If you have technical issues, please send a message in the chat box to **Support**.
For **Q&A**: go to Slido.com – event code: **#EUMSC15**

Course Program

12:00 UTC   **Welcome and Introduction**

(Christine Träger-Chatterjee, EUMETSAT)

12:15 UTC   **Land Surface Temperature from METEOSAT** (Joao Martins, LSA SAF / IPMA; Anke Duguay-Tetzlaf, CM SAF / MetoSwiss)

Discussion Q&A on: slido.com #EUMSC16

Course Material:
https://training.eumetsat.int/course/view.php?id=403

If you have technical issues, please send a message in the chat box to **Support**.
For **Q&A**: go to Slido.com – event code: **#EUMSC15**

EUMETSAT

EUMETSAT is an intergovernmental Organization

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

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

Copernicus
Europe's eyes on Earth
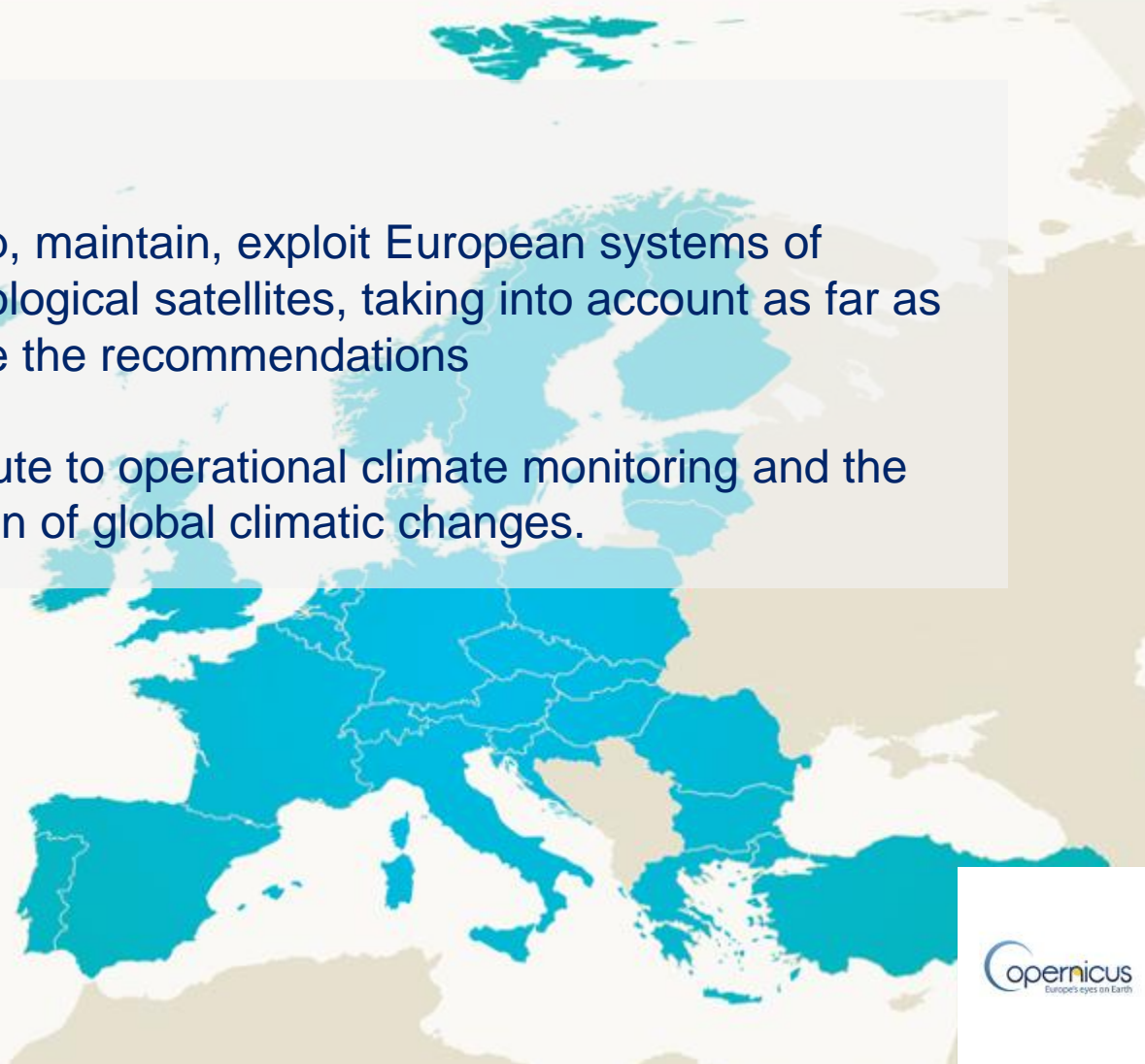
Current EUMETSAT Satellites

METOP-A, -B, & -C

LOW EARTH, SUN-SYNCHRONOUS ORBIT

EUMETSAT POLAR SYSTEM (EPS)

JASON-2 & -3, Sentinel-6

LOW EARTH, NON-SYNCHRONOUS ORBIT

OCEAN SURFACE TOPOGRAPHY MISSION, SHARED WITH CNES/NOAA/EU

SENTINEL-3 A & B

LOW EARTH, SUN-SYNCHRONOUS ORBIT

COPERNICUS SENTINEL-3 MARINE MISSION

METEOSAT-8

GEOSTATIONARY ORBIT

METEOSAT 2ND GENERATION IODC SERVICE UNTILL AT LEAST MID-2020

METEOSAT-9, -10, -11   **METEOSAT Third Generation (MTG), launch 2022**

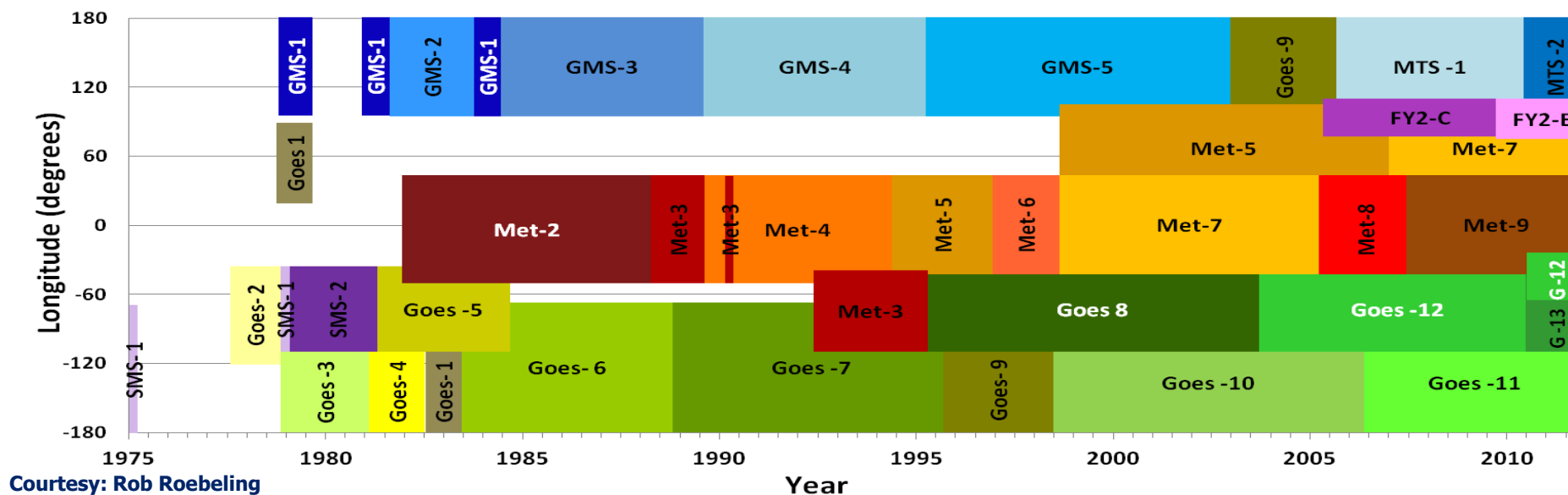| GEOSTATIONARY ORBIT	TWO-SATELLITE SYSTEM
METEOSAT 2ND GENERATION	FULL DISC IMAGERY SERVICE (15 MINS): METEOSAT-11 (0°)
	RAPID SCAN SERVICE OVER EUROPE (5 MINS): METEOSAT-10 (9.5° E)
	HOT BACK UP TO BOTH SERVICES : METEOSAT-9 (3.5° E)

EUMETSAT

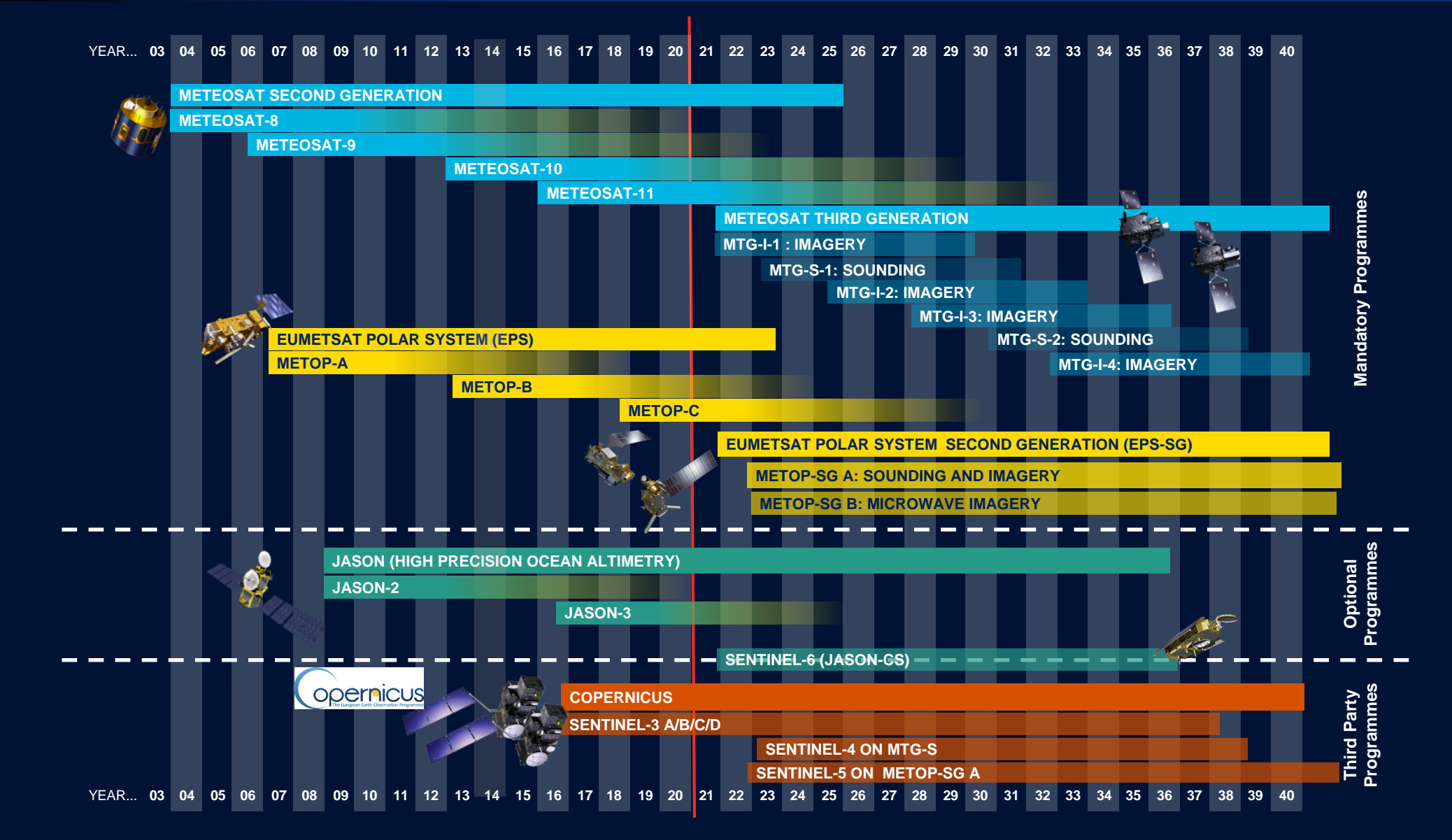# Climate Monitoring - "Satellite Period"

Courtesy: Rob Roebeling

➔ **Geostationary satellites that have been operated since the 70th**

➔ **EUMETSAT and the SAFs generate time series of Climate Data Records from these**

Courtesy Kenn Knapp

EUMETSAT committed to more & better observations until 2040

Satellite Application Facilities

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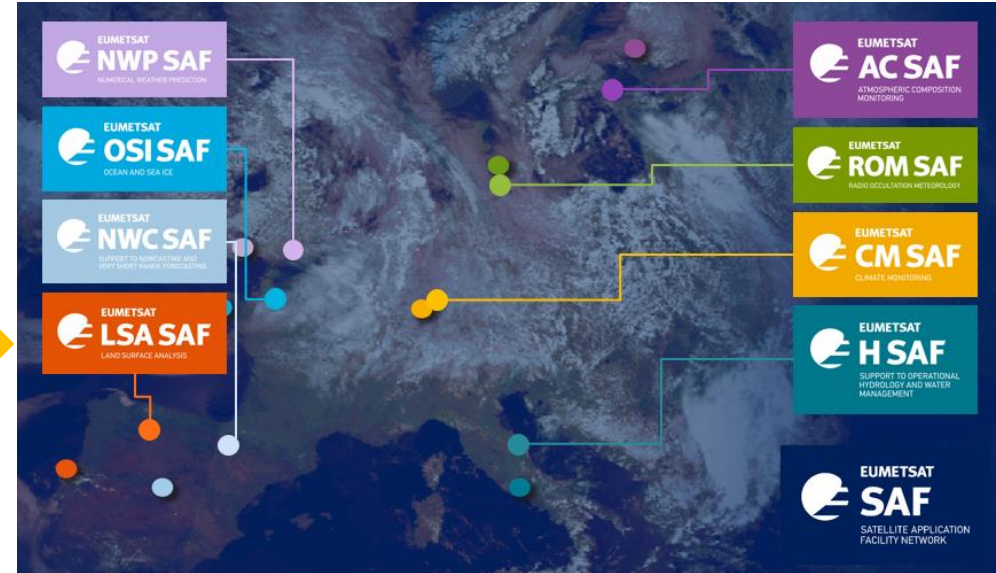
- Each SAF is a consortium of entities from EUMETSAT member states

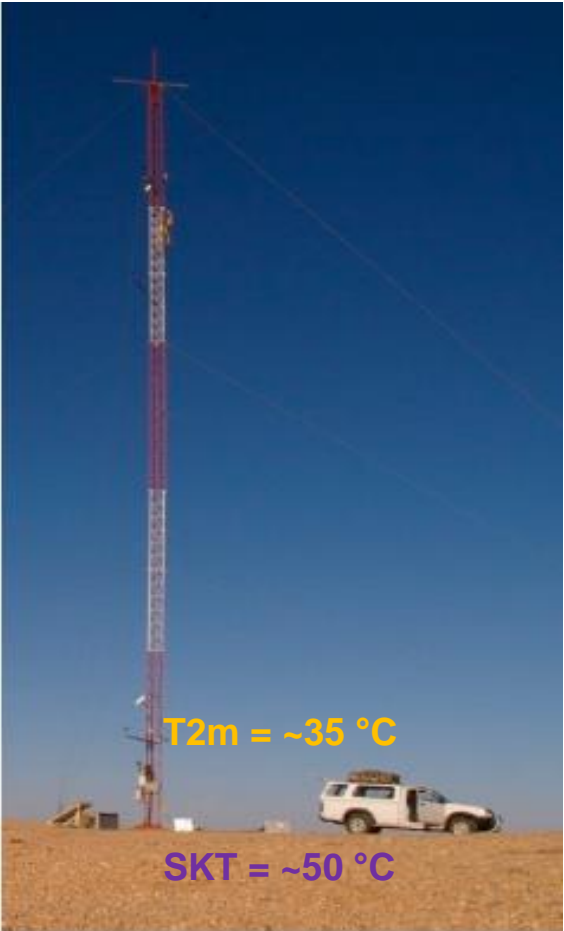# Land Surface Temperature from METEOSAT

T2m = ~35 °C

SKT = ~50 °C

Figure from Göttsche et al 2016

Your Feedback

Please let us know how you found this course and how we could do better in future courses!

Slido.com   #EUMSC15   Polls

EUMETSAT

The Drought & Vegetation Cube

Variable	Datasource	Temporal Coverage	Spatial Resolution	Temporal Resolution
Global Radiation	Satellite	Jan 1983 – Dec 2020	0.05°	Daily & monthly
Direct normal Solar Radiation	Satellite	Jan 1983 – Dec 2020	0.05°	Daily & monthly
Sunshine Duration	Satellite	Jan 1983 – Dec 2020	0.05°	Daily & monthly
Land Surface Temperature	Satellite	Jan 2004 – Dec 2020	0.05°	Hourly
Reference Evapotranspiration	Satellite	Jan 2004 – Dec 2020	0.05°	Daily
NDVI	Satellite	Mar 2007 – Dec 2020	0.01°	10-daily
Fractional Vegetation Cover	Satellite	Jan 2004 – Dec 2020	0.05°	Daily
Leaf Area Index	Satellite	Jan 2004 – Dec 2020	0.05°	Daily
Fraction of absorbed photosynthetically active radiation	Satellite	Jan 2004 – Dec 2020	0.05°	Daily
Soil Wetness Index (root zone)	Satellite	Jan 1992 – Dec 2020	0.1°	Daily
Precipitation	In situ	Jan 1982 – Dec 2020	1°	Monthly
T2m	Re-analysis	Jan 1979 – Oct 2020	0.1°	Monthly

Spatial Coverage:	**Europe**
Grid:	**Regular Lat / Lon**
Data Format:	**CF compliant netCDF4**

Access to the data cube:

➔ Enrol to the D&V Cube Exploration Phase: https://training.eumetsat.int/course/view.php?id=399

➔ Follow the link under: "*Access to the Data Cube*"

EUMETSAT

Upcoming Short Courses

16 June, 12:00 UTC - A Climate Data Record of Soil moisture in the root zone with David Fairbairn (ECMWF; H SAF)

https://training.eumetsat.int/

→ Events → Short Courses

Data Cube for Drought and Vegetation Monitoring
https://training.eumetsat.int/course/view.php?id=399
Join the Exploration Phase to test it!

EUMETSAT