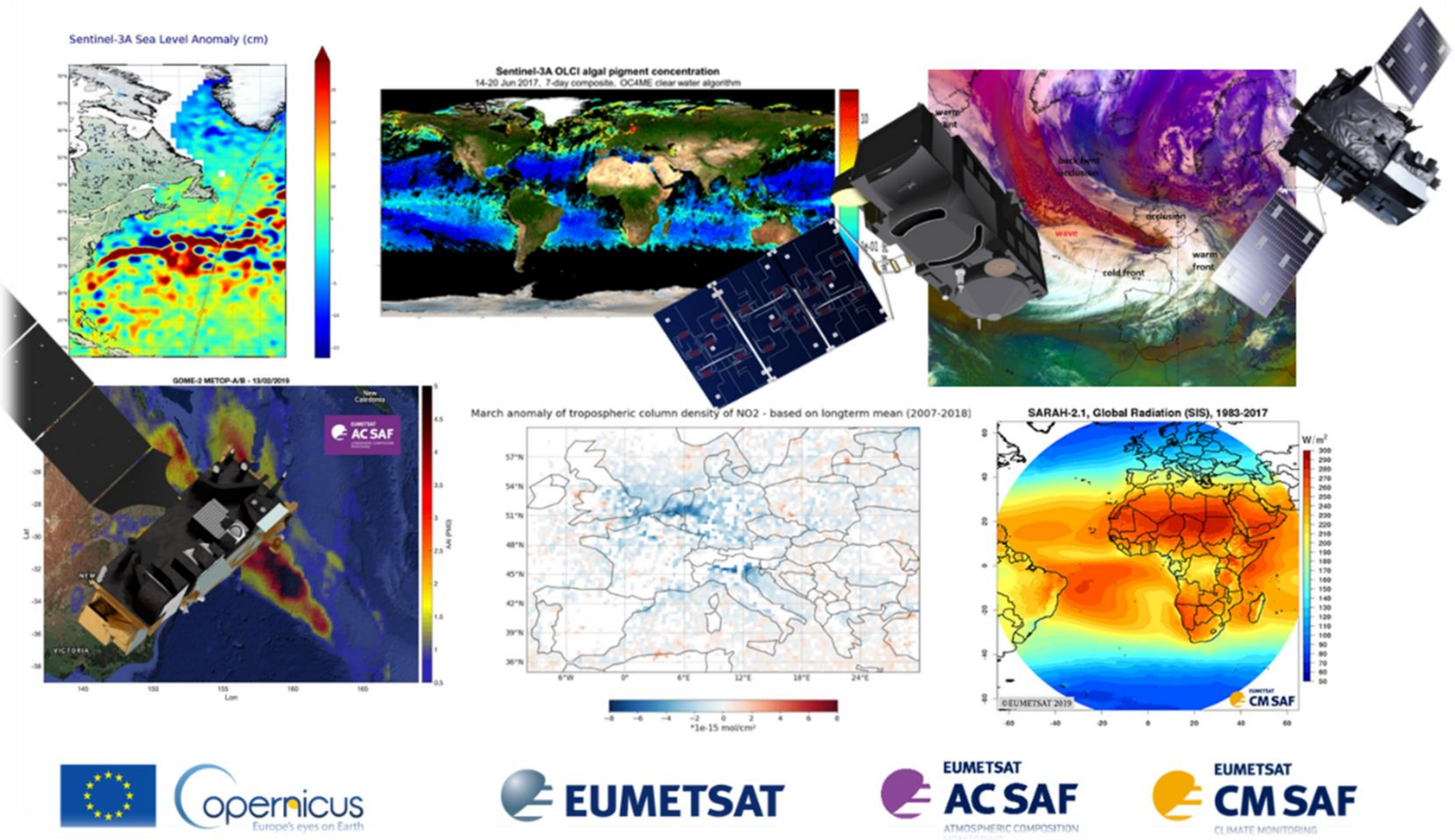
Welcome to the 12th short online course in the series
The session will begin at 12 UTC



If you have technical issues, please send a message in the chat box to **Support**.

For **Q&A**: go to Slido.com – event code: **#EUMSC12**

Upcoming Short Courses

- **24 March 2021, 12:00 UTC** - **How to build a case study – a demo session FOLLOW-UP** with Ivan Smiljanic and Natasa Strelec Mahovic

- **14 April 2021, 12:00 UTC - The Temperature of the Sea**, with Lauren Biermann and Christine Träger-Chatterjee

- **12 May 2021, 12:00 UTC** - **Spot atmospheric convection from satellite,** with Natasa Strelec Mahovic and Ivan Smiljanic

- More to come …

https://training.eumetsat.int/
→ Events → Short Courses

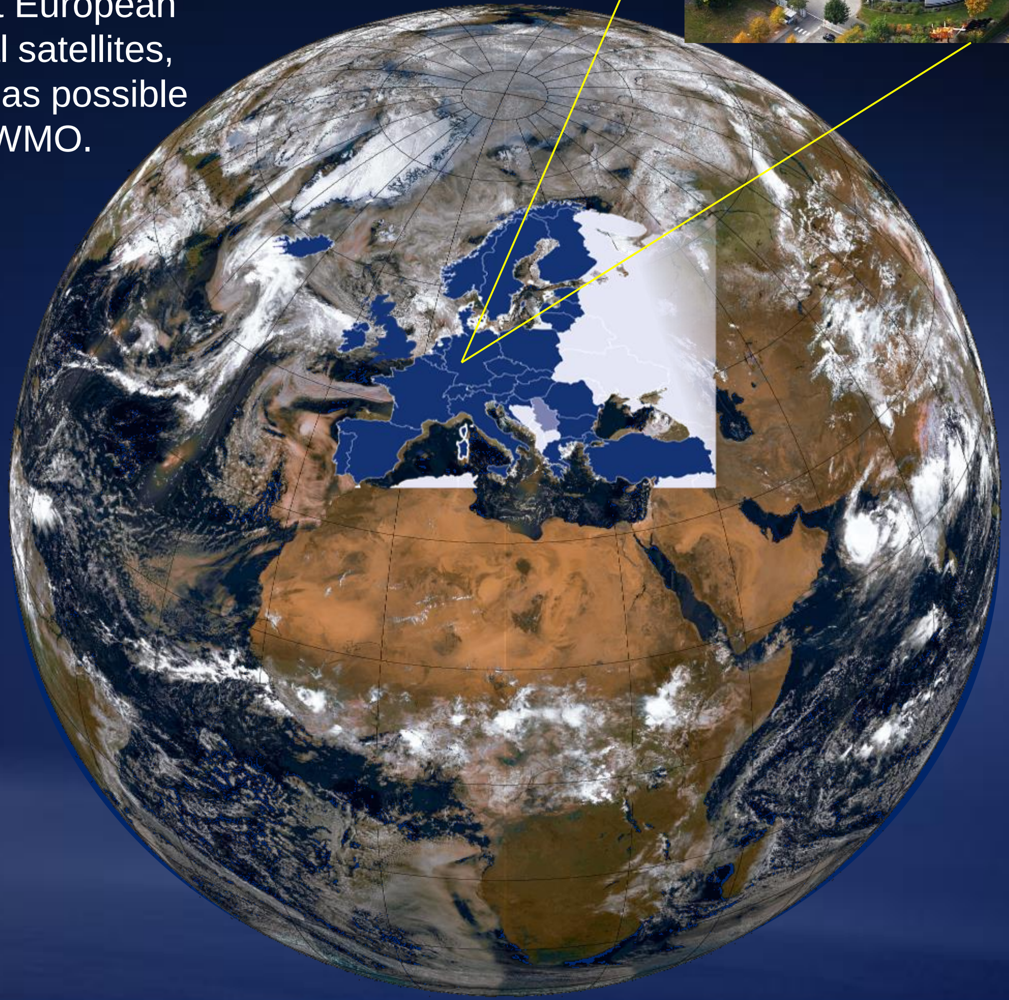
EUMETSAT is an intergovernmental Organization

Member States

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.



Current EUMETSAT Satellites

METOP-A, -B, & -C [redacted]

LOW EARTH, SUN-SYNCHRONOUS ORBIT

EUMETSAT POLAR SYSTEM (EPS)

SENTINEL-3 A & B [redacted]

LOW EARTH, SUN-SYNCHRONOUS ORBIT

COPERNICUS SENTINEL-3 MARINE MISSION

JASON-2 & -3, Sentinel-6

LOW EARTH, NON-SYNCHRONOUS ORBIT

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

METEOSAT-8 [redacted]

GEOSTATIONARY ORBIT

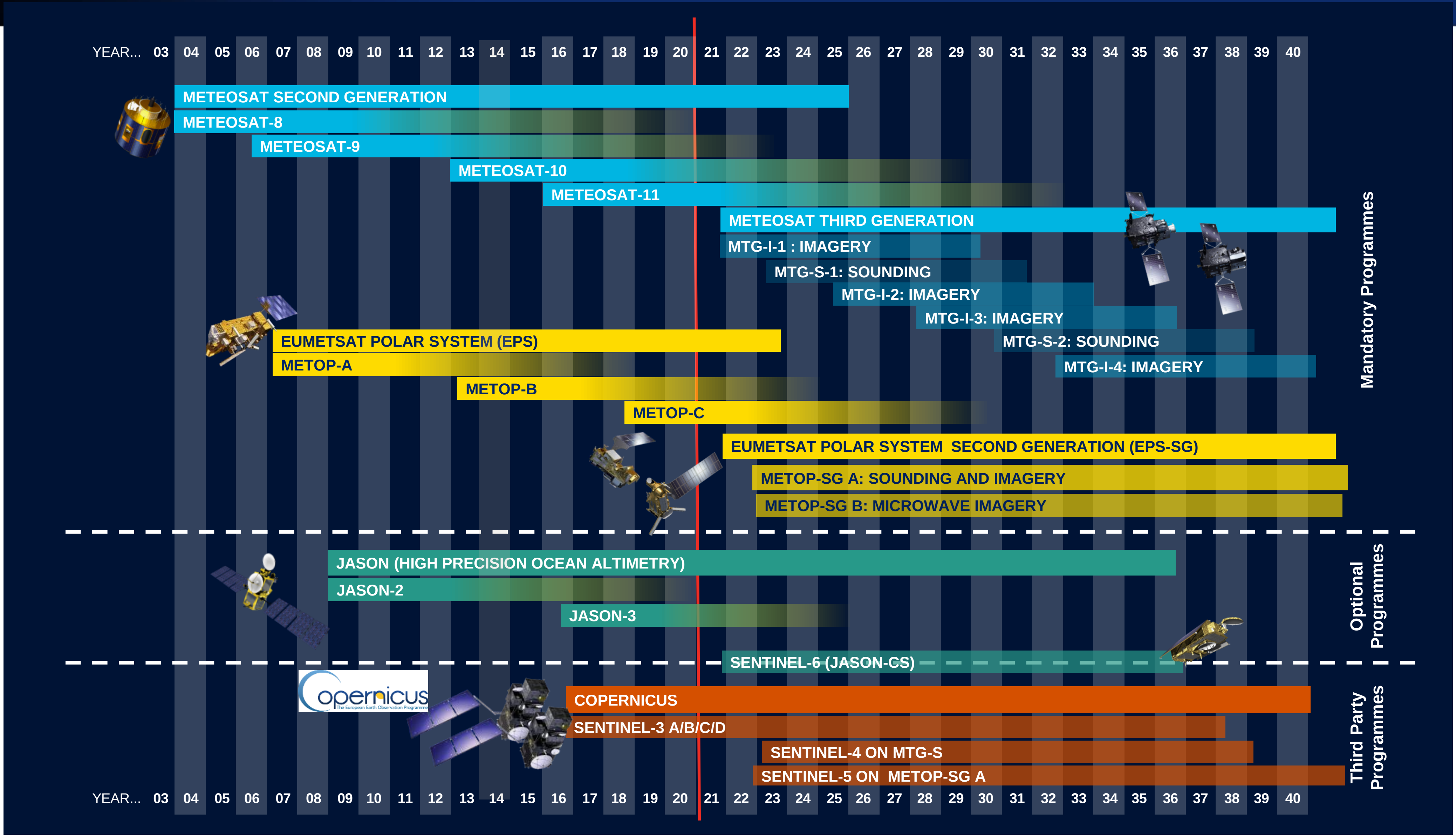
METEOSAT 2ND GENERATION IODC SERVICE UNTILL AT LEAST MID-2020

METEOSAT-9, -10, -11 [redacted]

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 committed to more & better observations until 2040



Course Program

12:00 UTC	**Welcome and Introduction**
12:05 UTC	**How to build a case study**
12:45 UTC	**Q&A and Wrap Up**
Wed, 24 March, 12:00 UTC	**Follow-up session**

Discussion Q&A on: slido.com #EUMSC12

Course Material: https://training.eumetsat.int/course/view.php?id=397

If you have technical issues, please send a message in the chat box to **Support**.
For **Q&A**: go to Slido.com – event code: **#EUMSC12**

EUMETSAT Short Courses:
How to build a case study?

17 March 2021

Natasa Strelec Mahovic and Ivan Smiljanic,
EUMETSAT

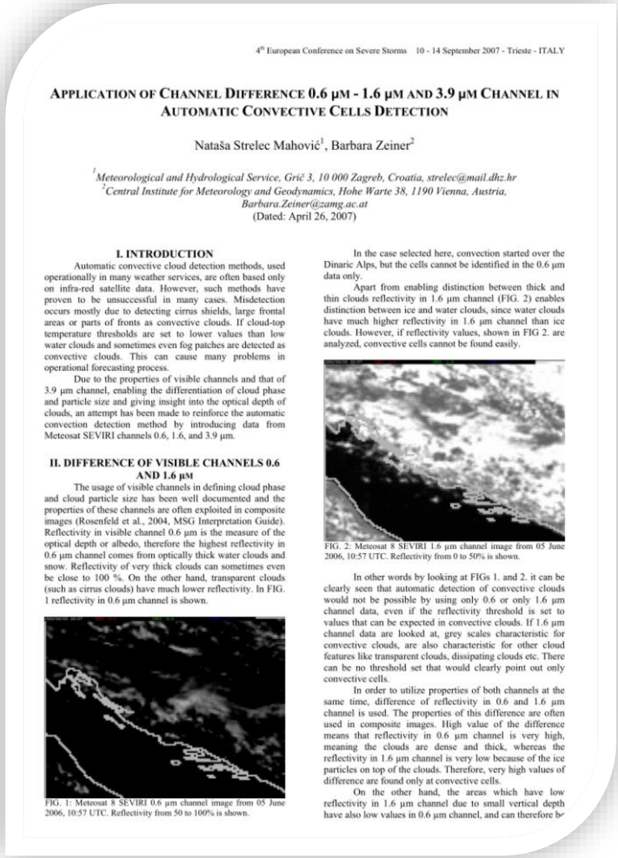
Important questions

- What is a case study (CS)?
- What is it good for?
- Who does CSs?
- …
- …
- …
- **How to do it?**

What is a case study?

What is a case study

< Anything from a Twitter post to a scientific paper >



4th European Conference on Severe Storms 10 - 14 September 2007 - Trieste - ITALY

APPLICATION OF CHANNEL DIFFERENCE 0.6 µM - 1.6 µM AND 3.9 µM CHANNEL IN AUTOMATIC CONVECTIVE CELLS DETECTION

Nataša Strelec Mahović[1], Barbara Zeiner[2]

[1] *Meteorological and Hydrological Service, Grič 3, 10 000 Zagreb, Croatia, strelec@mail.dhz.hr*
[2] *Central Institute for Meteorology and Geodynamics, Hohe Warte 38, 1190 Vienna, Austria, Barbara.Zeiner@zamg.ac.at*
(Dated: April 26, 2007)

I. INTRODUCTION

Automatic convective cloud detection methods, used operationally in many weather services, are often based only on infra-red satellite data. However, such methods have proven to be unsuccessful in many cases. Misdetection occurs mostly due to detecting cirrus shields, large frontal areas or parts of fronts as convective clouds. If cloud-top temperature thresholds are set to lower values than low water clouds and sometimes even fog patches are detected as convective clouds. This can cause many problems in operational forecasting process.

Due to the properties of visible channels and that of 3.9 µm channel, enabling the differentiation of cloud phase and particle size and giving insight into the optical depth of clouds, an attempt has been made to reinforce the automatic convection detection method by introducing data from Meteosat SEVIRI channels 0.6, 1.6, and 3.9 µm.

II. DIFFERENCE OF VISIBLE CHANNELS 0.6 AND 1.6 µM

The usage of visible channels in defining cloud phase and cloud particle size has been well documented and the properties of these channels are often exploited in composite images (Rosenfeld et al., 2004, MSG Interpretation Guide). Reflectivity in visible channel 0.6 µm is the measure of the optical depth or albedo, therefore the highest reflectivity in 0.6 µm channel comes from optically thick water clouds and snow. Reflectivity of very thick clouds can sometimes even be close to 100 %. On the other hand, transparent clouds (such as cirrus clouds) have much lower reflectivity. In FIG. 1 reflectivity in 0.6 µm channel is shown.

FIG. 1: Meteosat 8 SEVIRI 0.6 µm channel image from 05 June 2006, 10:57 UTC. Reflectivity from 50 to 100% is shown.

In the case selected here, convection started over the Dinaric Alps, but the cells cannot be identified in the 0.6 µm data only.

Apart from enabling distinction between thick and thin clouds reflectivity in 1.6 µm channel (FIG. 2) enables distinction between ice and water clouds, since water clouds have much higher reflectivity in 1.6 µm channel than ice clouds. However, if reflectivity values, shown in FIG 2. are analyzed, convective cells cannot be found easily.

FIG. 2: Meteosat 8 SEVIRI 1.6 µm channel image from 05 June 2006, 10:57 UTC. Reflectivity from 0 to 50% is shown.

In other words by looking at FIGs 1. and 2. it can be clearly seen that automatic detection of convective clouds would not be possible by using only 0.6 or only 1.6 µm channel data, even if the reflectivity threshold is set to values that can be expected in convective clouds. If 1.6 µm channel data are looked at, grey scales characteristic for convective clouds, are also characteristic for other cloud features like transparent clouds, dissipating clouds etc. There can be no threshold set that would clearly point out only convective cells.

In order to utilize properties of both channels at the same time, difference of reflectivity in 0.6 and 1.6 µm channel is used. The properties of this difference are often used in composite images. High value of the difference means that reflectivity in 0.6 µm channel is very high, meaning the clouds are dense and thick, whereas the reflectivity in 1.6 µm channel is very low because of the ice particles on top of the clouds. Therefore, very high values of difference are found only at convective cells.

On the other hand, the areas which have low reflectivity in 1.6 µm channel due to small vertical depth have also low values in 0.6 µm channel, and can therefore be

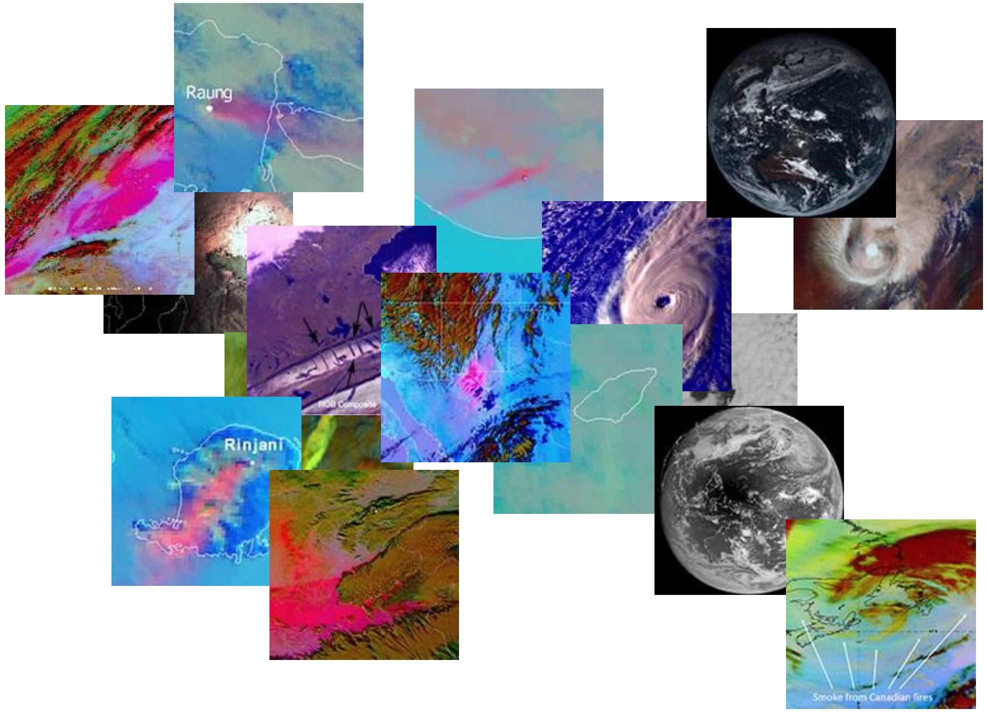
What is a case study

- “*A* ***case study*** *involves an up-close, in-depth, and detailed examination of a particular case or cases, within a real-world context.*” – Wikipedia

- Or - a case-based story telling (scientific research) about different:
  - Conceptual models in Earth-Atmosphere system
  - Satellite system capabilities
  - Data and product utility
  - Particular weather event of high impact/interest
  - Climate (change) description
  - …

What is a case study

- EUMETSAT Case Study Library



What is a case study

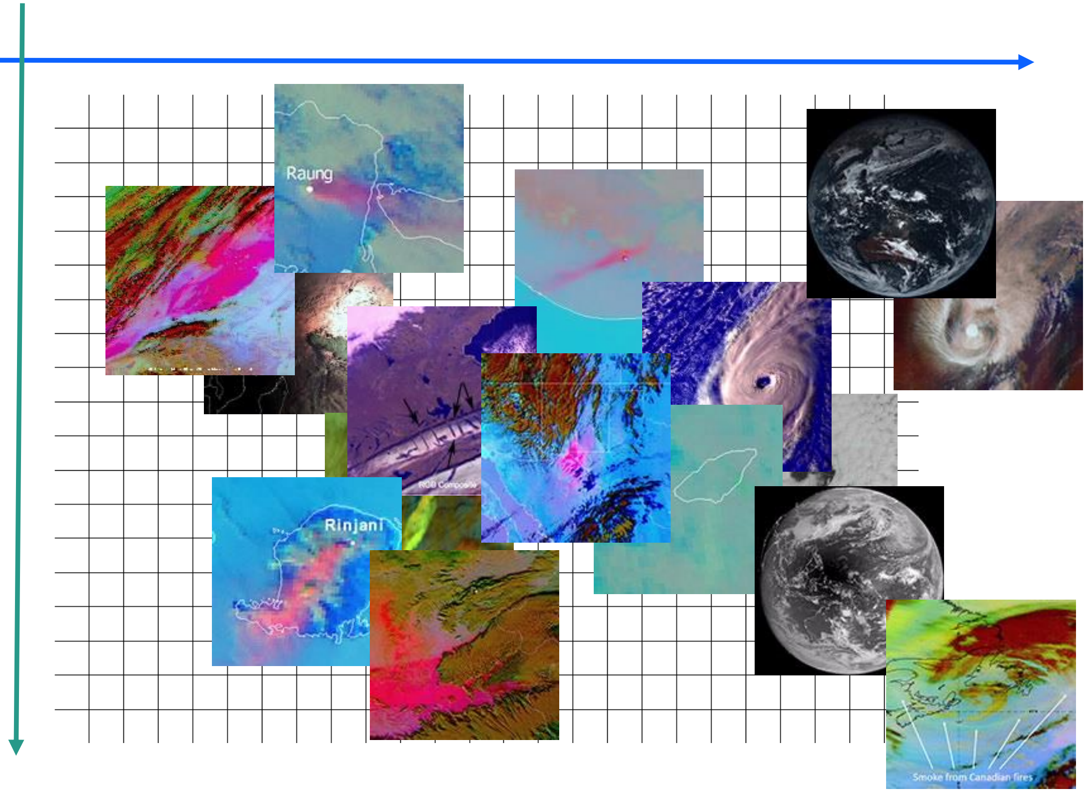
- EUMETSAT Case Study Library

PRODUCT

Absorbing Aerosol Index
ASCAT Winds
Atmospheric Motion Vectors
Ash Mass
Automatic Satellite Image Interpretation
Cloud Droplet Effective Radius
Cloud Optical Thickness
Cloud Phase RGB
Cloud Top Height
Convection RGB
Day Microphysics
Day-Night Band (DNB)
Dust RGB
Global Instability Index
High resolution Visible (HRV)
Ice Cover
Land Surface Temperature
Multisensor Precipitation Estimate
Night Microphysics RGB
Nitrogen Dioxide
…

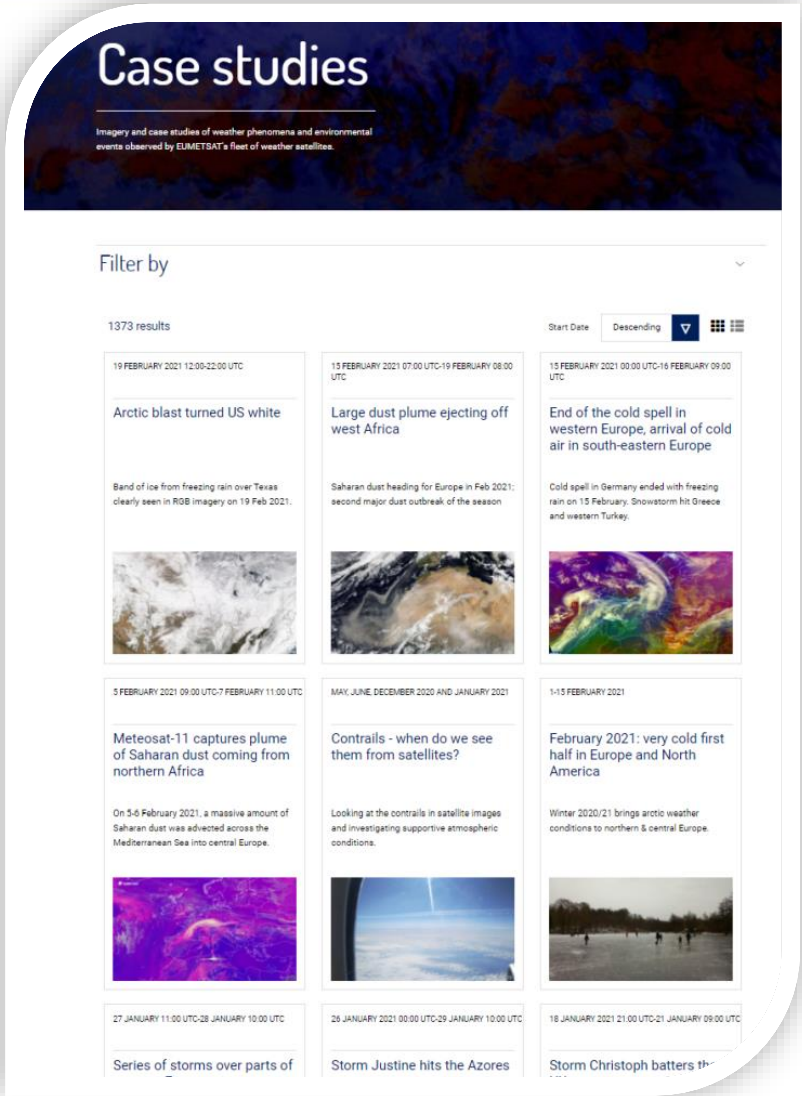
FEATURE

Aerosol
Airmass Boundary
Algae Blooms
Asteroid
Atmospheric Pollution
Atmospheric River
Aurora borealis
Bora
Burned Area
Cirrus
Climate Monitoring
Cloud deck
Convergence Line
Cumulus
Cyclogenesis
Extratropical transition
Fire
Foehn
…



What is a case study

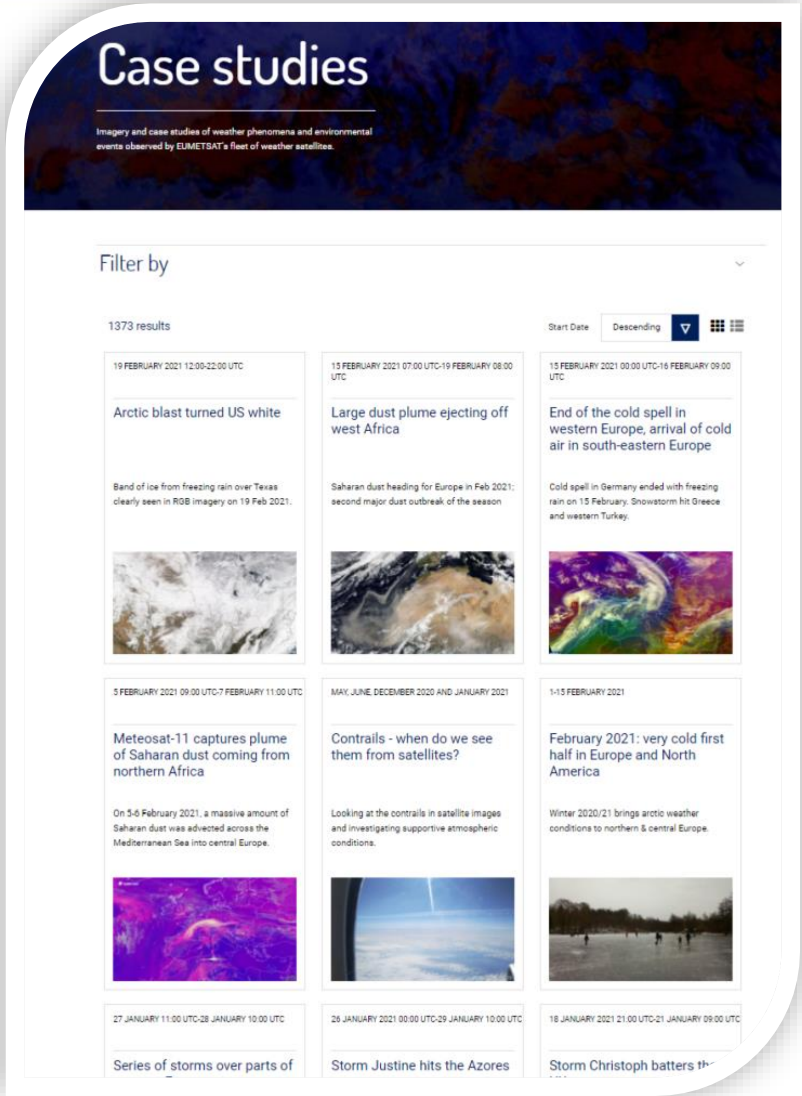
- EUMETSAT Case Study Library



> https://www.eumetsat.int/case-studies

What is a case study

- EUMETSAT Case Study Library



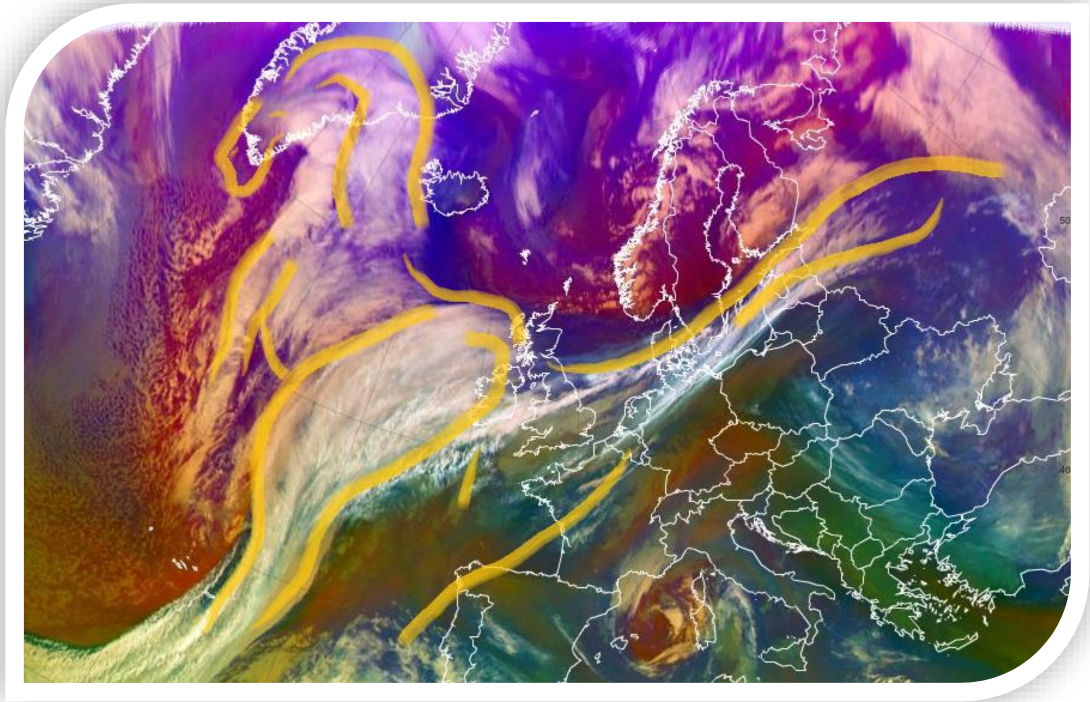
Check **examples here**

> https://www.eumetsat.int/case-studies

What is a CS good for?

What is a case study good for

- Multiple (hidden) reasons:
  - handling data
  - defining/tuning tools
  - revealing physics
  - defining advantages and constrains
  - comparing instruments
  - redefining needs
  - develop ‘feeling’ for data
  - expand knowledge
  - inventing
  - networking
  - user training
  - …
  - have fun



Who does the CSs?

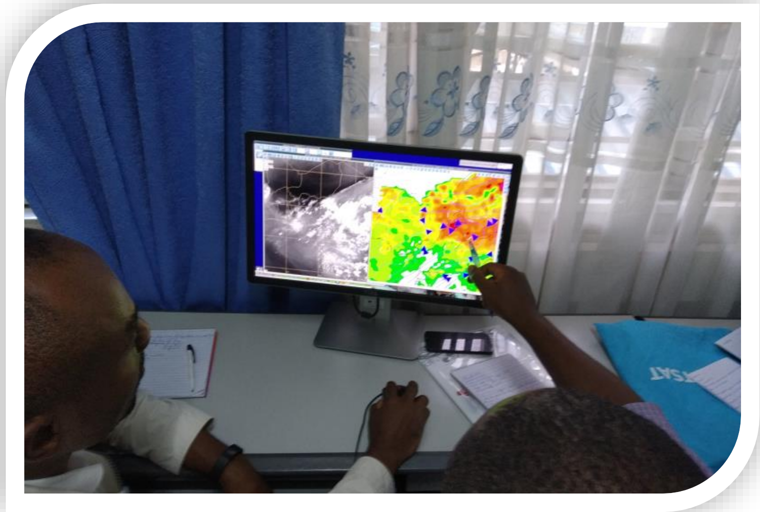
Who does the CSs

You

How do we make the CSs?

How do we make the CSs

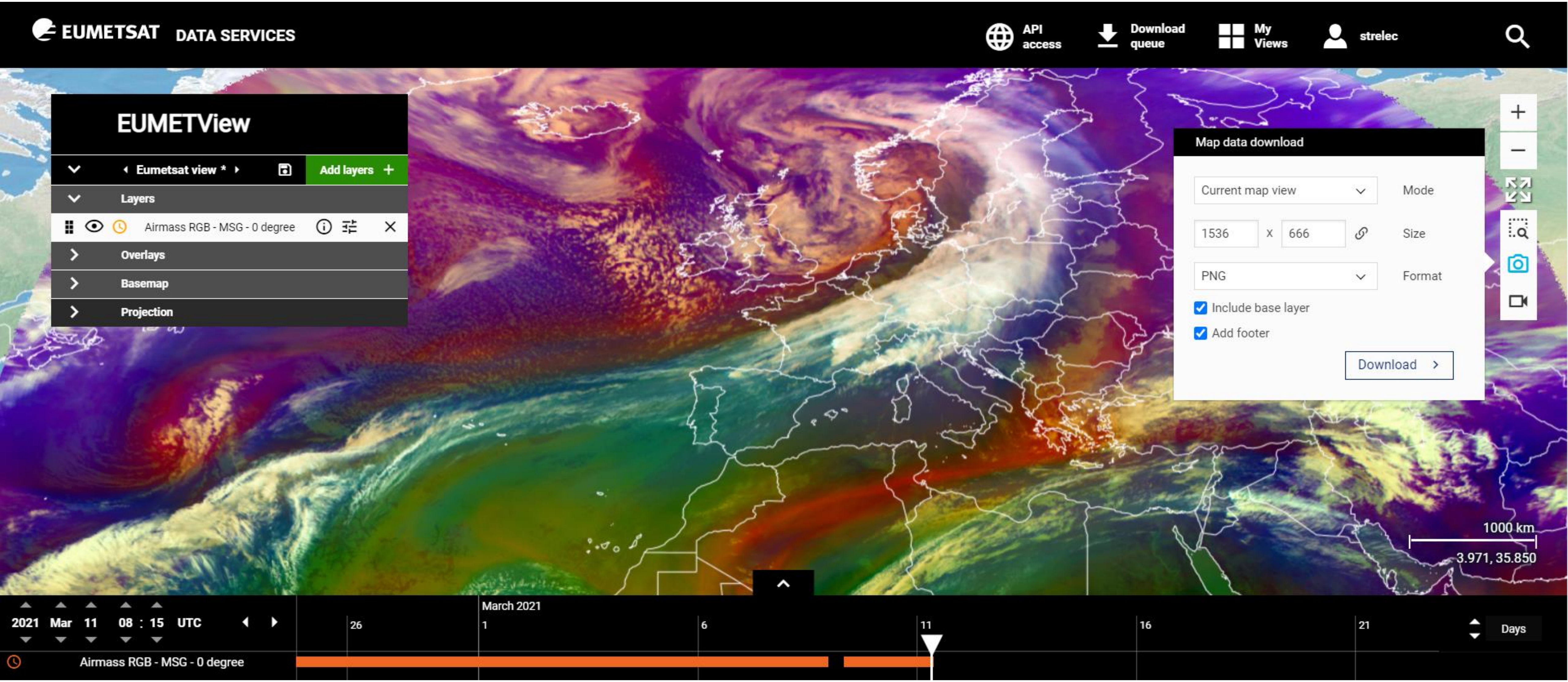
1. Idea
2. Data exploration
3. Expert collaboration
4. Revision
5. Web publication



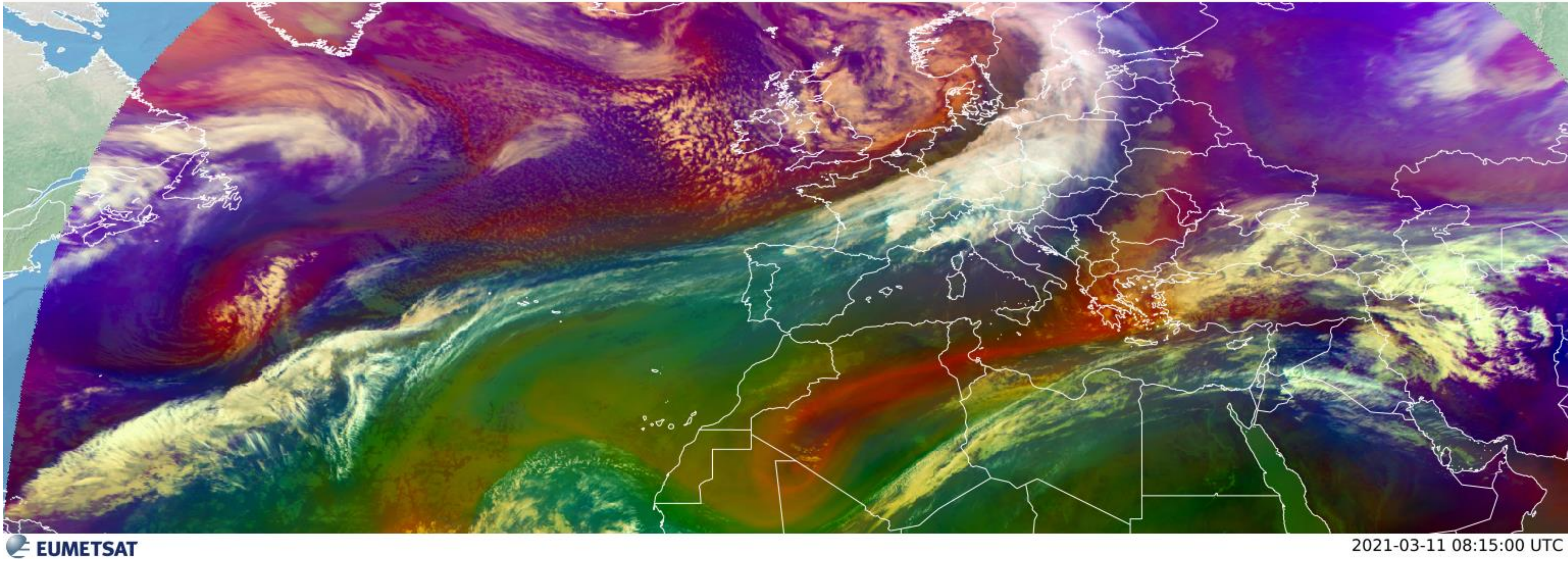
How do we make the CSs – data, tools, resources

- Where do we get data and how ?
- Which tools we can use for visualisation?
- Training resources: Satmanu, Quick Guides, Cheat-sheets, Colour interpretation guides
- Which expert group to consult ?
- Info sources: WMO Saturn and Oscar …

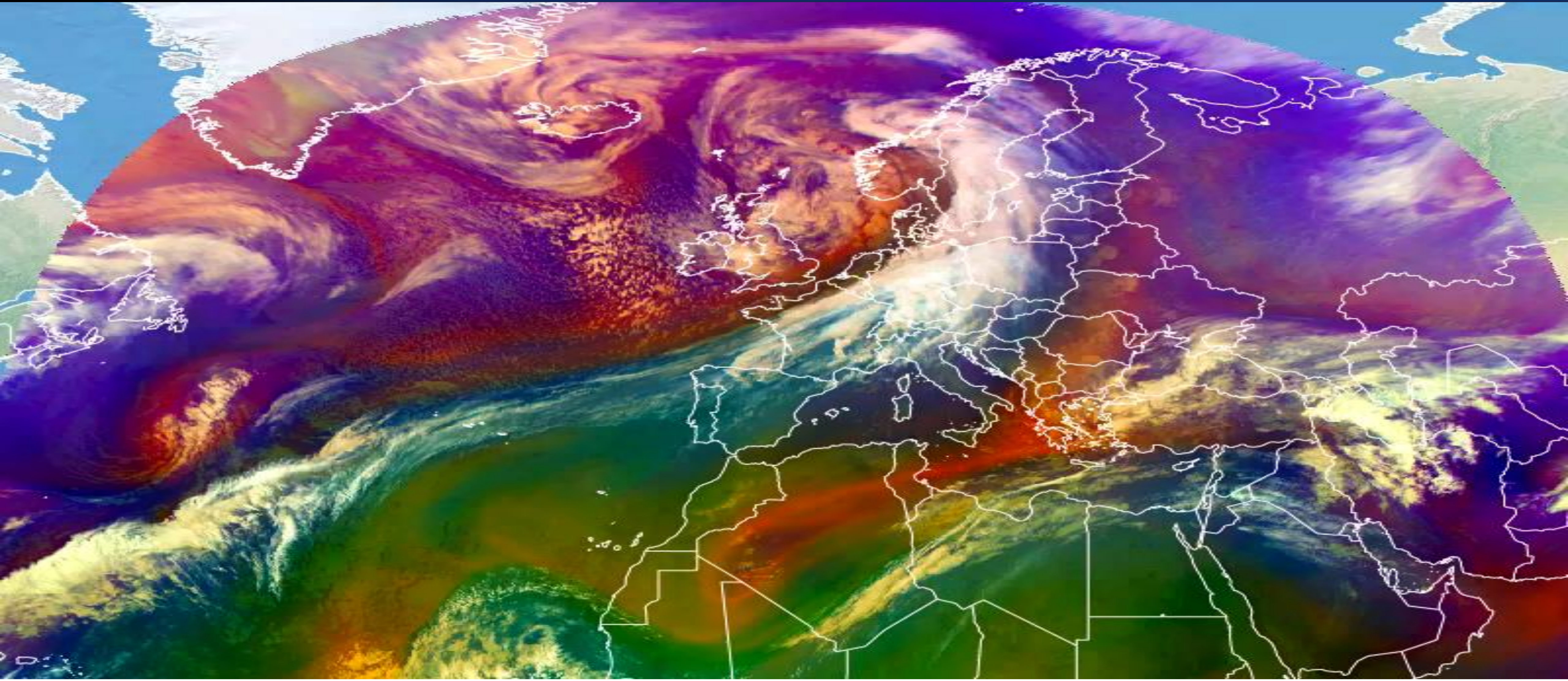
Getting the data – images https://view.eumetsat.int



Getting the data – images https://view.eumetsat.int



Getting the data – images https://view.eumetsat.int



Getting the data – images https://view.eumetsat.int

Current data collections

METOP

AVHRR RADIOMETRY PRODUCTS

EUMETSAT OSI SAF OCEAN AND SEA ICE

SST PRODUCTS

WIND PRODUCTS

MFG/MSG

MSG SEVIRI RADIOMETRY PRODUCTS

MSG CLOUD MASK PRODUCTS

EUMETSAT H SAF SUPPORT TO OPERATIONAL HYDROLOGY AND WATER MANAGEMENT

PRECIP. PRODUCTS

SENTINEL-3A / 3B

SLSTR RADIOMETRY PRODUCTS

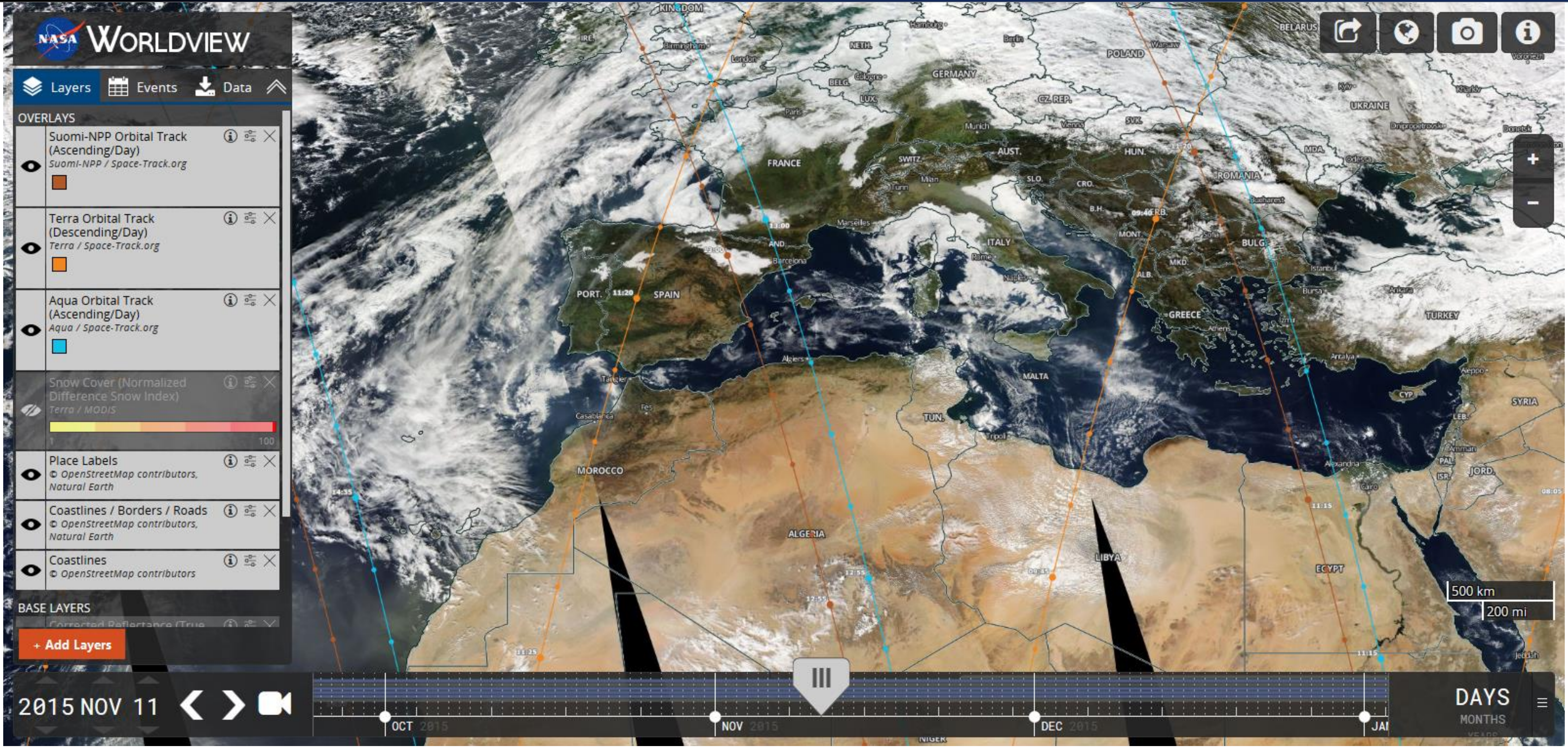
OLCI RADIOMETRY PRODUCTS

European Commission

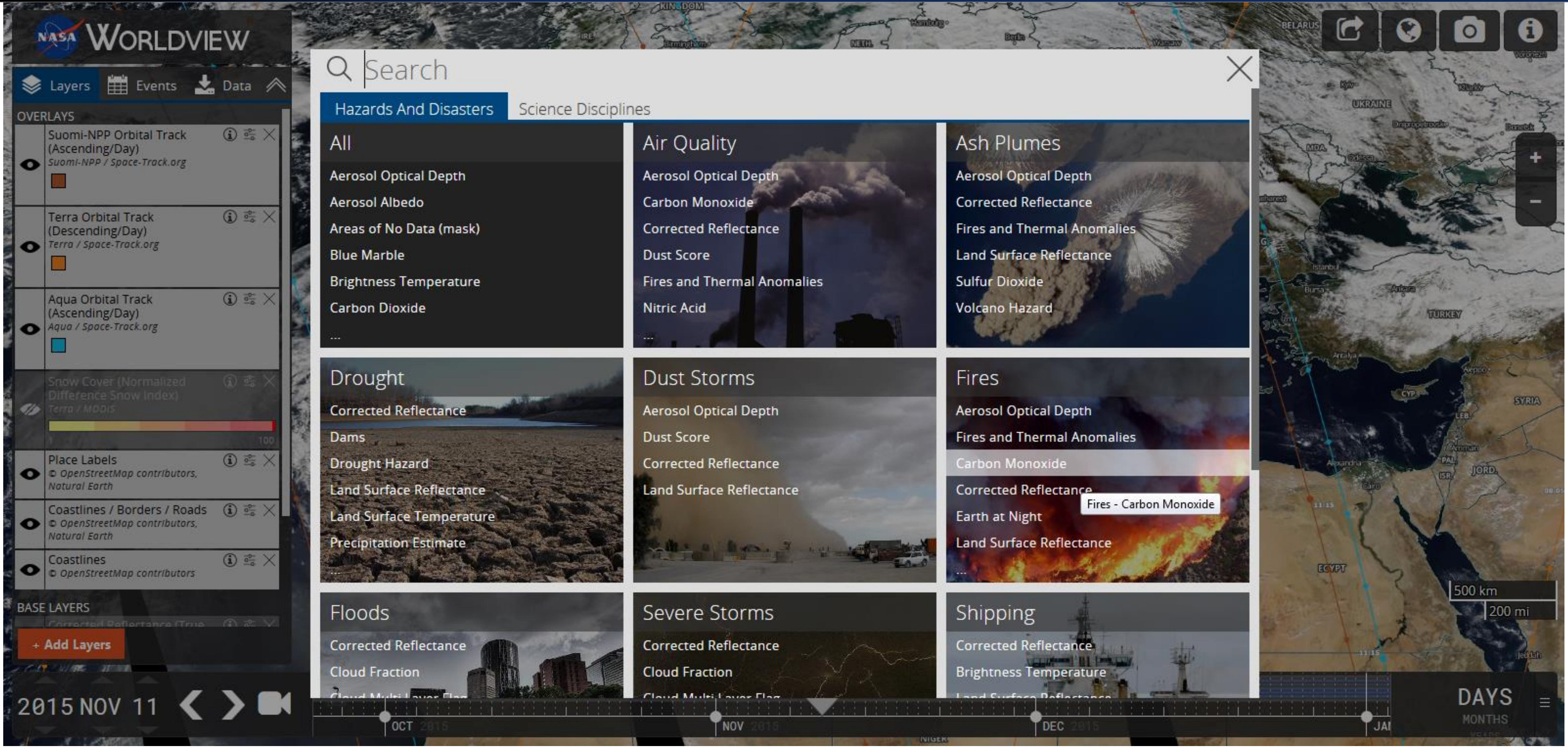
Copernicus Europe's eyes on Earth

Product	Platform	OGC Service
Metop AVHRR RGB Clouds (accumulated orbits)	Metop A, B, C	WMS
Metop AVHRR Natural Colour + Fog (accumulated orbits)	Metop A, B, C	WMS
Metop AVHRR IR 10.8	Metop A, B, C	WMS
Global AVHRR SST	Metop B	WMS, WCS
ASCAT L2 Coastal Winds at 12.5 km	Metop A, B, C	WMS, WFS
Meteosat single channel imagery (10.8, 3.9, 0.6, 6.2), RGB Day Microphysics; Ash; Dust; E-View, Fog, Convection, Natural Colour, Snow, Nat. Colour Enhanced, Airmass, Tropical Airmass.	0 deg., IODC	WMS
Meteosat single channel imagery (3.9), RGB Day Microphysics; Natural Colour, Nat. Colour Enhanced, Airmass, Tropical Airmass.	RSS	WMS
Visualised products; CTH, CLM, Active Fire	0 deg., IODC	WMS
Precipitation (MPE)	IODC	WMS
Precipitation (H03B)	0 deg.	WMS
Sentinel 3 OLCI L1 RGB orbits	Sentinel 3A & B	WMS
Sentinel 3 OLCL L2 CHL Concentration orbits	Sentinel 3A & B	WMS, WCS
Sentinel 3 SLSTR L2 SST orbits	Sentinel 3A & B	WMS, WCS
Sentinel 3 OLCI L1 RGB accumulated orbits over a day orbits	Sentinel 3A + B	WMS
Sentinel 3 OLCL L2 CHL Concentration accumulated orbits / day	Sentinel 3A + B	WMS, WCS
Sentinel 3 SLSTR L2 SST accumulated orbits / day	Sentinel 3A + B	WMS, WCS

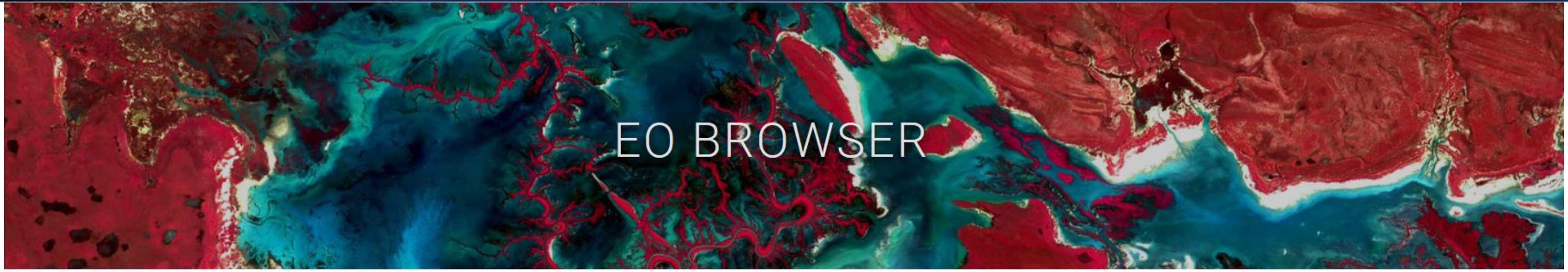
https://worldview.earthdata.nasa.gov



https://worldview.earthdata.nasa.gov

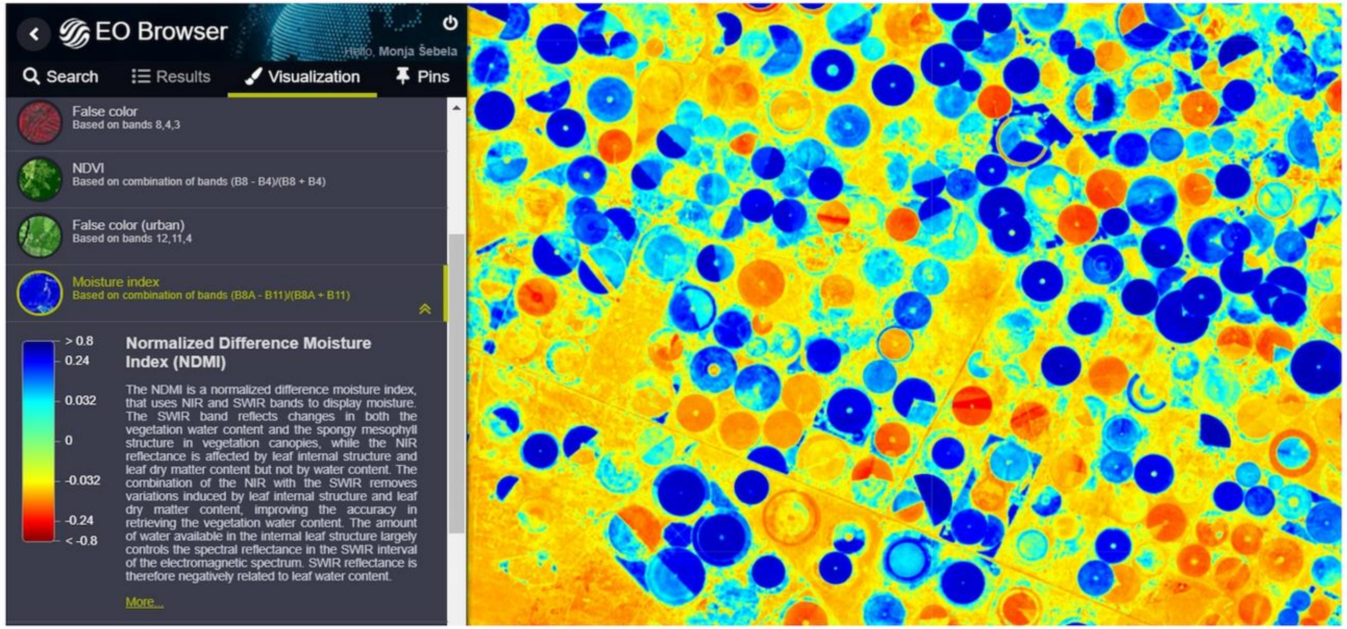


https://www.sentinel-hub.com/explore/eobrowser/

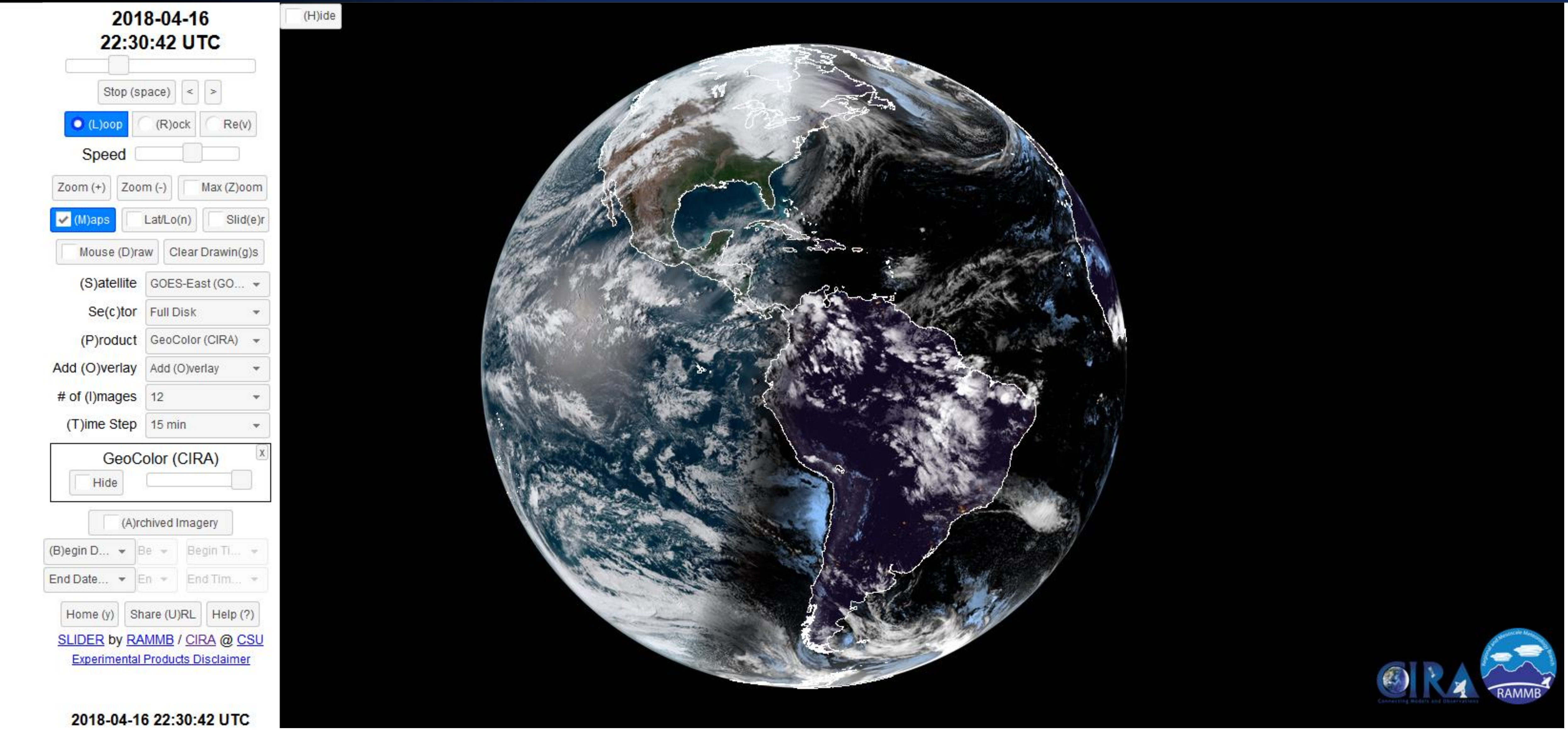


Custom Visualization

Satelite imagery in EO Browser can be visualized based on user's desired configuration. There are already several visualizations with legends and descriptions prepared for you, such as true color, false color, NDVI, EVI, etc.



http://rammb-slider.cira.colostate.edu/



New EUMETSAT Data Services

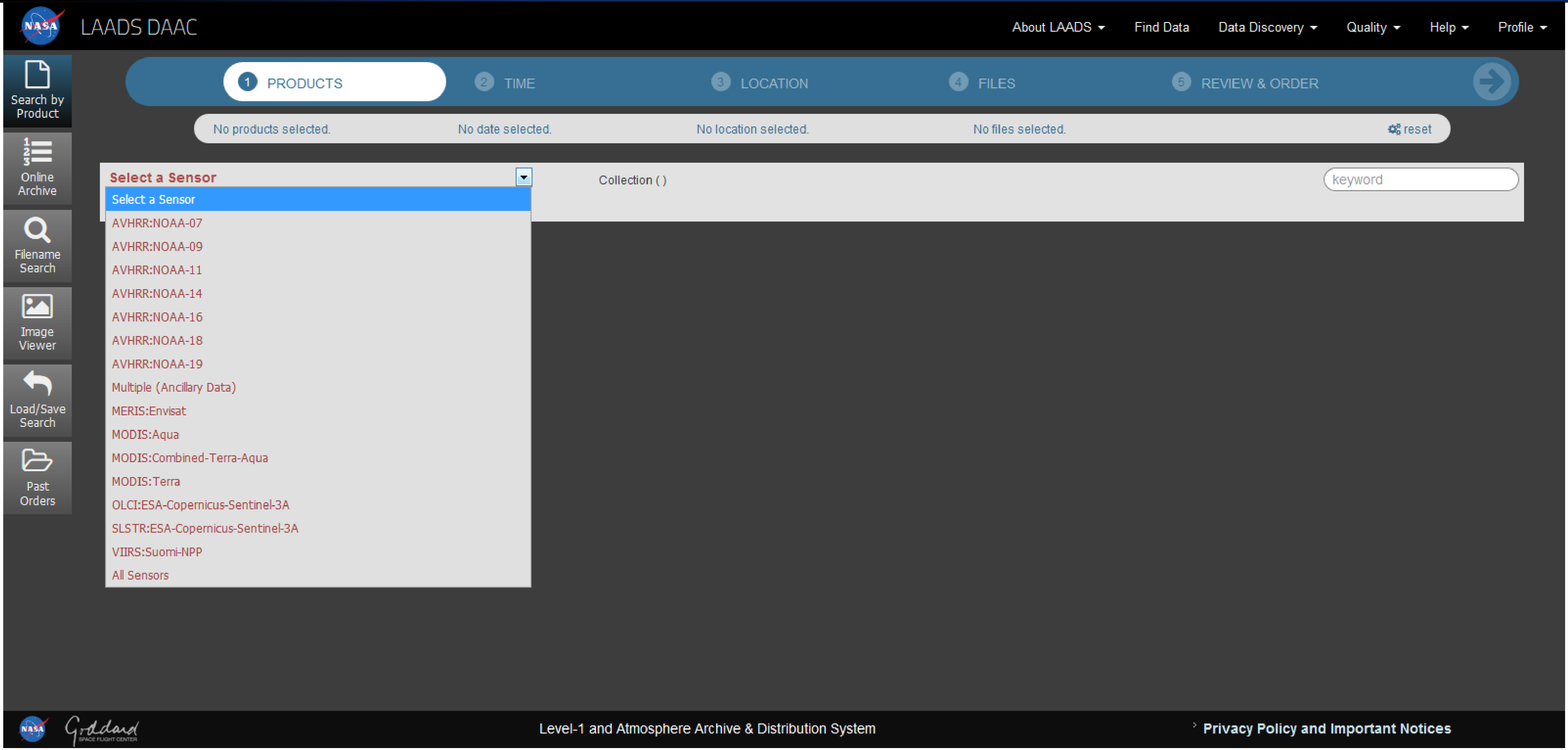
Data Store
Data Tailor

http://eumetrain.org/data/6/603/snow_ew_2021_s2c.pdf

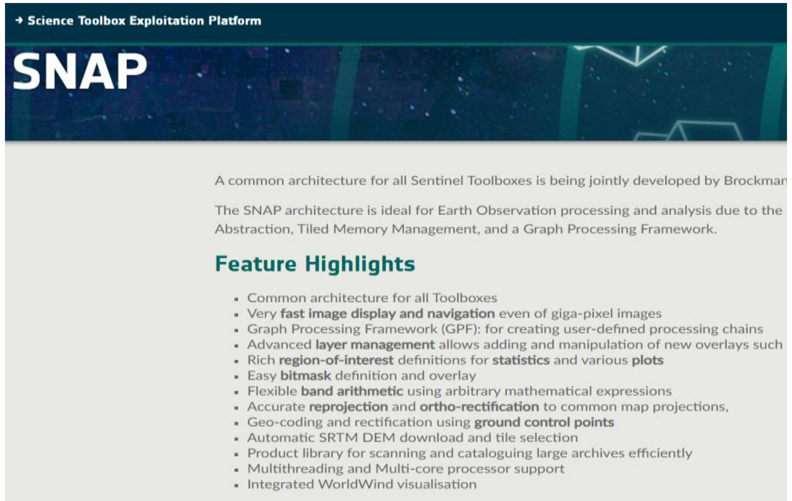
Knowledge base for services

EUMETSAT User Support - EUMETSAT Public Confluence (atlassian.net)

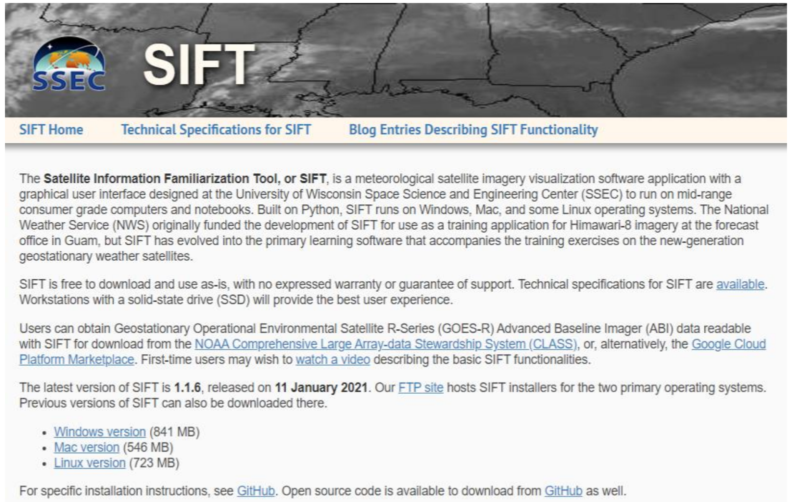
https://ladsweb.modaps.eosdis.nasa.gov/search/



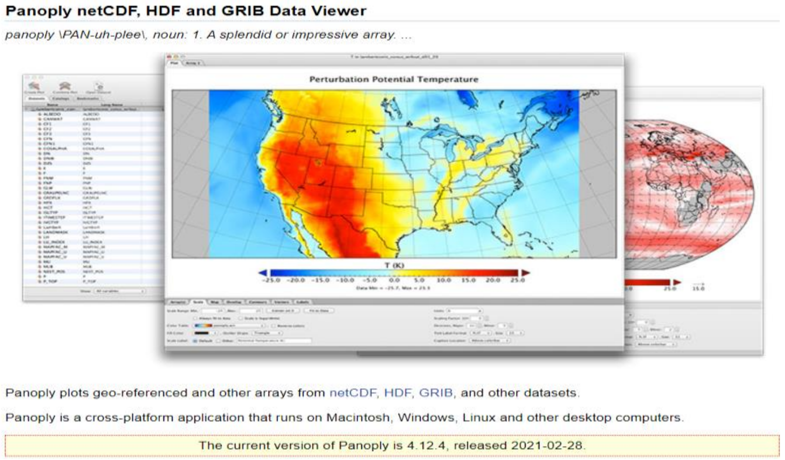
Visualization Software



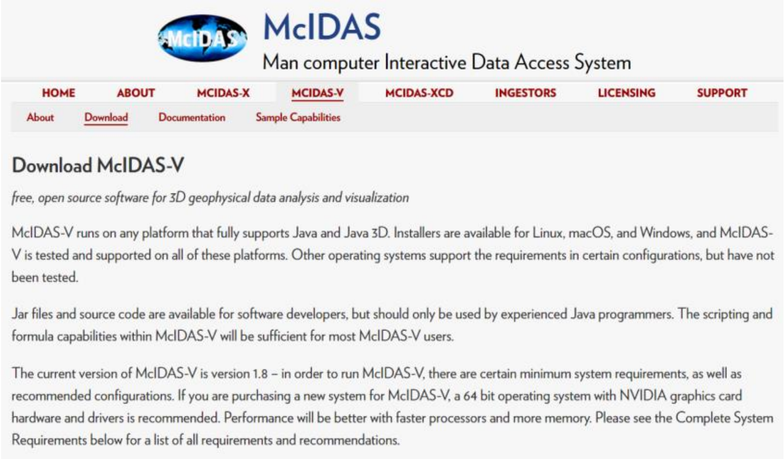
https://step.esa.int/main/toolboxes/snap/



http://sift.ssec.wisc.edu/

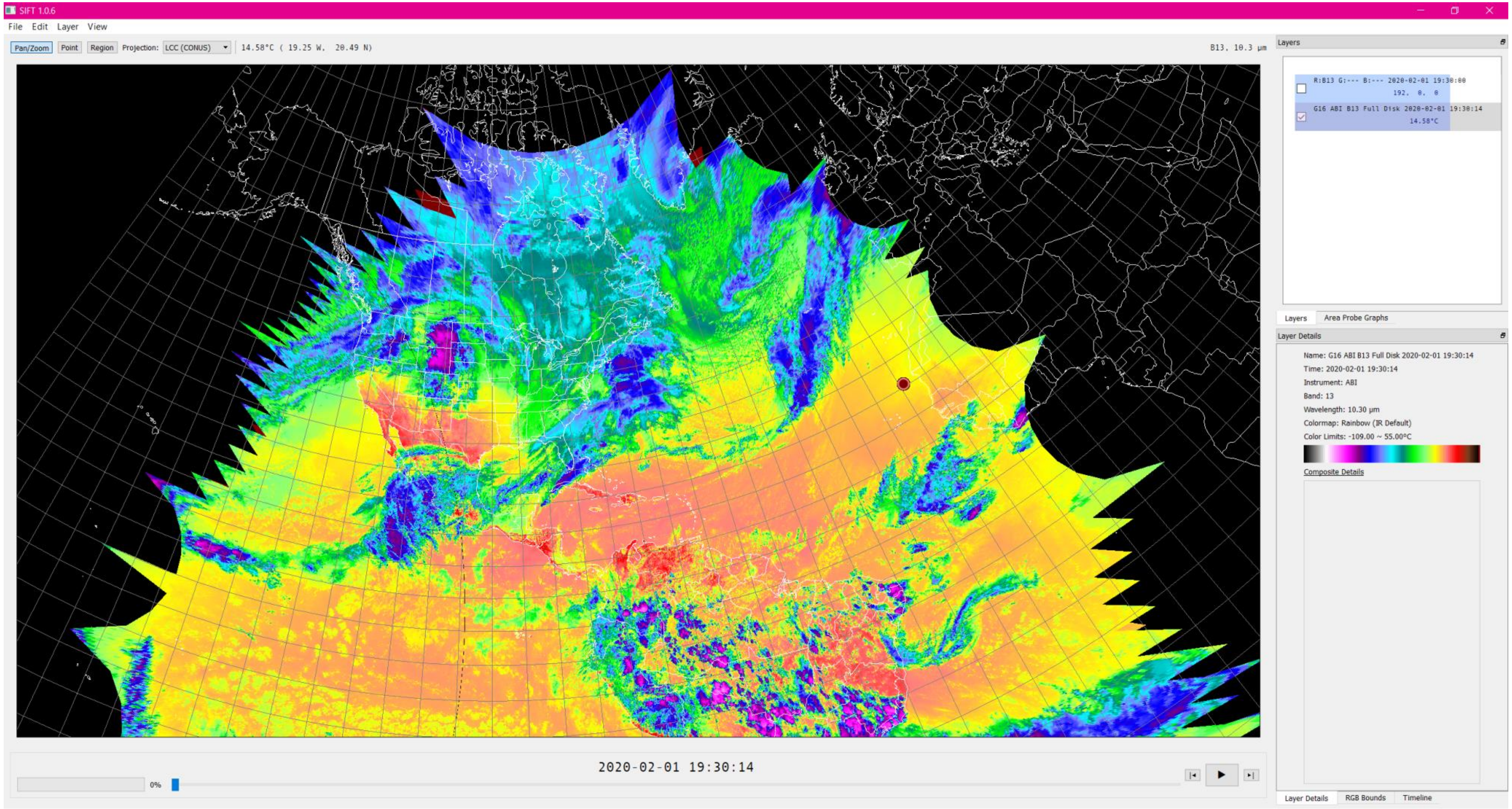


https://www.giss.nasa.gov/tools/panoply/



https://www.ssec.wisc.edu/mcidas/software/v/

Visualization Software - Example



Images + NWP model data http://eumetrain.org/e-port

EUMETRAIN

International training project sponsored by EUMETSAT
to support and increase the use of meteorological satellite data

Home | Resources | ePort | User Manual | Courses | Events | Image Gallery | MTG Training

ePort – JavaScript
ePort PRO

Home » ePort

ePort

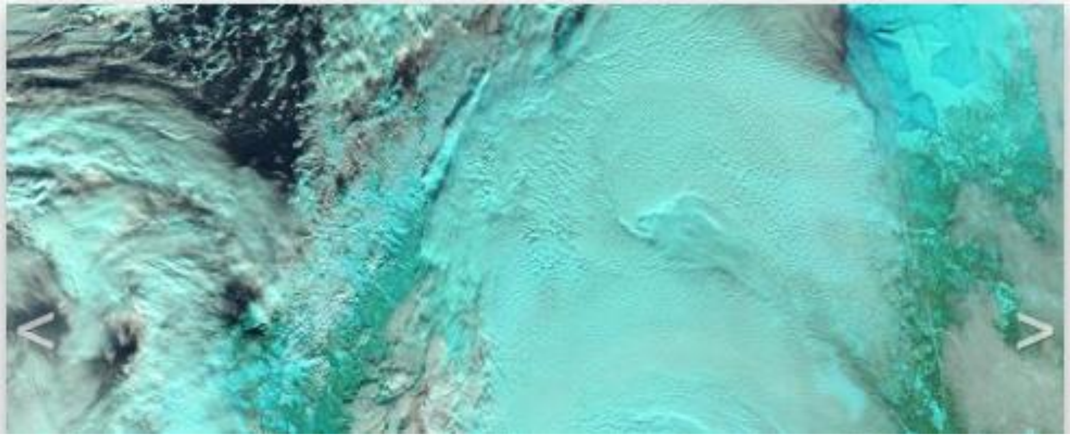
Concept of ePort

ePort is a product of EUMeTrain which has been developed to allow you to combine a range of EUMETSAT satellite images with satellite derived products and numerical model fields.

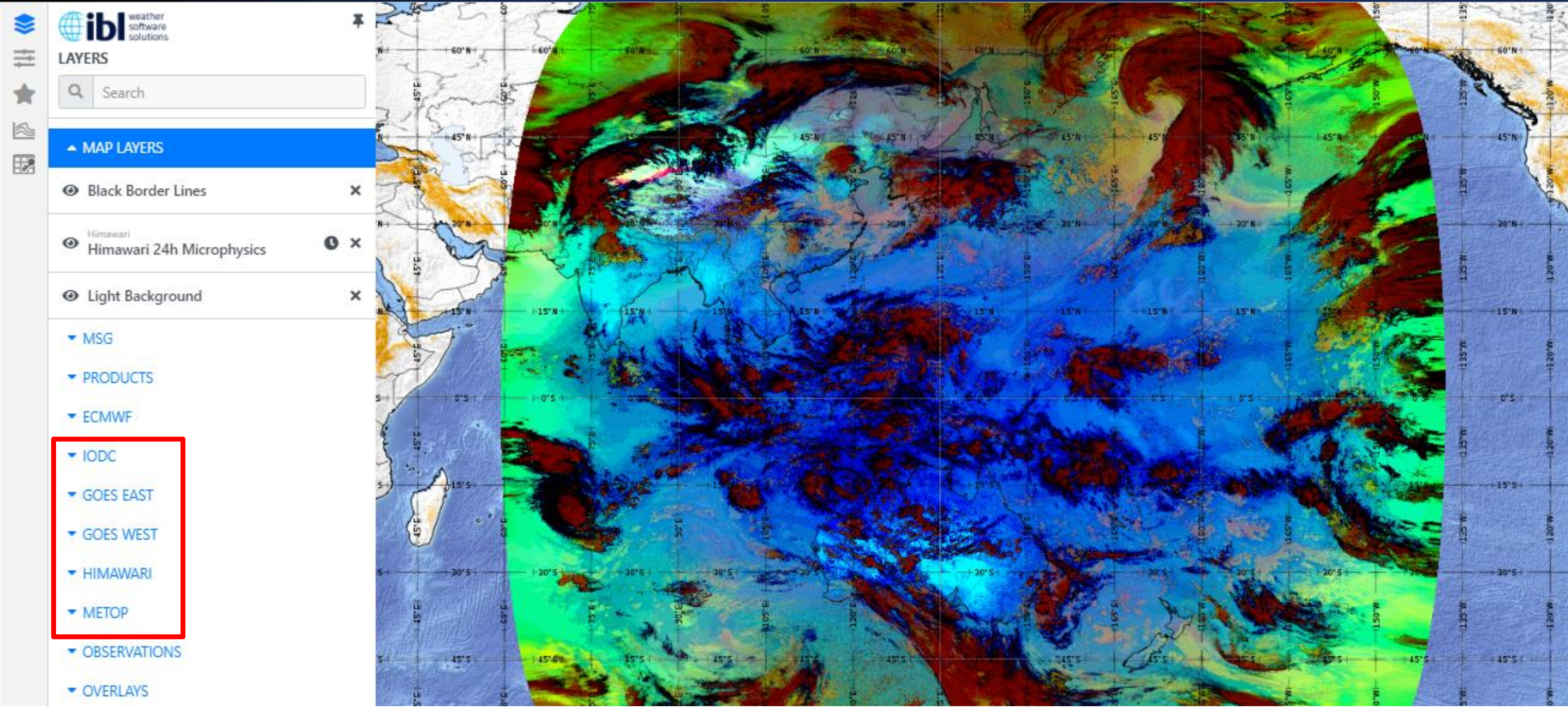
ePort has switched to a web map service in 2015, the old ePort will is not available anymore.

All images generated are automatically stored in an archive which makes it possible for you to do a qualitative research.

Showcase



Satellite data in the E-port http://eumetrain.org/e-port



Assistance tools: Next generation GEO - cheat sheet

IMAGING

"Colloquial" channel name	Applications	Advanced Baseline Imager Ch. No.	ABI Central λ (µm)	ABI λ width (µm)	ABI Resolution (km)	Flexible Combined Imager Ch. No.	FCI Central λ (µm)	FCI λ width (µm)	FCI Resolution (km)
Blue	aerosol, surface features	1	0.47	0.04	1.0	1	0.44	0.06	1.0
Green	aerosol, vegetation					2	0.51	0.04	1.0
Red	fog, insolation, winds	2	0.64	0.10	0.5	3	0.64	0.05	1.0 (*0.5)
Veggie	vegetation, winds	3	0.86	0.04	1.0	4	0.86	0.05	1.0
Low-level WV	water vapour, winds					5	0.91	0.02	1.0
Cirrus	thin cirrus	4	1.38	0.02	2.0	6	1.38	0.03	1.0
Snow/Ice	cloud phase, snow/ice	5	1.61	0.06	1.0	7	1.61	0.05	1.0
Particle Size	particle size, vegetation	6	2.25	0.05	2.0	8	2.25	0.05	1.0 (*0.5)
Fire	microphysics, fires	7	3.90	0.20	2.0	9	3.80	0.40	2.0 (*1.0)
High-level WV	WV, winds, rainfall	8	6.19	0.80	2.0	10	6.30	1.00	2.0
Mid-level WV	WV, winds, rainfall	9	6.95	0.40	2.0				
Lower-level WV	WV, winds, SO2	10	7.34	0.20	2.0	11	7.35	0.50	2.0
Cloud-top phase	cloud phase, SO2	11	8.50	0.40	2.0	12	8.70	0.40	2.0
Ozone	total O3, turbulence	12	9.61	0.40	2.0	13	9.66	0.30	2.0
Clean IR	SST, clouds temp	13	10.35	0.50	2.0	14	10.50	0.70	2.0 (*1.0)
IR Longwave	SST, clouds temp, rainfall	14	11.20	0.80	2.0				
Dirty IR	TPW, dust, ash	15	12.30	1.00	2.0	15	12.30	0.50	2.0
CO2	air temp, cloud height	16	13.30	0.60	2.0	16	13.30	0.60	2.0

"Colloquial" channel name	Advanced Himawari Imager Ch. No.	AHI Central λ (µm)	AHI λ width (µm)	AHI Resolution (km)	Proxy instruments - λ(µm) / Res (km) SEVIRI	MODIS	VIIRS	SLSTR
Blue	1	0.47	0.05	1.0	-	0.44/1.0	0.45/0.75	-
Green	2	0.51	0.02	1.0	-	0.55/0.5	0.55/0.75	0.55/0.5
Red	3	0.64	0.03	0.5	0.64/3.0	0.65/0.25	0.64/0.375	0.67/0.5
Veggie	4	0.86	0.02	1.0	0.81/3.0	0.86/1.0	0.87/0.375	0.86/0.5
Low-level WV					-	0.91/1.0	-	
Cirrus					-	1.38/1.0	1.38/0.75	1.38/0.5
Snow/Ice	5	1.61	0.02	2.0	1.64/3.0	1.64/0.5	1.61/0.375	1.61/0.5
Particle Size	6	2.25	0.02	2.0	-	-	2.25/0.75	2.25/0.5
Fire	7	3.88	0.22	2.0	3.92/3.0	3.75/1.0	3.74/0.375	3.74/1.0
High-level WV	8	6.24	0.37	2.0	6.25/3.0	-	-	-
Mid-level WV	9	6.94	0.12	2.0	-	6.72/1.0	-	-
Lower-level WV	10	7.34	0.17	2.0	7.35/3.0	7.33/1.0	-	-
Cloud-top phase	11	8.59	0.32	2.0	8.70/3.0	8.55/1.0	8.55/0.75	-
Ozone	12	9.64	0.18	2.0	9.66/3.0	9.73/1.0	-	-
Clean IR	13	10.40	0.30	2.0	10.8/3.0	11.0/1.0	10.8/0.75	10.8/1.0
IR Longwave	14	11.23	0.20	2.0	-	-	11.5/0.375	-
Dirty IR	15	12.38	0.30	2.0	12.0/3.0	12.0/1.0	12.0/0.75	12.0/1.0
CO2	16	13.28	0.20	2.0	13.4/3.0	13.3/1.0	-	-

Advanced Baseline Imager

Full disc	< 83°	15 min	0.5 - 2.0 km
Continental US (CONUS)	5000 x 3000 km	5 min	0.5 - 2.0 km
Mesoscale	1000 x 1000 km	0.5 min	0.5 - 2.0 km

Flex Mode: The flex mode provides a full disk scan every 15 minutes, a CONUS every 5 minutes, and two mesoscale every 60 seconds (or one sub-region every 30 seconds).

Flexible Combined Imager

Full disc	?	10 min	1.0 - 2.0 km
Rapid Scan	LAC 4 (top disc quarter)	2.5min	0.5 - 1.0 km

* The channels VIS 0.6, NIR 2.2, IR 3.8 and IR 10.5 are delivered in advanced resolution in the rapid sampling configuration.

Advanced Himawari Imager

Full disc	?	10 min	0.5 - 2.0 km
Japan region	2000 x 1000 km	2.5 min	0.5 - 2.0 km
Target area	1000 x 1000 km	2.5 min	0.5 - 2.0 km
Landmark area / x2	1000 x 500 km	0.5 min	0.5 - 2.0 km

Assistance tools: Next generation GEO - cheat sheet

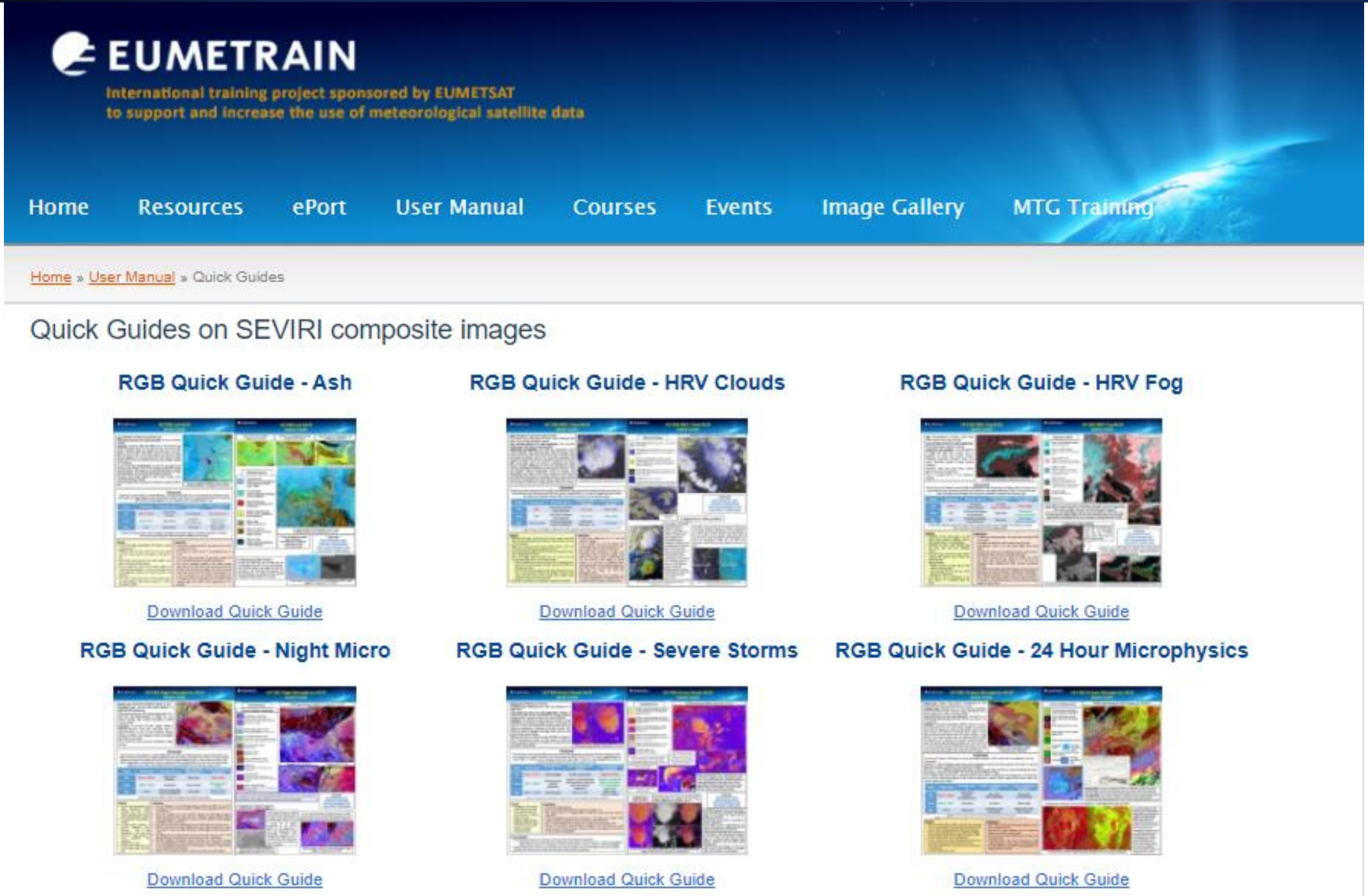
LIGHTNING DETECTION

	Pioneer instrument - LIS	Geostationary Lightning Mapper	Lightning Imager	Lightning Mapping Imager	Ground network - GLD360
Platform	TRMM/ISS	GOES-16	MTG-I	Feng-Yun-4	~
Orbit	LEO	GEO	GEO	GEO	~
Description	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	CCD camera operating at 777.4 nm (O2), flash counts and intensity measurement. Detection efficiency > 90 % for events of 10 µJ·m-2·sr-1 at 45° (day), 4 µJ·m-2·sr-1 (night). FAR < 2 s-1	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	A network of sensors operating in the Very Low Frequency (VLF) band and measuring horizontal magnetic fields of radio impulses generated by return strokes and large cloud pulses.
Scanning technique	Pushbroom, matrix array of 128 x 128 detectors, swath 600 km; each earth location observed continuously (every 2 ms) for about 90 s	Electronic, 3-axis stabilised satellite, single detector matrix	Electronic, 3-axis stabilised satellite, single detector matrix	Electronic, 3-axis stabilised satellite, single detector matrix	Fixed location, ground-Based detectors
Resolution	4 km	8 km at s.s.p. (sub-satellite point)	10 km	7.8 km at s.s.p.	2-3 km
Coverage /Cycle	Passes at ~ 100-min intervals with longer gaps once or twice per day. More regular coverage at 15°N and 15°S. On ISS: latitude coverage extended to 51.6°	Large fraction of the disk continuously observed (time resolution 2 ms)	Full disk continuously observed (time resolution ~ 2 ms)	Full disk continuously observed (time resolution ~ 2 ms)	Global

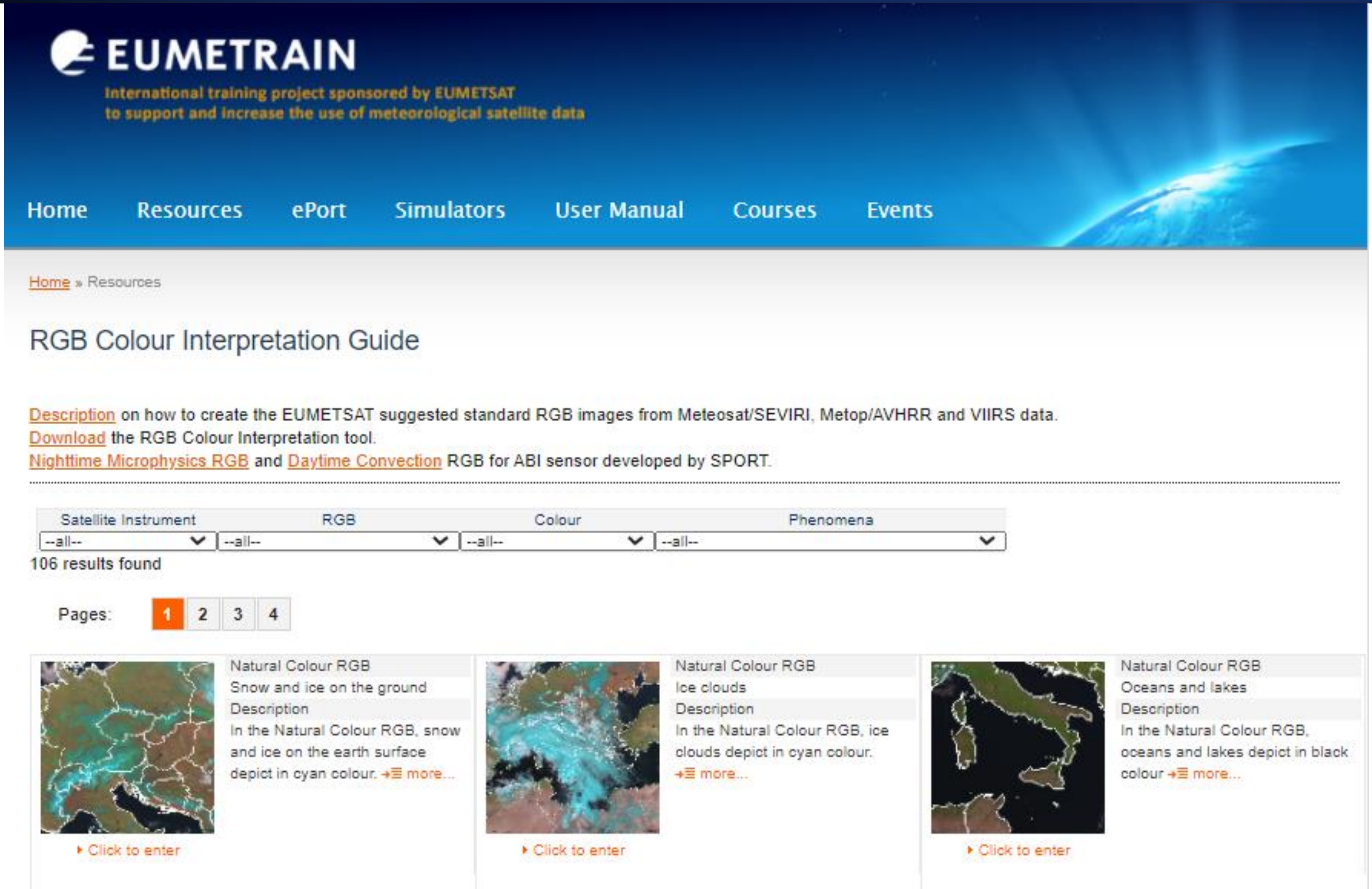
SOUNDING

	Proxy instrument - IASI	Proxy instrument - CrIS	Infra-Red Sounder	Geostationary Interferometric IRS
Platform	EPS-A/B/C	NOAA-20	MTG-S	Feng-Yun-4
Orbit	LEO	LEO	GEO	GEO
Description	Interferometer with 8461 channels, with one embedded IR imaging channel	Interferometer with three IR bands, 1305 channels in initial operation mode. Future operation mode will have 2211 channels with the same full spectral resolution in all three bands.	Interferometer with large detector arrays for simultaneous sounding of more pixels	MWIR/TIR interferometer with large detector arrays for simultaneous sounding of more pixels. 913 channels on the first flight unit, 1188 on follow-on flight units.
Scanning technique	Cross-track: 30 steps of 48 km ssp, swath 2130 km - Along-track: one 48-km line every 8 s	Cross-track: 32 steps of 48 km s.s.p., swath 2200 km - Along-track: one 48-km line every 8 s	Mechanical, bi-axial, 3-axis stabilised satellite, step-and-dwell of a detector matrix	Mechanical, bi-axial, 3-axis stabilised satellite, step-and-dwell of a detector matrix.
Resolution	4 x 12-km IFOV close to the centre of a 48 x 48 km2 cell (average sampling distance: 24 km)	3 x 3 14 km IFOV covering a 48 x 48 km2 cell (average sampling distance: 16 km)	4.0 km	Prototype flight 16 km, follow-on 8 km, at s.s.p.. Supporting VIS: 2 km at s.s.p.
Coverage /Cycle	Near-global coverage twice/day	Near-global coverage twice/day	Full disk in 60 min. Limited areas in correspondingly shorter time intervals	China area (5000 km x 5000 km) in 67 min. Mesoscale area (1000 km x 1000 km) in 35 min

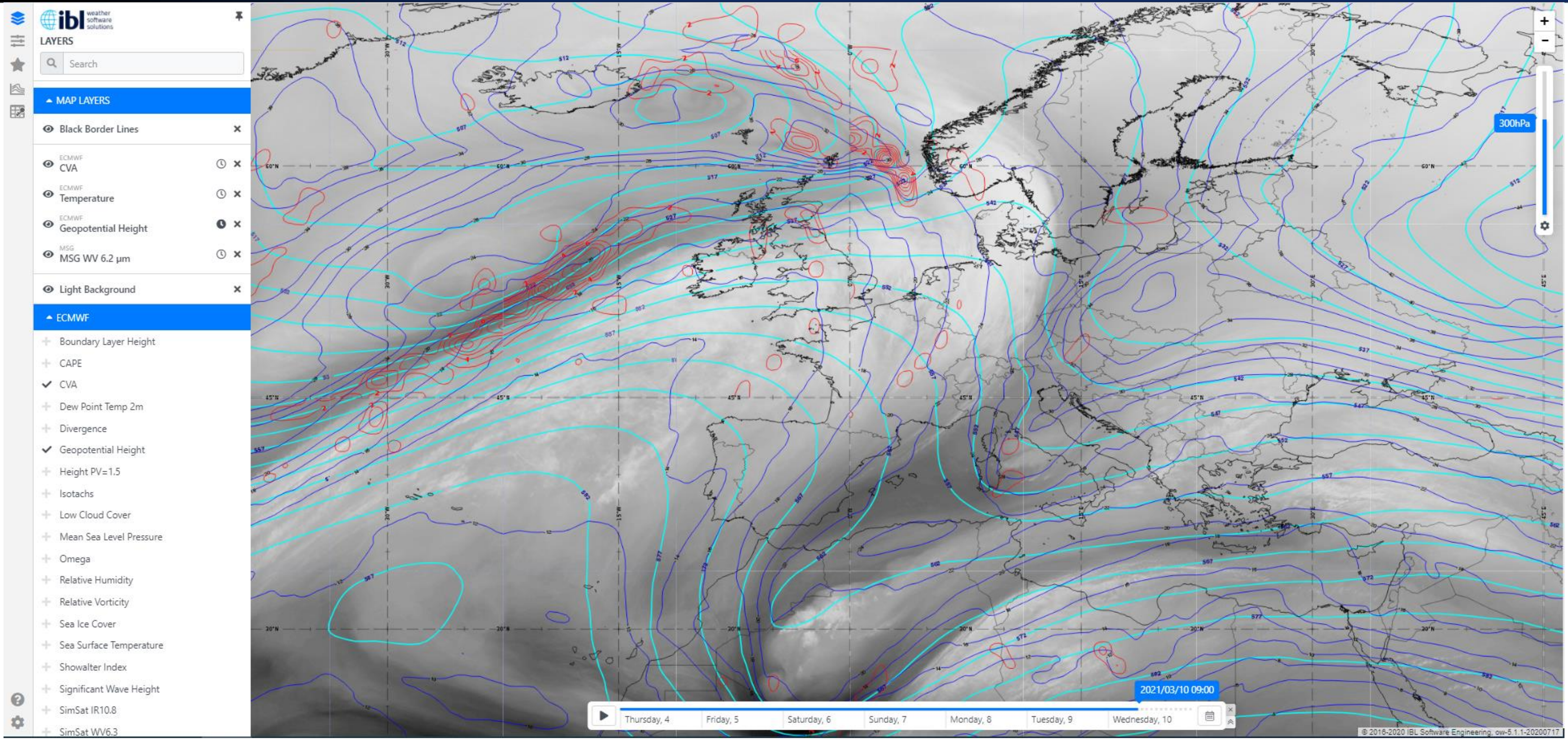
RGB Quick guides, colour interpretation guides



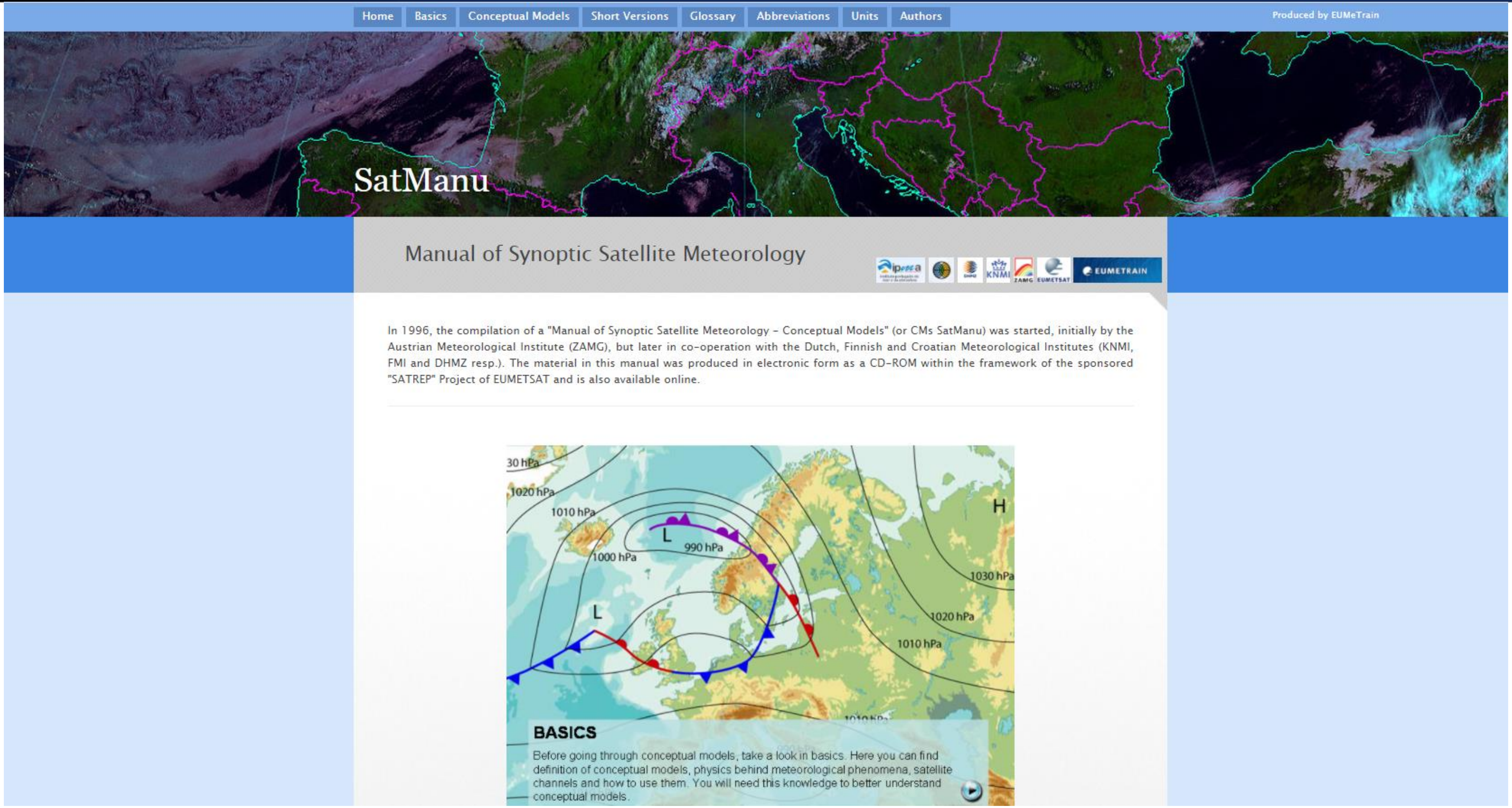
RGB Quick guides, colour interpretation guides



Images + NWP model data http://eumetrain.org/e-port



Satmanu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Produced by EUMeTrain
SatManu
Manual of Synoptic Satellite Meteorology
EUMETRAIN
KNMI
ZAMG
EUMETSAT
In 1996, the compilation of a "Manual of Synoptic Satellite Meteorology - Conceptual Models" (or CMs SatManu) was started, initially by the Austrian Meteorological Institute (ZAMG), but later in co-operation with the Dutch, Finnish and Croatian Meteorological Institutes (KNMI, FMI and DHMZ resp.). The material in this manual was produced in electronic form as a CD-ROM within the framework of the sponsored "SATREP" Project of EUMETSAT and is also available online.
1020 hPa
1010 hPa
1000 hPa
990 hPa
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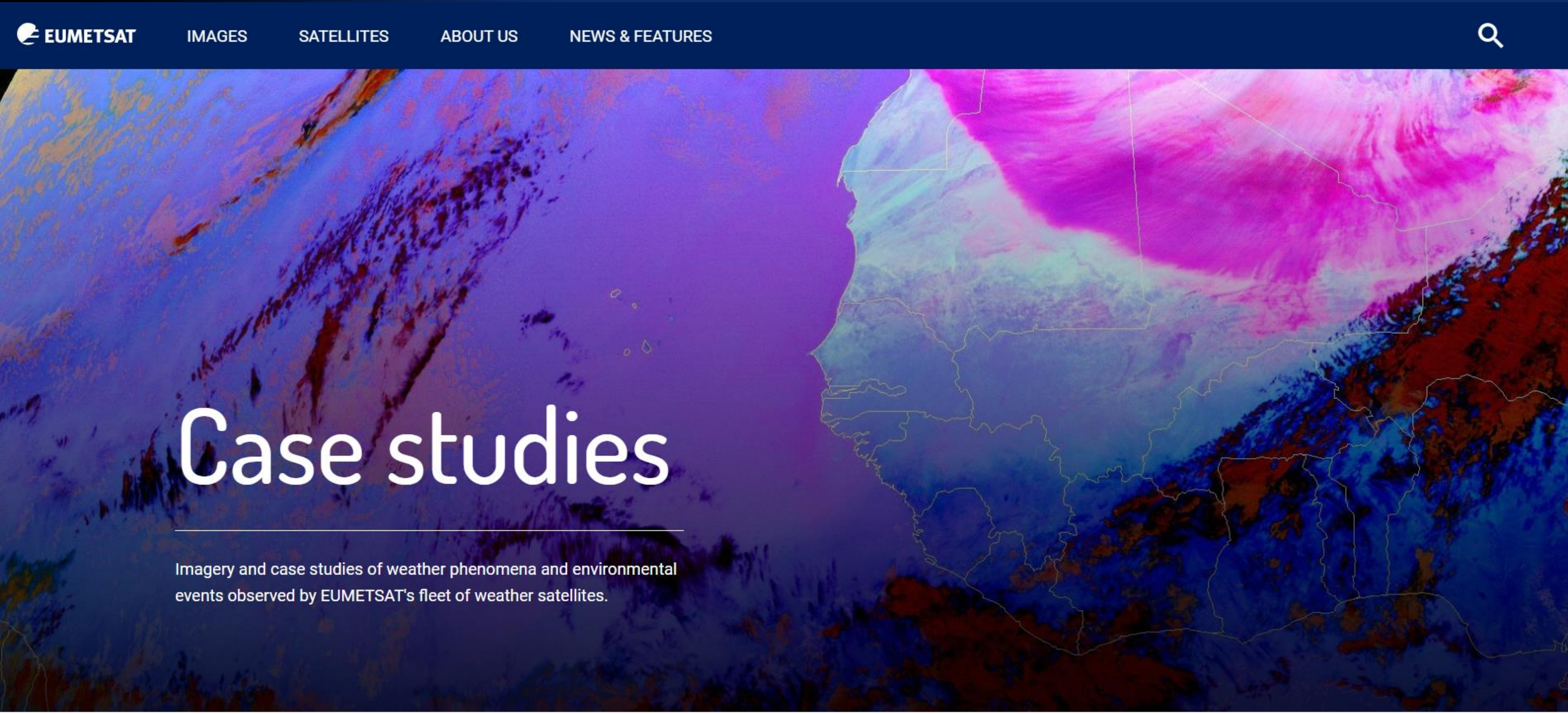
BASICS
Before going through conceptual models, take a look in basics. Here you can find definition of conceptual models, physics behind meteorological phenomena, satellite channels and how to use them. You will need this knowledge to better understand conceptual models.

Consult colleagues, expert groups

- regional training communities
- CWG
- MTG Forum
- EUMETSAT trainers/experts
- topcase email

Case study factory https://www.eumetsat.int/case-studies



Want to join us?
Have ideas of your own?

Let’s do a CS together!

Follow-up demo session

- In a week time (24th March) we get together and discuss:
  - Objective of your case study (Why did you choose it? What do you want to show? What is the importance of the CS?)
  - Scope of your CS (Which case? Which conceptual models to use? What kind of data?)
  - Which tools did/would you utilise?
  - Who did/would you collaborate with?
  - Would you like to publish the CS in the EUMETSAT case study library?

https://padlet.com/TrainingEUMETSAT/z8es6rqcwo7y7ecs

Enjoy making a case study!

See you next Wednesday!