The session will start at 12 UTC

CLAAS – A Climate Data Record of Cloud Properties

EUMETSAT · CM SAF CLIMATE MONITORING

If you have **technical issues**, please send a message in the **zoom chat** box to **Support**.
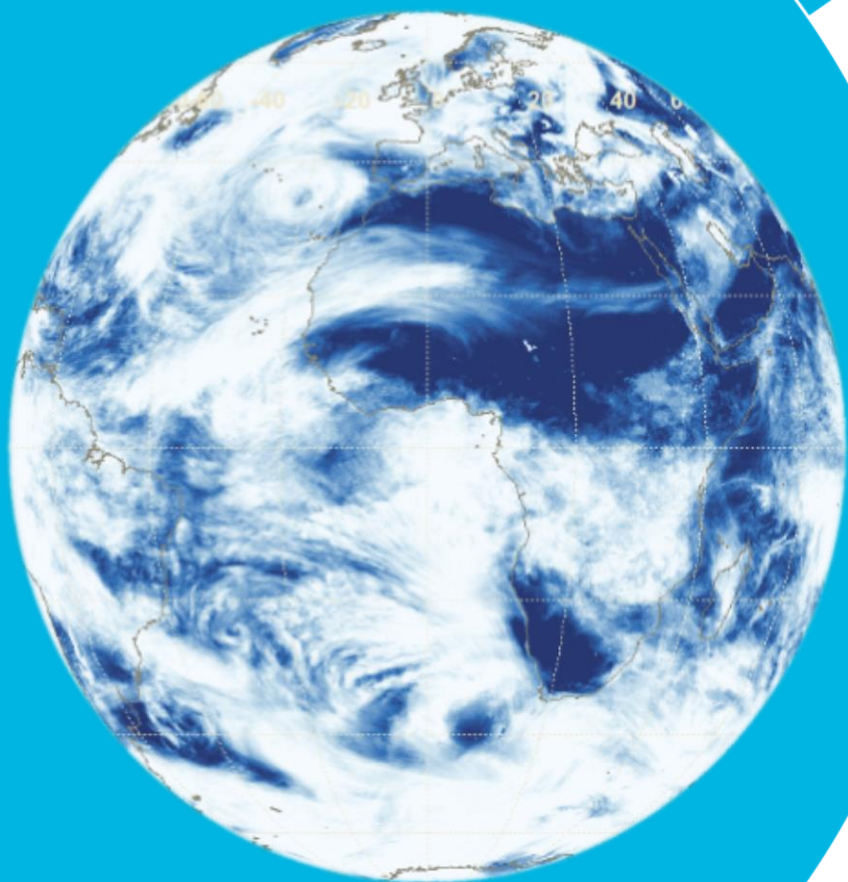For **Q&A**: go to Slido.com – event code: **#EUMSC36**
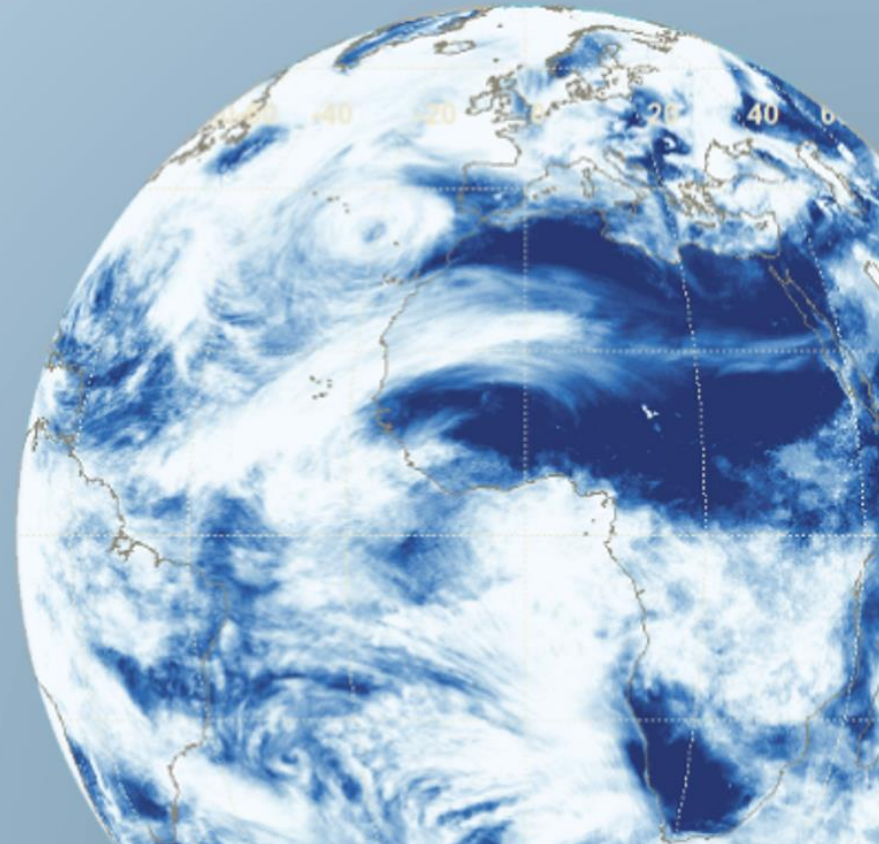
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All **material** will be shared after the course on course page**:**

https://training.eumetsat.int/course/view.php?id=473

Agenda

Welcome and Introduction
(Christine Träger-Chatterjee, EUMETSAT)

The new CLAAS data record
(*Jan Fokke Meirink, CM SAF/KNMI)*
Q&A

Ordering Data from CM SAF
(Steffen Kothe, CM SAF/DWD)
Q&A

Using the data – CM SAF R Toolbox
(Steffen Kothe, CM SAF/DWD)
Q&A

Using the data –Jupyter Notebooks
(Irina Solodovnik, CM SAF/DWD; Antonio Vecoli, EUMETSAT/MEEO)
Q&A

Wrap up and closing (14:00 UTC)

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AUSTRIA   BELGIUM   BULGARIA   CROATIA

CZECH REPUBLIC   DENMARK   ESTONIA   FINLAND

FRANCE   GERMANY   GREECE   HUNGARY

ICELAND   IRELAND   ITALY   LATVIA

LITHUANIA   LUXEMBOURG   THE NETHERLANDS   NORWAY

POLAND   PORTUGAL   ROMANIA   SLOVAK REPUBLIC

SLOVENIA   SPAIN   SWEDEN   SWITZERLAND

TURKEY   UNITED KINGDOM

Tasks

- Develop, maintain, exploit European systems of meteorological satellites, taking into account as far as possible the recommendations of WMO.

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

Copernicus
Europe's eyes on Earth

Current EUMETSAT satellites

SENTINEL-3A & -3B (98.7° incl.)
Low Earth, sun-synchronous orbit
Copernicus satellites delivering marine data services from 814km altitude

JASON-3 (63° incl.)
Low Earth, non-synchronous orbit
Copernicus ocean surface topography mission (shared with CNES, NOAA, NASA and Copernicus)

Sentinel-6 Michael Freilich (66° incl.)
Low Earth, non-synchronous orbit
Copernicus ocean surface topography mission (shared with NASA, NOAA, ESA and Copernicus with support from CNES)

METEOSAT-10, -11
Geostationary orbit
Meteosat Second Generation

Two-satellite system
Full disc imagery mission (15 mins) (Meteosat-11 (0°))
Rapid scan service over Europe (5 mins) (Meteosat-10 (9.5° E))

METEOSAT-9 (45.5° E)
Geostationary orbit
Meteosat Second Generation providing Indian Ocean data coverage
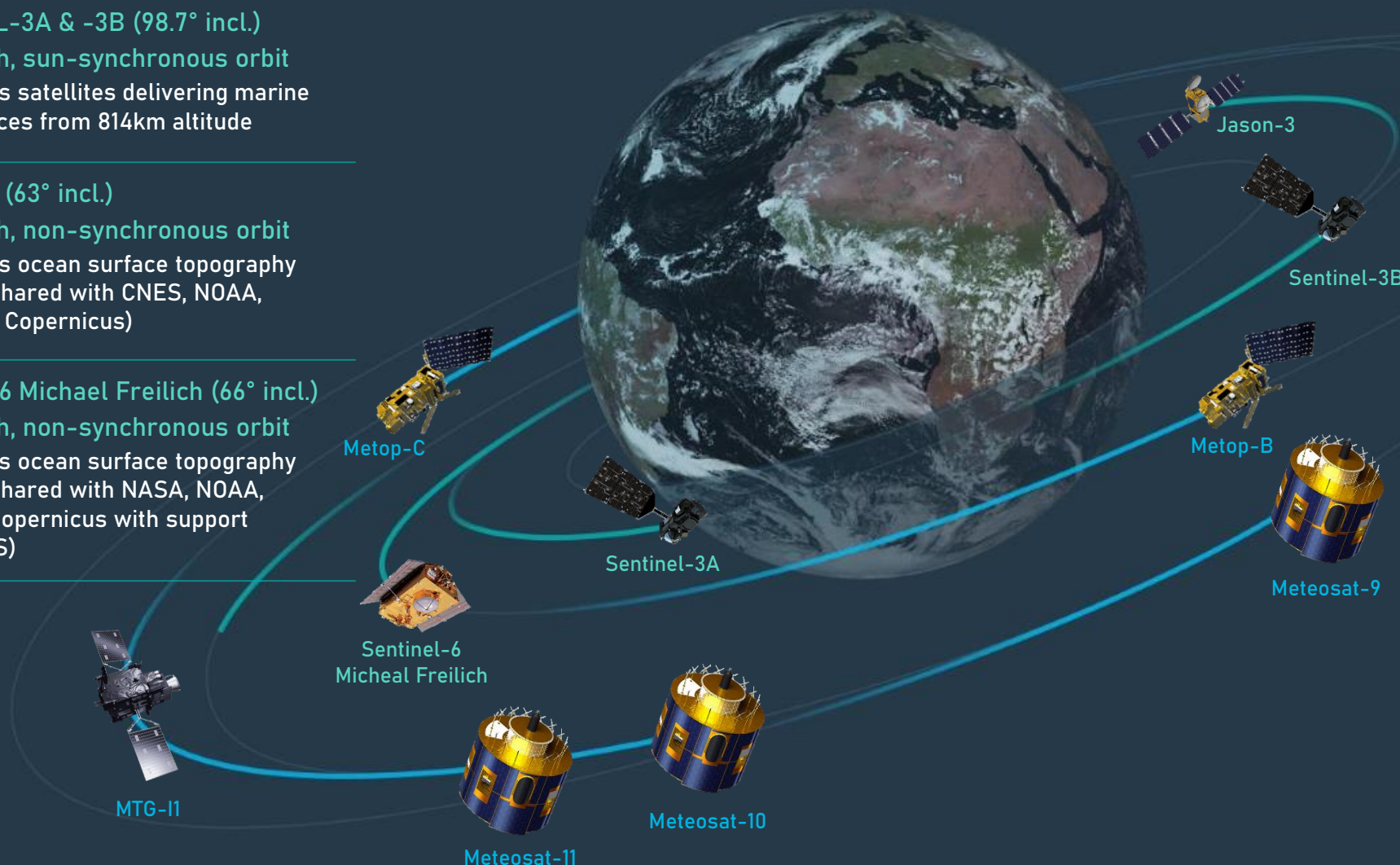
METOP-B & -C (98.7° incl.)
Low Earth, sun-synchronous orbit
EUMETSAT Polar System (EPS)/ Initial Joint Polar System

MTG-I1
Geostationary orbit
Meteosat Third Generation imaging mission, currently in commissioning phase

Jason-3

Sentinel-3B

Metop-C

Metop-B

Meteosat-9

Sentinel-3A

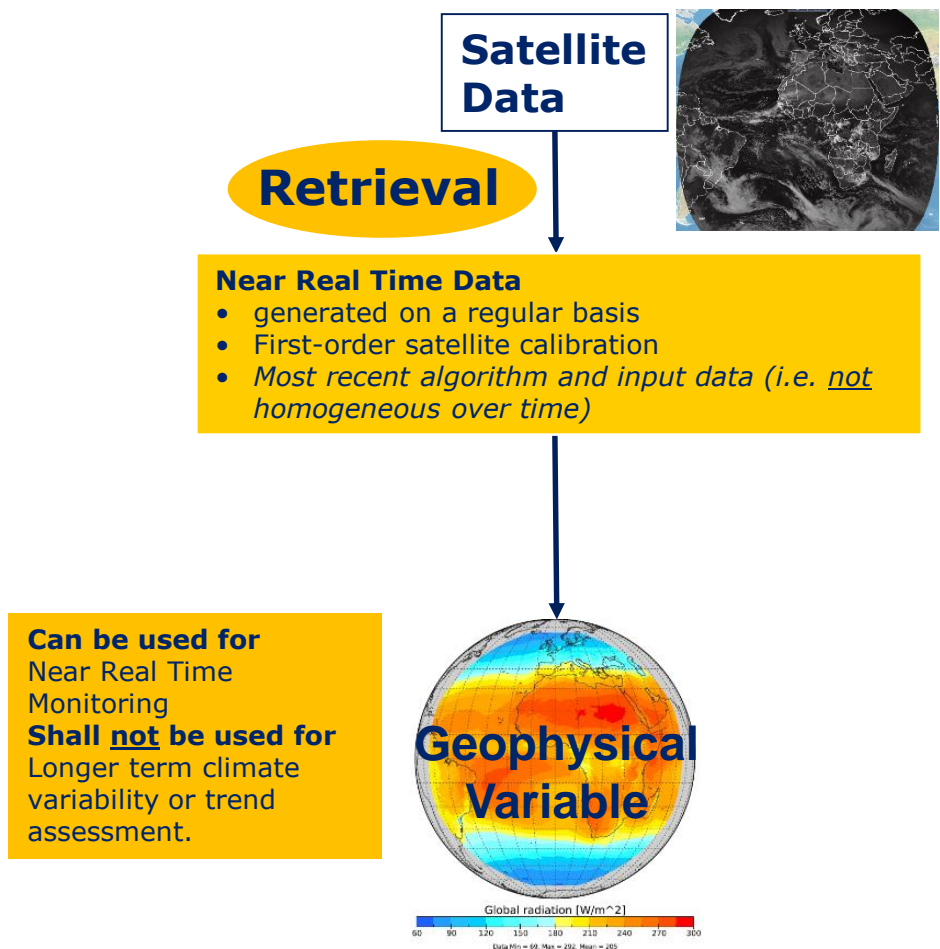Sentinel-6
Micheal Freilich

MTG-I1

Meteosat-11

Meteosat-10

- EUMETSAT has a network of different Satellite Application Facilities (SAFs)

- SAFs are dedicated centres of excellence for processing satellite data

    - research, development and operational activities

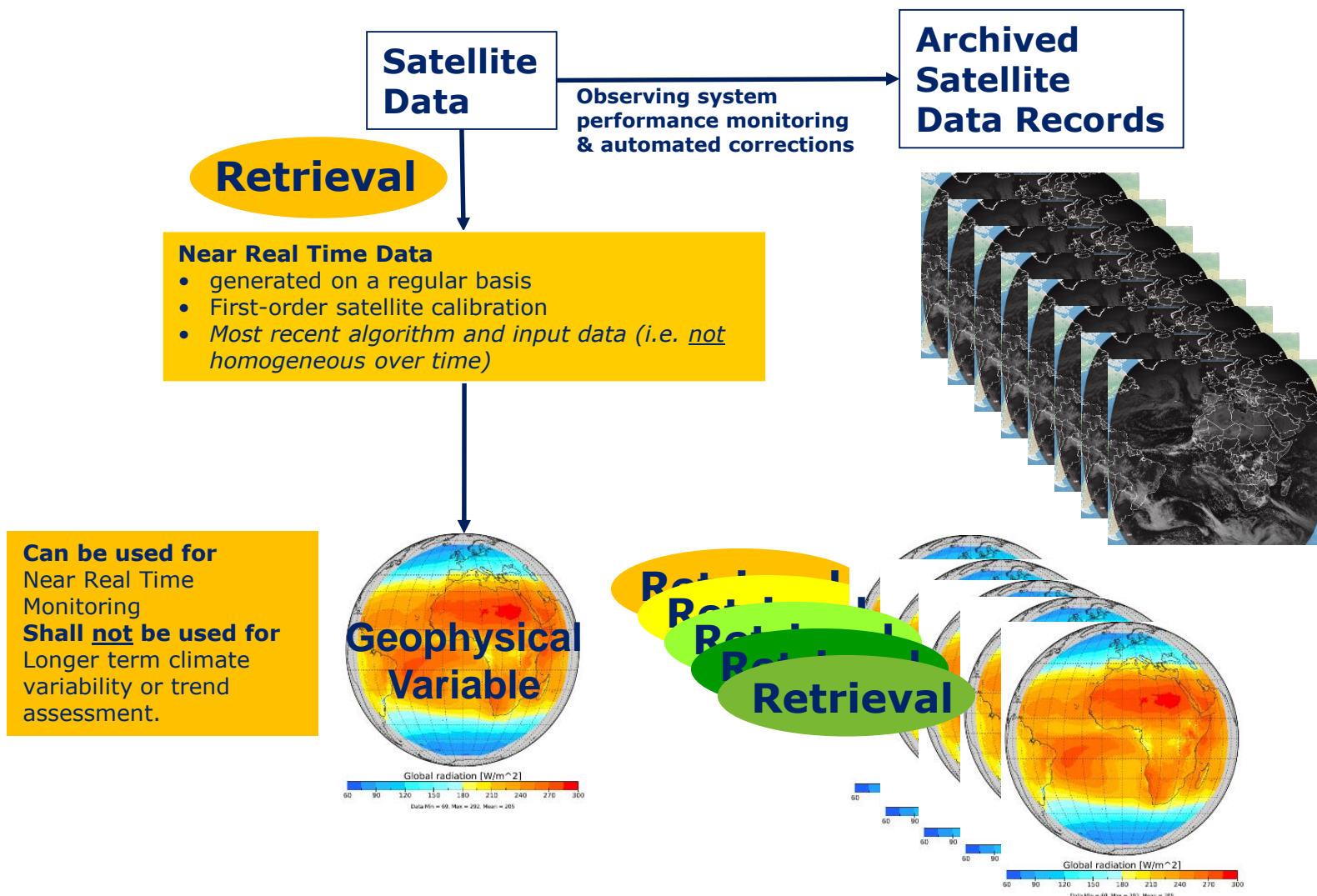   - each SAF focusses on specific user communities or application areas

- Each SAF is a consortium of entities from EUMETSAT member states

Satellite Data

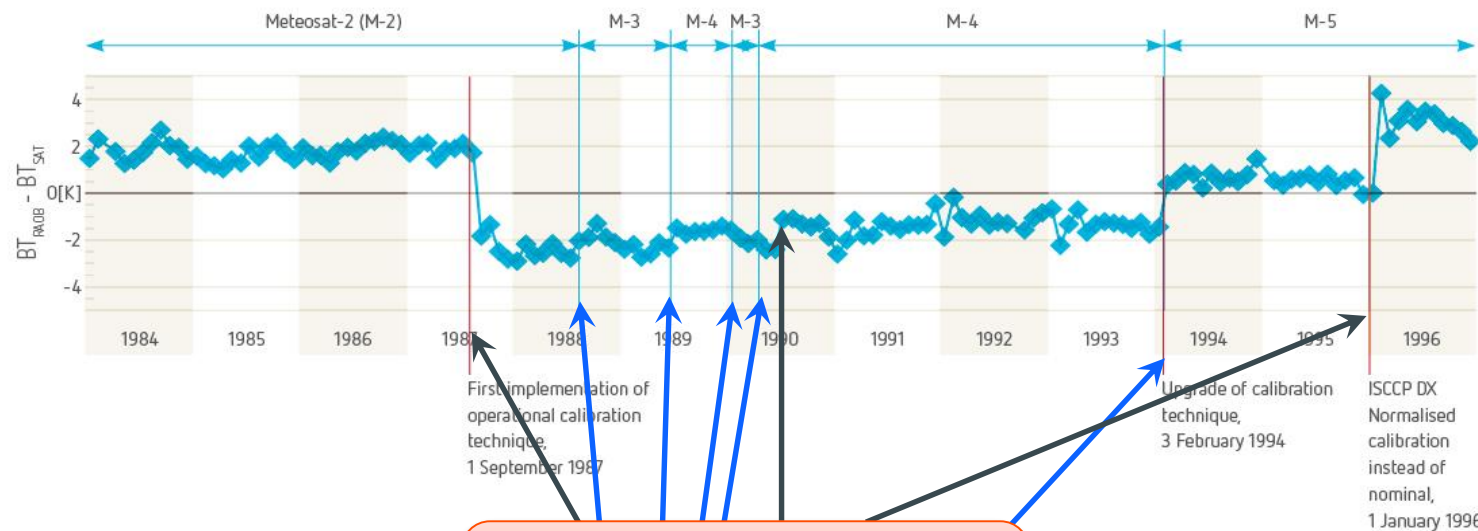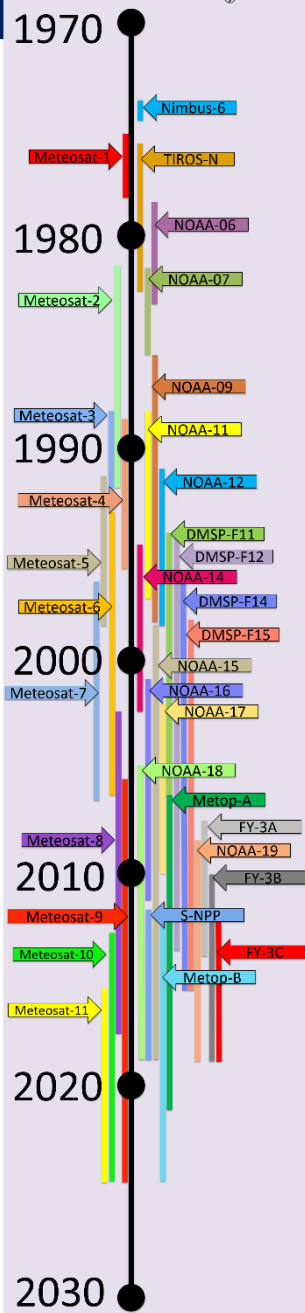**Retrieval**

Near Real Time Data
- generated on a regular basis
- First-order satellite calibration
- *Most recent algorithm and input data (i.e. <u>not</u> homogeneous over time)*

Can be used for Near Real Time Monitoring
Shall <u>not</u> be used for Longer term climate variability or trend assessment.

Geophysical Variable

Global radiation [W/m^2]

60   90   120   150   180   210   240   270   300
Data Min = 69, Max = 292, Mean = 205

Short and Intermediate Term

Longterm

Satellite Data

Observing system performance monitoring & automated corrections

Archived Satellite Data Records

Retrieval

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Geophysical Variable

Retrieval

Short and Intermediate Term

Longterm

Satellite Data

Observing system performance monitoring & automated corrections

Archived Satellite Data Records

Re-calibration & Inter-calibration

Fundamental Climate Data Records

Retrieval

Retrieval

Reprocessing

Near Real Time Data
- generated on a regular basis
- First-order satellite calibration
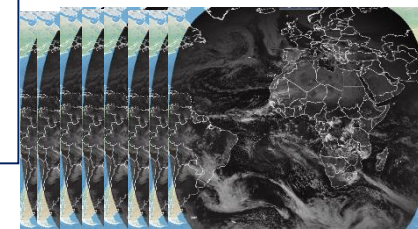- *Most recent algorithm and input data (i.e. not homogeneous over time)*

Climate Data Record
- Generated on an irregular basis, i.e. every few years
- Calibrated and homogenized satellite data
- Algorithm and auxiliary input data homogeneous over time
- Resulting time series fully applicable for climate monitoring purposes, including trend estimation

Can be used for Near Real Time Monitoring
Shall not be used for Longer term climate variability or trend assessment.

Geophysical Variable

Global radiation [W/m^2]
60 90 120 150 180 210 240 270 300
Data Min = 69, Max = 292, Mean = 205

Suited for longer term climate variability & climate change analysis as other applications.

Geophysical Variable

Global radiation [W/m^2]
60 160 9 60 60 90 120 150 180 210 240 270 300
Data Min = 69, Max = 292, Mean = 205

Short and Intermediate Term

Longterm

Satellite Data

Observing system performance monitoring & automated corrections

Archived Satellite Data Records

Re-calibration & Inter-calibration

Fundamental Climate Data Records

Retrieval

Retrieval

Retrieval

Reprocessing

Near Real Time Data
- generated on a regular basis
- First-order satellite calibration
- *Most recent algorithm and input data (i.e. not homogeneous over time)*

Interim Climate Data Record
- Generated on a regular basis
- First- order satellite calibration
- Same algorithm and auxiliary input data as for current TCDR
- Fill the gap between end of CDR and present.

Climate Data Record
- Generated on an irregular basis, i.e. every few years
- Calibrated and homogenized satellite data
- Algorithm and auxiliary input data homogeneous over time
- Resulting time series fully applicable for climate monitoring purposes, including trend estimation

Can be used for Near Real Time Monitoring
Shall not be used for Longer term climate variability or trend assessment.

Geophysical Variable

Geophysical Variable

Geophysical Variable

Suited for longer term climate variability & climate change analysis as other applications.

Schulz (2009), adapted & updated
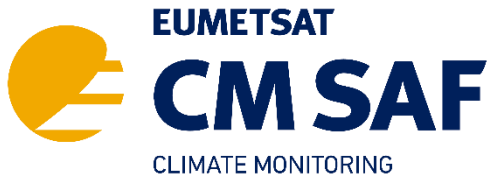
Please give us your feedback: slido.com #EUMSC36 (poll)

Check out training.eumetsat.int
for more in-depth courses

www.eumetsat.int

- 02 May 2023   12:00 UTC   **Dust monitoring and forecasting: 2023 events |** Register
- 17 May 2023   13:30 UTC   **Customise sentinel-3 products with EUMETSAT's Data Tailor - Data Access Services |** Register
- 24 May 2023   12:00 UTC   **A new Climate Data Record on Surface Solar Radiation**
- 31 May 2023   12:00 UTC   **Discovering MTG-I1 test data using the SIFT visualisation tool |** Register
- 07 June 2023   12:00 UTC   **How to develop impactful and educational Jupyter notebooks? |** Register
- 12 July 2023   12:00 UTC   **Wildfire Monitoring with Next-Generation Satellites |** Register
- 20 Sept 2023   12:00 UTC   **A new Climate Data Record on Earth Radiation Budget**

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→ Events → Short Courses