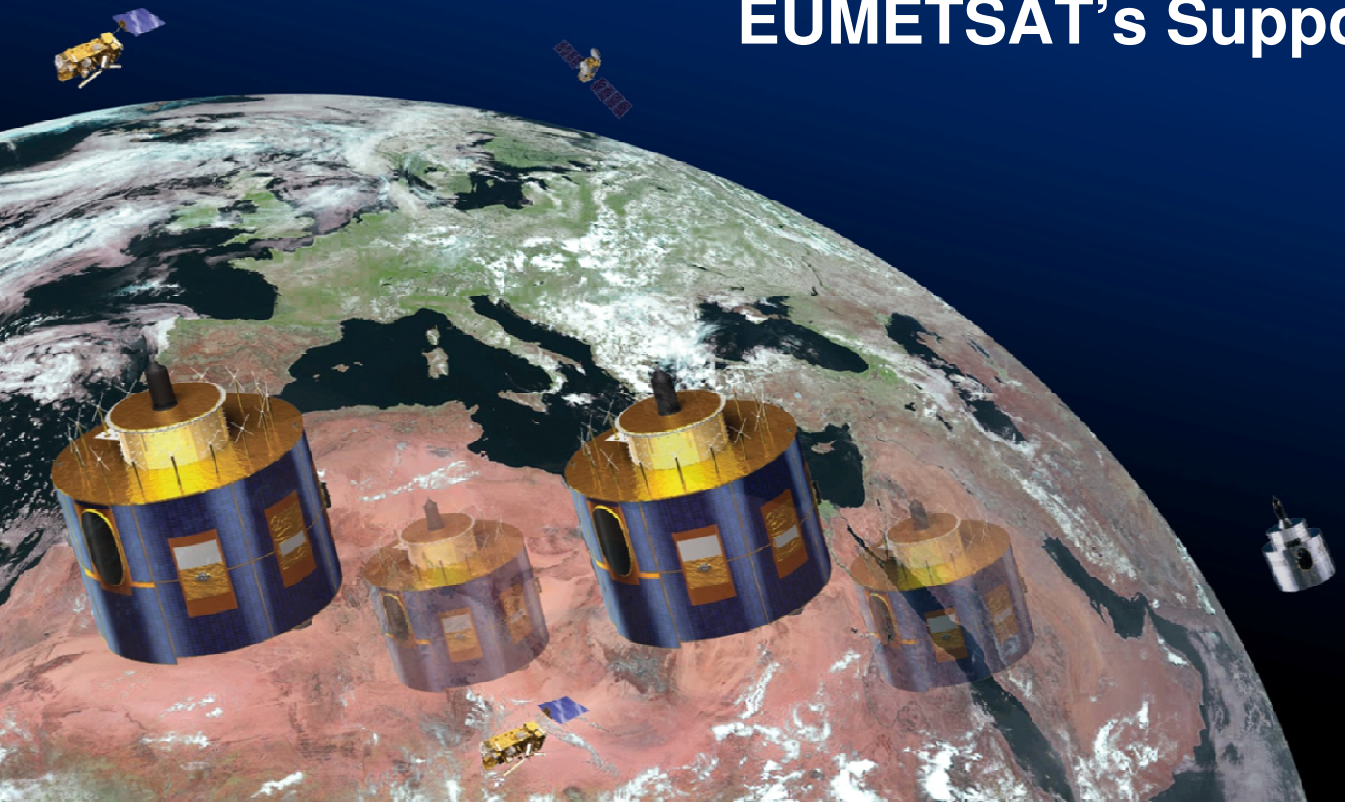
EUMETSAT's Support to Climate Services and User Support

Joachim Saalmüller



Outline of my talk

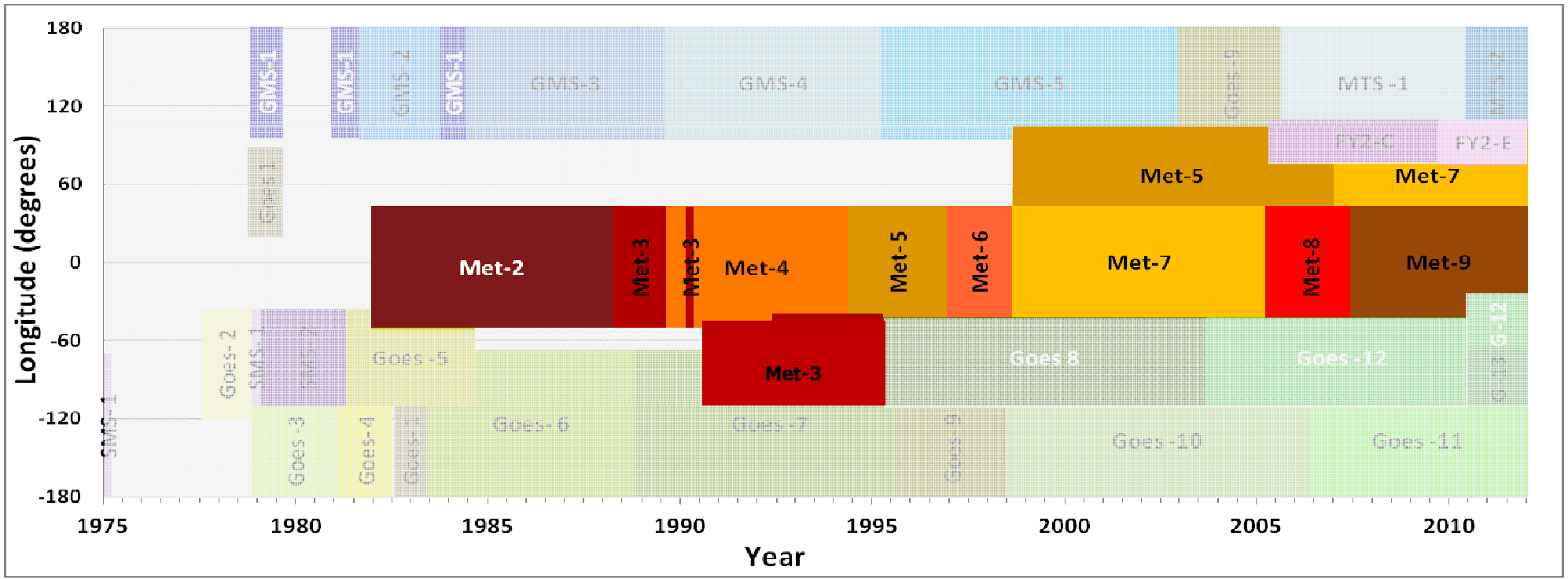
- EUMETSAT in support of climate services
- Exploring our data and subscribing to our data services
- EUMETSAT's Data Centre
- Finding help on our data and services

EUMETSAT in support of Climate Services

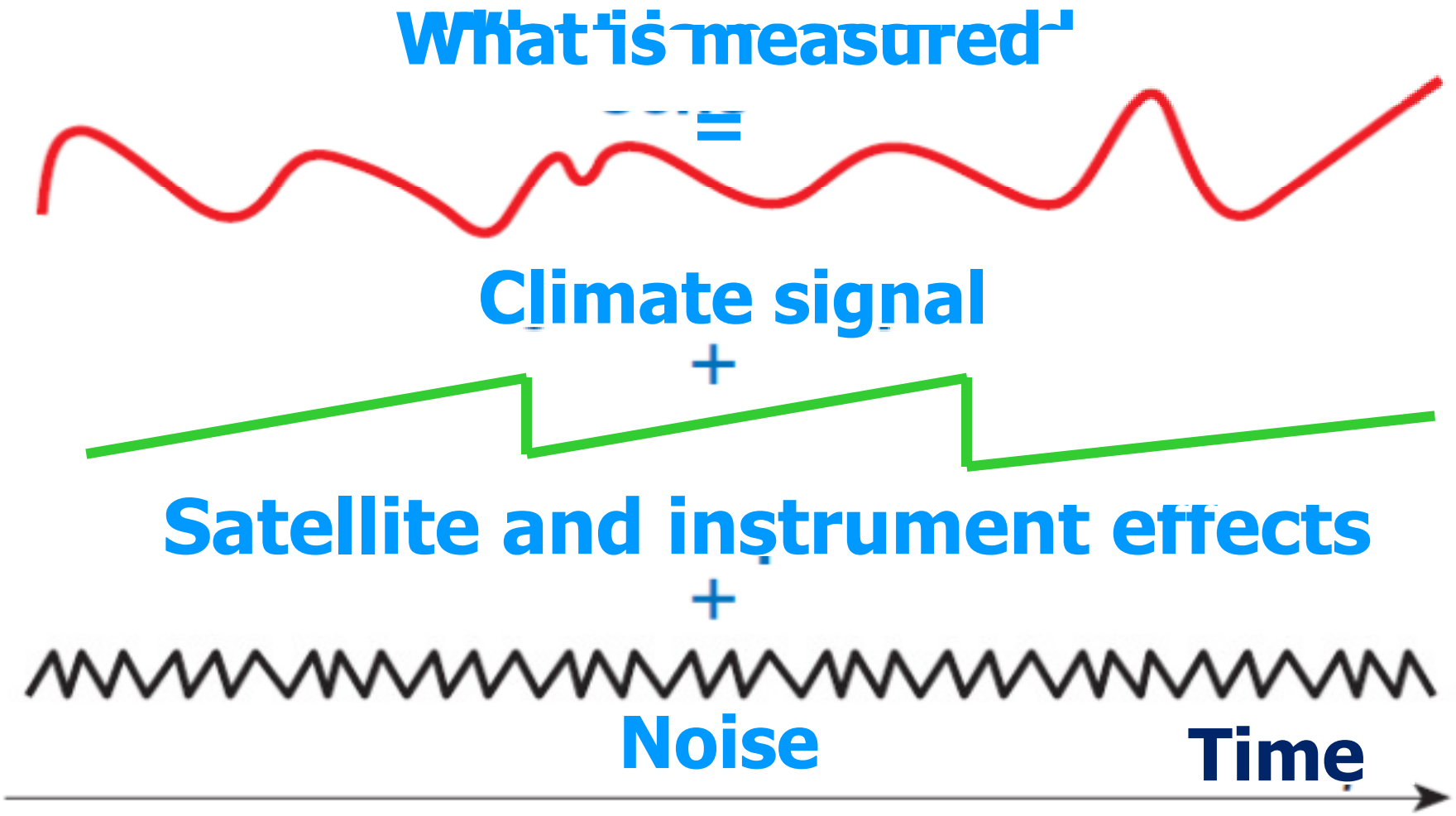
- Our mandate: Contribute to the operational monitoring of the climate and the detection of global climatic changes

- Our role:
  - delivering advanced multi-satellite programmes with long-term commitment
  - Maintaining a unique archive of decades of of space-based observations (ocean, atmo, land)
  - Producing consistent climate data records and providing easy access
  - Supporting climate-related capacity building initiatives

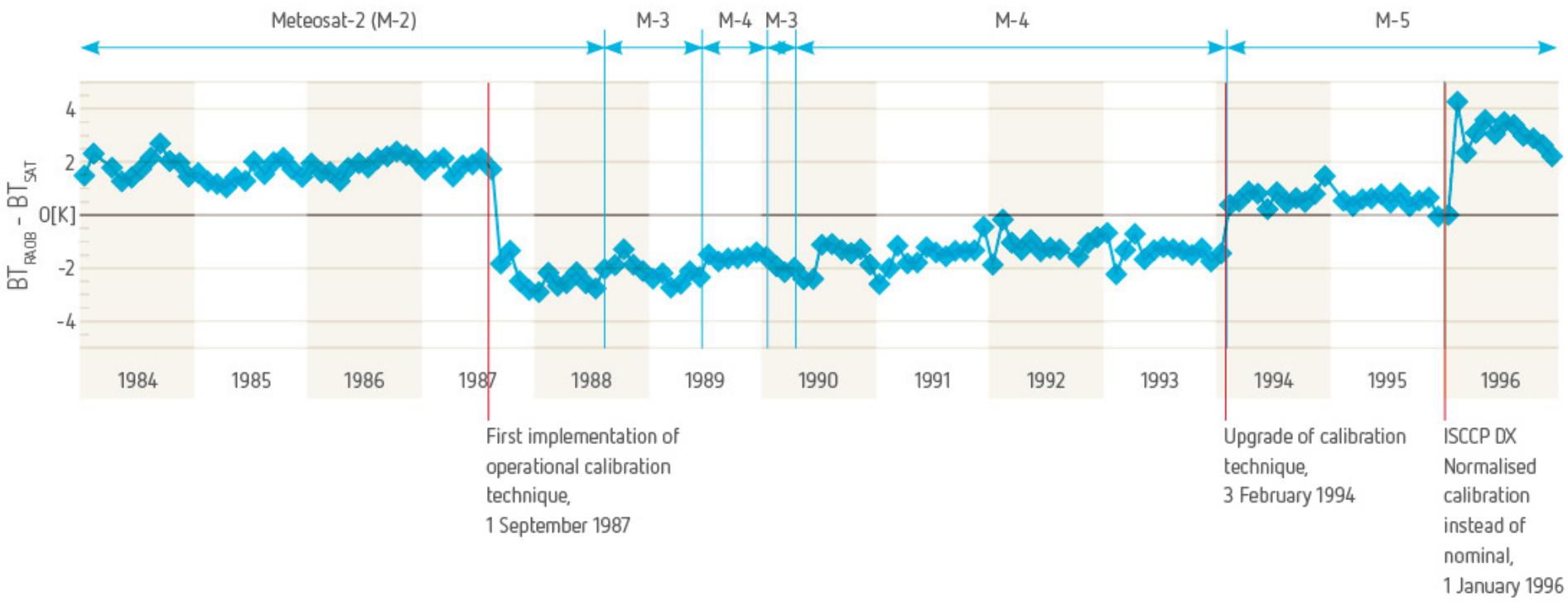
Satellites over the years



Issue with long series of satellite data



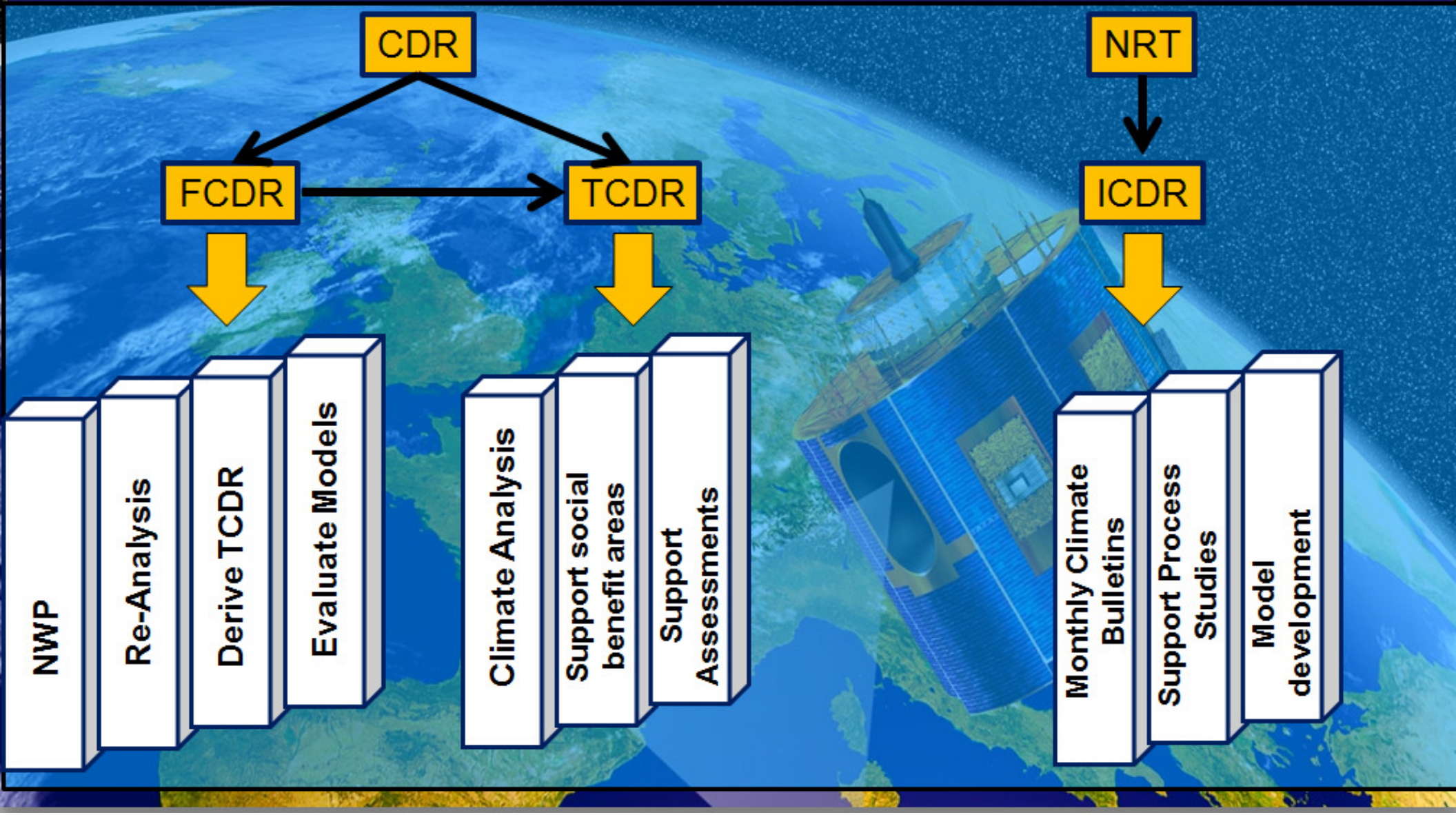
This results in a rather inhomogeneous time series



- Quality of data need to be assessed and improved per instrument;
- Data can be re-calibrated to reference observations that also has the effect of data record homogenisation.

Pathway of Satellite Climate Data Records

From Satellite observation to climate services



Coutesy of J. Schulz & R. Hollmann

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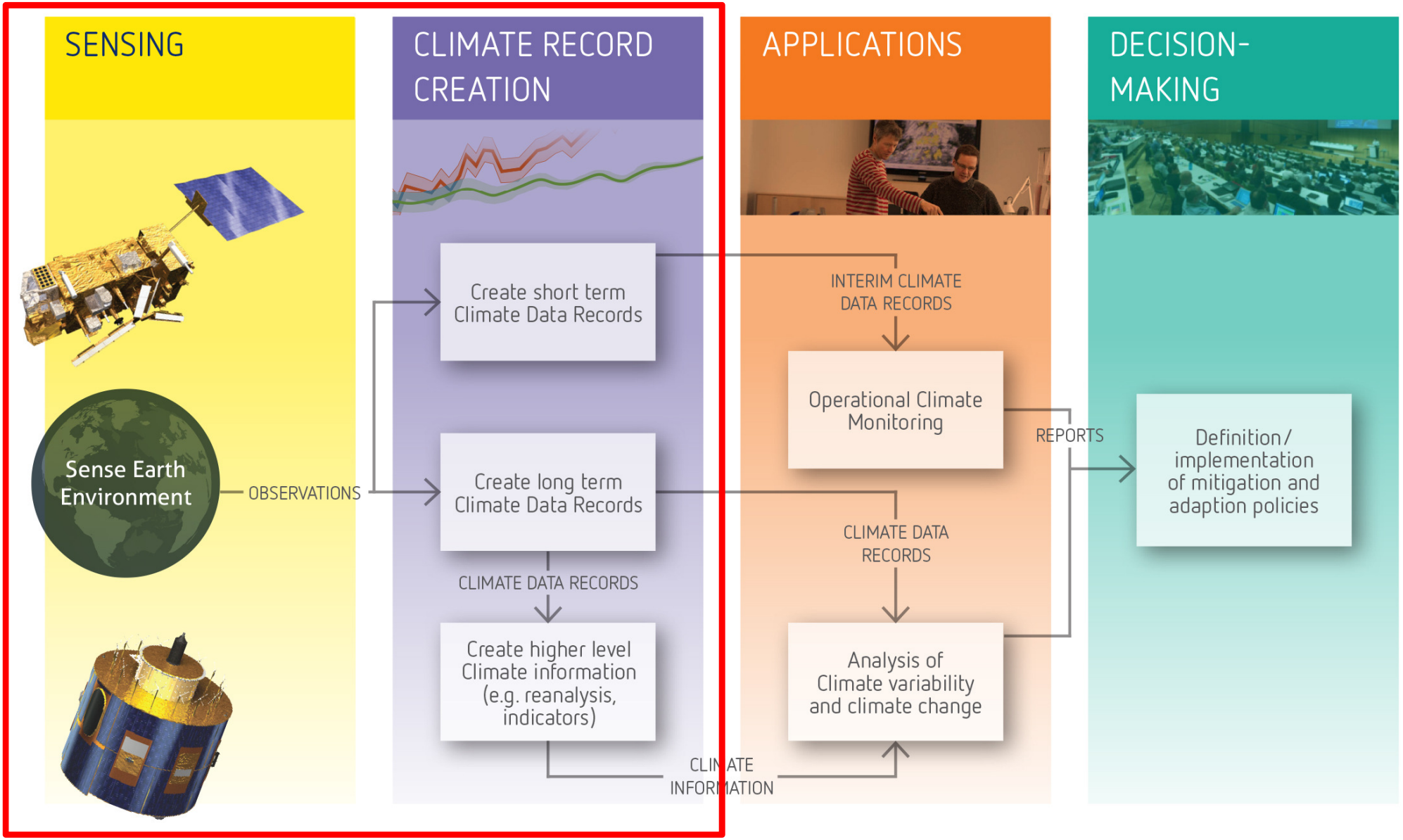
Our role in support of climate service



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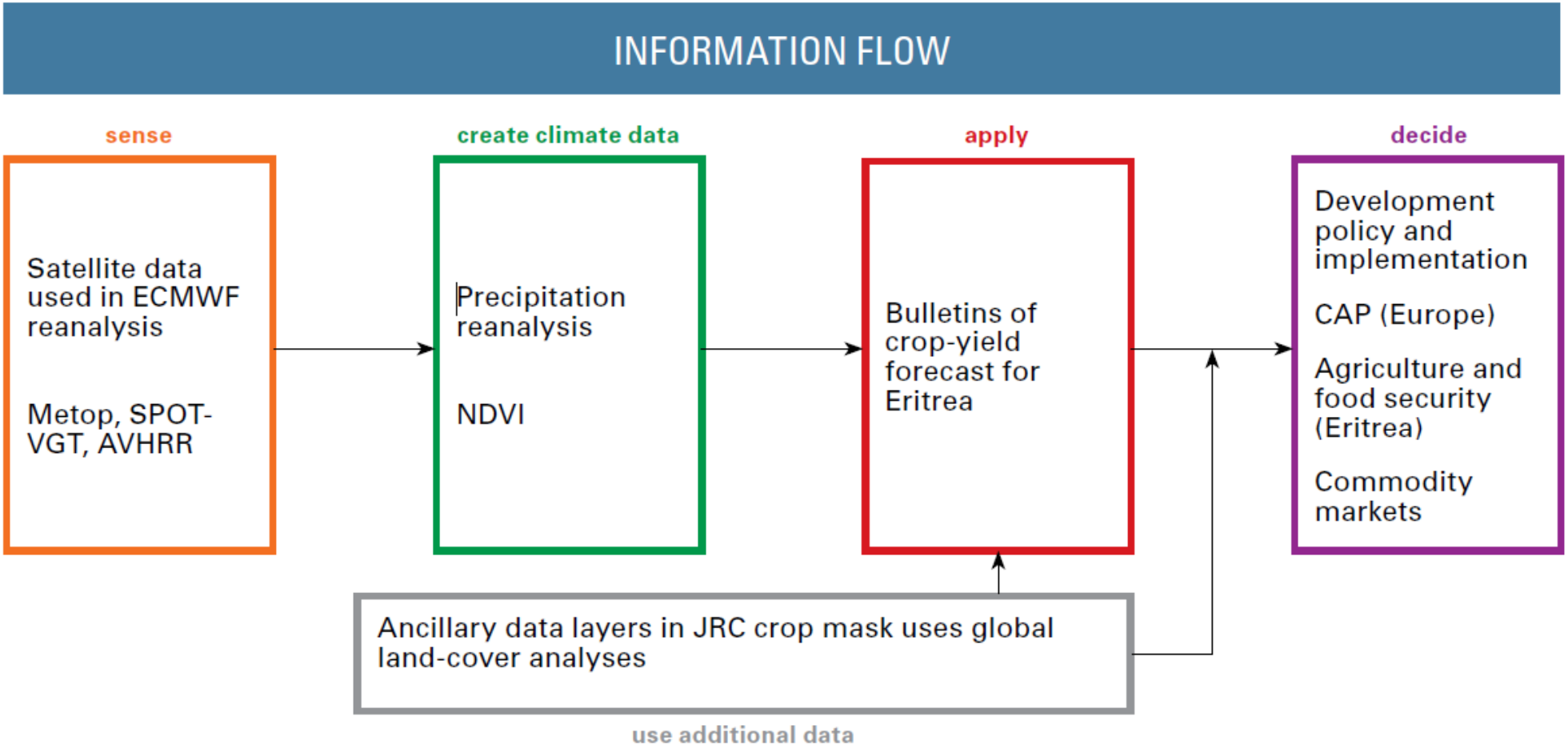
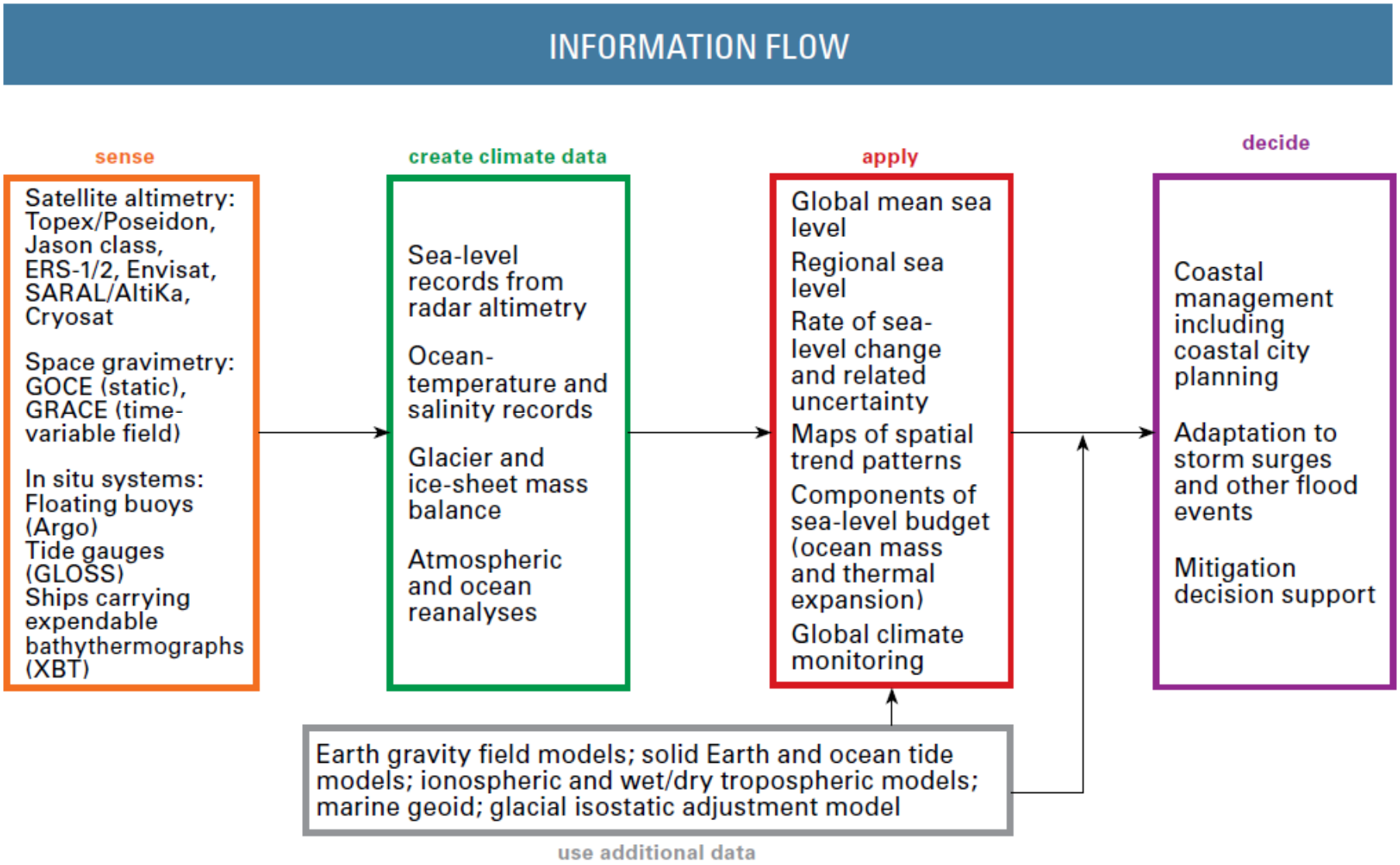
Application example: Crop Monitor



Reference: Case Study 5 in "SATELLITES FOR CLIMATE SERVICES", WMO No. 1162

Application example: Sea level rise and coastal impact



Reference: Case Study 2 in "SATELLITES FOR CLIMATE SERVICES", WMO No. 1162

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EUMETSAT Contributions to GCOS ECV Data Records

- EUMETSAT Secretariat provides FCDR for its sensors serving as input to ECV data records (yellow);
- The SAF network provides single and multi-sensor ECV data records using the FCDRs (indicated in pink);
- EUMETSAT contribution is described in the medium-term rolling Climate Service Development Plan (2016-2021) and the individual SAF work plans for CDOP-3 (2017-2022);
- Data record generation is performed using operational processing systems.

Atmosphere	Ocean	Terrestrial
Composition	Surface	
Aerosol Properties	Sea Surface Temperature	Land Cover
Carbon Dioxide & Methan	Sea Level	Fire Disturbance
Ozone	Sea Ice	Soil Moisture
Long-Lived Green House Gases	Ocean Colour	Glaciers and Ice Caps
	Sea State	Ice Sheets
Upper Air	Current	Snow Cover
Cloud Properties	Sea Surface Salinity	Albedo
Temperature	Carbon Dioxide Partial Pressure	Leaf Area Index
Water Vapour	Phytoplankton	FAPAR
Wind Speed and Direction	Ocean Adicity	Lakes
Earth Radiation Budget	Sub surface	Above Ground Biomass
Near Surface	Carbon	Permafrost
Air Pressure	Current	Ground Water
Air Temperature	Nutrients	River Discharge
Precipitation	Ocean Adicity	Soil Carbon
Radiation Budget	Oxygen	Land Surface Temperature
Water Vapour (Humidity)	Salinity	
Wind Speed	Temperature	
	Tracers	
	Global Ocean Heat Content	

EUMETSAT FCDR	EUMETSAT ECV	

Session 7: Climate Services this Friday morning

With presentations from MINIRENA, WMO, Meteo Rwanda, CM SAF, ACMAD and University of Reading

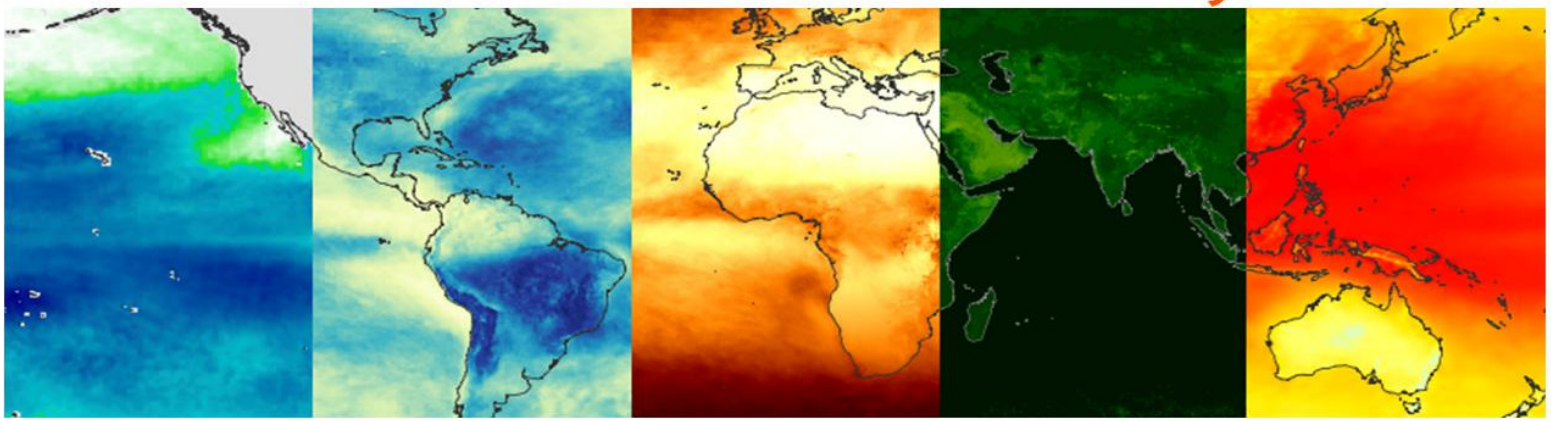
CM SAF

Deutscher Wetterdienst
Wetter und Klima aus einer Hand
DWD

Satellite-based climate data records and their applications in Africa

Steffen Kothe and CM SAF team

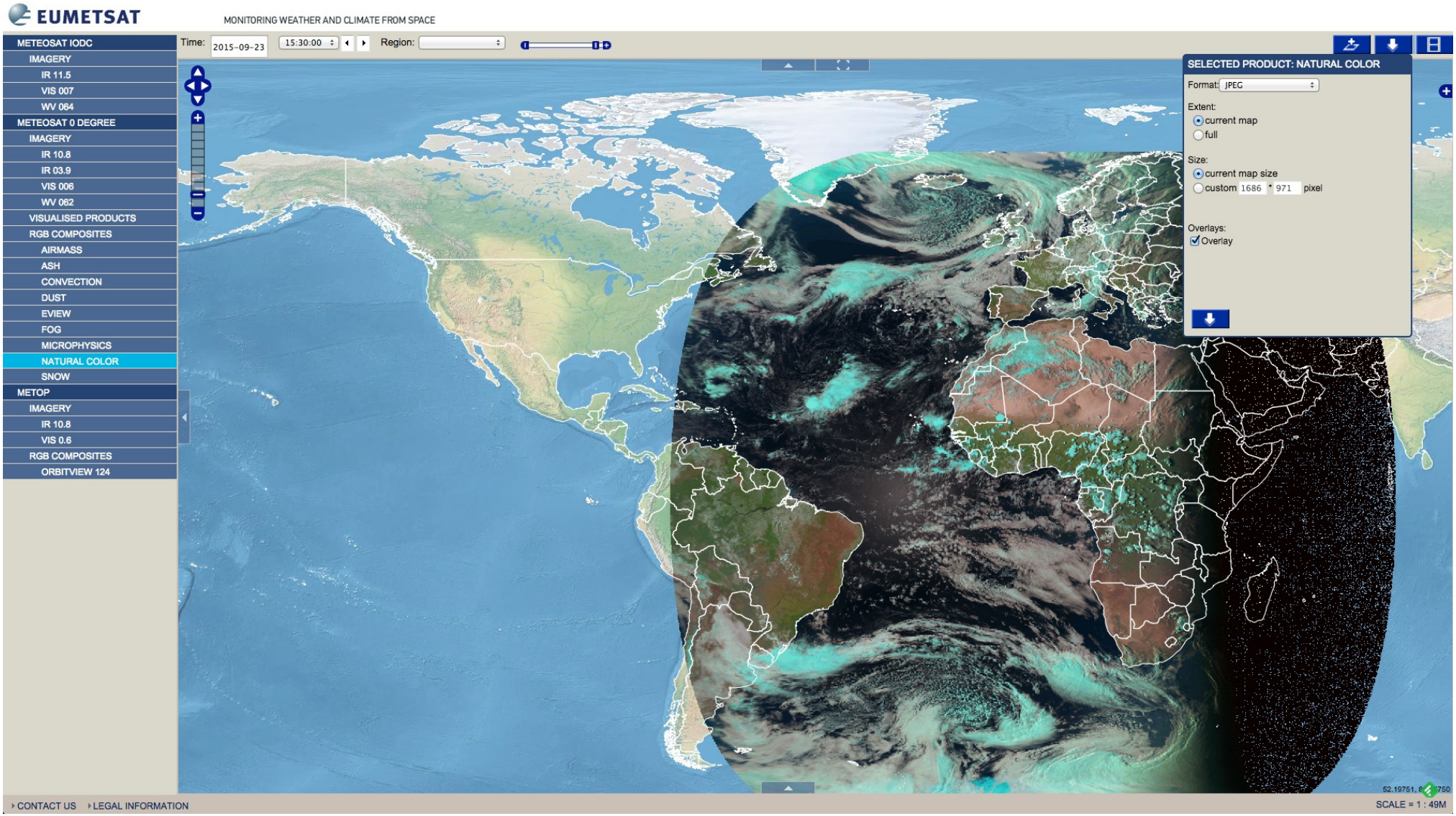
This Friday morning in Session 7...



Overview: Data Access Services and User Support

Exploring our data
and
subscribing to data services

EUMETView Web Mapping Service



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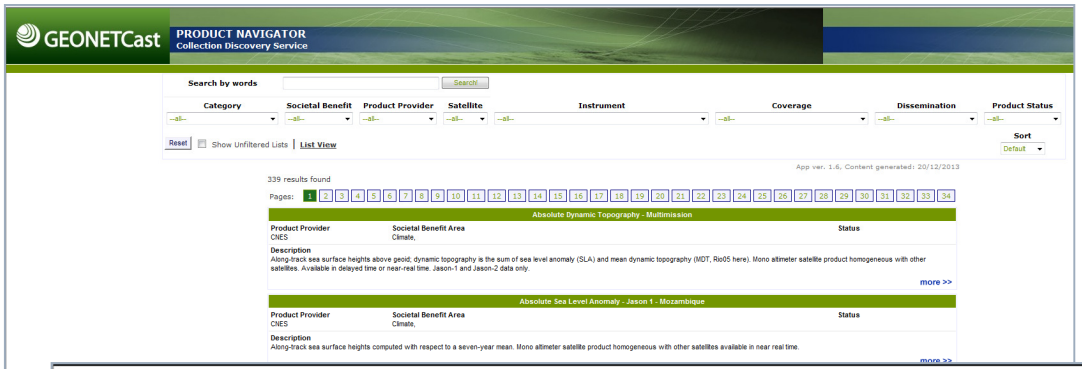
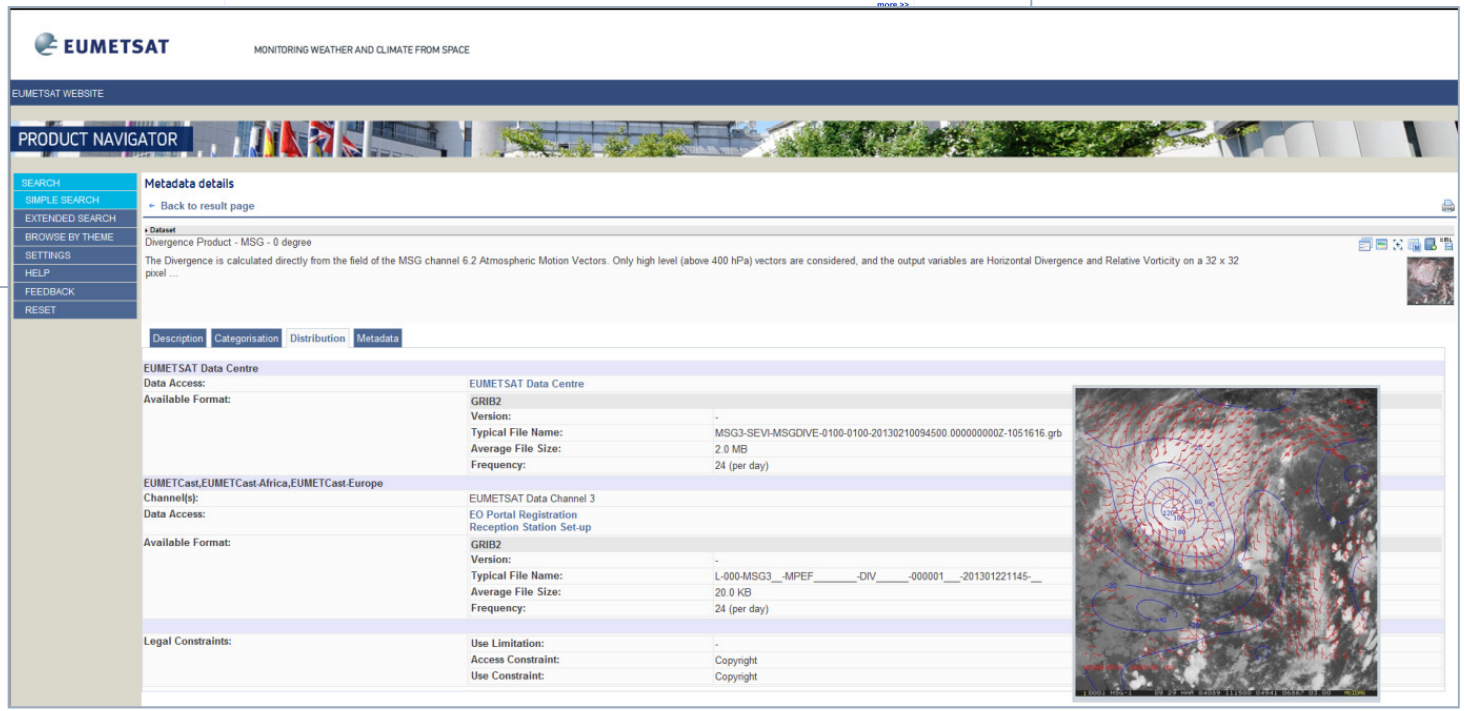
The service we currently provide allows you to...

- ...Get a rapid visualization of the last couple of days worth of imagery in your internet browser, including 4 individual MSG channels, the RGBs and selected products.
- ...Animate those.
- ...Do the same through a GIS client or similar visualization tool on the user side, harvesting the respectrive layers from the EUMETView server and combining with any other compatible visualization (e.g. model output, radar)
- Excellent for training and data exploration
- It is not a replacement for your operational and highly reliable data stream on EUMETCast!

Product Navigator – Data discovery at your fingertips



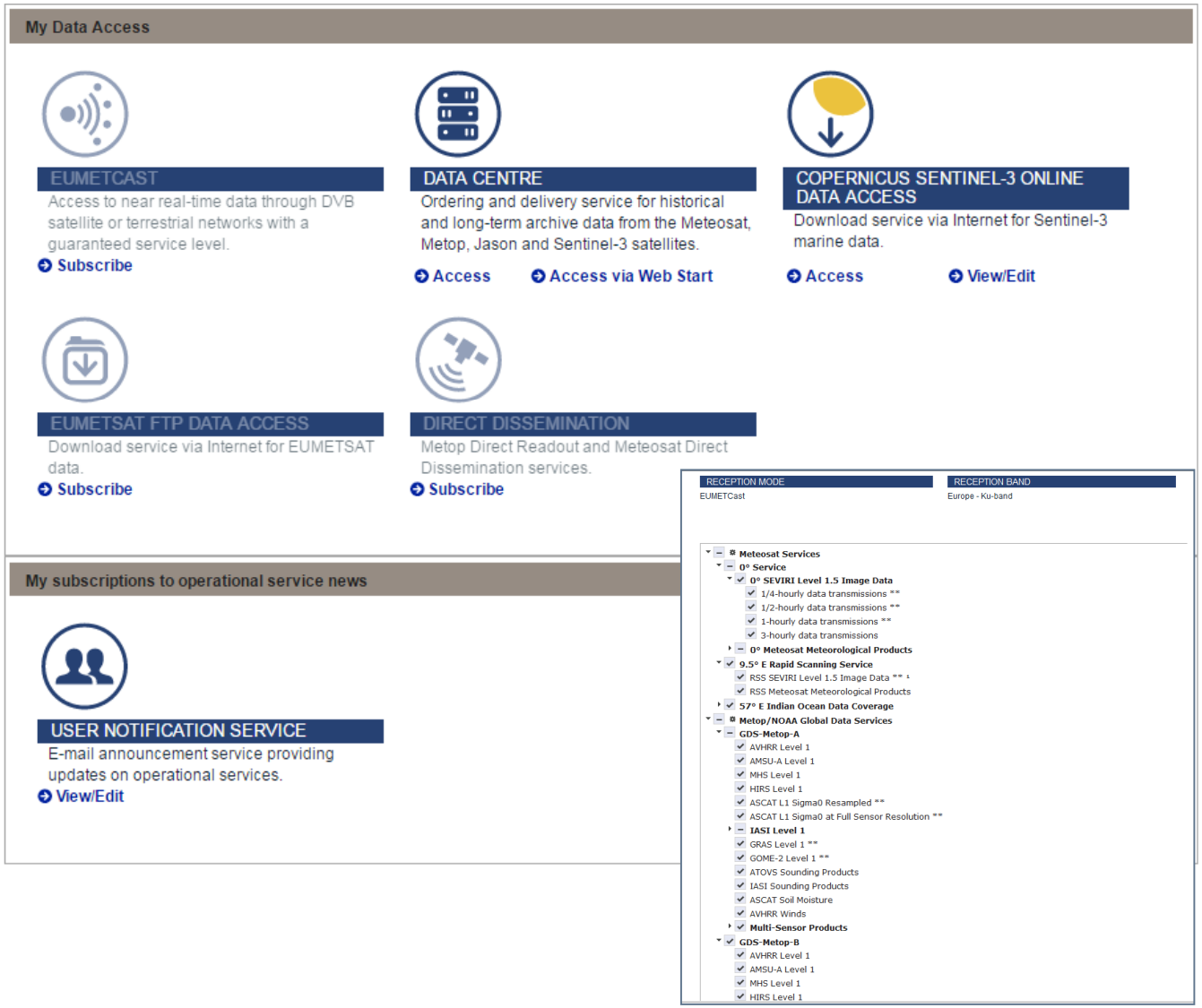


Play explanatory video

Key Features:

- Metadata descriptions, data provider and data access information
- Links to resource information (e.g. user documentation)
- Includes all EUMETSAT and Third-party products, including those delivered through EUMETCast
- Sentinel-3 marine products are included
- Uses open standards (e.g. OGC, Inspire) for catalogue interoperability with other organisations

Data Subscription – Registration via Earth Observation Portal



- **Single Access Point - registration portal for all data provided by EUMETSAT**
- **Users can subscribe to data services:**
  - **Near-real time data (e.g. via EUMETCast)**
  - **Data for download e.g. Online Data Access**
  - **Long Term Archive, Data Centre**
- **In addition user can subscribe to User Notifications Service (UNS) emails**

Training in Africa (from October 2015)

- Satellite applications for agriculture with WMO
  - Ethiopia, March 2016, 40 participants from Africa
  - Zimbabwe, October 2016, ~25 participants
- ESAC (Meteosat applications course) with Vlab Centres of Excellence
  - Niger, Niamey, November 2015, 22 participants, focus on Aviation forecasting
  - South Africa, Pretoria, March 2016, 9 participants, focus on Climate applications
  - Kenya, Nairobi, August 2016, 32 participants, focus on operational forecasting
  - Niger, Niamey, November 2016, ~25 participants, focus on convection and dust
- On-line resources developed in Africa:
  - ASMET modules (2700 visits/year from Africa)

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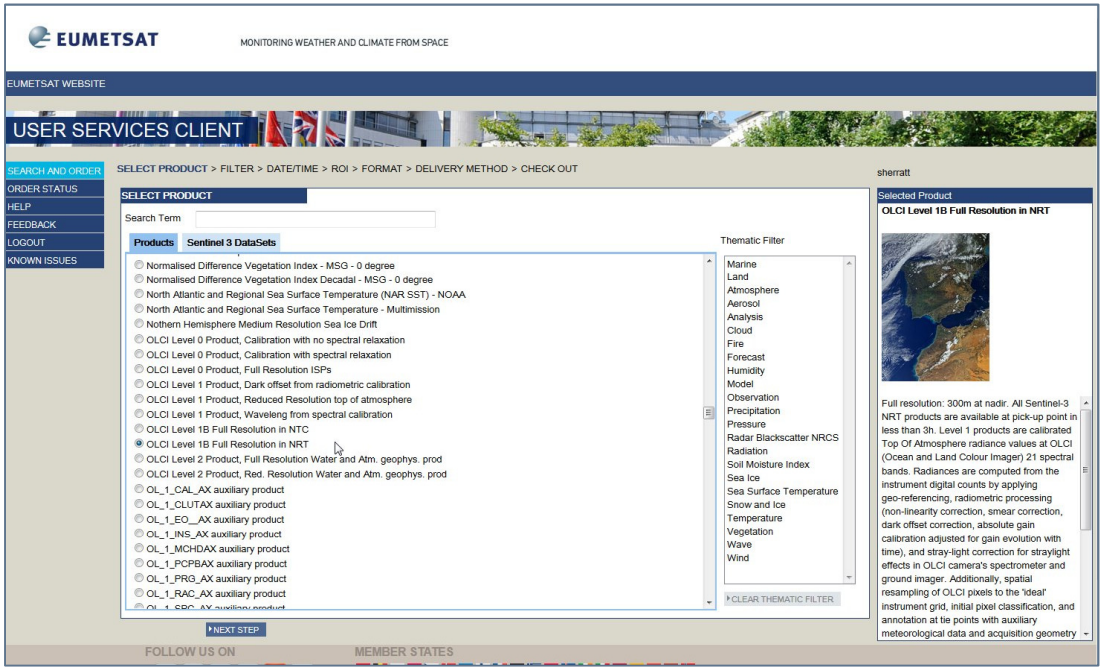
Data Centre – Data from the Long-Term Archive

- Archived data starting 1981 (over 30 years of Meteosat data);
- Data Centre contains all EUMETSAT Satellite data including reprocessed data;
- Long-Term Data Preservation in practice since 1995;
- Ordering is available to everybody and free of charge;
- Web based User Services Client to access product catalogue and order data;
- Delivery of data is either via the Internet or via Media (on average per month ca. 700.000 files or 40 TB delivery);



Video on Ordering Process

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User Service Helpdesk

Please don’t hesitate to approach our helpdesk available to you

- During normal working hours, Monday to Thursday 08:30–17:15 CET, Friday 08:30–16:00 CET.
- **Tel:** +49 6151 807 3660/3770
  Fax: +49 6151 807 3790
- Email: ops@eumetsat.int

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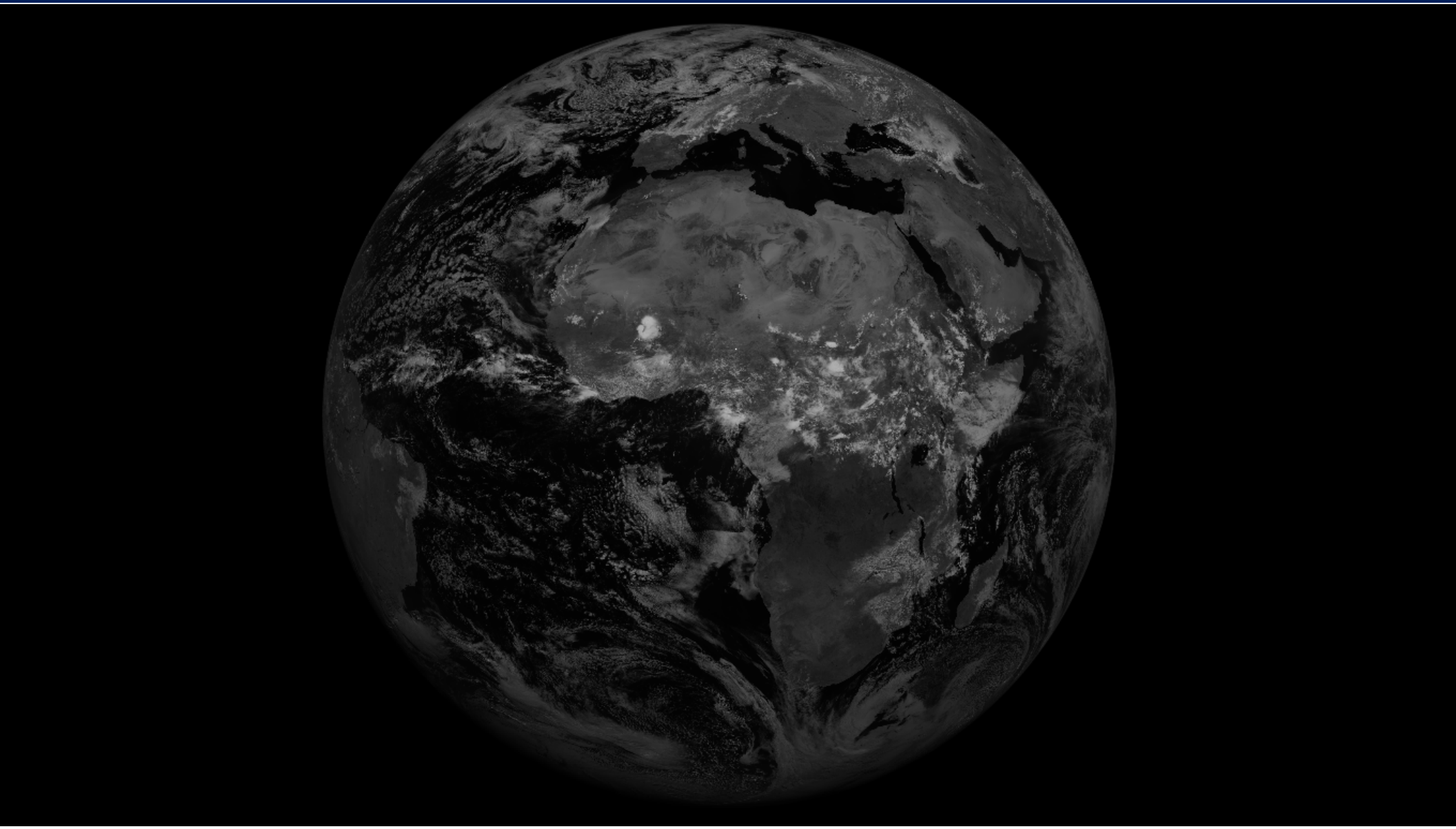
Meteosat 8 drifting to its new position on 41.5 E



We are there to enhance your use experience of our data and products...

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Thank you

Any Questions ?