

The METEOSAT Second Generation System

Few words about the MSG

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Few words about the MSG

MSG is more than merely a series of satellite of advanced design.

The satellites are part of an integrated system, providing a comprehensive range of services and products directly to the end-users.

Few words about the MSG



METEOSAT

Second Generation
satellite

diameter 3,2 m

height 2,4 m

Few words about the MSG

- The new satellite system comprises a series of three identical MSG satellite that are expected to provide observations and services at least 12 years.
- The satellites are completed by a totally new ground infrastructure that includes both centralised and distributed processing elements, as well as newly implemented user system

Few words about the MSG

Three main sub-assemblies:

- The Spinning Enhanced Visible and Infrared Imager (SEVIRI)
- The Mission Communication Payload (MCP)
- The platform support subsystem

Few words about the MSG

SEVIRI

- 12-channel spinning enhanced visible and infrared imager scans the full Earth disc with repeat cycle 15 minutes
- for 11 channels image pixels are sampled every 15 minutes at intervals of 3 km
- the high resolution visible (HRV) just 1 km, with east-west scan of half of full Earth disc

Few words about the MSG

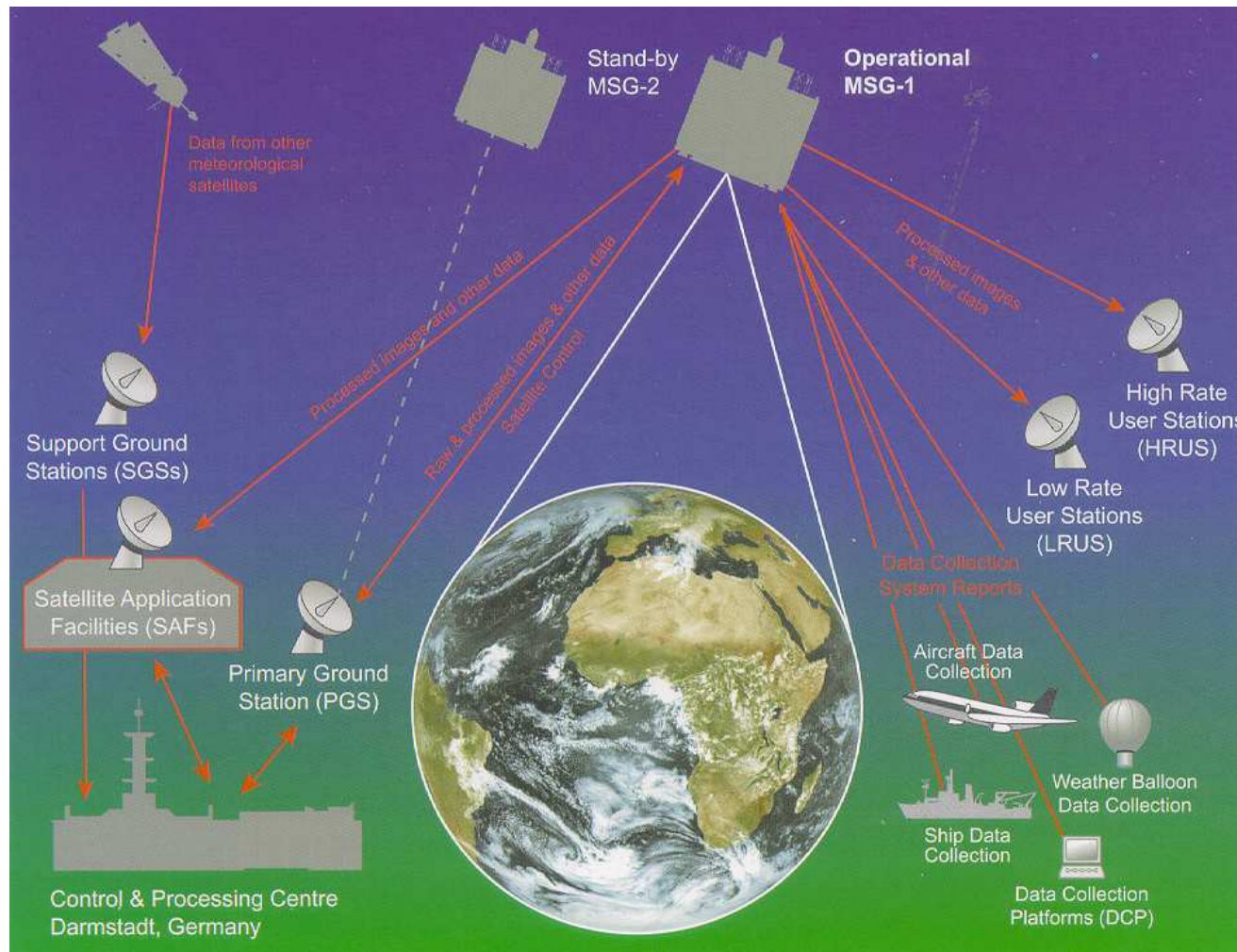
The well known
full Earth disc,
in this form
absolutely useless
for
agrometeorological
purposes



Few words about the MSG

Channel	central (μm)	band	
VIS 0.6	0.635	0.56 - 0.71	similar AVHRR
VIS 0.8	0.81	0.74 - 0.88	of NOAA
NIR 1.6	1.64	1.50 - 1.78	snow and cloud
IR 3.9	3.92	3.48 - 4.36	low cloud, fog
WV 6.2	6.25	5.35 - 7.15	continues
WV 7.3	7.35	6.85 - 7.85	Meteosat
IR 8.7	8.7	8.30 - 9.10	HIR Sounder
IR 9.7	9.66	9.38 - 9.94	ozone concentration
IR 10.8	10.8	9.80 - 11.80	AVHRR split
IR 12.0	12	11.0 - 13.00	window IR thermal
IR 13.4	13.4	12.4 - 14.40	CO ₂ absorption
HRV	0.7	0.5 - 0.9	Meteosat VIS 1 km

Few words about the MSG



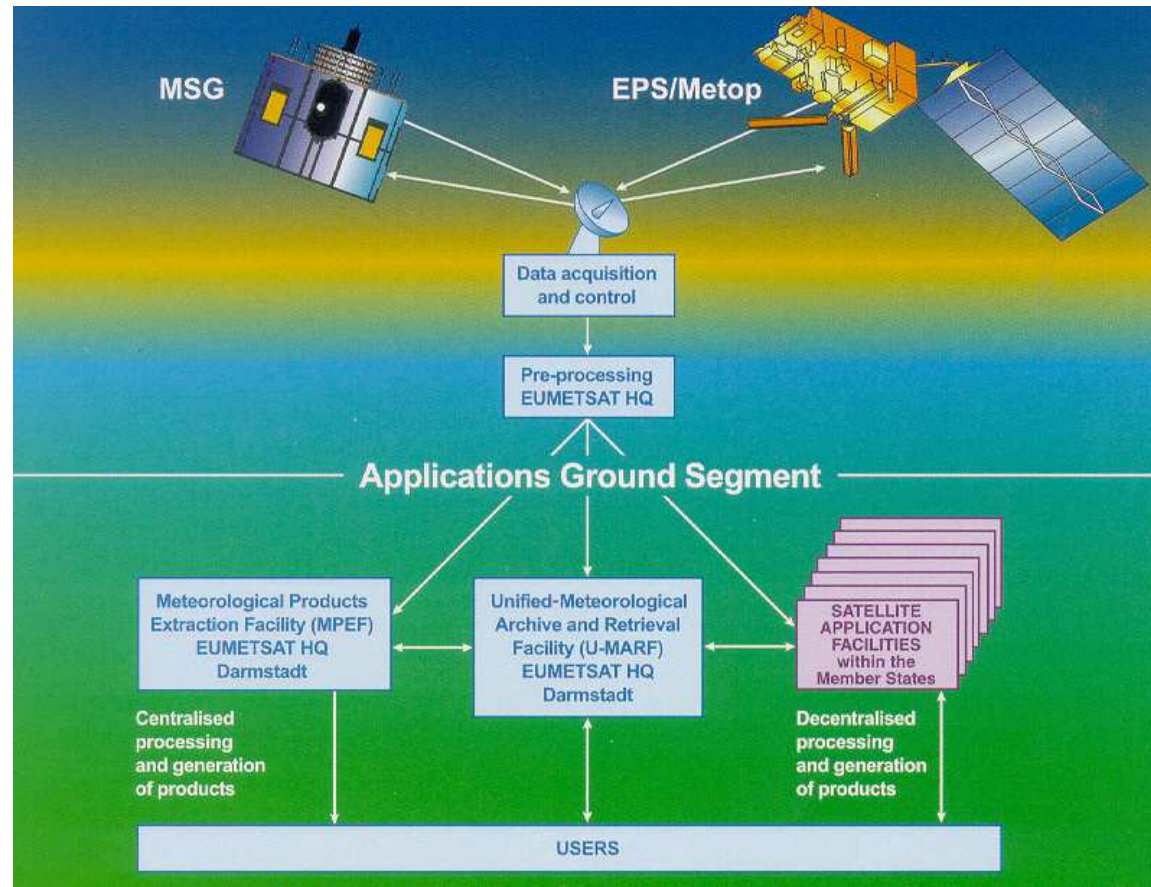
Schematic of the MSG system showing main user services

Few words about the MSG

Satellite Application Facilities since 2002

- **NWC** Nowcasting and Very Short Range Forecasting, *INM*
- **OSI** Ocean and Sea Ice, *Météo-France*
- **OZONE** Ozone monitoring, *FMI*
- **NWP** Numerical Weather Prediction, *Met Office*
- **CLM** Climate Monitoring, *DWD*
- **LSA** Land Surface Analysis, *IM*

Few words about the MSG



The EUMETSAT Applications Ground Segment

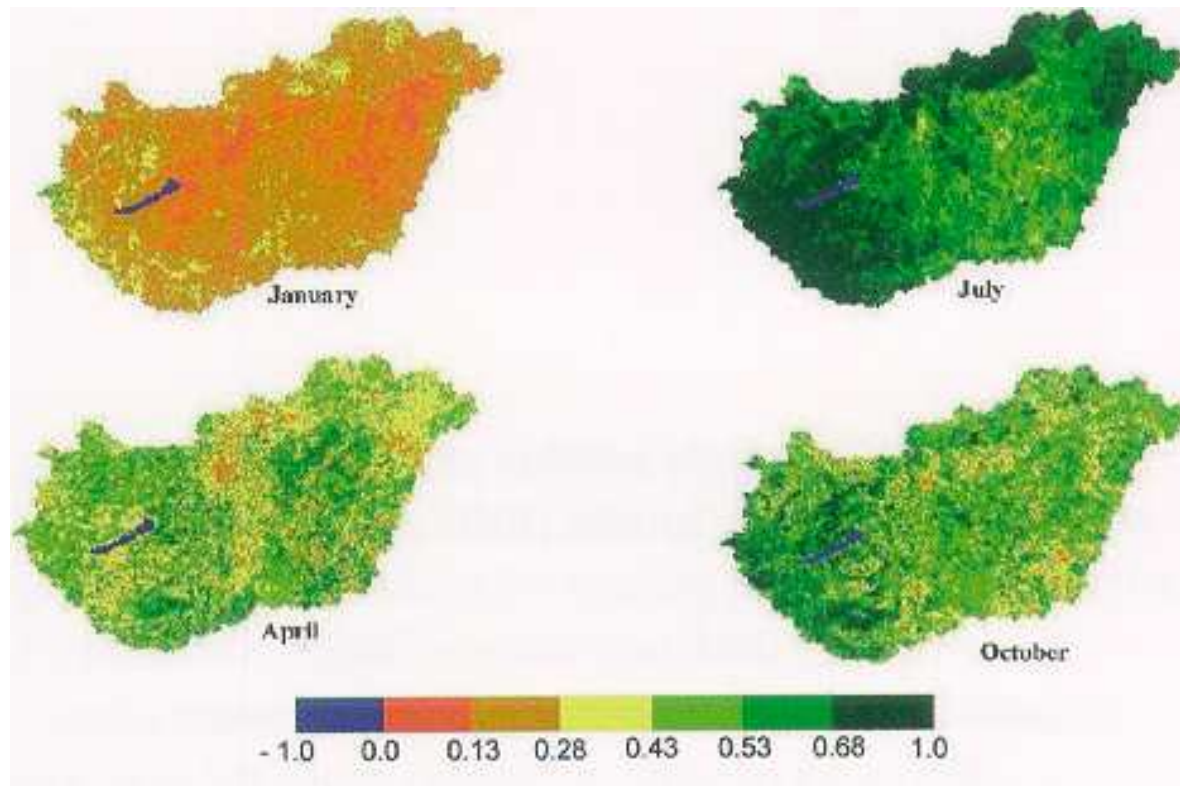
Few words about the MSG

LSA, Land Surface Analysis

MSG-based products such as:

- surface albedo and emissivity
- aerosols
- scattered radiance field
- surface short wave and long wave fluxes
- land surface temperature
- soil moisture
- evapotranspiration rate

Few words about the MSG

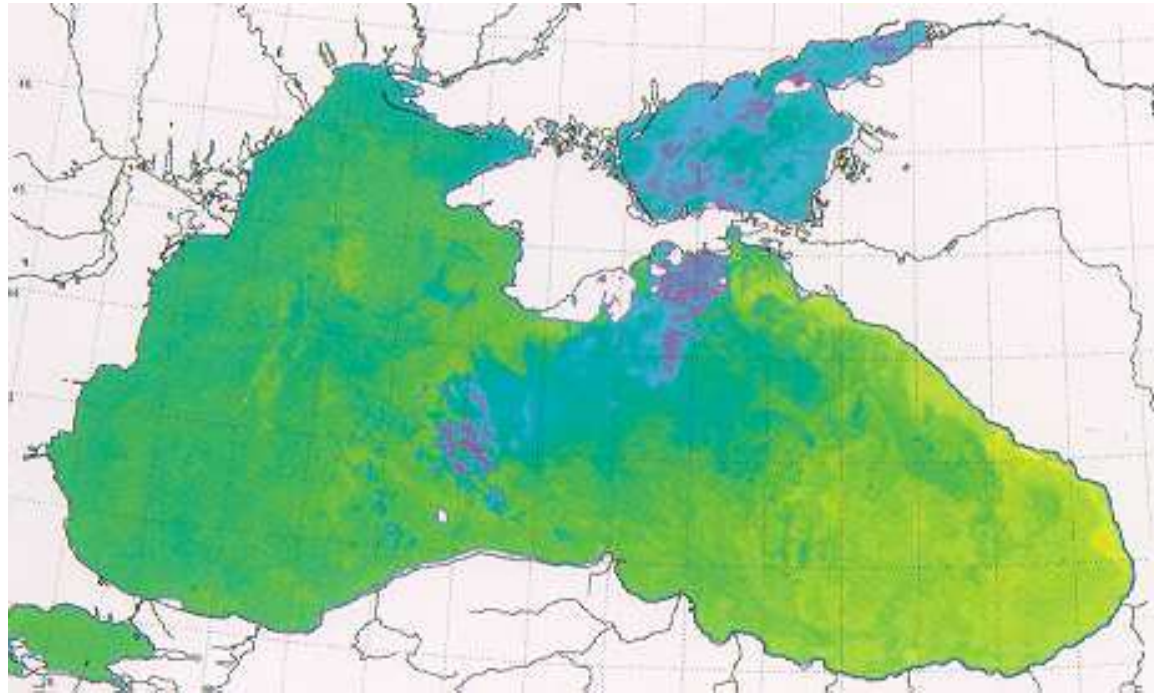


NDVI

base of many
further
calculation

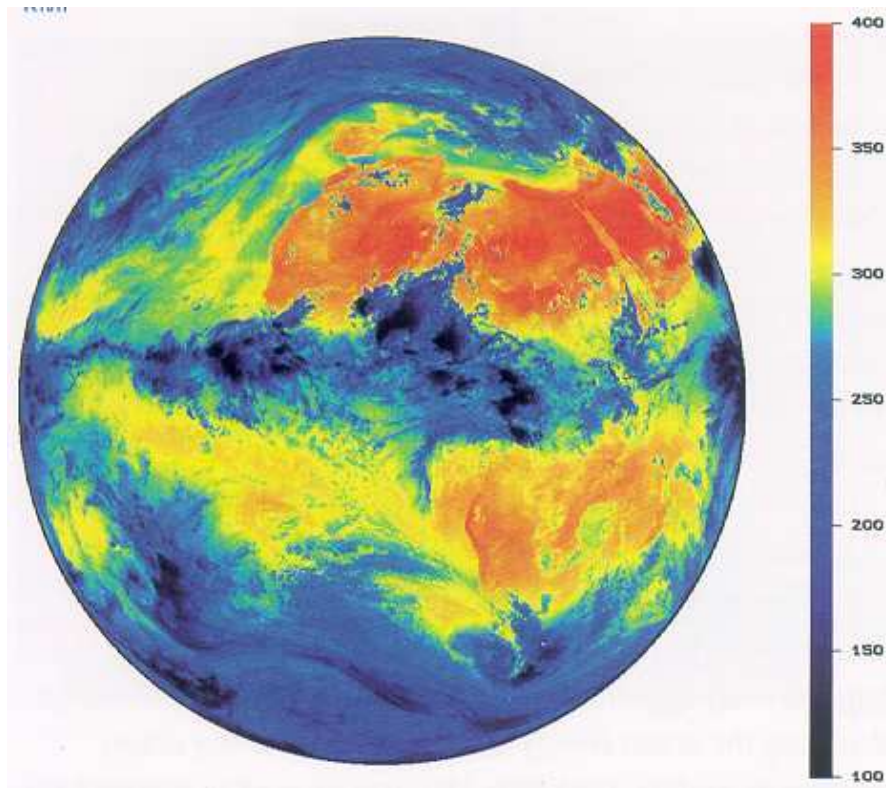
new
phenological
tool

Few words about the MSG



- Sea Surface Temperature

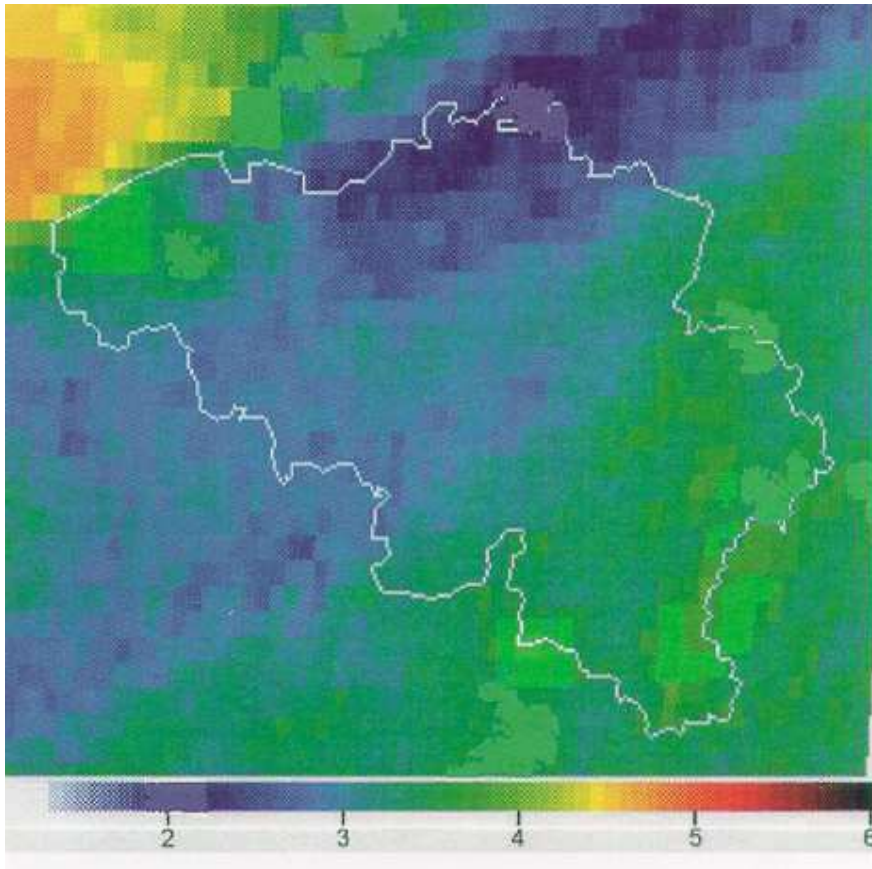
Few words about the MSG



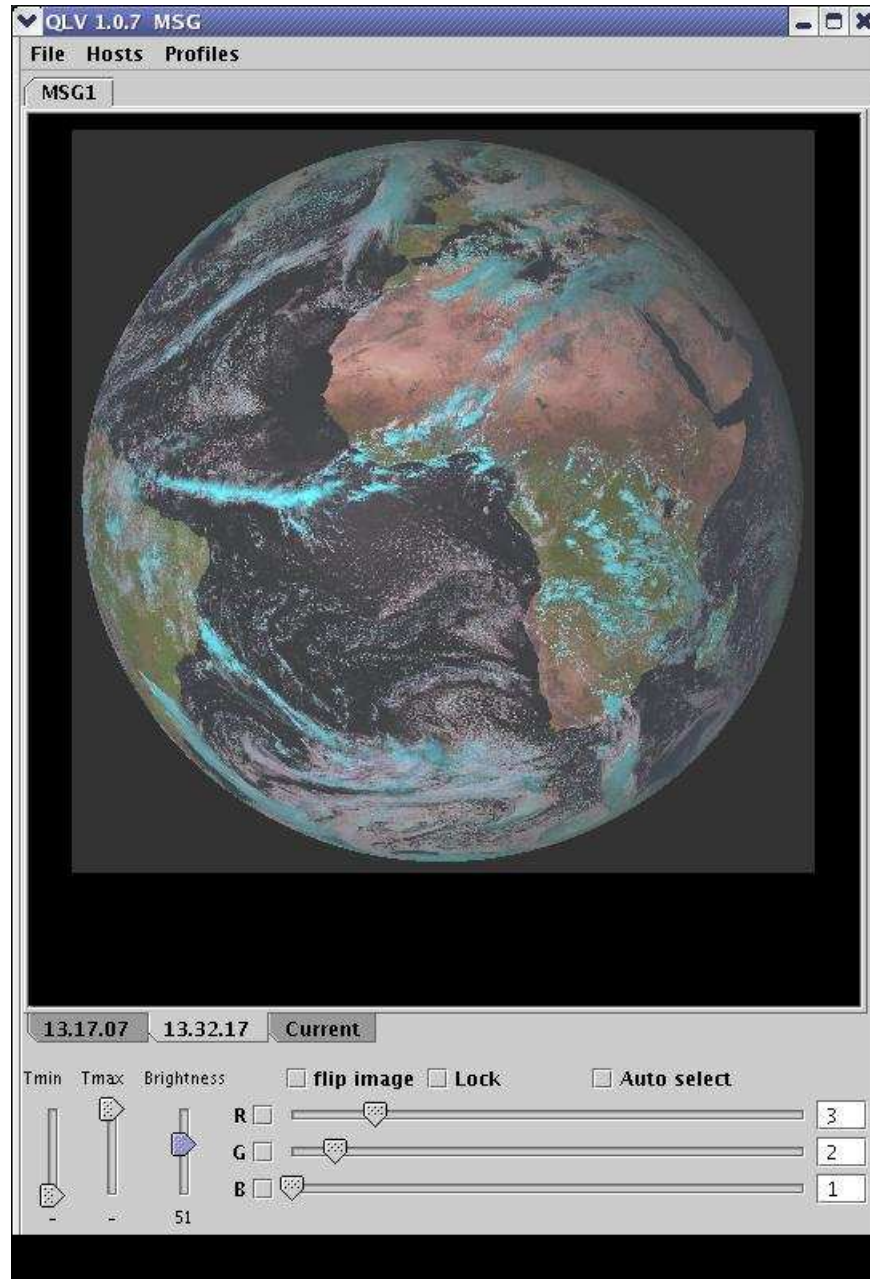
Simulated values of the
Thermal Flux
(outgoing long wave
radiation),

emitted Thermal Flux in
 W/m^2 units

Few words about the MSG



Evapotranspiration data
obtained from
Meteosat data

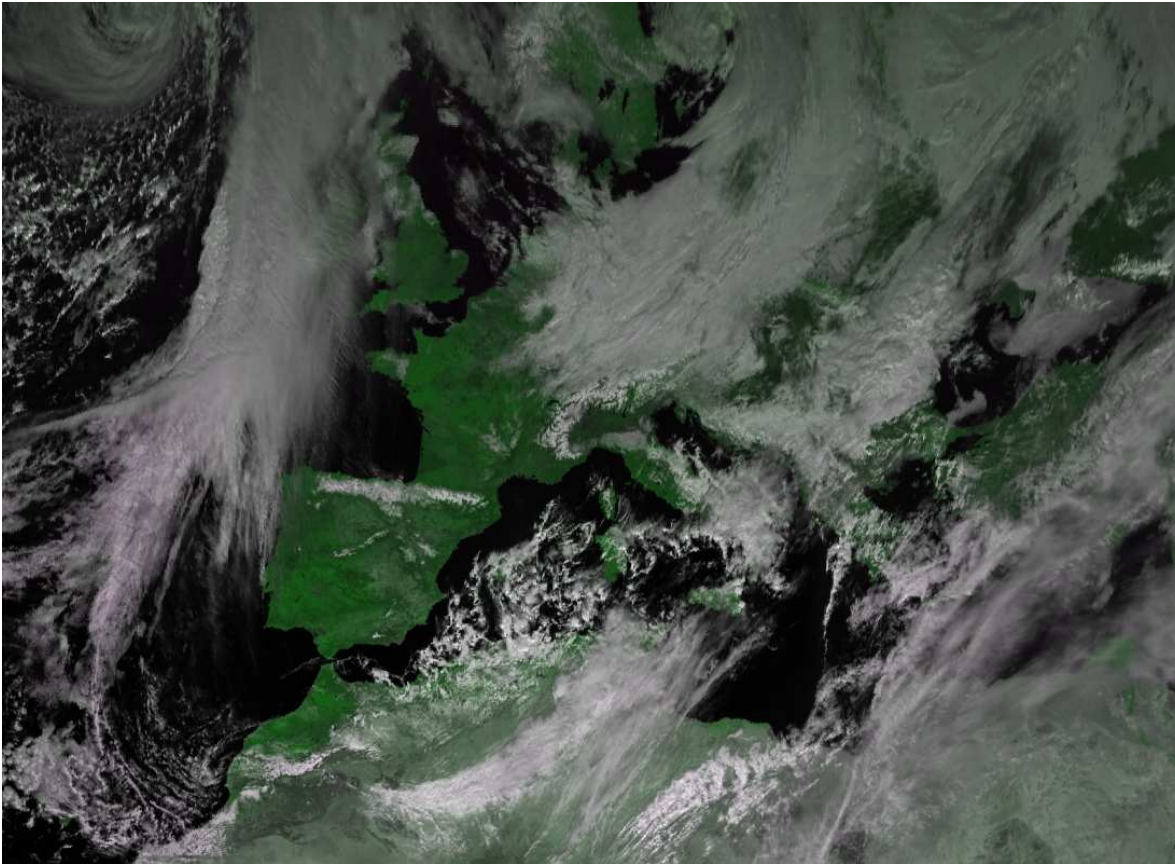


Few words about the MSG

Combination of 3,2,1
channels could be seen
in the screen receiving
the images

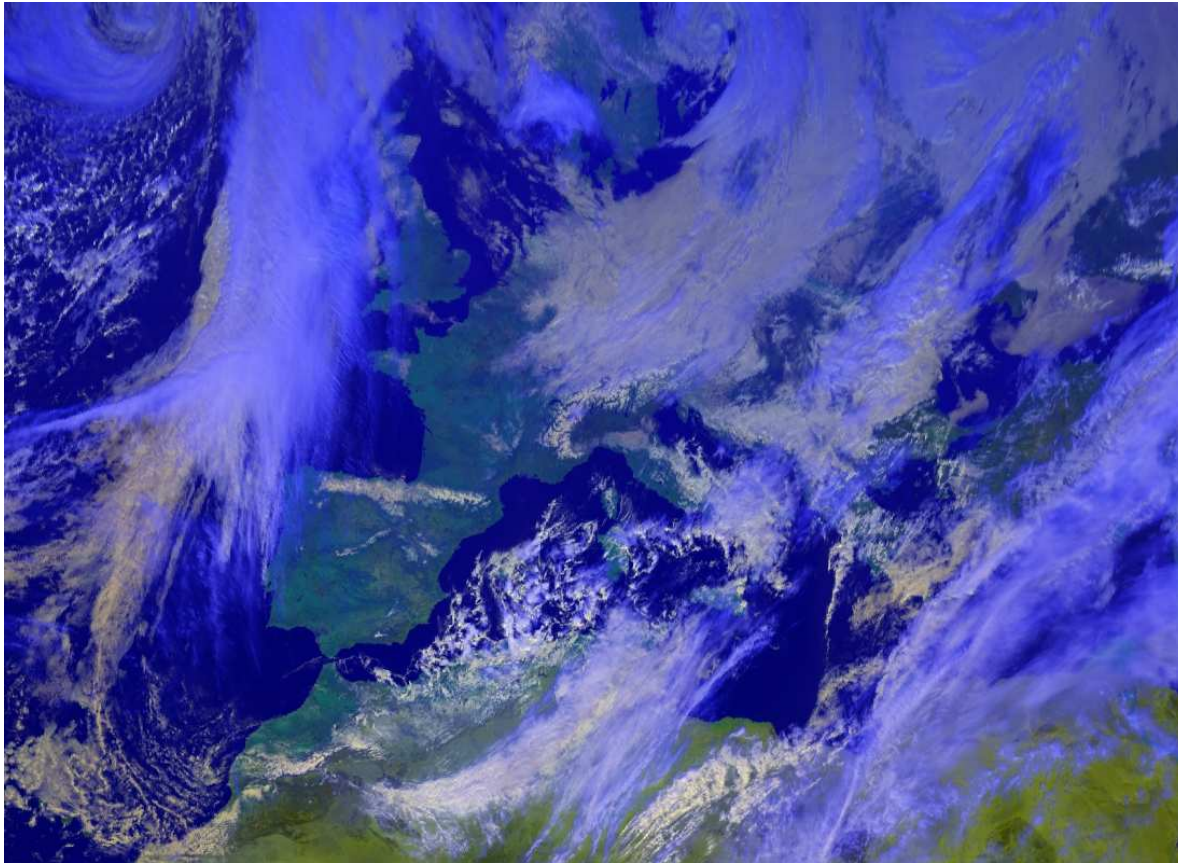
02 March 2004

Few words about the MSG



Combination
of
two visible
channel
02.03.04 12:00
white:
snow
or cloud

Few words about the MSG



Combination of
three channels

02.03.04 12:00

blue snow or
cloud