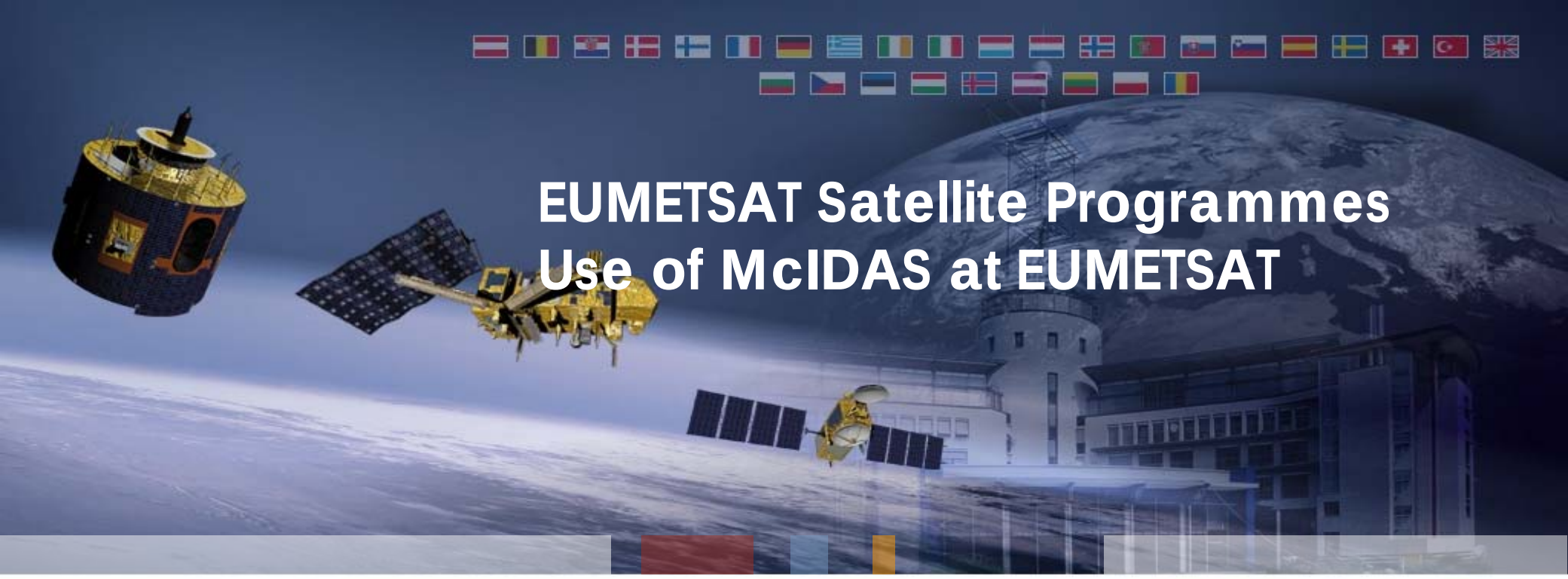


EUMETSAT Satellite Programmes
Use of McIDAS at EUMETSAT

Marianne König

Peter Miu

EUMETSAT

EUMETSAT Headquarters – Darmstadt

Location of EUMETSAT - Germany

Google Map View

26 Member States & 5 Cooperating States*

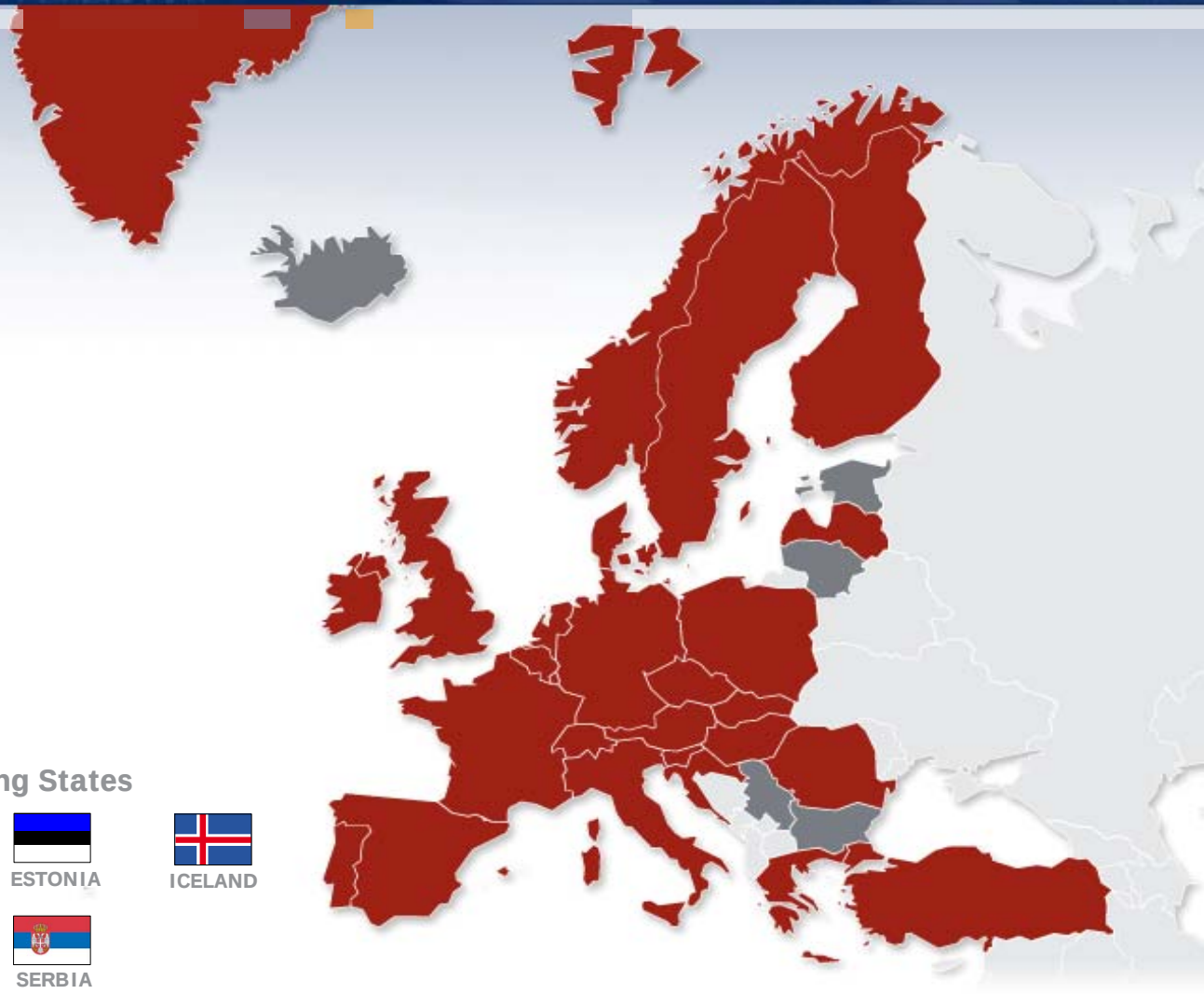
Member States

AUSTRIA
BELGIUM
CROATIA
CZECH REPUBLIC*
DENMARK
FINLAND
FRANCE
GERMANY
GREECE
HUNGARY
IRELAND
ITALY
LATVIA
LUXEMBOURG
NETHERLANDS
NORWAY
POLAND
PORTUGAL
ROMANIA*
SLOVAK REPUBLIC
SLOVENIA
SPAIN
SWEDEN
SWITZERLAND
TURKEY
UNITED KINGDOM

* Pending full ratification

Cooperating States

BULGARIA
ESTONIA
ICELAND
LITHUANIA
SERBIA



EUMETSAT

Global Satellite System

GEOSTATIONARY

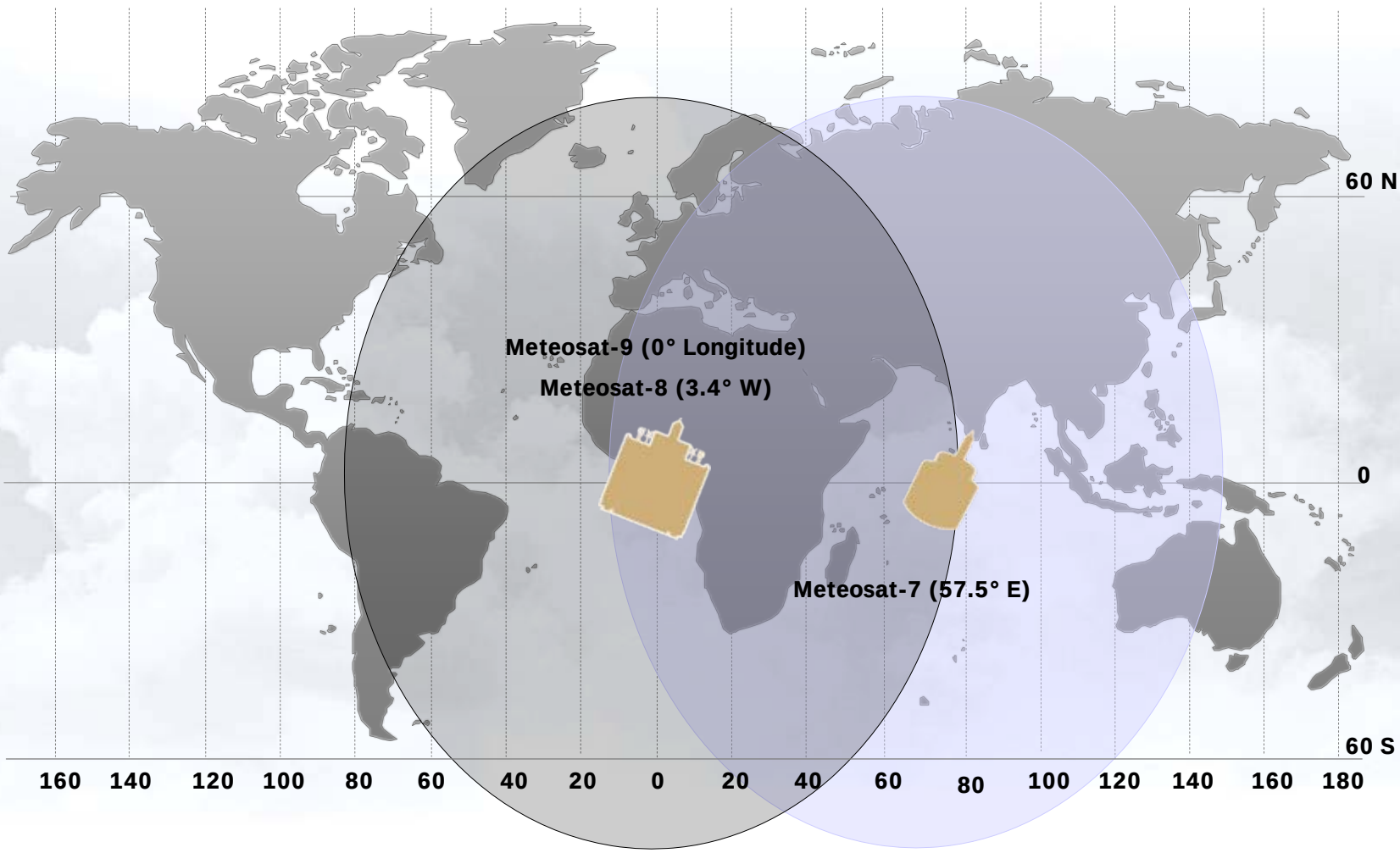
1. GOES-11 (USA) 135°W
2. GOES-13 (USA) 105°W
3. GOES-14 (USA) 89.5°W
4. GOES-12 (USA) 75°W
5. GOES-10 (USA) 60°W
6. METEOSAT-9 (EUMETSAT) 0°Longitude
7. METEOSAT-8 (EUMETSAT) 9.5°E
8. METEOSAT-7 (EUMETSAT) 57.5°E
9. ~~METEOSAT-6 (EUMETSAT) 67.5°E~~
10. KALPANA-1 (INDIA) 74°E
11. INSAT-3C (INDIA) 74°E
12. GOMS-N1 (RUSSIA) 76°E
13. FY-2D (CHINA) 86.5°E
14. INSAT-3A (INDIA) 93.5°E
15. FY-2C (CHINA) 105°E
16. FY-2E (CHINA) 123°E
17. MTSAT-1R (JAPAN) 140°E
18. MTSAT-2 (JAPAN) 145°E

LOW EARTH ORBIT

19. METOP-A (EUMETSAT)
20. JASON-2 (USA, EUROPE)
21. JASON-1 (USA, EUROPE)
22 23 24. NOAA-15,-16,-17 (USA)
25 26. NOAA-18,-19 (USA)
27 28. FY-1D, -3A (CHINA)
29 30. OCEANSAT-1, -2 (INDIA)
31. METEOR-M N1 (RUSSIA)

EUMETSAT

EUMETSAT Geostationary Satellites' Coverage



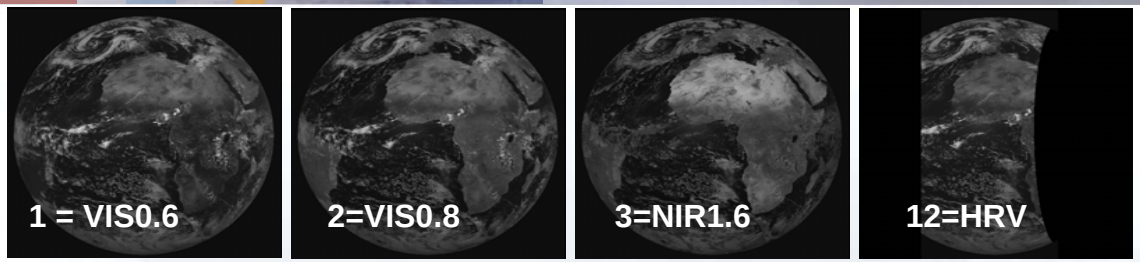
EUMETSAT

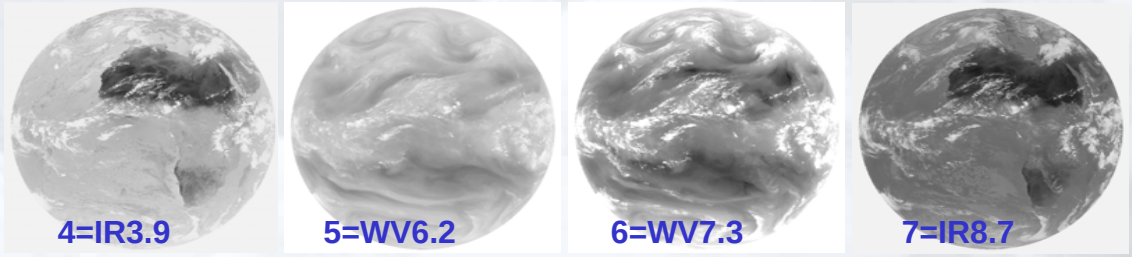
MSG: Meteosat Second Generation

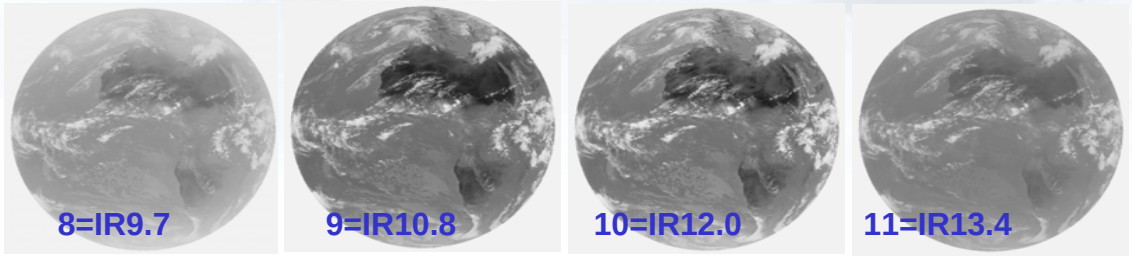
MSG SEVIRI*:

12 Kanal Instrument
3 (1) km Pixelgröße
Bildfolge alle 15 Minuten
(5 min. im “rapid scan service”)

*: SEVIRI :
Spinning Enhanced Visible and InfraRed Imager







MSG News

Launch of MSG-3 on 19 June 2012 (to be Meteosat-10)

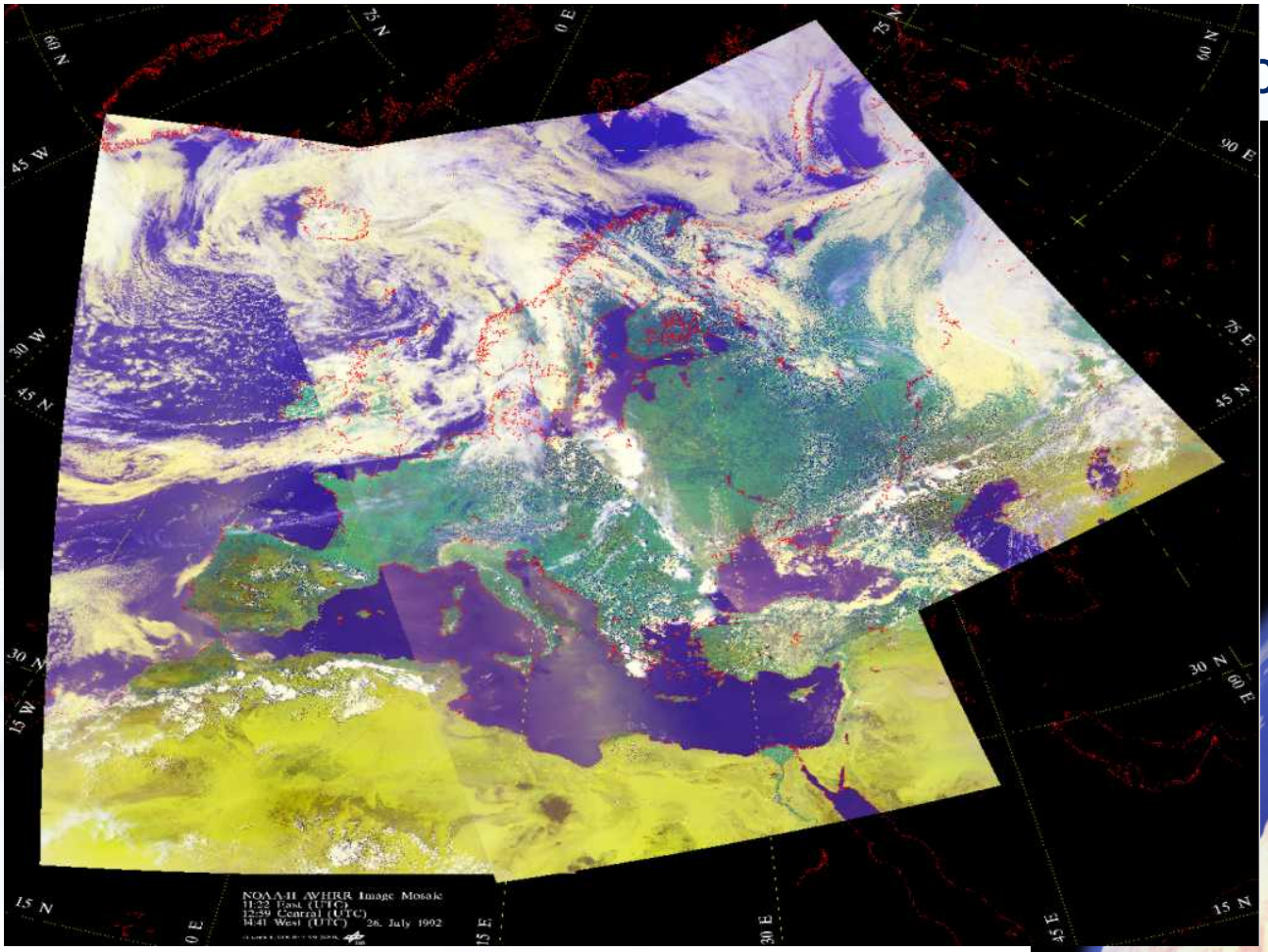
Recent events on Meteosat-8: Loss of onboard sun sensors due to a solar panel damage, i.e. compromised image quality

Metop News

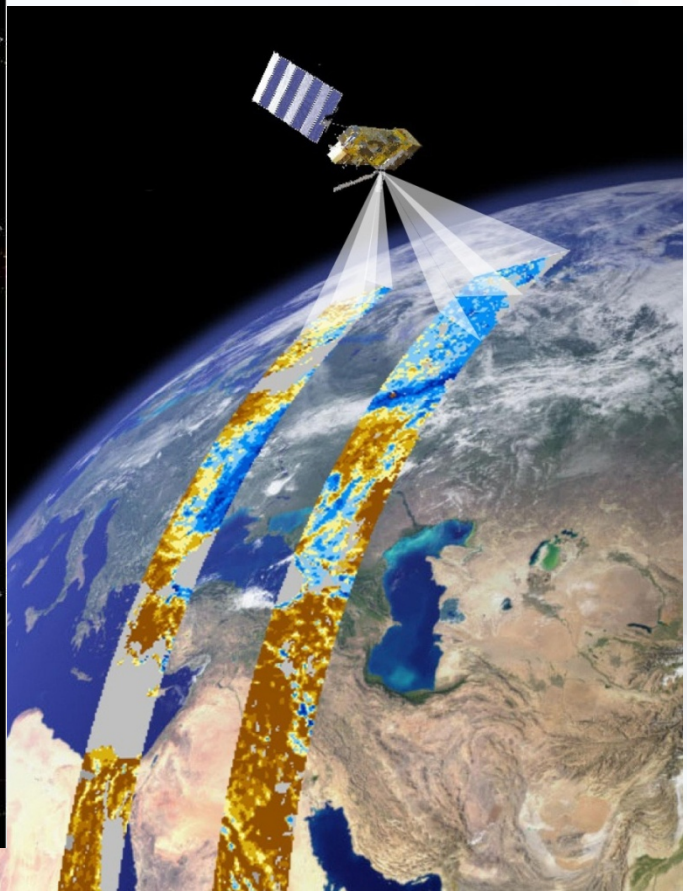
Launch of Metop-B in in July 2012 (TBC)

09:30 orbit maintained, however with a 90 deg difference to Metop-A orbit:

Reasons for Specific Metop Orbit Configuration

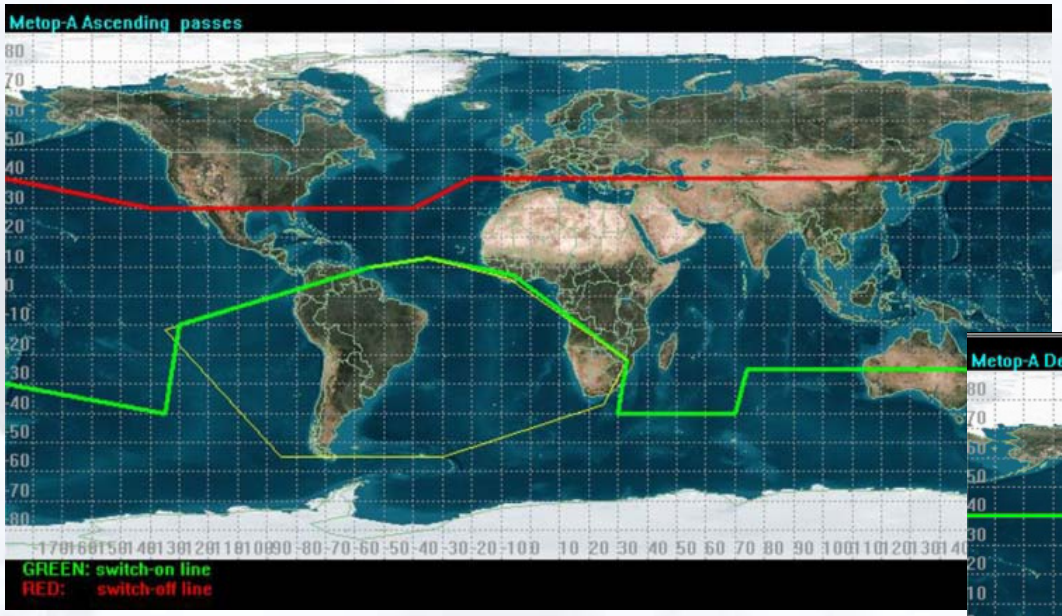


communication)

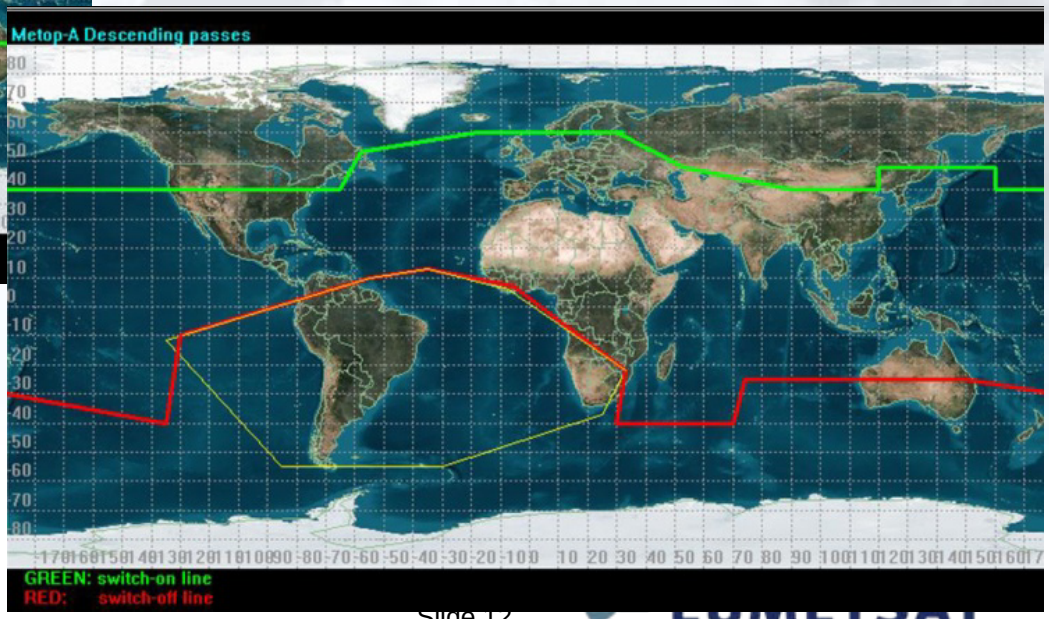


EUMETSAT

Metop HRPT



Metop-B: HRPT will be available everywhere

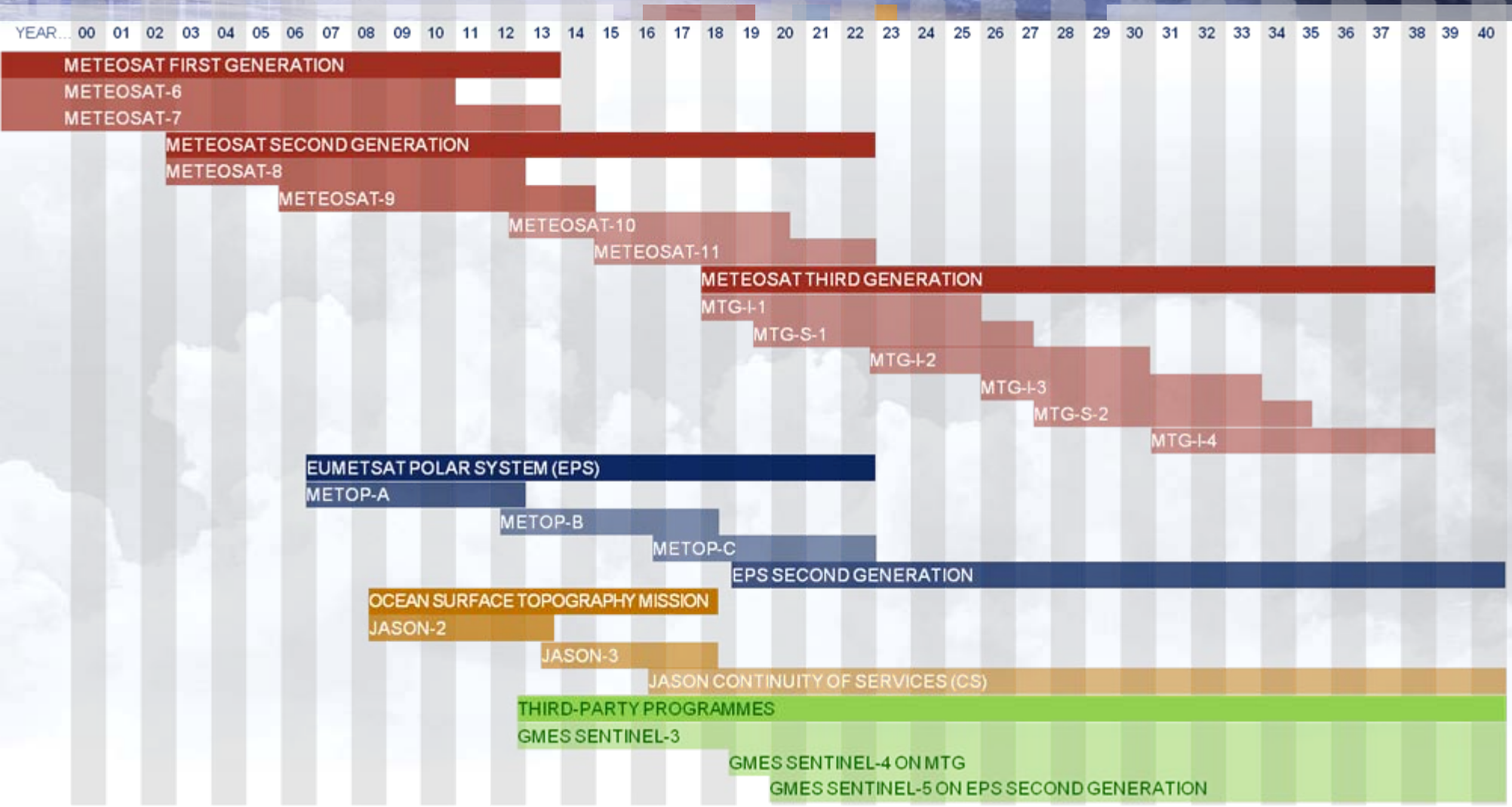


Future EUMETSAT Satellite Programmes

Eumetsat is preparing/developing the following satellites programmes:

- Sentinel-3 (2013): Low Earth Orbiting mission to support services relating to the marine and global land environment, with capability to serve further atmospheric- and cryospheric-based application areas.
  - **http://www.eumetsat.int/Home/Main/Satellites/Sentinel-3/index.htm?l=en**
- MTG: Meteosat Third Generation (2018), EUMETSAT is preparing for the next European operational geostationary meteorological satellite system. MTG will revolutionise weather forecasting and environmental monitoring by providing significant improvement over the capabilities of the current Meteosat generation.
  - **http://www.eumetsat.int/Home/Main/Satellites/MeteosatThirdGeneration/index.htm?l=en**
- EPS-SG: EUMETSAT Polar System – Second Generation (2020), The EPS follow-on system to EPS will provide continuity of polar orbiting observations for the user community.
  - **http://www.eumetsat.int/Home/Main/Satellites/EPS-SG/index.htm?l=en**

EUMETSAT Programmes Timeline



EUMETSAT

MTG Space Segment – Twin Satellite Concept

MTG-I; 4 satellites

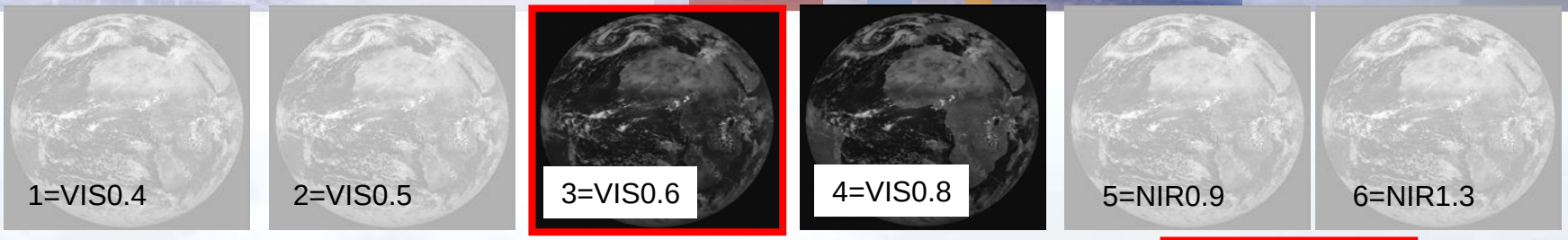
MTG-S; 2 satellites

Courtesy of ThalesAlenia Space

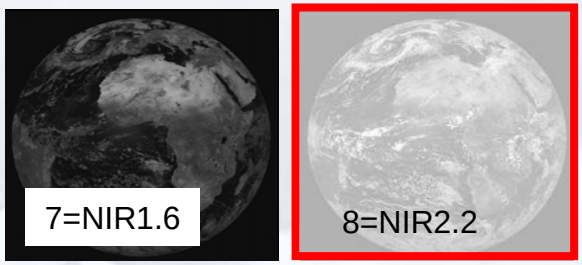
MTG Space Segment Configuration

- Twin Satellite Concept, based on 3-axis platforms
  - 4 Imaging Satellites (MTG-I) (20 years of operational services)
  - 2 Sounding Satellites (MTG-S) (15.5 years of operational services)
- Payload complement of the MTG-I satellites
  - The Flexible Combined Imager (FCI)
  - The Lightning Imager (LI)
  - The Data Collection System (DCS) and Search and Rescue (GEOSAR)
- Payload complement of the MTG-S satellites
  - The Infrared Sounder (IRS)
  - The Ultra-violet, Visible and Near-infrared Sounder (UVN)

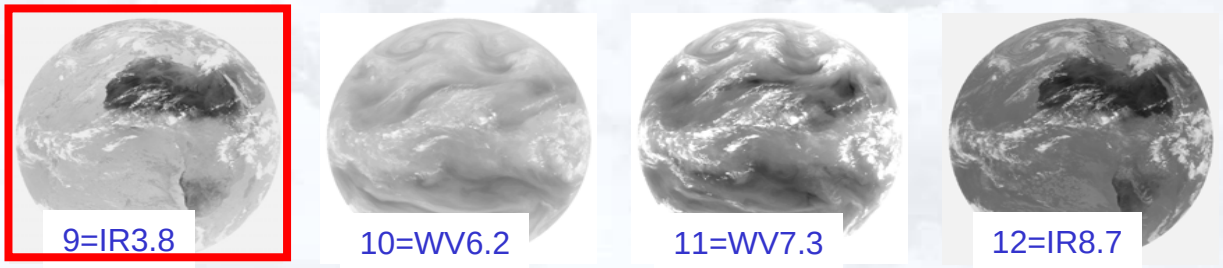
Meteosat Evolution: 1977 – 2002 - 2019

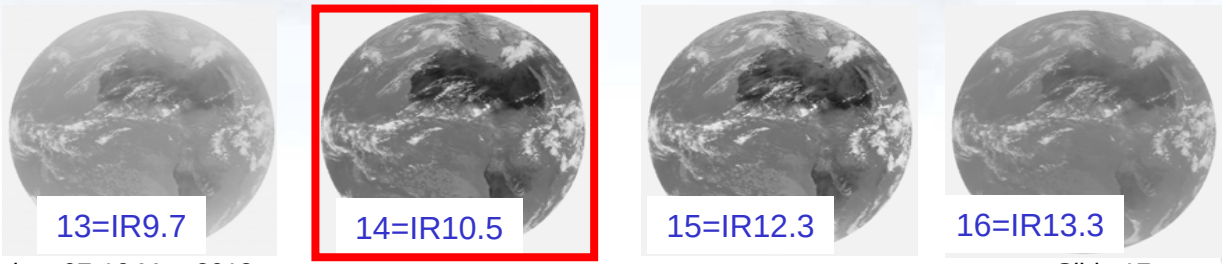


FCI-FDSS:
8 solar channels at 1km
8 thermal channels at 2km



FCI-RSS:
2 solar/thermal channels
at
0.5 km/1.0 km





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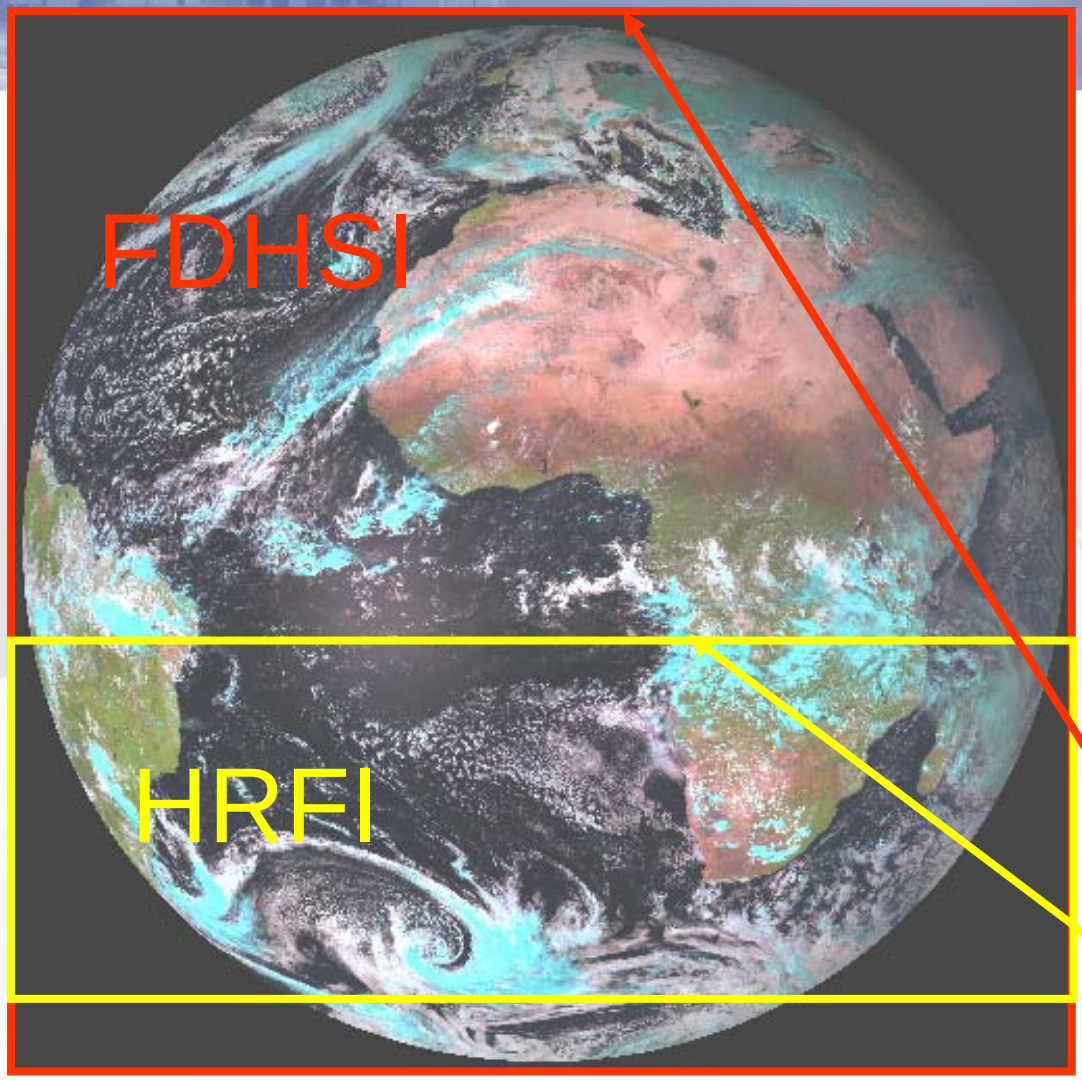
From MSG-SEVIRI to MTG-FCI



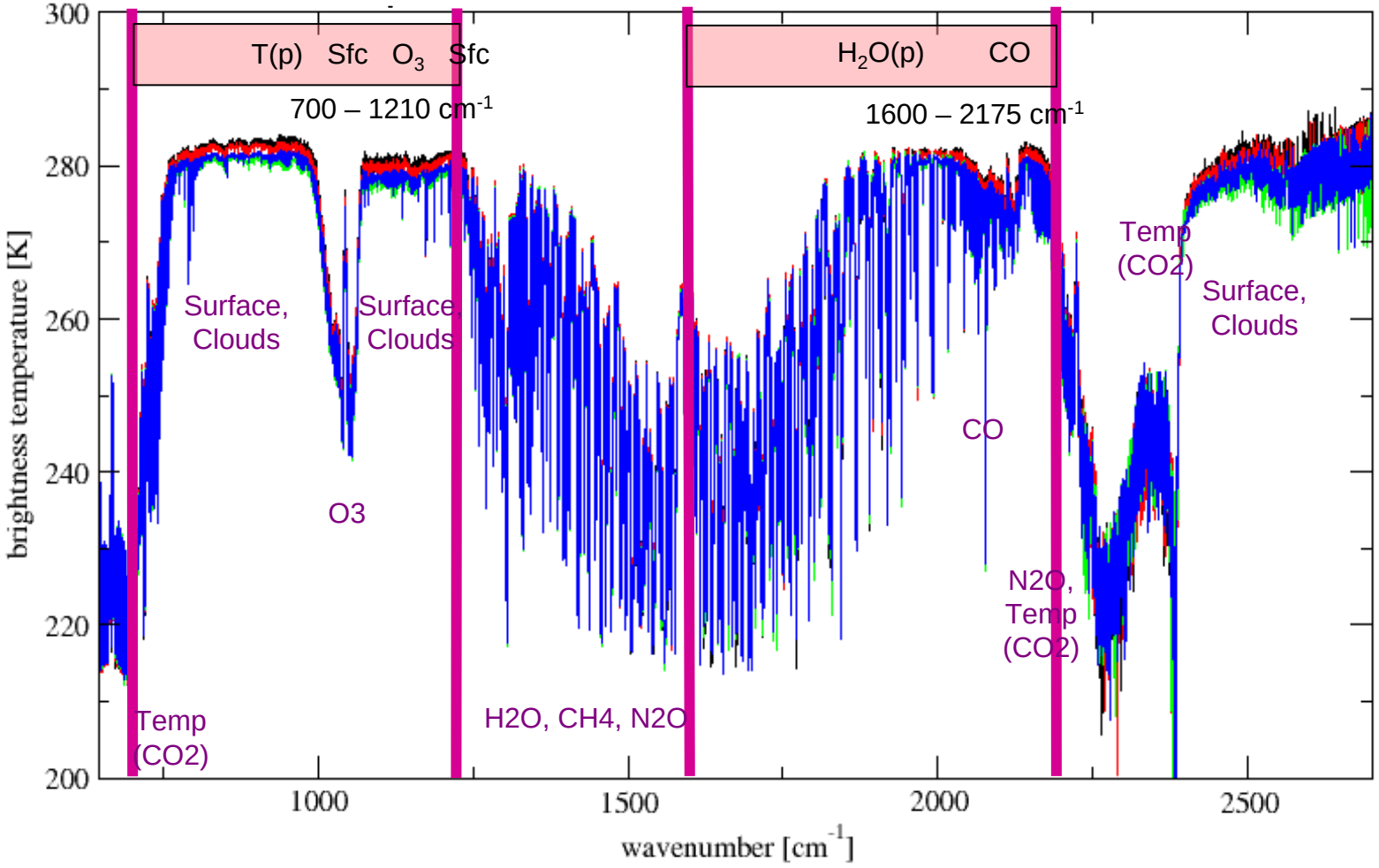
MTG FCI outbids MSG SEVIRI observations on cloud, aerosol, moisture and fire:

- by adding new channels
- by improving temporal-, spatial-, and radiometric resolution

	Coverage	Repeat cycle
FDHSI mission	18°x18°	10 min
HRFI mission	1/4 FD	10/4 min

MTG-IRS: High Spectral/Spatial/Temporal Sampling

MTG-IRS will deliver unprecedented information on horizontal and vertical gradients of moisture, wind and temperature.



EUMETSAT

MTG Lightning Imager Requirements

The LI on MTG measures Total Lightning:
Cloud-to-Cloud Lightning (IC) and Cloud-to-Ground Lightning (CG)

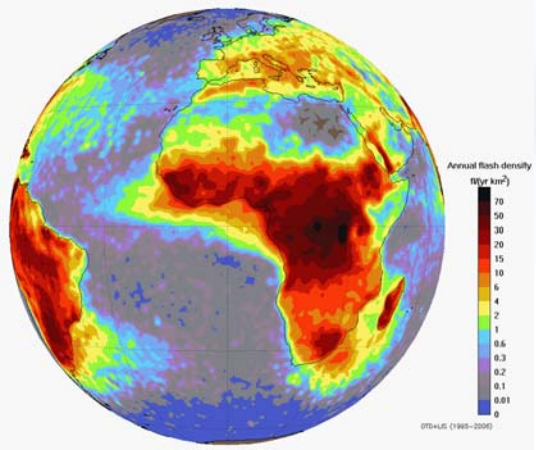
Main benefit from GEO observations:
homogeneous and continuous observations delivering information on location and strength of lightning flashes to the users with high timeliness of 30 seconds

detect, monitor, track, and extrapolate in time occurrence of strokes:

- Warnings
- Development (Intensity/Movement) of active convective areas
- Lifecycle of storms

As well as…

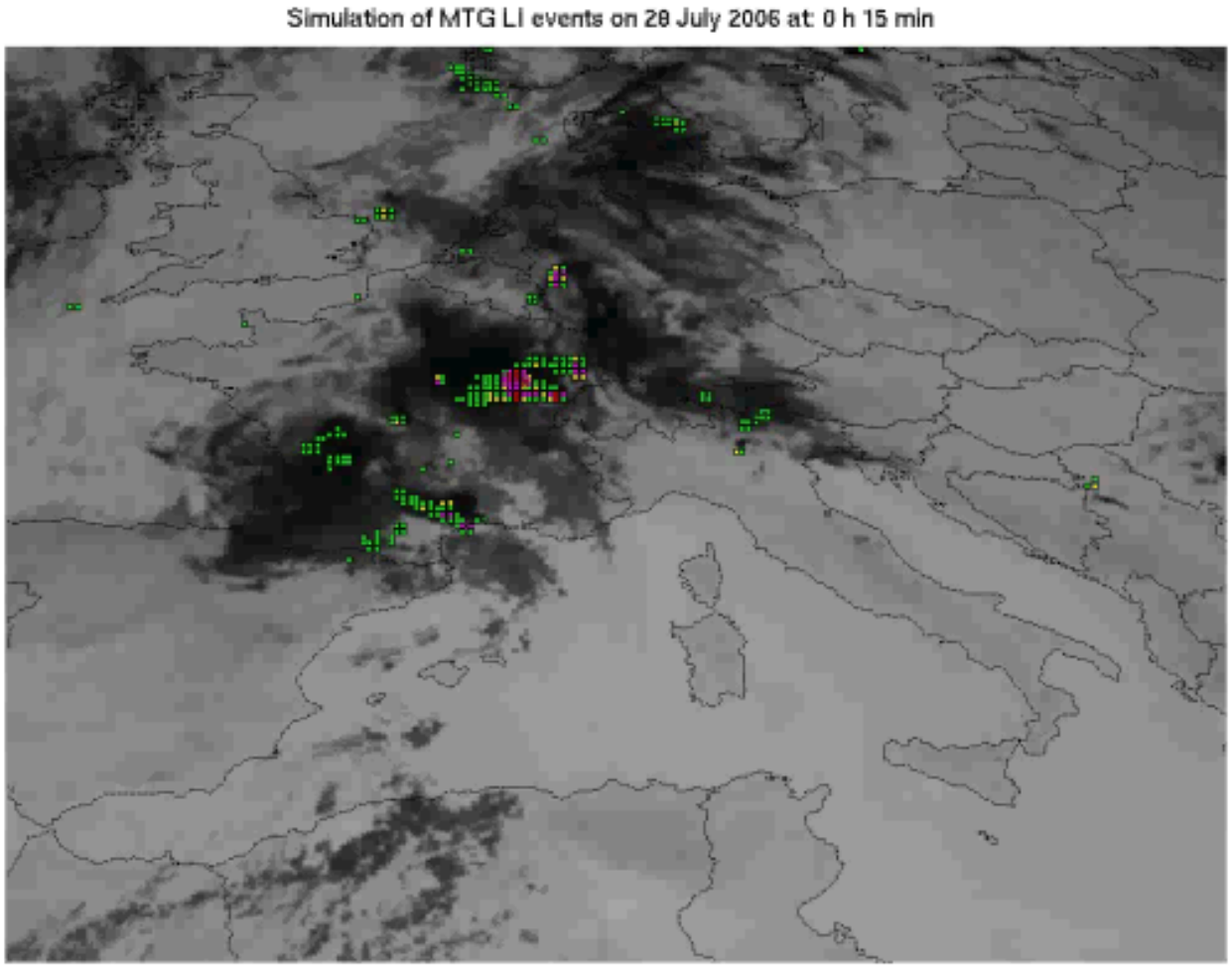
- Lightning climatology
- Chemistry (NOx production)



LIS/OTD flash density in the MTG LI field of view

EUMETSAT

Proxy Data Development – Example

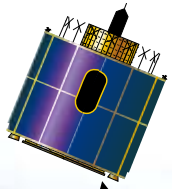


Based on LINET ground-based data over Europe

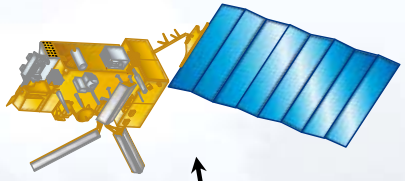
Colour code indicates the MTG-LI “event” density

The EUMETSAT Data Centre Archive – McIDAS is available as a delivery format for the Level 1.5 Data Set from EUMETSAT's Geostationary Satellites

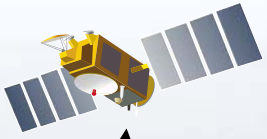
EUMETSAT Geostationary Systems
Meteosat satellites



EUMETSAT Polar System
Metop satellites



Jason-2
Optional Programme
for Ocean Altimetry



SATELLITE APPLICATION FACILITIES
within the Member States

MTP facilities | MSG facilities | EPS facilities | Jason-2 facilities

Data Archiving and
Data Retrieval

records back to 1981

Media delivery

FTP | HTTP

EO Portal

USERS

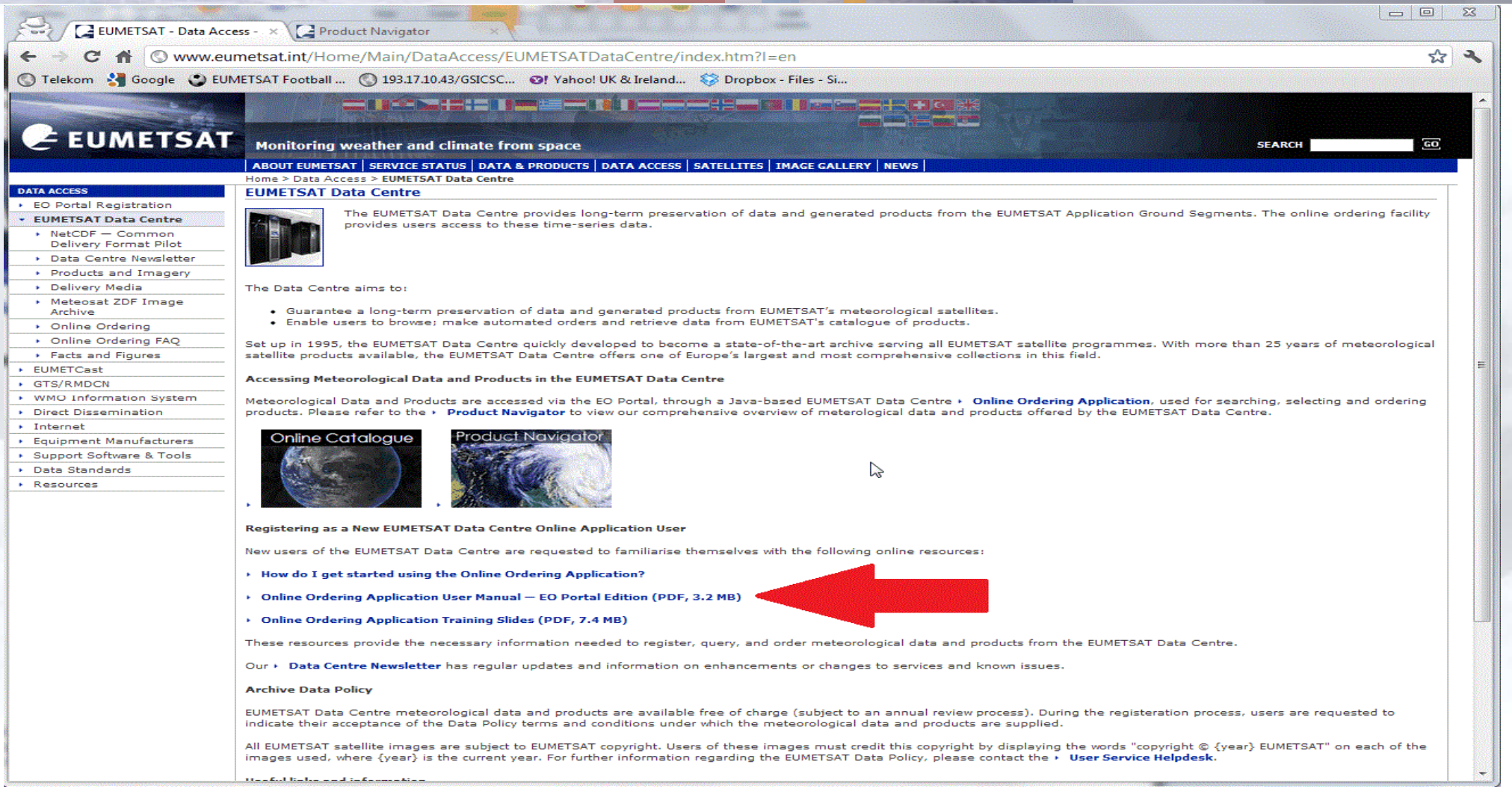
EUMETSAT

Ordering McIDAS Data from the EUMETSAT Data Centre

- Anyone can register using the EO Portal to become a Data Centre user.
- EO Portal URL - **http://eoportal.eumetsat.int** into your browser.
- User should subscribe to the Data Centre Service subscription.
- This service offers an Online Ordering Application were EUMETSAT data can be queried and ordered.
- The Data is free but there is no guarantee on delivery times.
- User guides, training slides and general information about the Data Centre can be founded under:

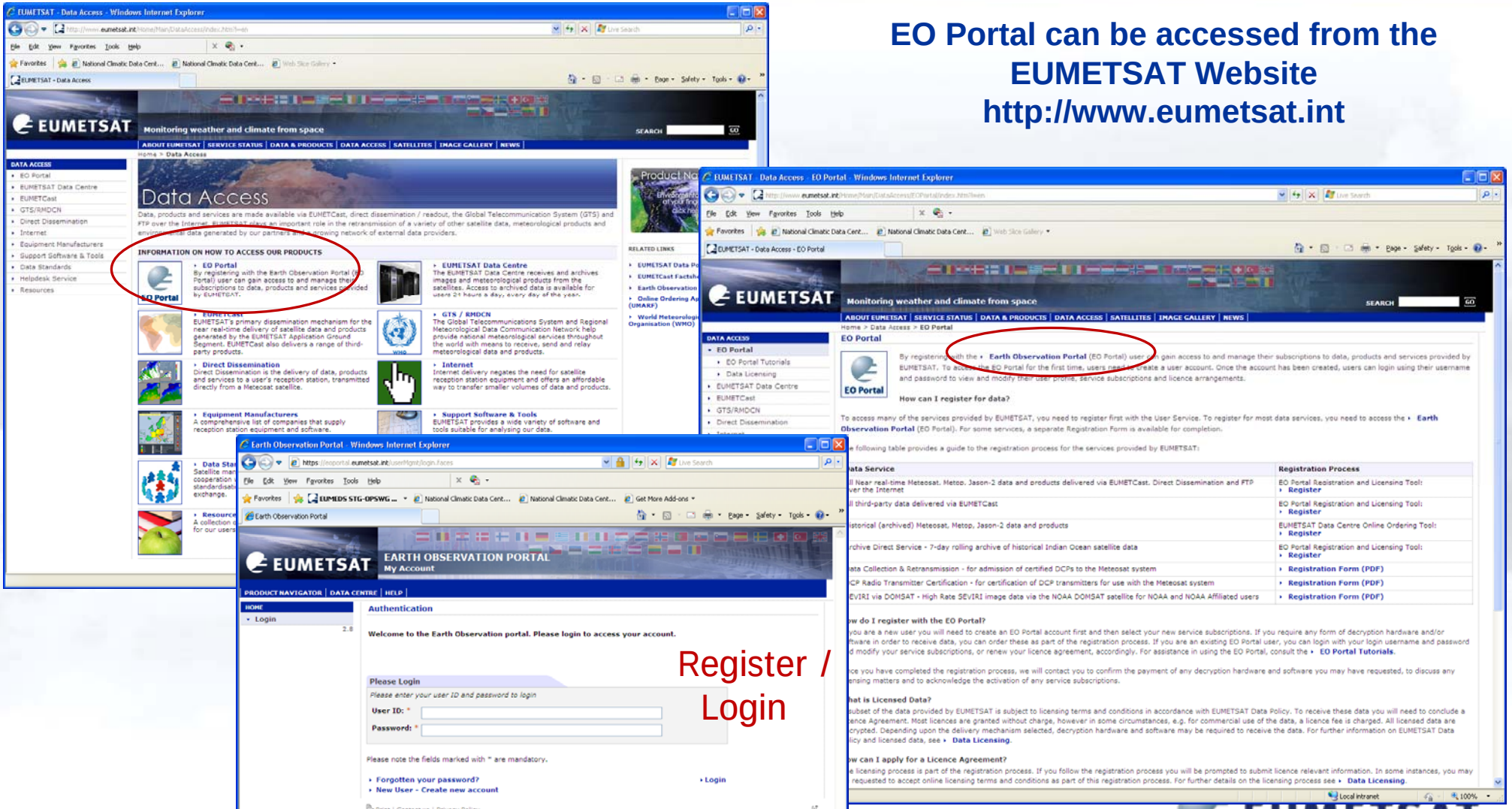
  http://www.eumetsat.int/Home/Main/DataAccess/EUMETSATDataCentre/index.htm?l=en

User guides, training slides and general information about the Data Centre



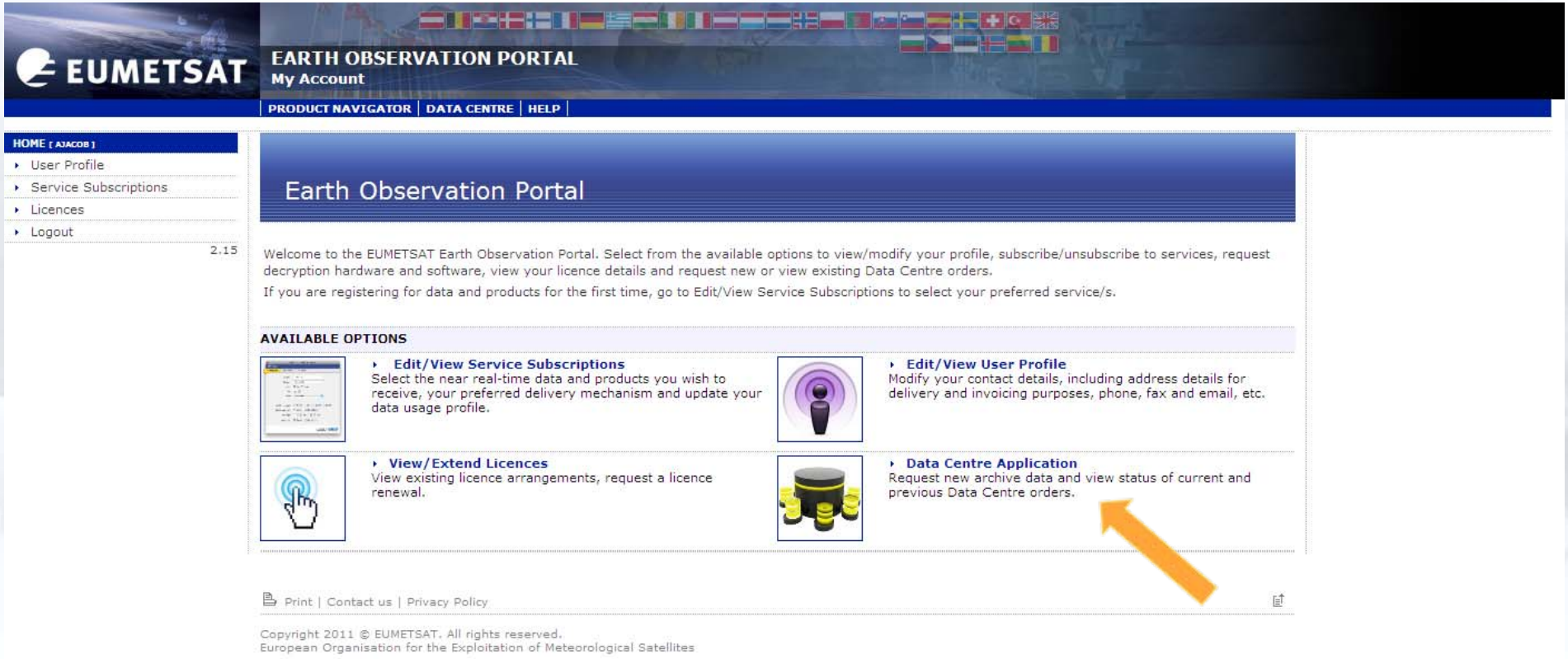
Earth Observation Portal (EO Portal) for User Registration and Services Subscription for EUMETSAT Data.

EO Portal can be accessed from the EUMETSAT Website http://www.eumetsat.int

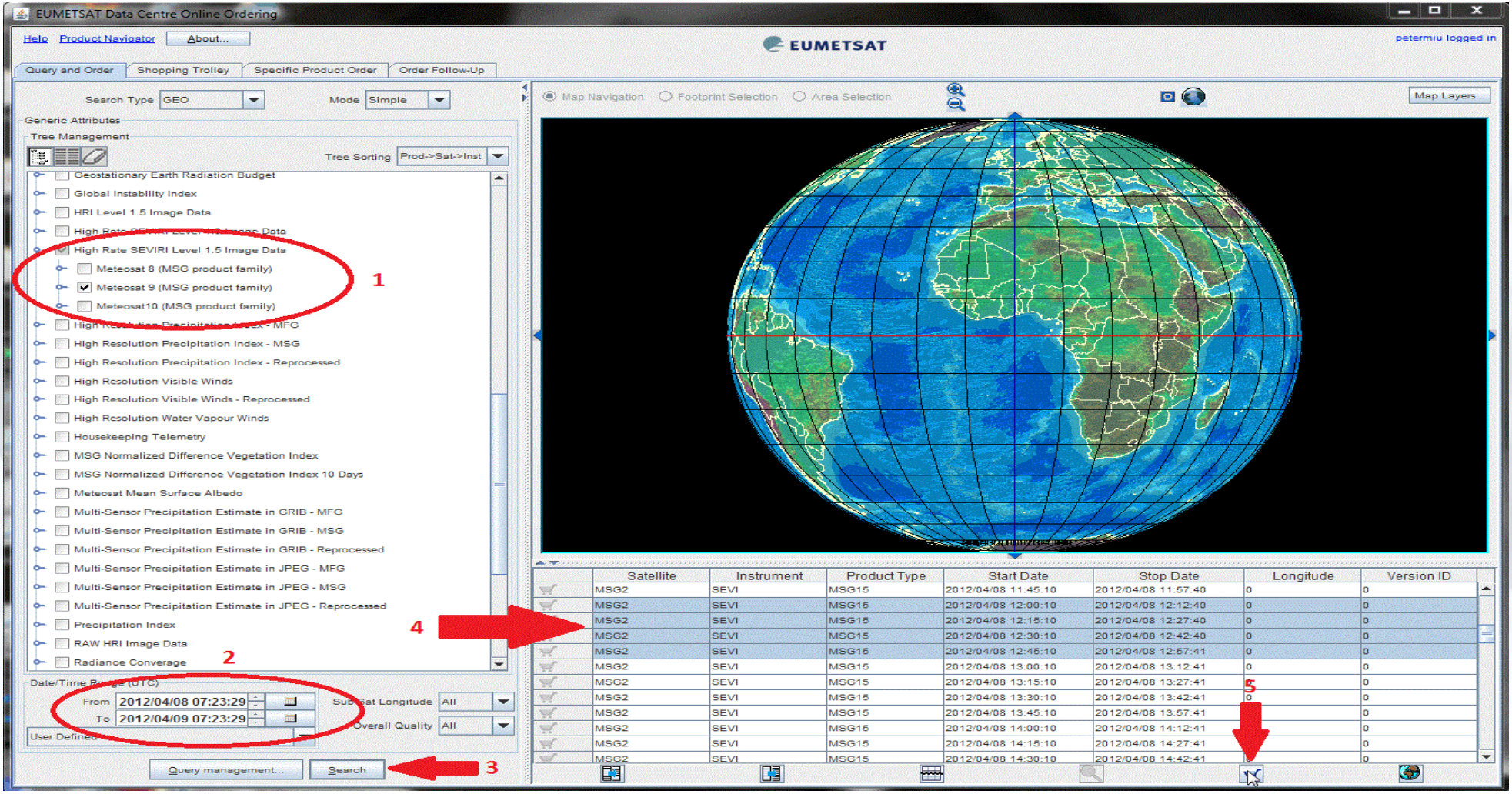


EO Portal: User Registration and Subscription

The Data Centre Ordering Application can be found here:

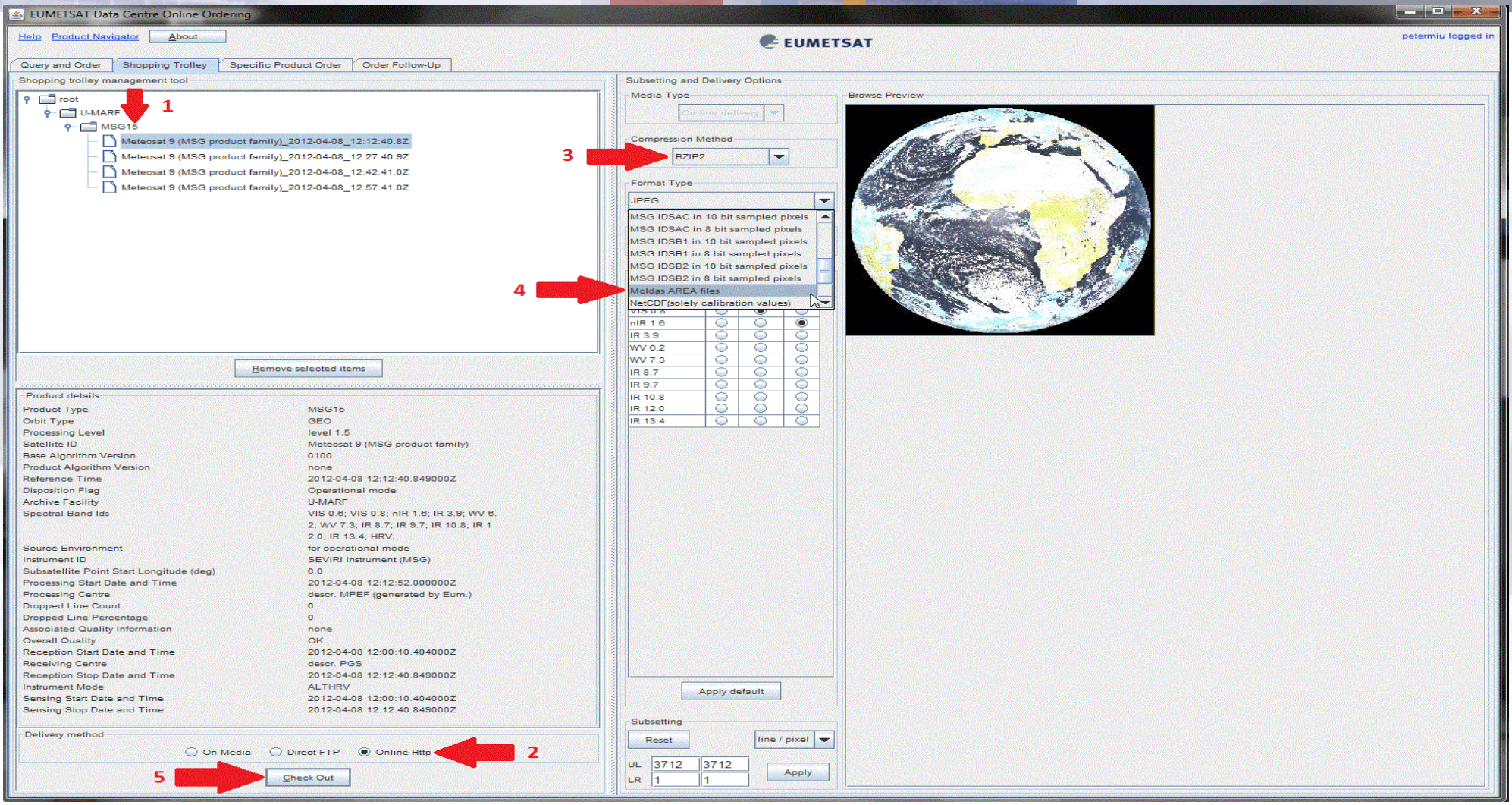


Ordering McIDAS Data Sets from EUMETSAT



EUMETSAT

Ordering McIDAS Data Sets from EUMETSAT



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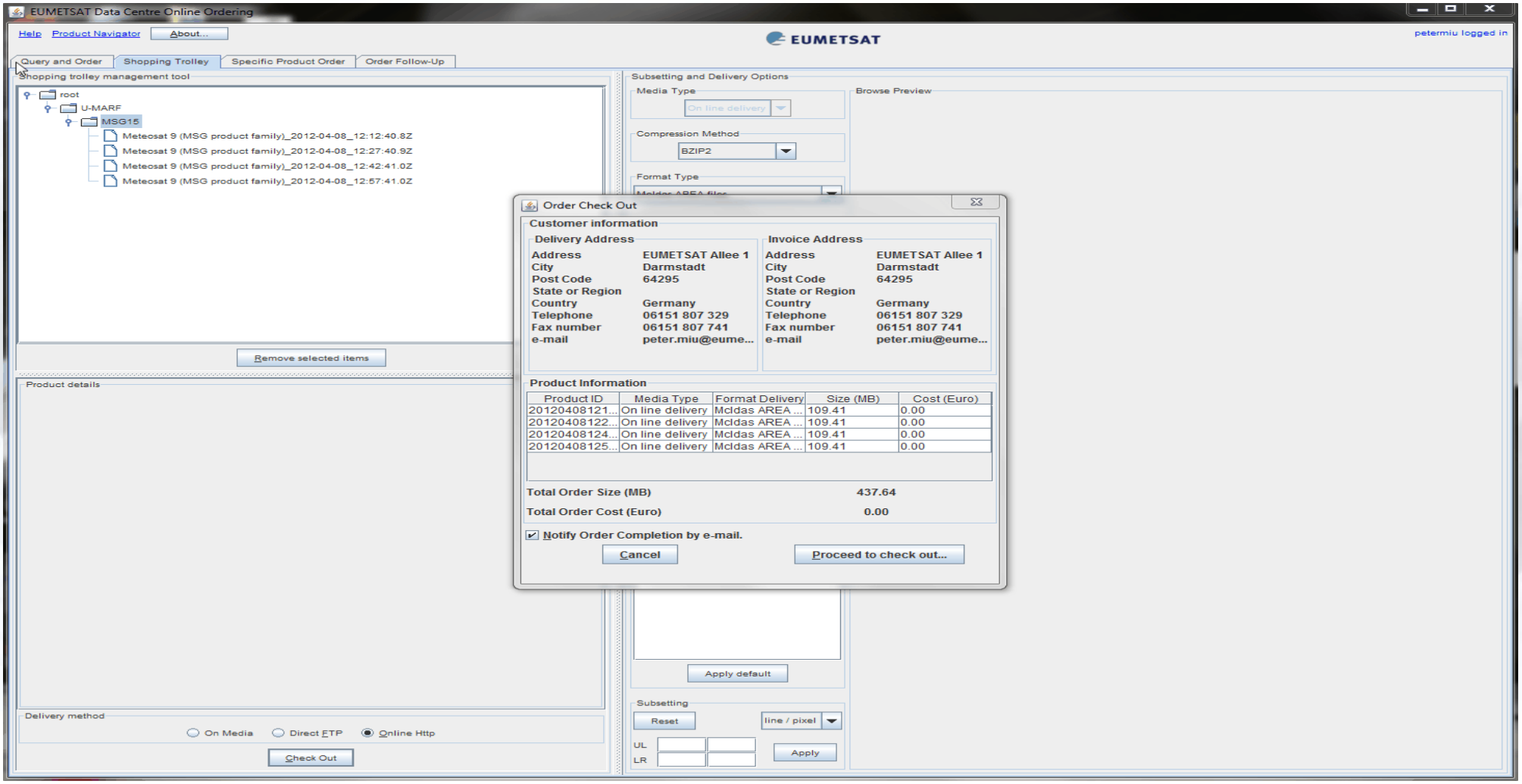

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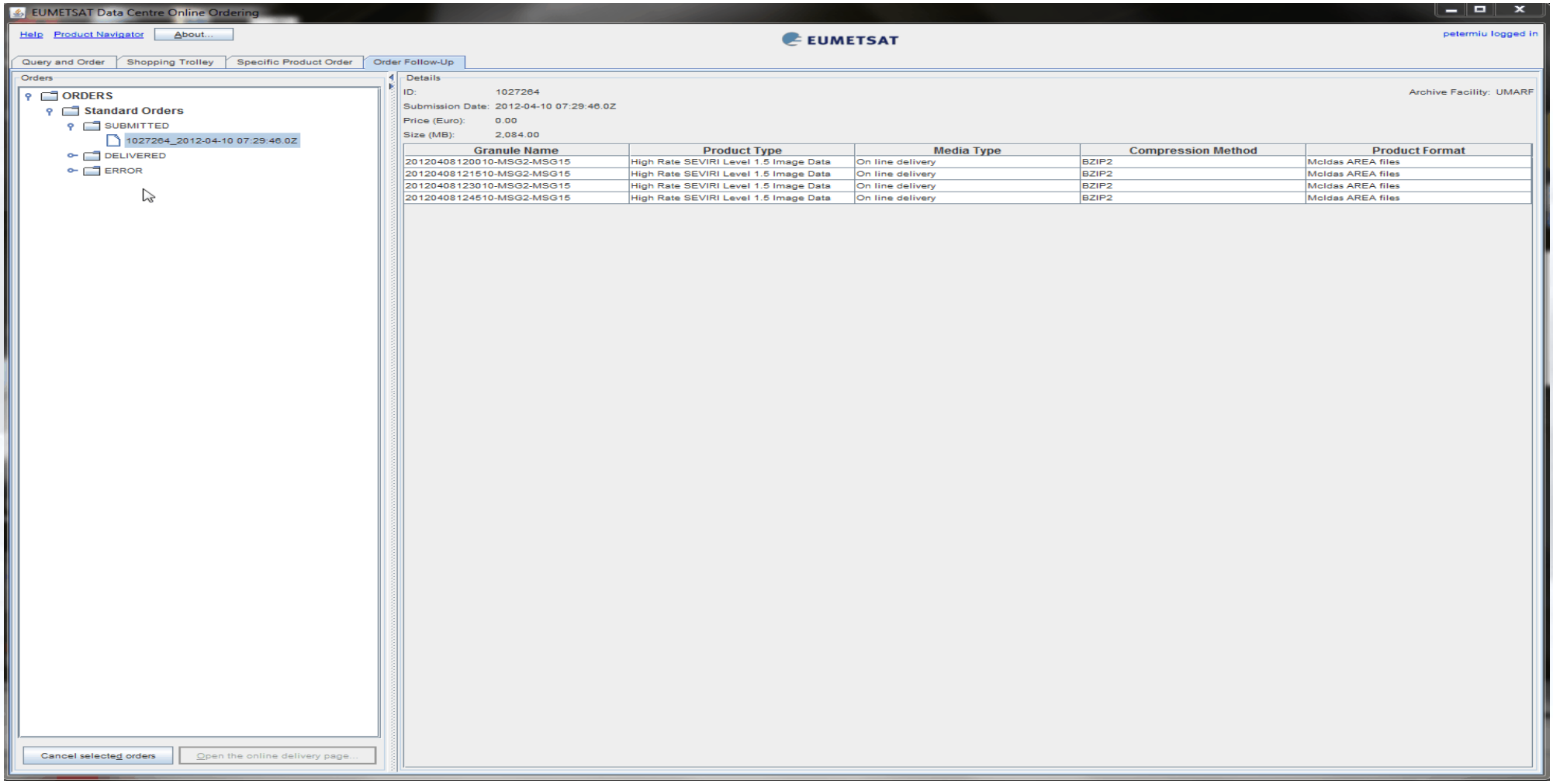

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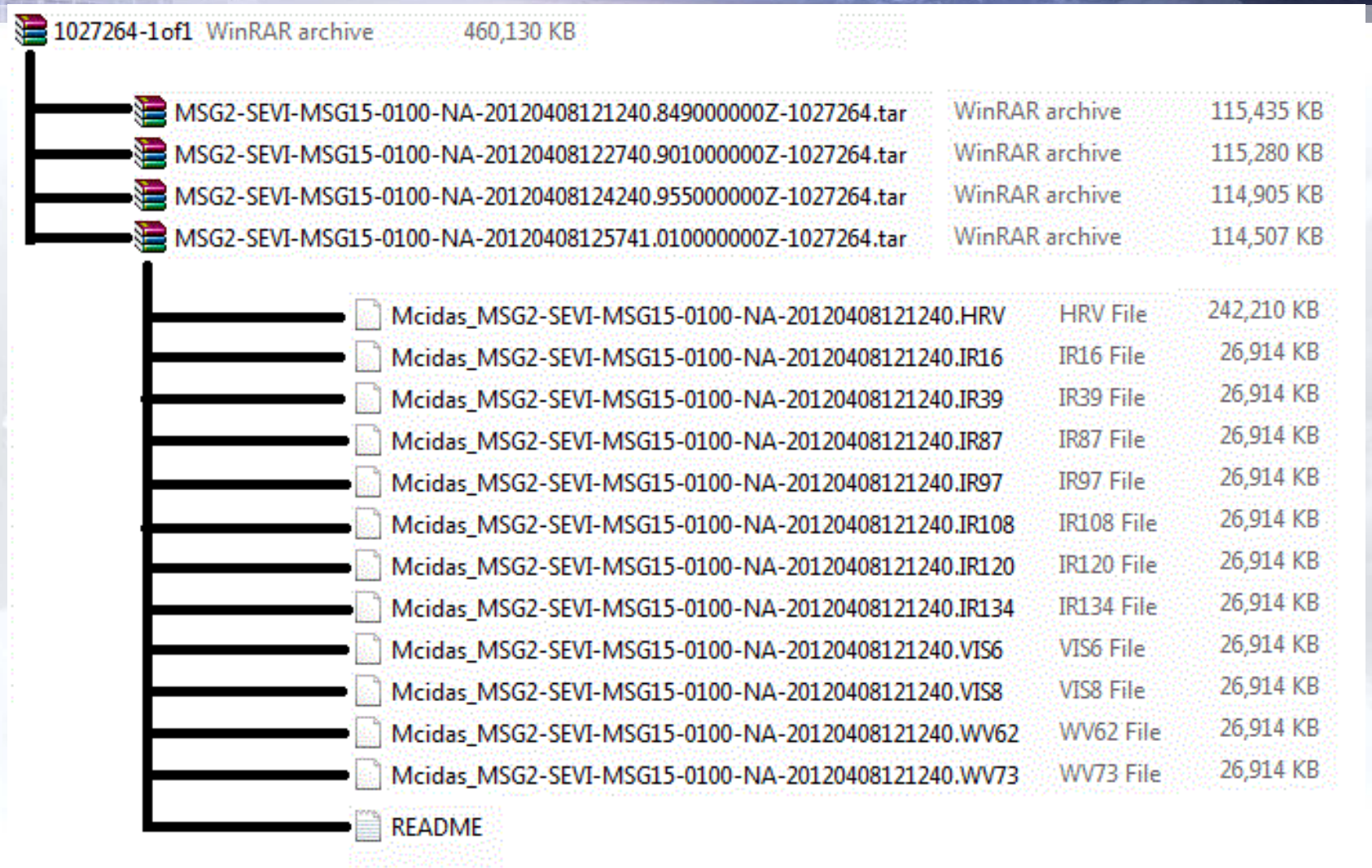
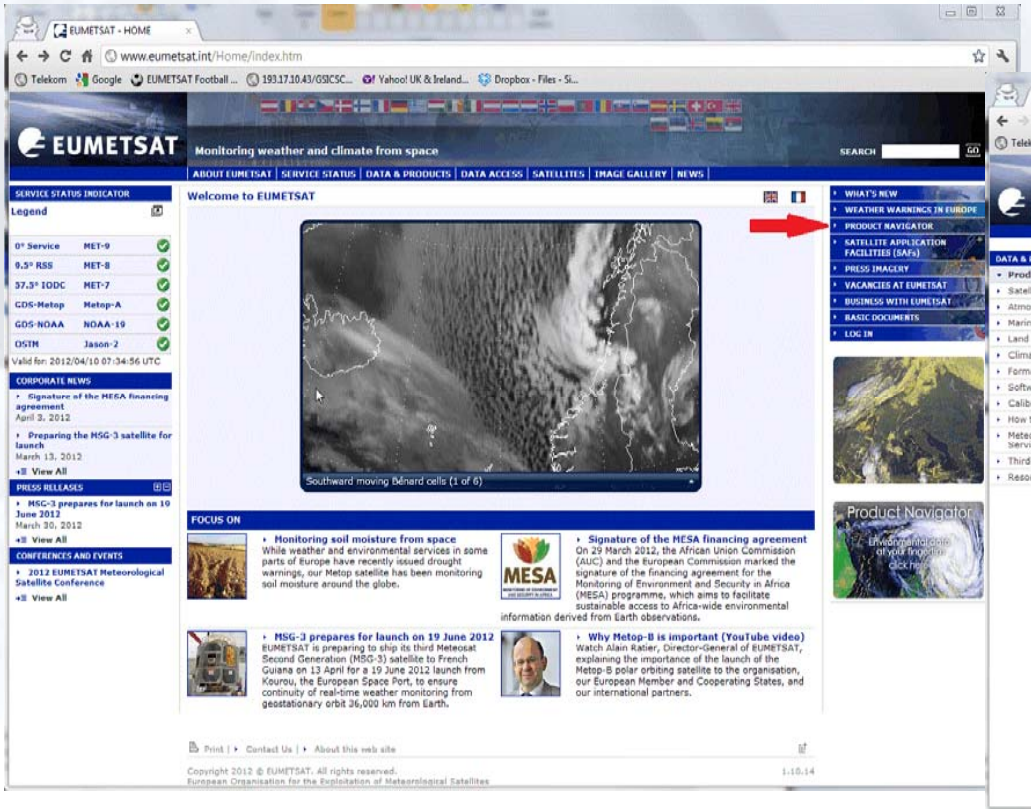
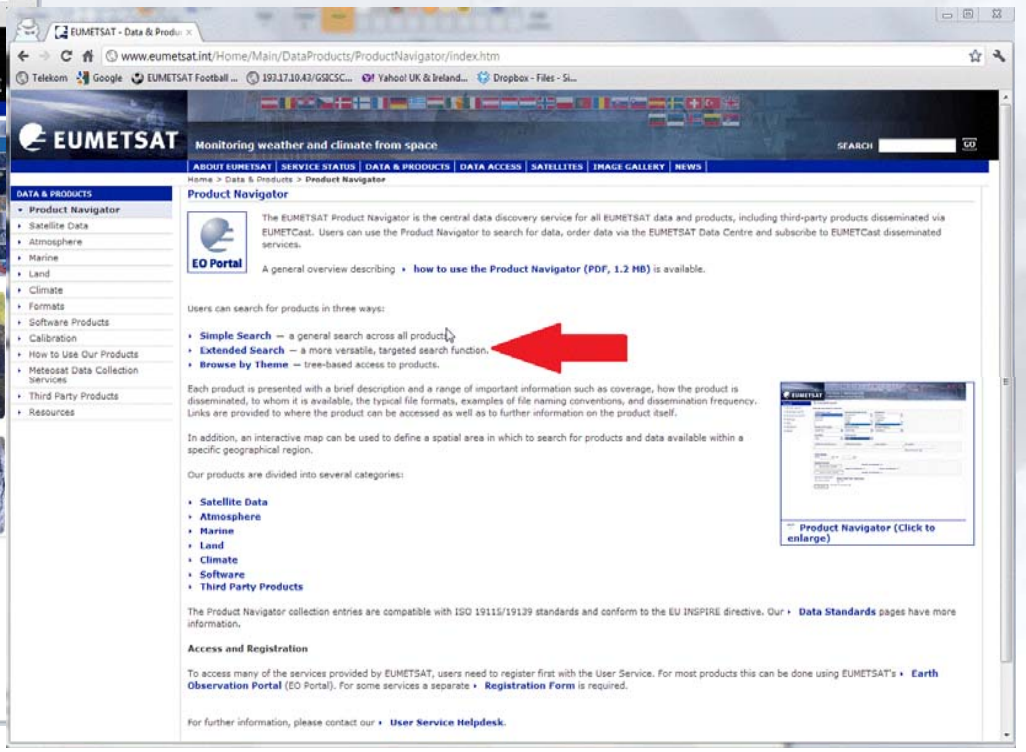


EUMETSAT

EUMETSAT Product Navigator: http://navigator.eumetsat.int

The Product Navigator is the central online access to all of EUMETSAT's data information and meta-data. The Navigator complies with ISO 19115/19139 meta-data standards and conforms to the EU INSPIRE directive.





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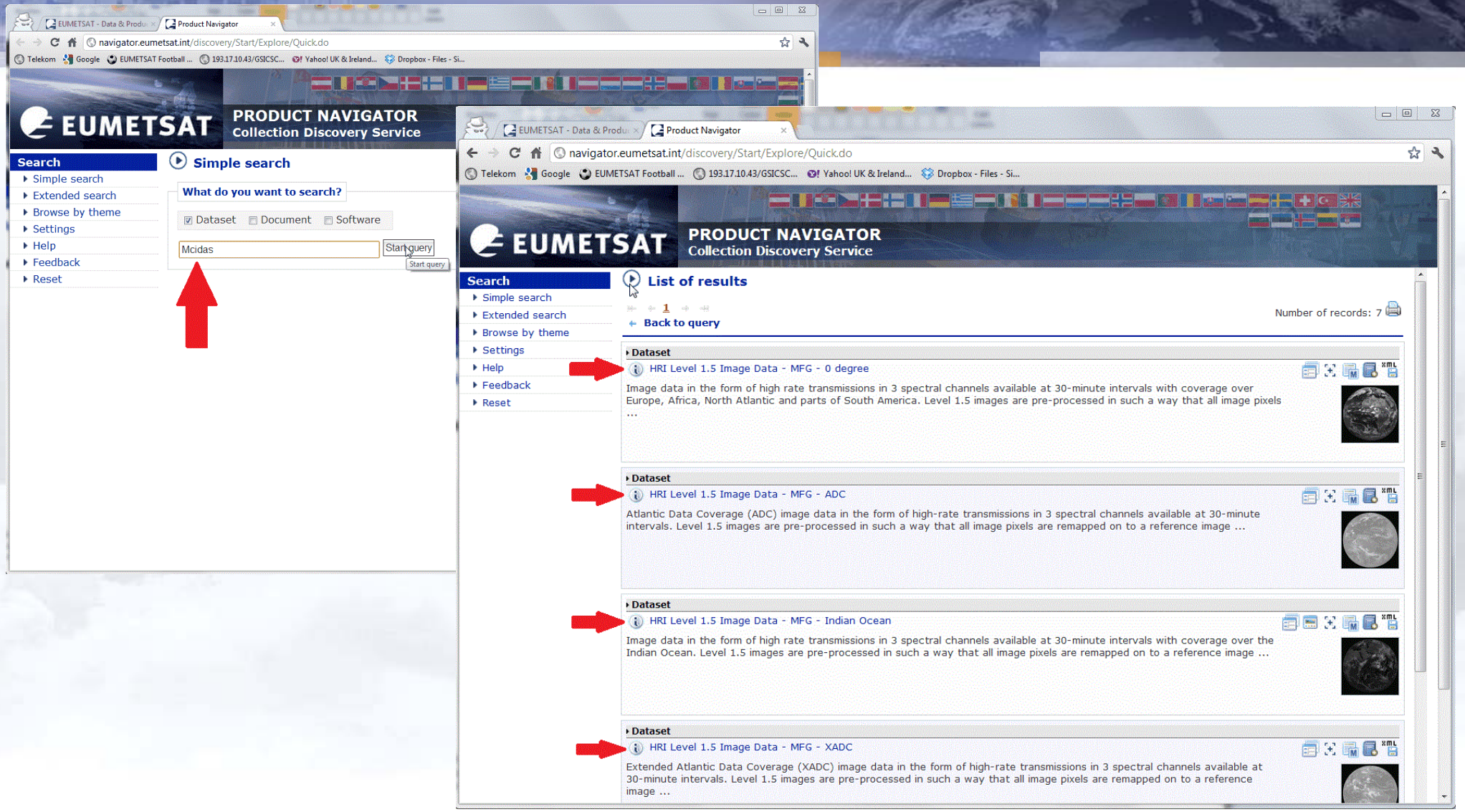
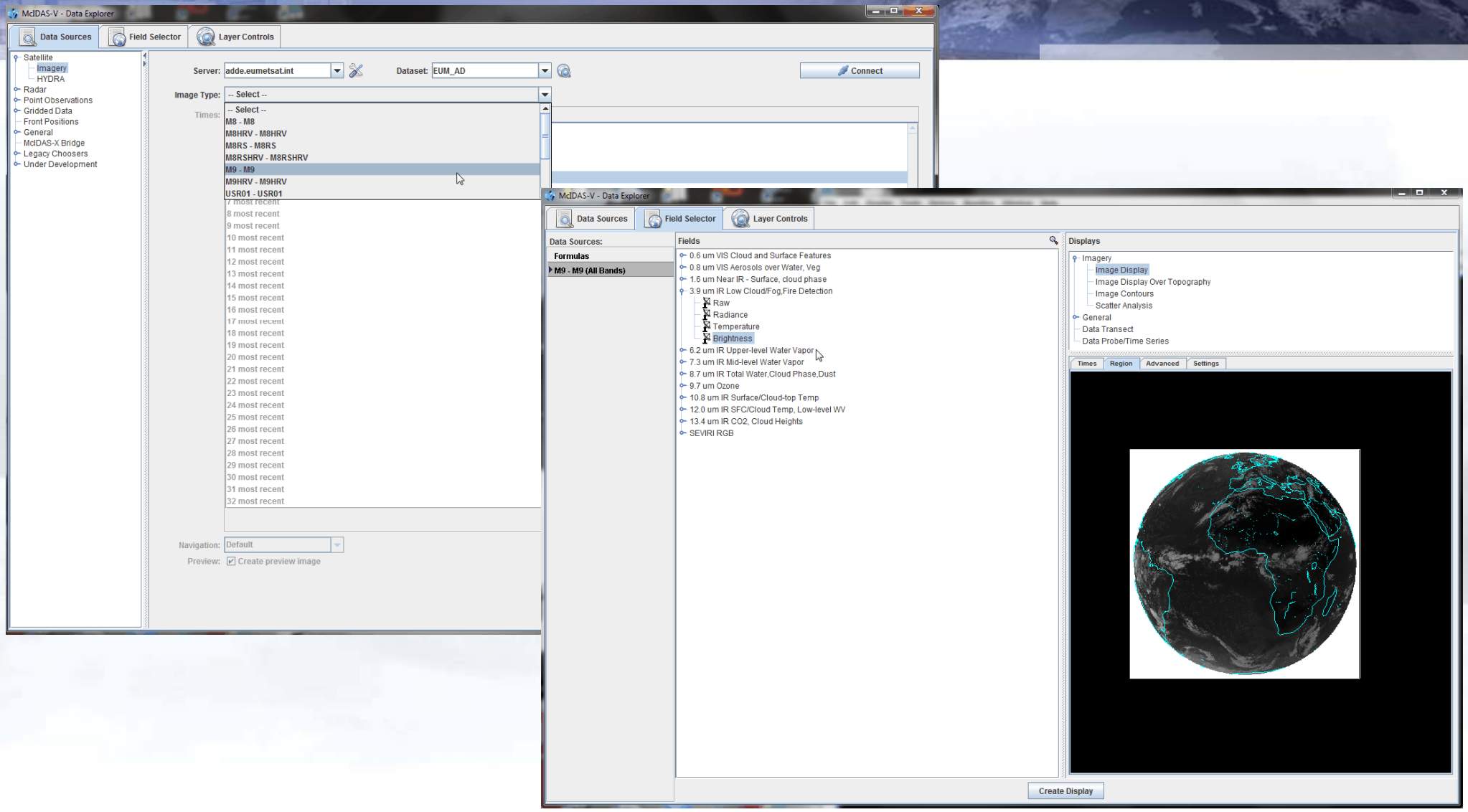
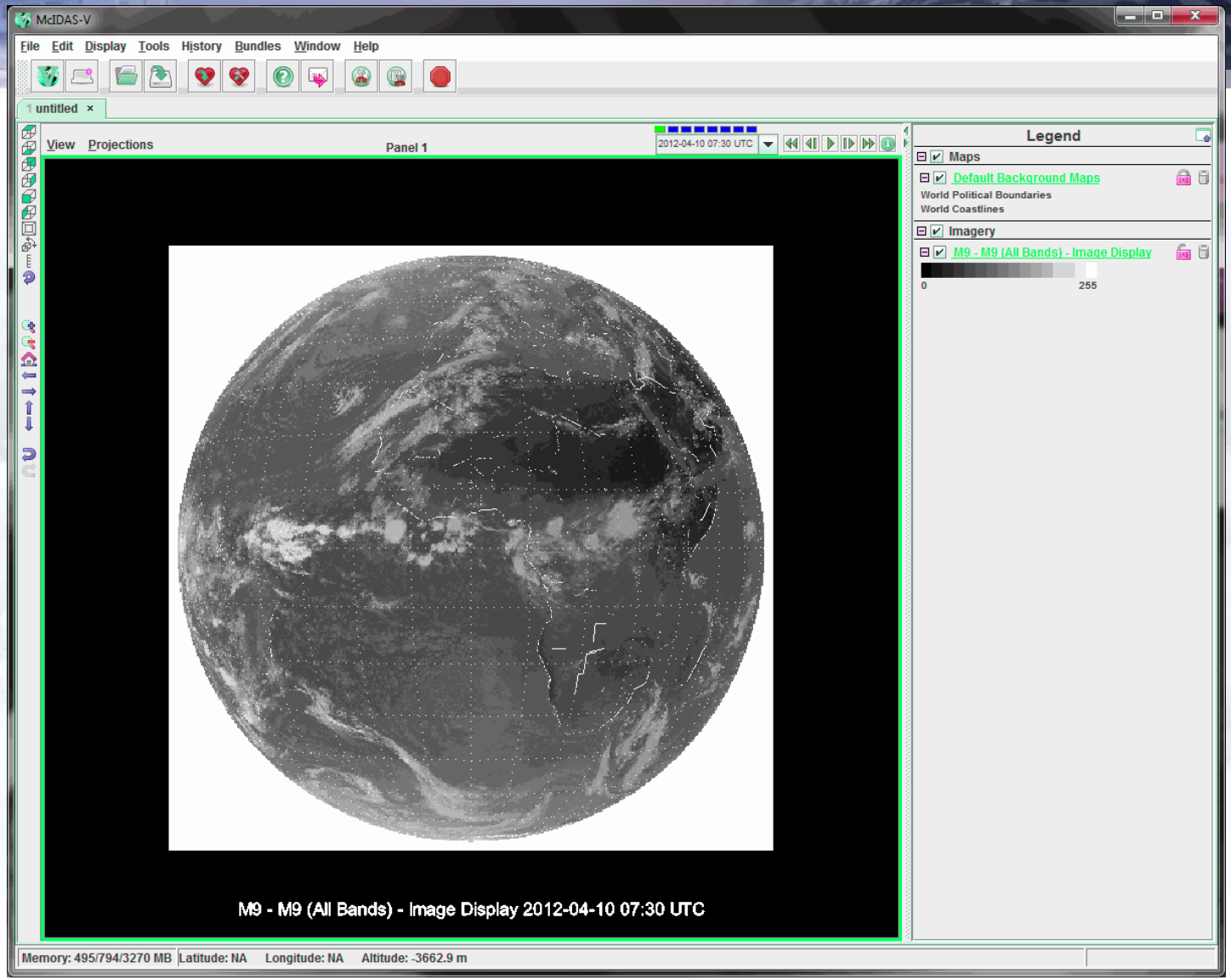


The EUMETSAT McIDAS ADDE Server (used for training)



EUMETSAT

The EUMETSAT McIDAS ADDE Server



EUMETSAT

User Service Division: Point of contact for User's feedback to improve all EUMETSAT Data Access Services (ops@eumetsat.int)

EUMETSAT

End of Presentation

Thank you for your Attention, questions ?

EUMETSAT URLs:

http://www.eumetsat.int

http://eoportal.eumetsat.int

http://navigator.eumetsat.int

http://adde.eumetsat.int