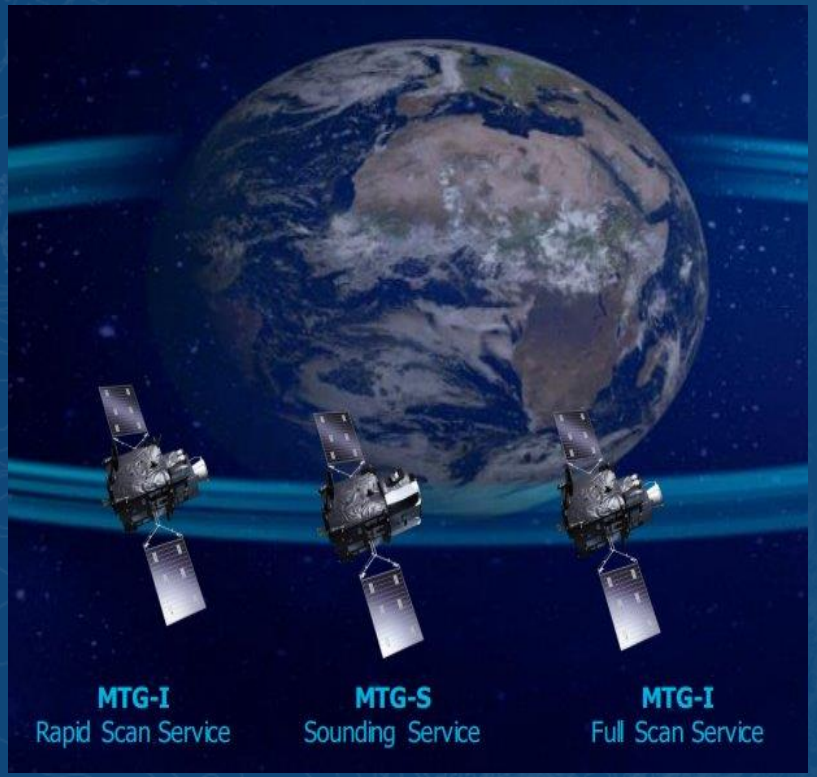
Veðurstofa Íslands

Vísindi á vakt

Nýjar kynslóðir veðurtungla

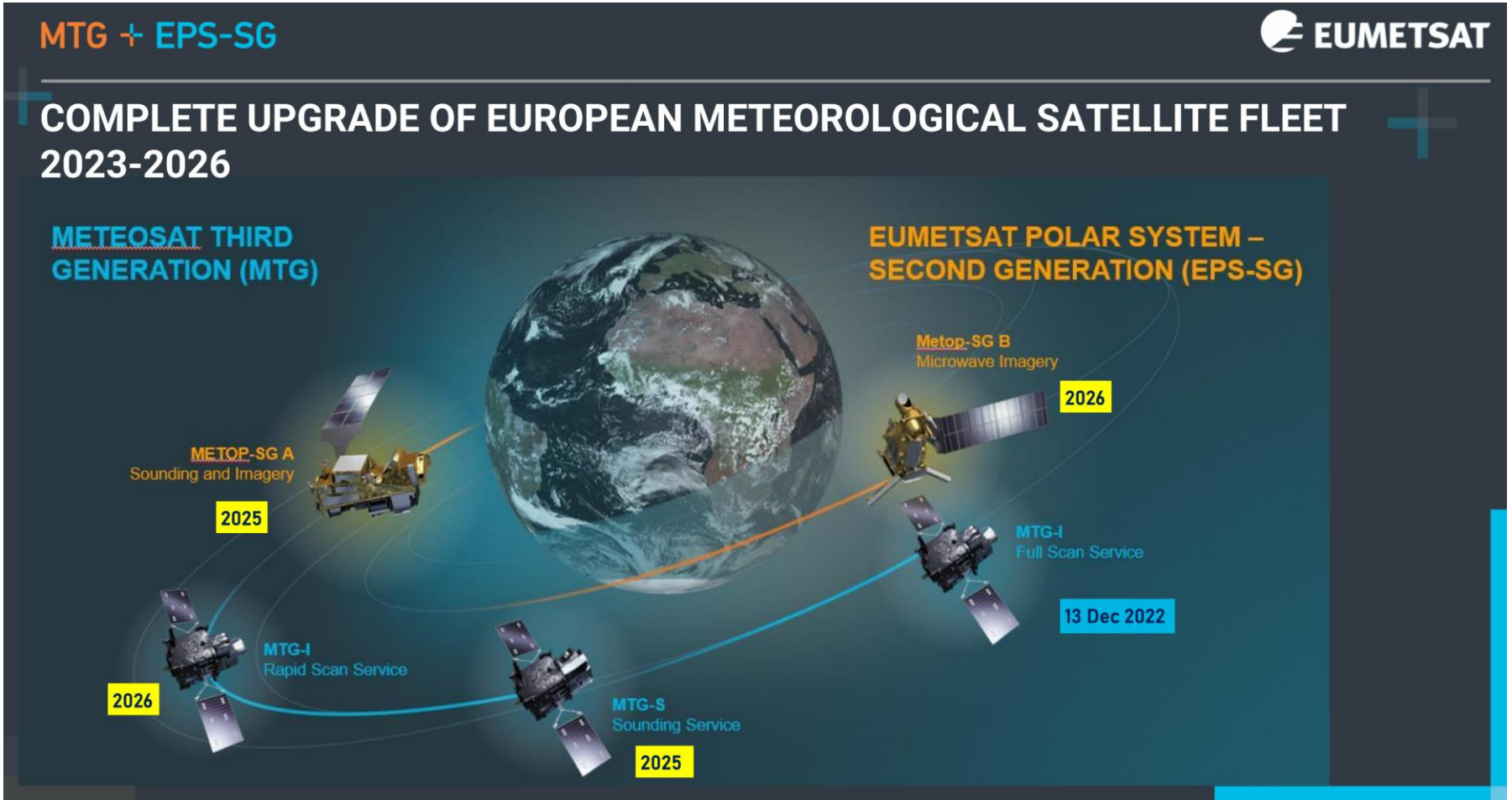


Bryndís María Ragnarsdóttir

Góuþing Veðurfræðifélagsins 24. feb 2026

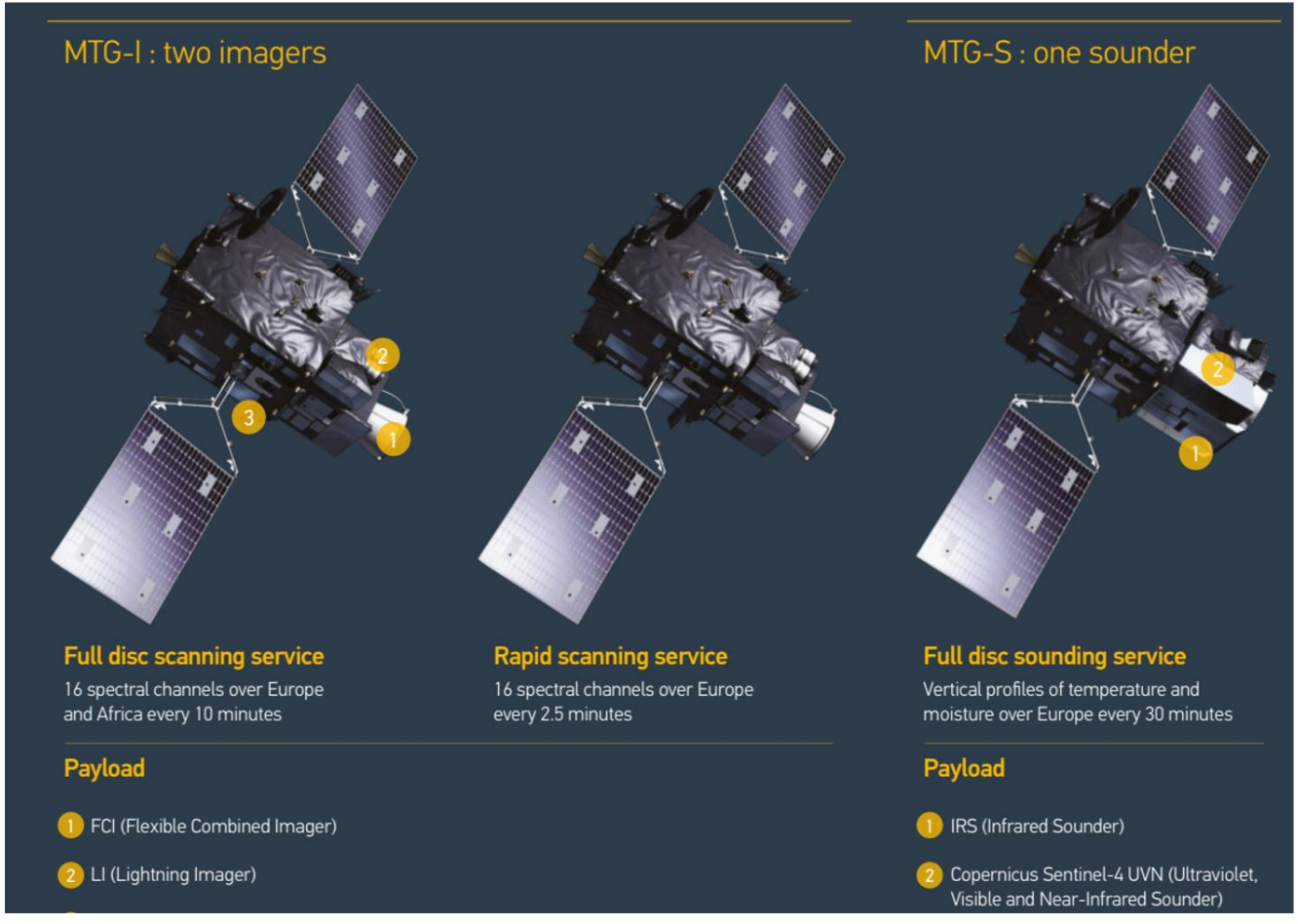
Nýjar kynslóðir veðurtungla

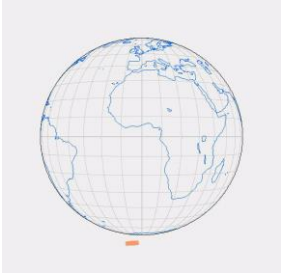
Veðurstofa Íslands



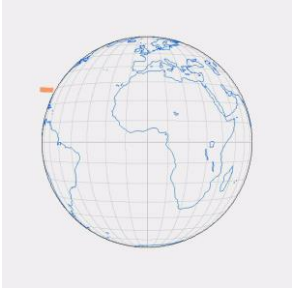
Meteosat Third Generation (MTG)

Veðurstofa Íslands





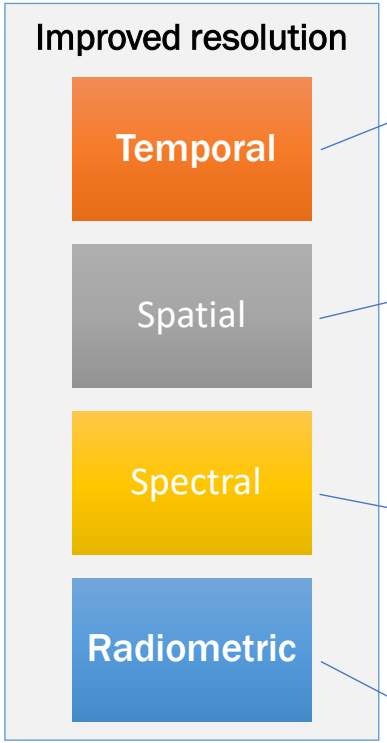
Full disc FCI scanning pattern



Rapid scanning service scanning pattern

Samanburður á MTG og MSG

Veðurstofa Íslands

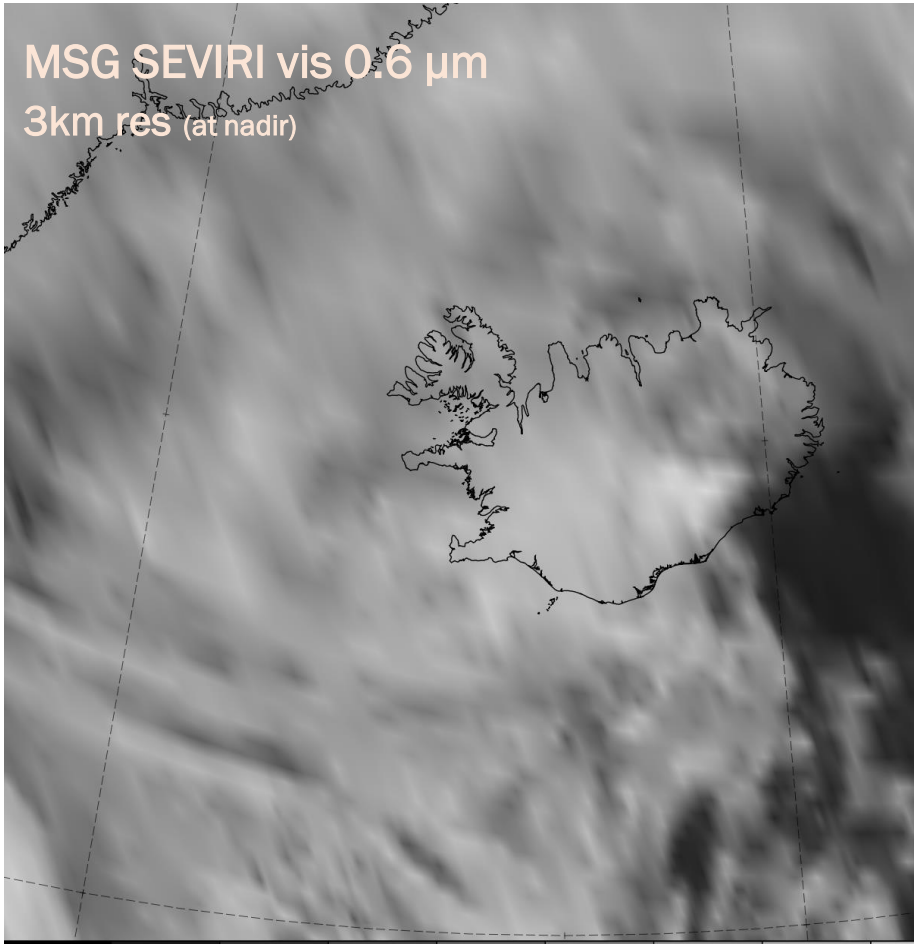


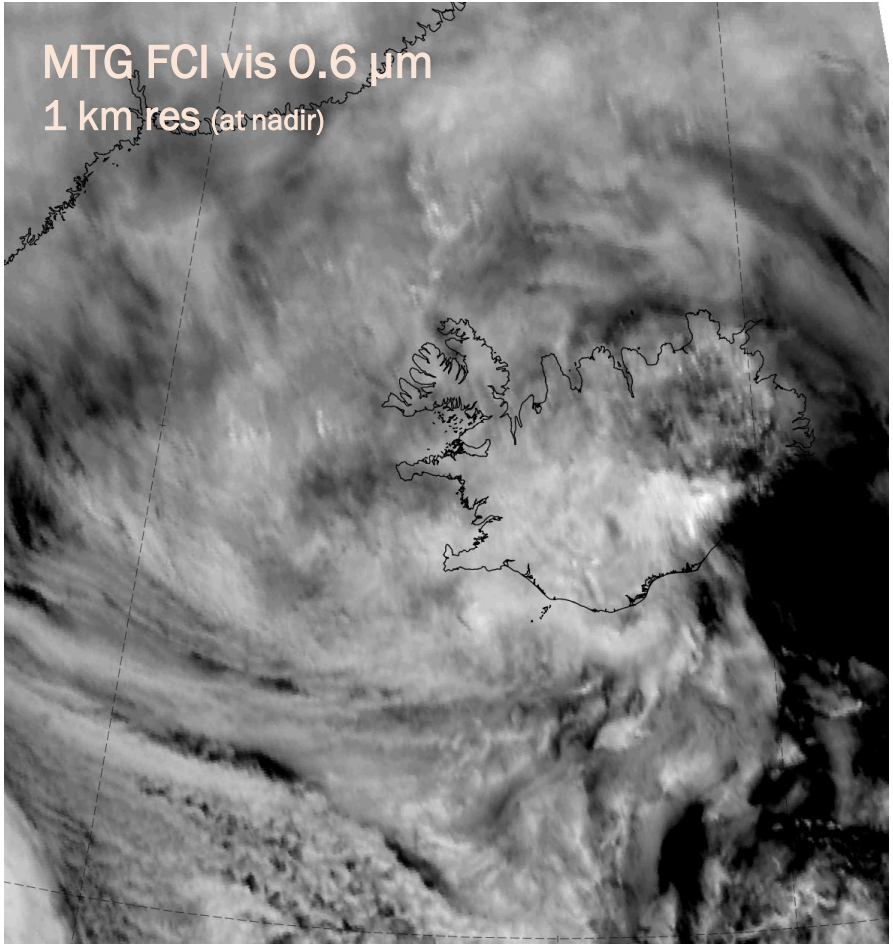
MTG FCI	MSG SEVIRI
10 min (full disk) 2,5 min (Europe)	15 min (full disk) 5 min (Europe)
Normal resolution (FDHSI): - **8 x 1 km** channels - **8 x 2 km** channels	**11 x 3 km** non-HRV channels
High resolution (HRFI) - **2 x 0.5 km** channels - **2 x 1 km** channels	**1 x 1 km** High-Res Visible (HRV) channel
New channels: VIS 0.4 VIS 0.5 VIS 0.9 NIR 1.3 NIR 2.2	
SNR 12-40 NEdt 0.1-0.3 K IR 3.8 up to 450 K	SNR 1.2-10.1 NEdt 0.25-1.8 K IR3.9 up to 335 K

SNR - Signal-to-Noise Ratio: A higher SNR - clearer signal with less interference, lower SNR - weaker signal overwhelmed by noise.

NEdT- Noise Equivalent Differential Temperature: A measure of a sensor's radiometric sensitivity, indicating the smallest temperature difference that the sensor can reliably detect.

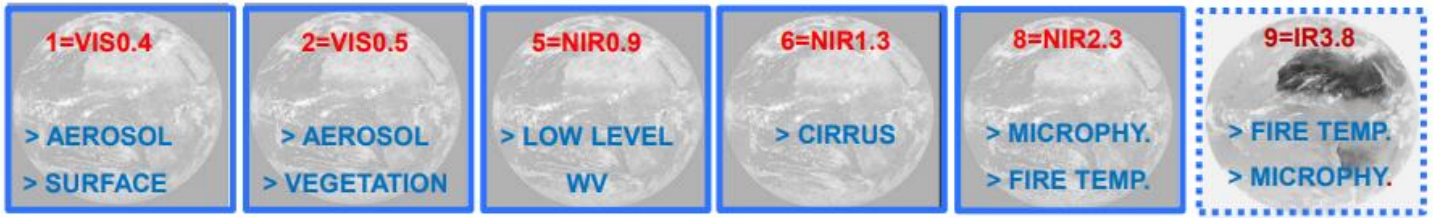
Veðurstofa Íslands

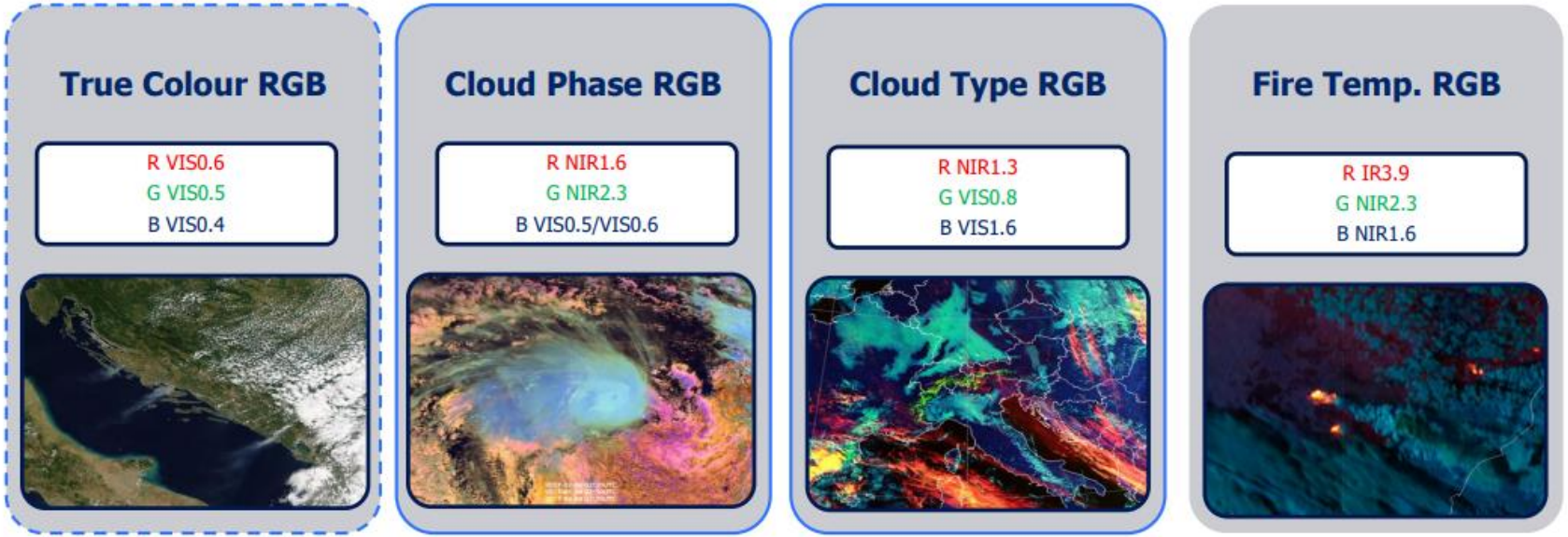




Nýjar rásir -> Nýjar RGB samsetningar

Veðurstofa Íslands





Leiðbeiningar og námskeið á https://eumetrain.org/

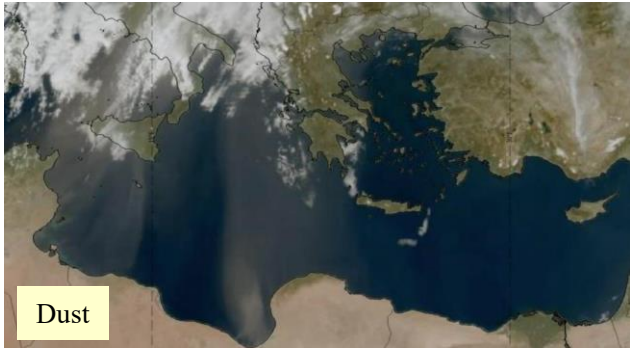
True Colour RGB

Veðurstofa Íslands



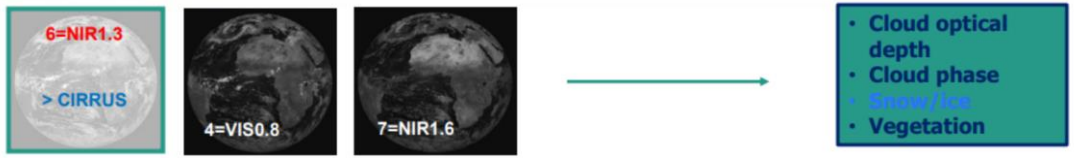


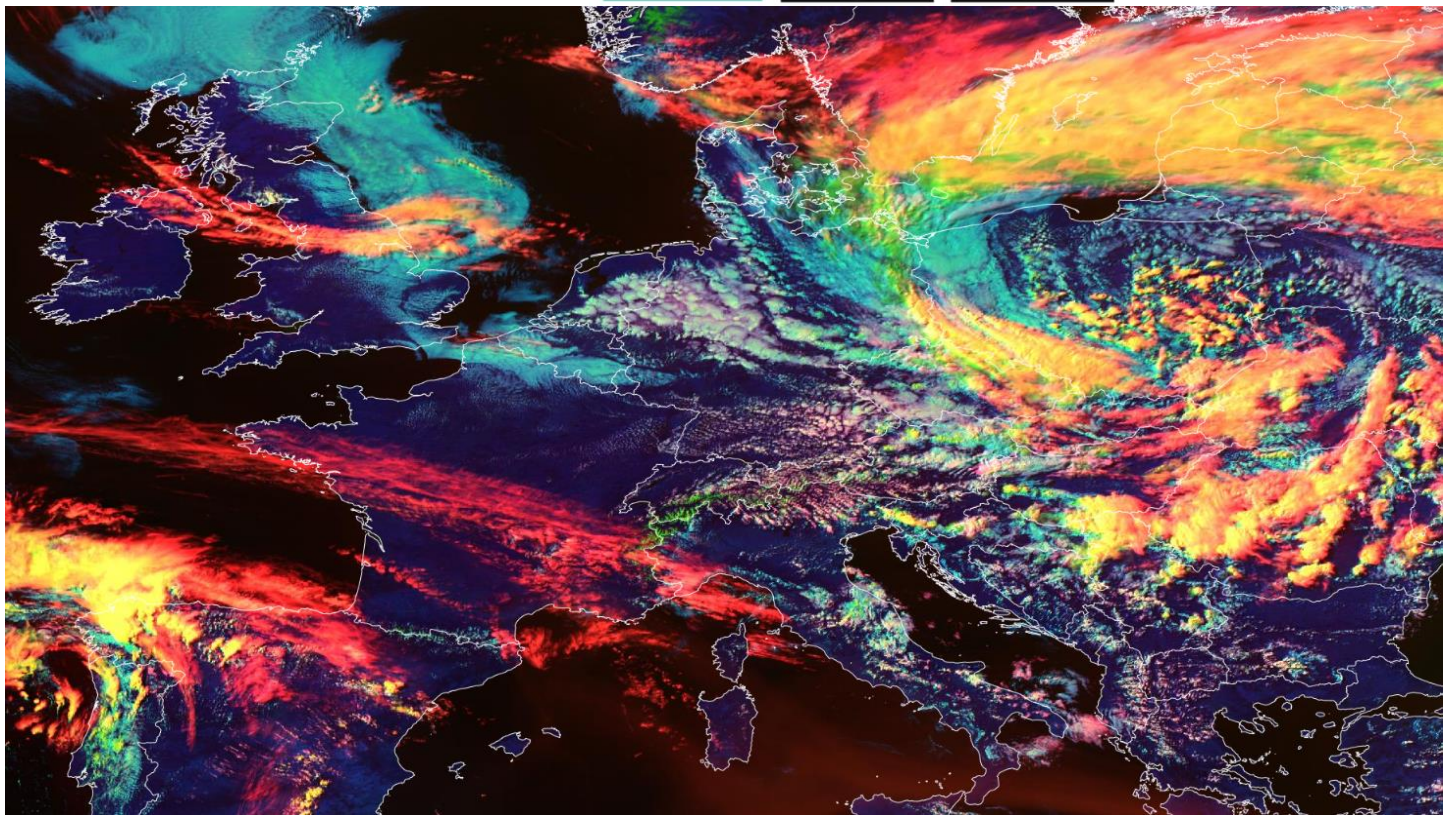




Cloud Type RGB

Veðurstofa Íslands

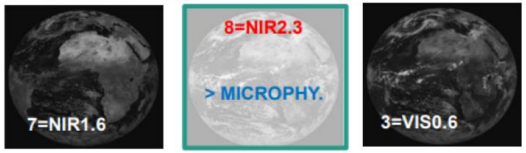




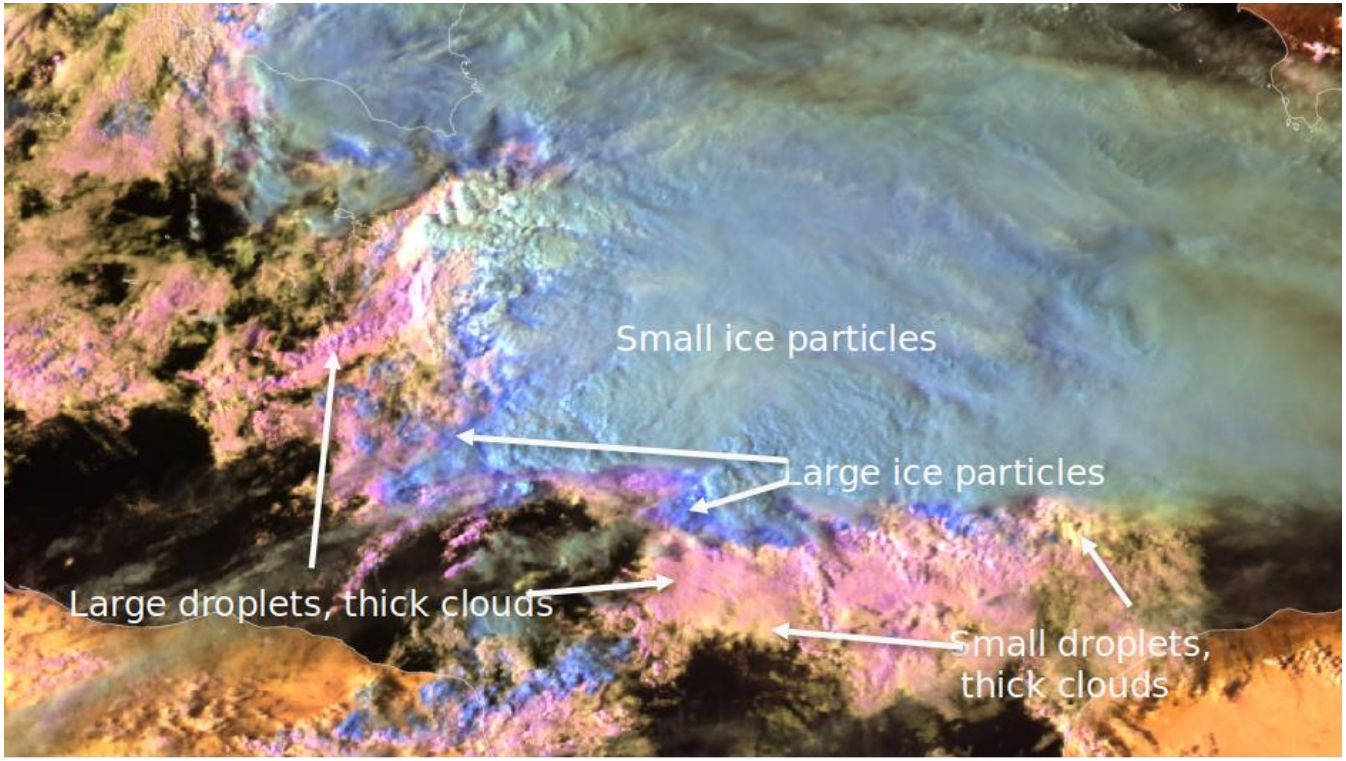
- Optical thin ice clouds
- Optical thick ice clouds
- Low to mid-level water clouds
- Low to mid-level mixed phase clouds
- Mid-level thin water clouds
- Super-cooled water clouds

Cloud Phase RGB

Veðurstofa Íslands



- Cloud phase
- Particle size
- Snow/ice
- Vegetation



Water clouds

- Very large drops
- Large drops
- Smaller drops
- Even smaller drops

warm

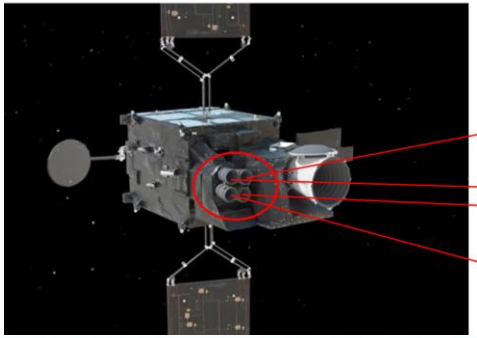
Ice clouds

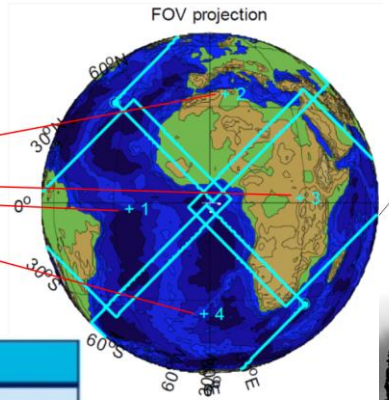
- Large particles
- Small particles
- Snow

cold

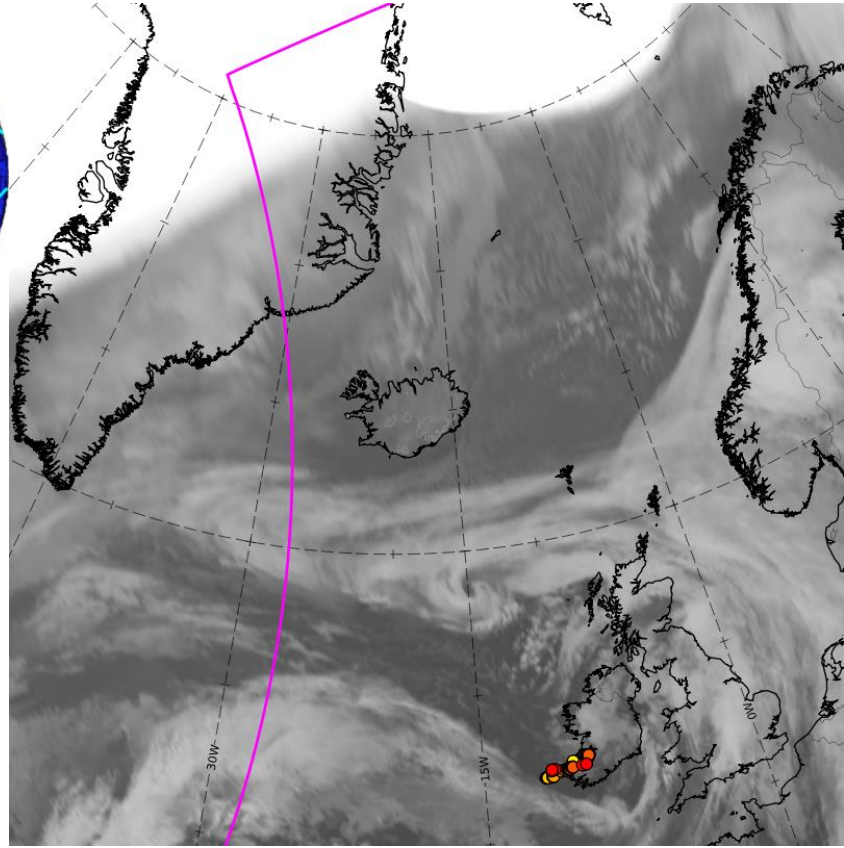
MTG Lightning Imager (MTG-LI)

Veðurstofa Íslands





Key design features	
Detector(s)	1000x1170(x4) pixels CMOS
Spatial resolution	4.5 km at Nadir (about 8 km over Europe)
Coverage	Up to 80 degrees North
Spectral band	777.4 nm with 1.9 nm bandwidth
Integration time	1 millisecond
On-board processing	Lightning detection + data filtering
On-ground processing	Level 1b (Radiometry + INR + noise filtering) Level 2 (noise filtering + product definition)
Level 2 products to users	Lightning groups (RC 10 sec), flashes (RC 10 sec) and accumulated products (RS 30 sec)



MTG-S

Veðurstofa Íslands

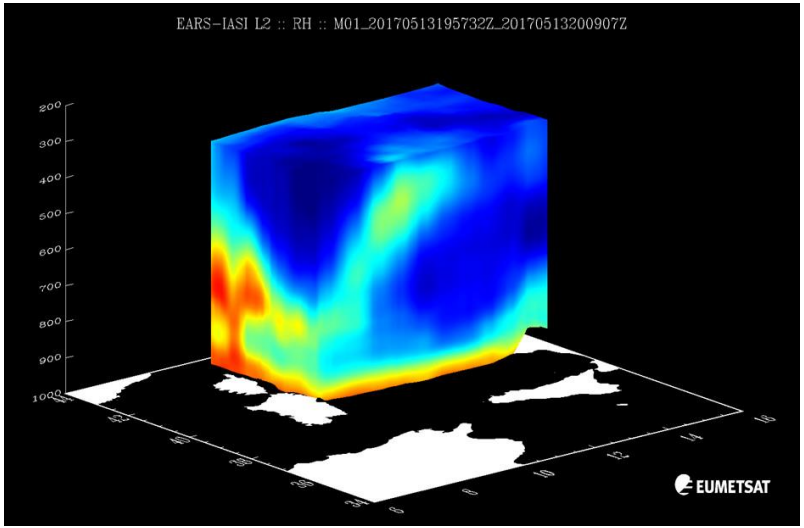
Tvö mælitæki: Infrared Sounder (IRS) | Sentinel-4

Infrared sounder (IRS)

- First geostationary infrared sounder over Europe
- Vertical temperature and humidity profiles + trace gas concentrations
- 30 min temporal resolution over Europe
- 4 km resolution at nadir and ~15 km over Iceland

Sentinel-4

- UV-VIS-NIR spectrometer
- 1 h temporal resolution
- 8 km spatial resolution
- Air quality measurements
    - Aerosols
    - SO_2
    - O_3
    - NO_2

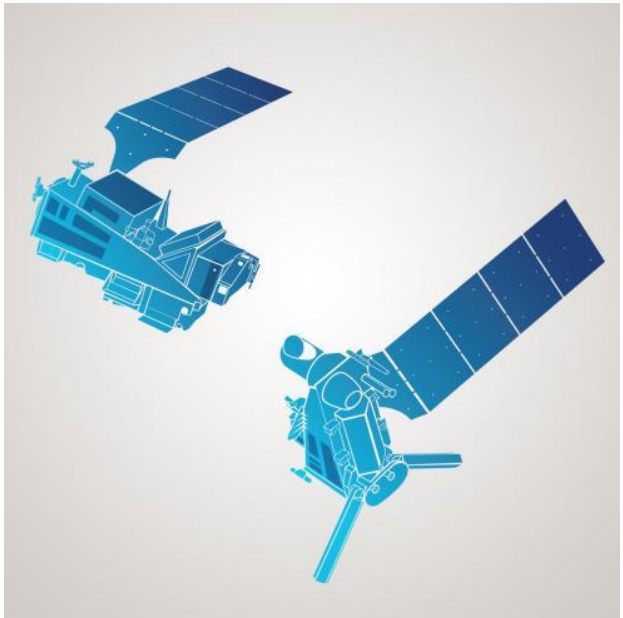


Metop Second Generation

Veðurstofa Íslands

Metop-SG A

- Infrared Atmosoheric Sounding Interferometer (IASI NG)
- Microwave sounder
- METImage – Vis and IR imager
- Radio Occulation Sounder
- 3MI
- Sentinel-5



Metop-SG B

- Scatterometer
- Radio Occultaion Sounder
- Microwave Imager
- Ice Cloud Imager
- Argos-4 (Advanced Data Collection System)

Veðurstofa Íslands

- Takk fyrir!

Veðurstofa Íslands

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