

RUNNING ACTIVITIES AND PLANS FOR THE FUTURE



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EUMETSAT



EUMETSAT's Mission

- The primary objective is to *establish, maintain and exploit* European *systems of operational* meteorological *satellites*, taking into account as far as possible the recommendations of WMO
- A further objective is to contribute to the *operational monitoring of the climate* and the detection of global climatic changes
- Instruments: mandatory programmes (EPS and Meteosat) and, since 2000, optional programmes and third-party programmes

EUMETSAT is an intergovernmental organisation with 30 Member and 1 Cooperating States

30 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

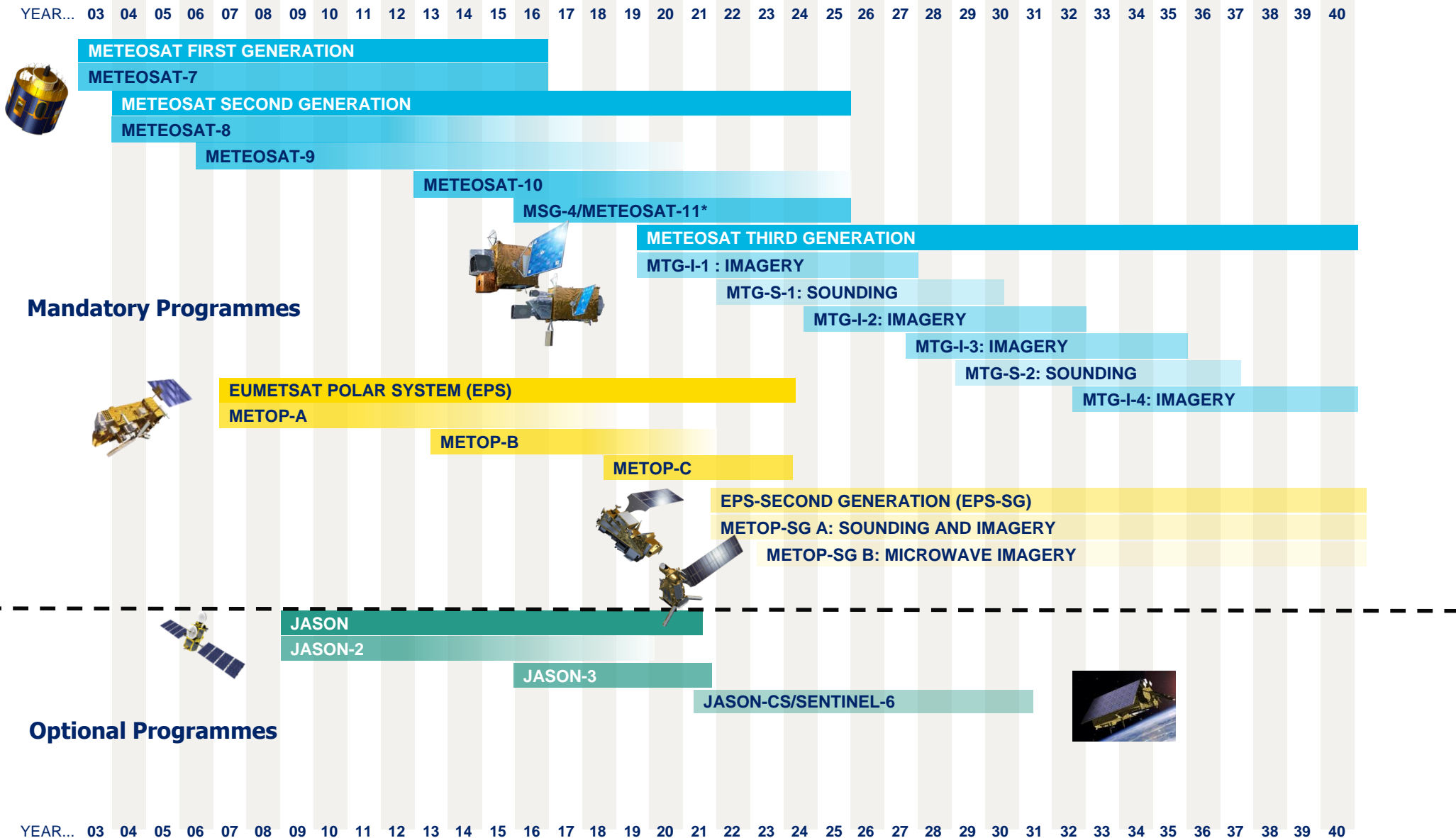
1 Cooperating State



SERBIA



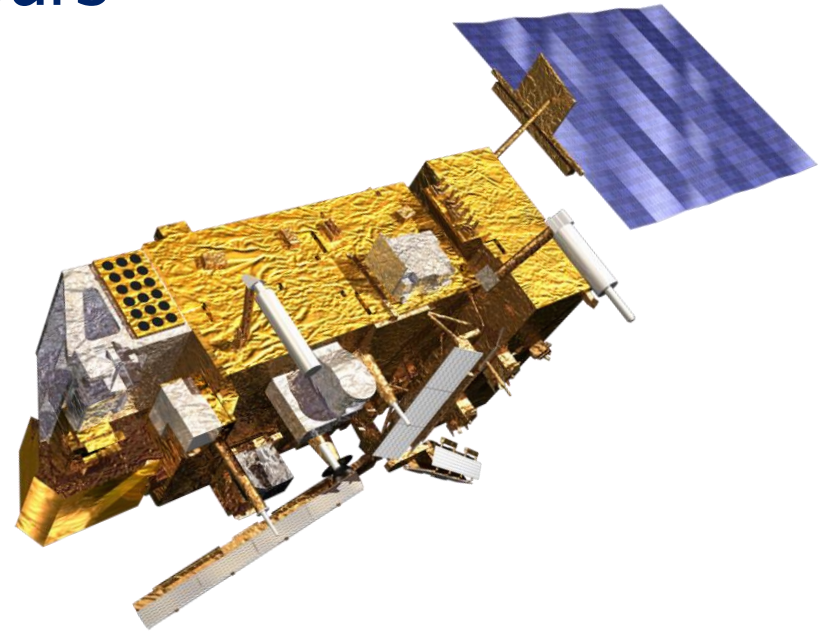
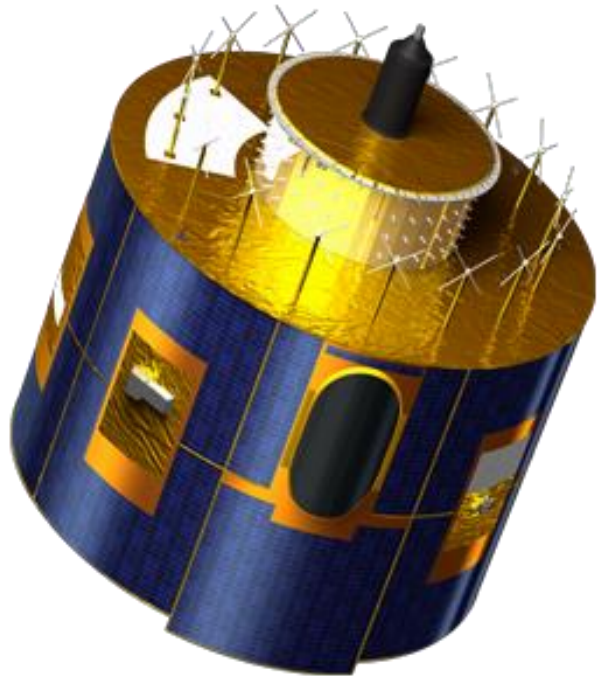
Operational services call for long term commitments..



Need for two types of meteorological satellites

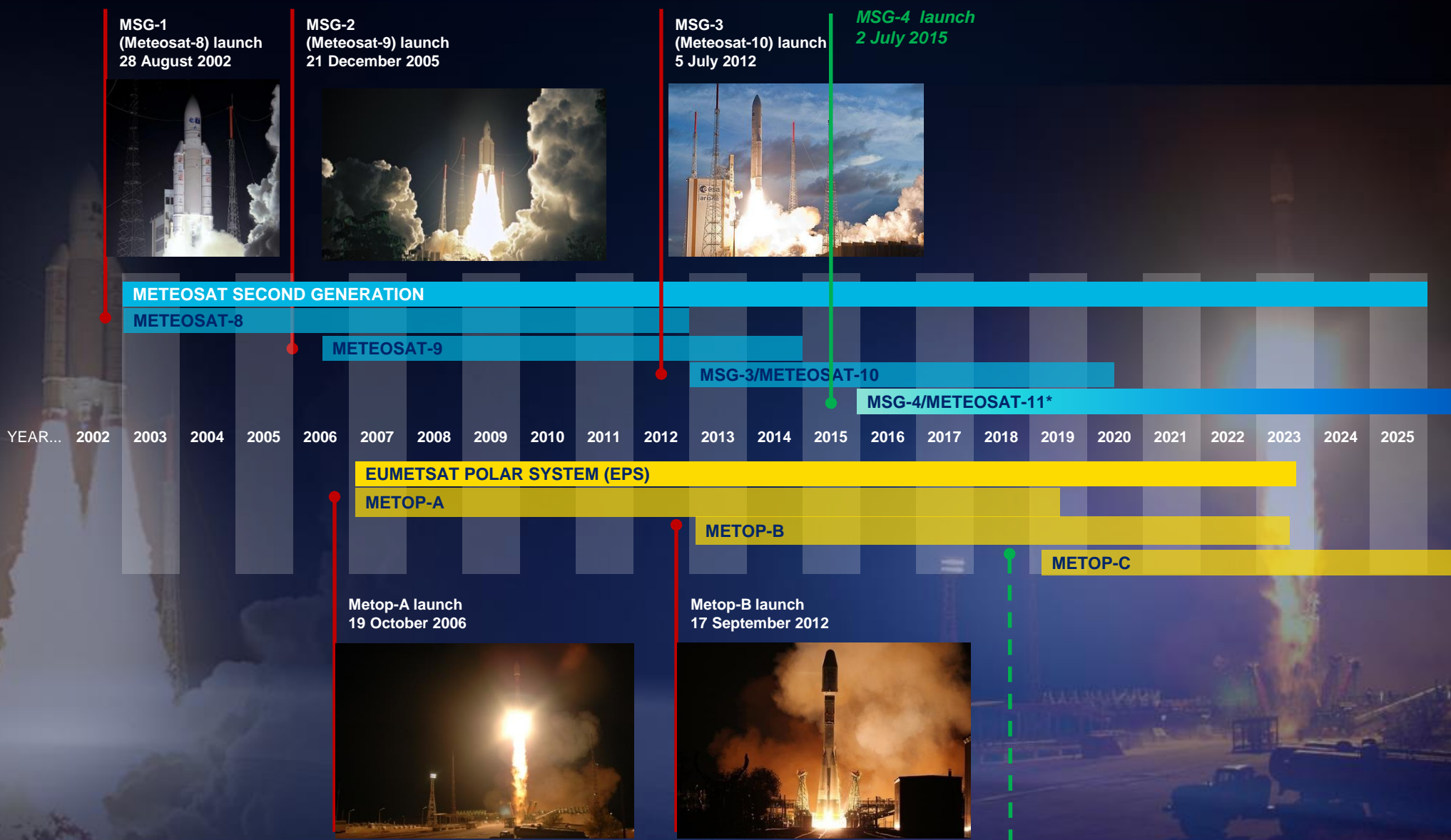
Geostationary orbit

Vital for forecasts up to a few hours

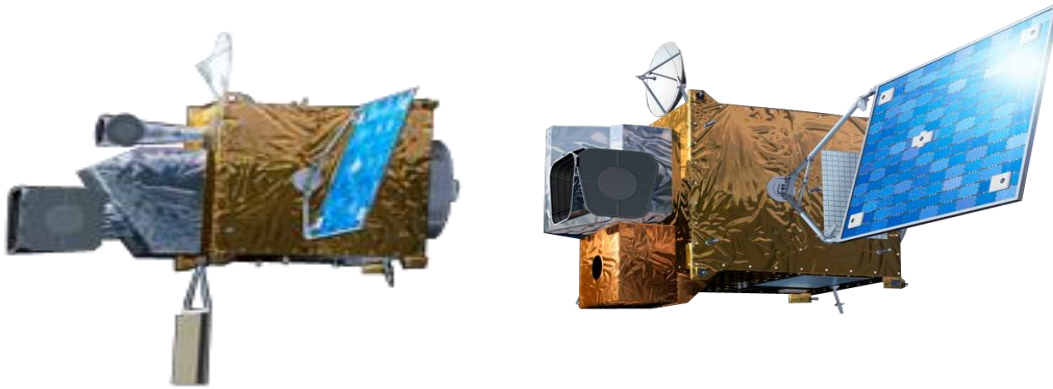


Polar orbit: critical for forecasts up to 10 days

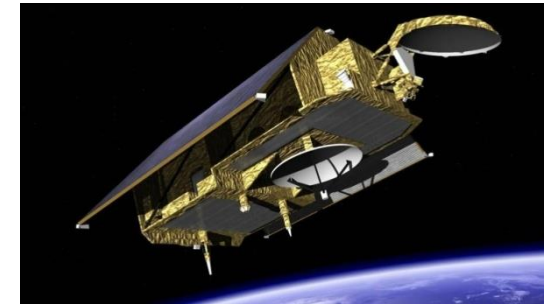
Deploying the remaining MSG and Metop satellites



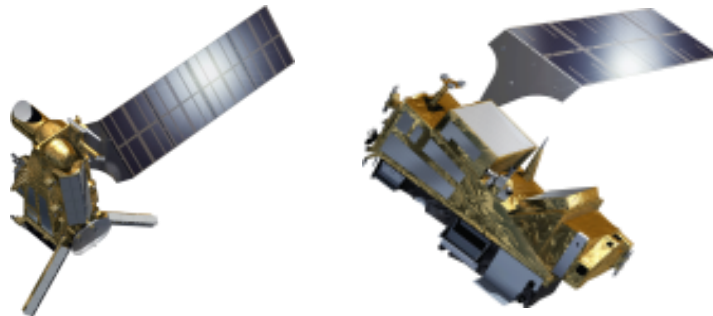
Future programmes shape the 2018 – 2040 timeframe



MTG: Approved, under development
Sentinel-4 approved (2 instruments funded by ESA)



Jason-CS : Proposed, *open to subscription in Nov. 2014*
Satellite development approved at ESA CMIN14
Recurrent satellite co-funded by EU/Copernicus



EPS-SG : *approval process started in July 2014*
Metop-SG programme approved at ESA CMIN12
Sentinel-5 development approved at CMIN14
Recurrent Sentinel-5 instruments funded by EU/Copernicus

RELATIONSHIPS WITH OUR MEMBER STATES



EUMETSAT and its Member States

- **EUMETSAT** : a business neutral “mission-driven” agency
- **EUMETSAT** has the obligation to deliver a service to its Member States and for this acts as the Architect of a System delivering a service to its Member States – which are its users
- A characteristic of the relationships with our Member States is the user-driven dimension – EUMETSAT is a user-governed, operational agency which means:
 - Owns user requirements definition process
 - **System** authority + procurement of **ground facilities** and launch services
 - Deliver services to users as per SLA, and implements agreed changes
 - Legal instruments : mandatory, optional and third-party programmes

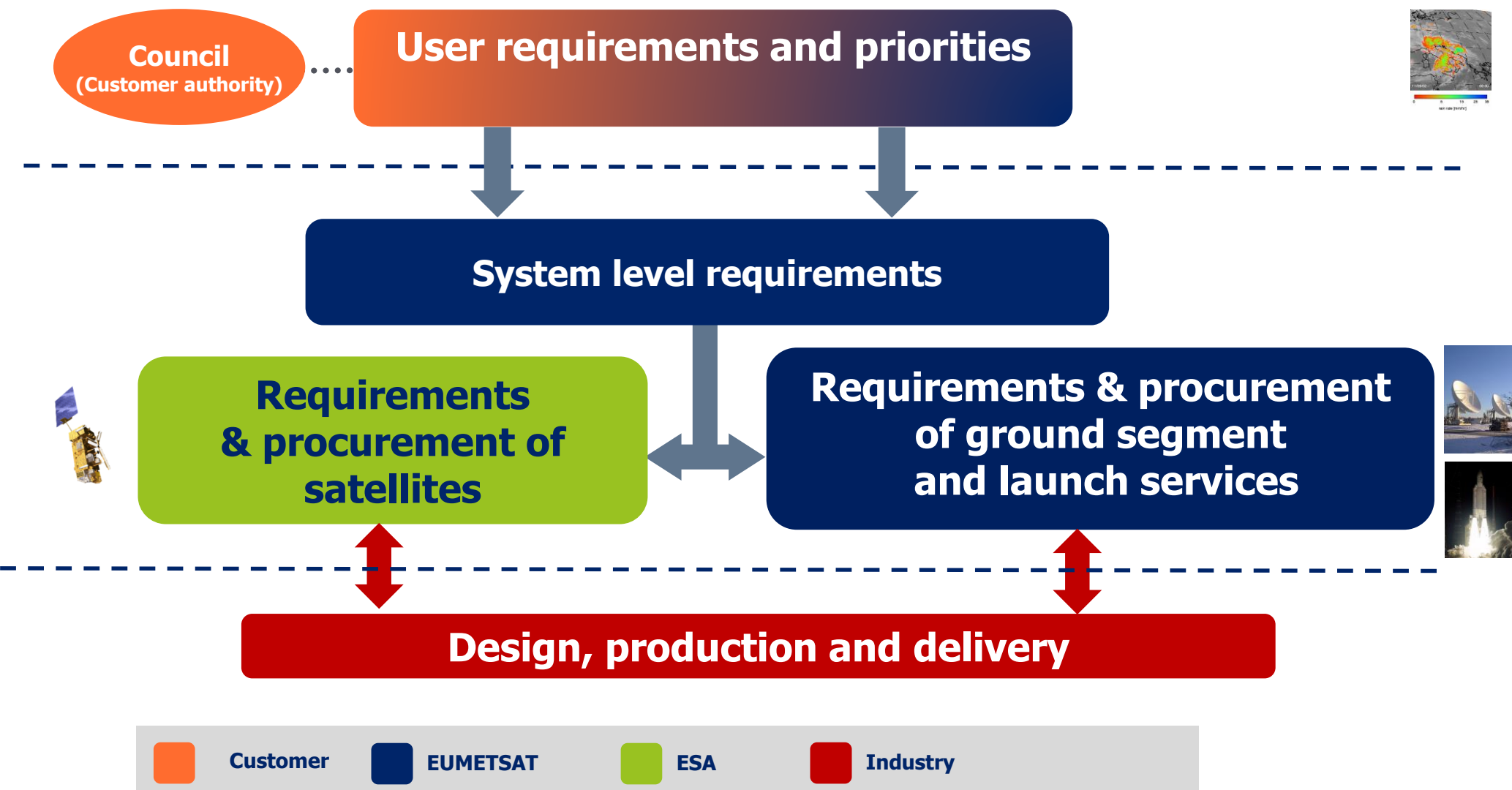
RELATIONSHIPS WITH ESA



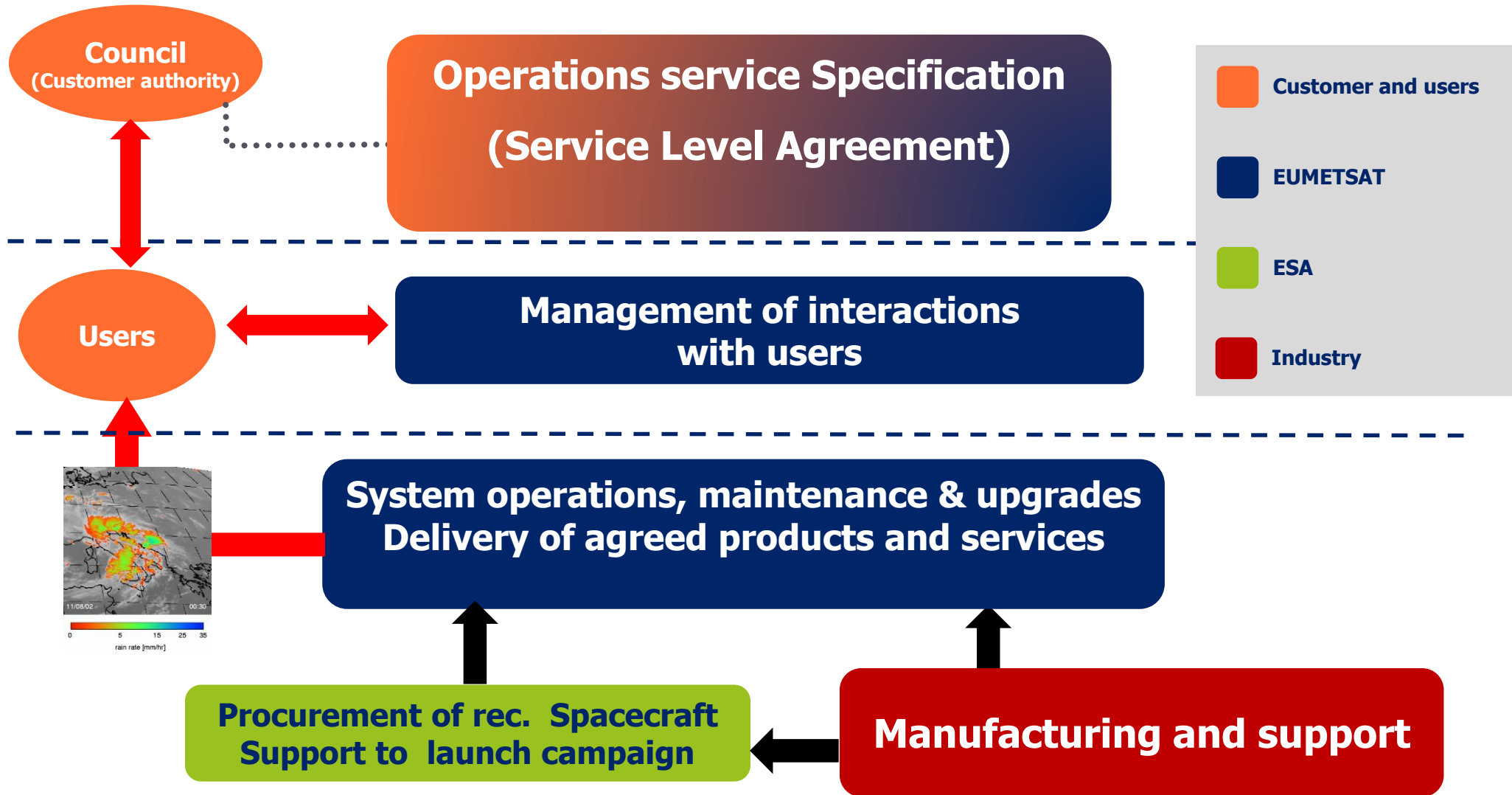
The ESA-EUMETSAT cooperation model for meteorology

- **EUMETSAT** acting as a user-governed, operational agency
 - Owns user requirements definition process
 - **System** authority + procurement of **ground facilities** and launch services
 - Deliver services to users as per SLA, and implements agreed changes
- **ESA** acting as a satellite development agency and procurement agent
 - Procure development satellite(s) as part of ESA optional programme (30% funded by EUMETSAT)
 - Procure recurrent satellites (100% funded by EUMETSAT)
 - Act as interface with space industry (satellites)
 - Legal instruments : Agreements per programme
- Major role of European Industry under ESA and EUMETSAT contracts

ESA-EUMETSAT Cooperation model: development phase



ESA-EUMETSAT Cooperation model: operations phase



RELATIONSHIPS WITH EC



EUMETSAT activities in support of Copernicus

- Legal Framework:

- EUMETSAT: Third Party Programme foreseen by the Convention approved on 15 October 2014
- EU: Delegation Agreement foreseen by the Copernicus Regulation signed on 7 November 2014 (229 M€ over 7 years)



- Cooperation with ESA on development and operations (Agreement)
- Vision: *“To deliver integrated data streams (from Copernicus, EUMETSAT and third party missions) to create opportunities for Copernicus and EUMETSAT users”*

EUMETSAT activities in support of Copernicus

(Committed under Agreement, covered within 229 M€ budget)

Building Block I

Operations (Sentinel-3, Jason-3, Sentinel-6 / Jason-CS) and delivery of operational data and support services to the Copernicus Marine Service

Building Block II

Operations (Sentinel-4, Sentinel-5 as part of MTG and EPS-SG) and delivery of operational data and support services to the Copernicus Atmosphere Service

Building Block III

Deliver selected Mission Data services, incl. Third Party data (building on operational cooperation established by EUMETSAT with U.S., China, India,...)

(Subject to EU request and additional EU funding)

Building Block IV

Support to Copernicus Climate Change monitoring service

Building Block V

Support to EC for User Requirements for Copernicus Marine, Atmosphere and Climate Services

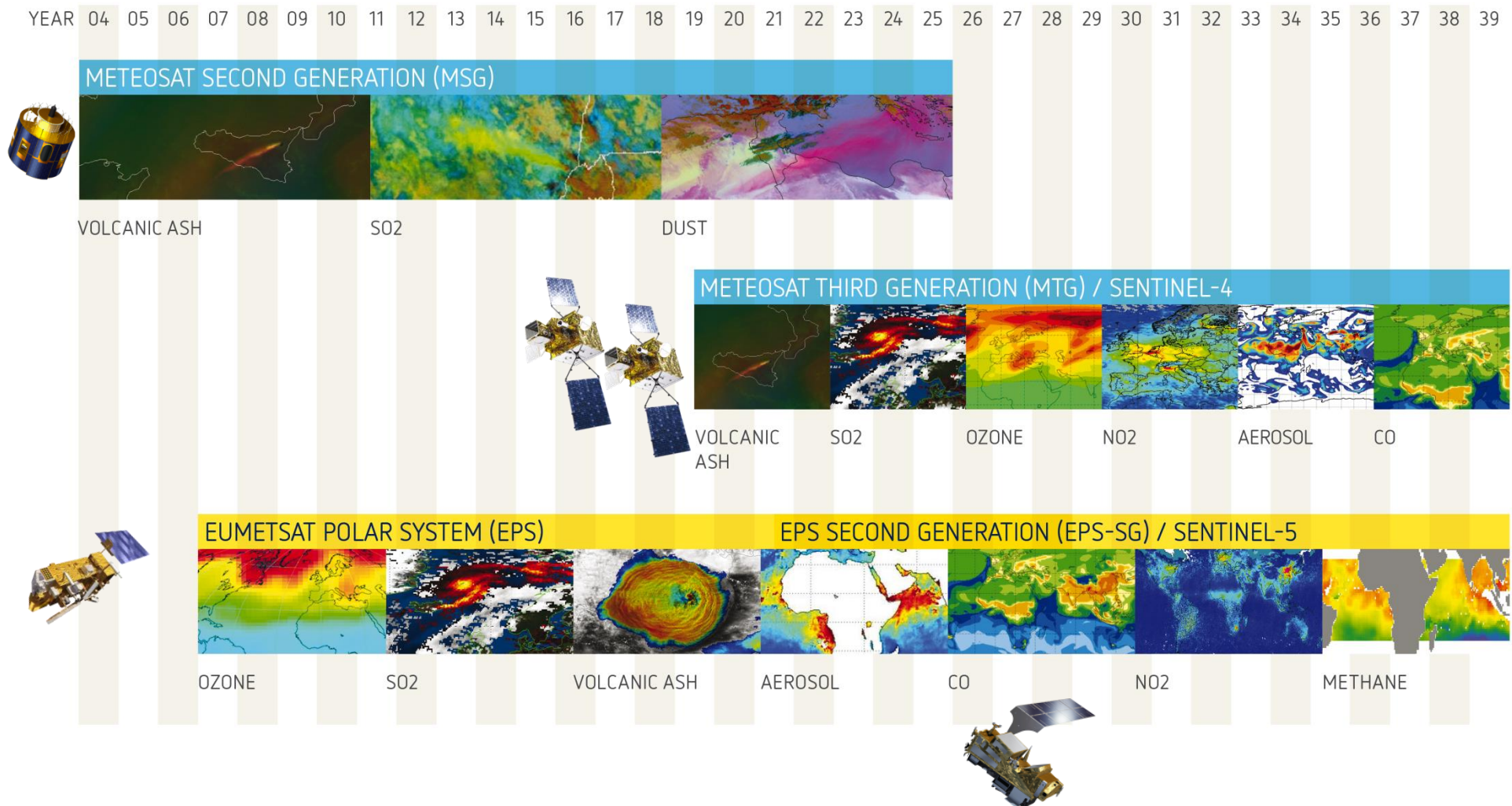
Data service for Marine Environment Monitoring

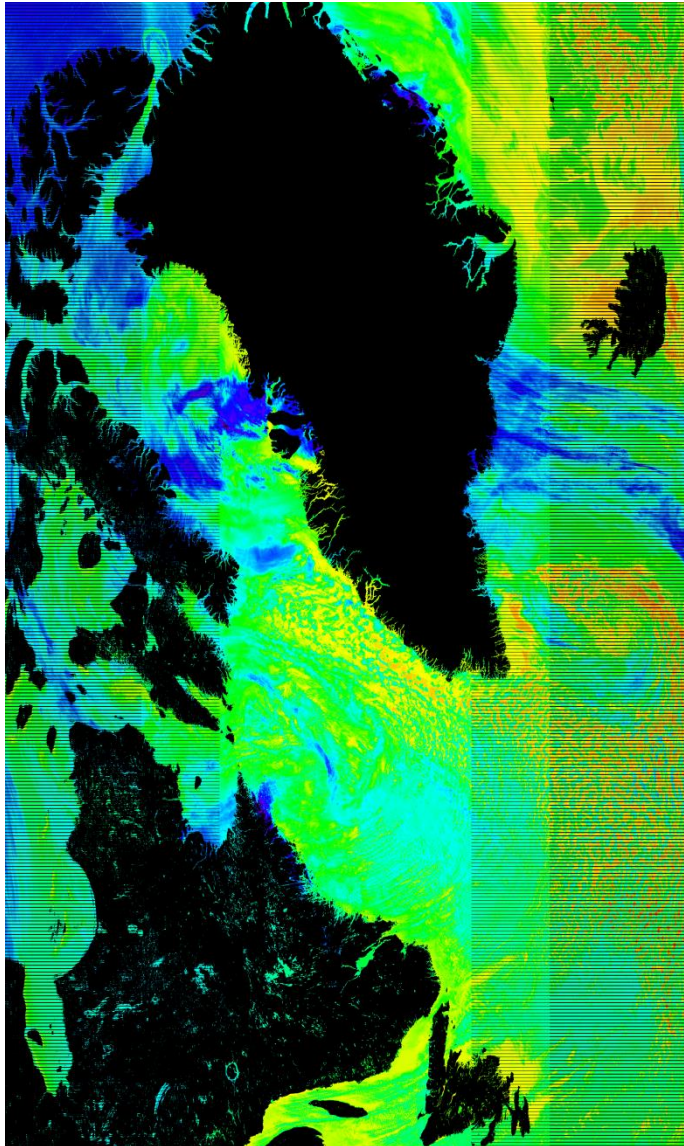
Building
Block I



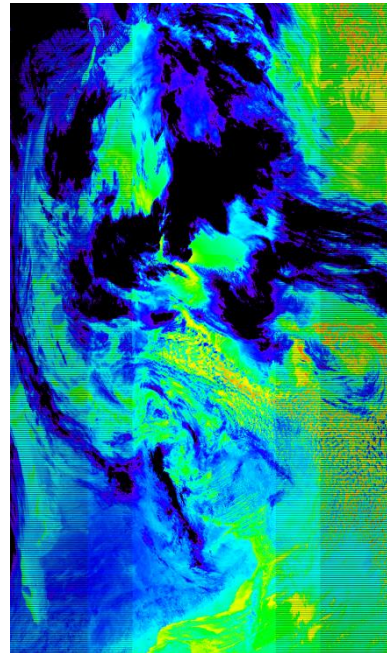
Data service for Atmosphere Monitoring

Building
Block II

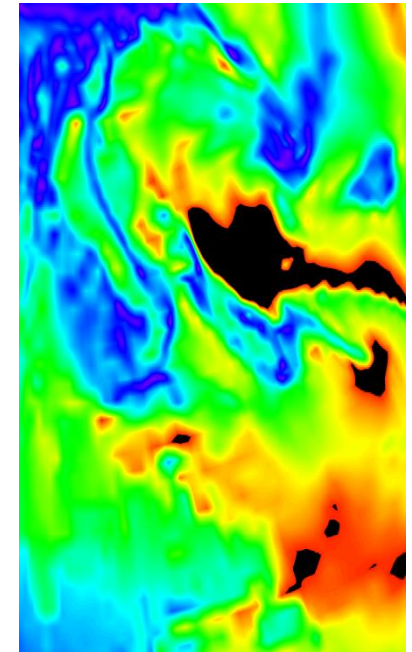




Sea water temperature at 1 m depth
GHR SST format from NASA Suomi
NPP satellite



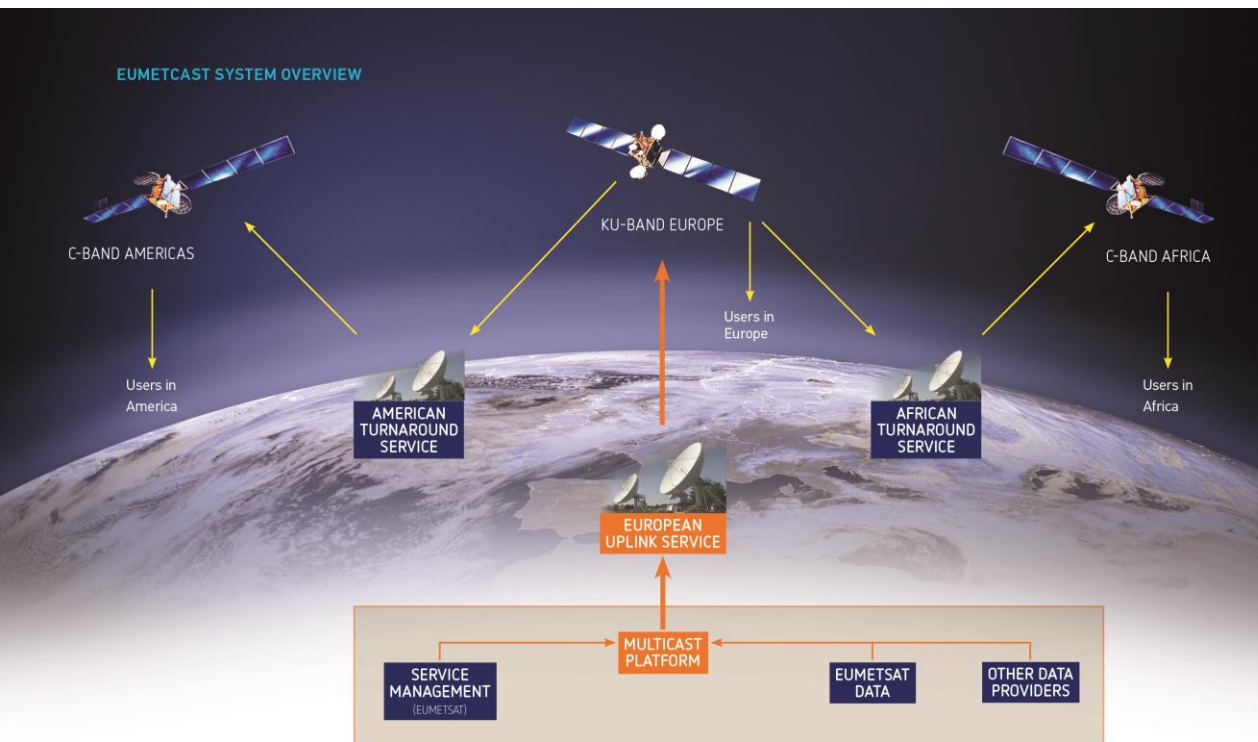
BT 11 μ



Wind speed at 10 m

EUMETSAT is also discussing with China, India, Japan and Russia how relevant data can be made accessible to Copernicus Services as part of the Agreements that EUMETSAT has in place with agencies in these countries

EUMETCast: guaranteed real time access for all users in the EU Copernicus marine/atmospheric satellite data



- Same state of the art technology as digital TV broadcast (DVBS-2)
- User access via low cost off the shelf station: VSAT antenna and PCs (2 k€)
- No limit to number of users, no dependence on local infrastructures
- Integrated data stream for broad range of applications: EUMETSAT and Copernicus marine data
- Supports demanding timeliness requirements, high and low volumes, with 99.9% reliability
- Secure and controlled delivery (selection of users, data...)



EVOLUTION OF SPACE GOVERNANCE IN EUROPE



Evolution of Space governance in Europe

In the context of a discussion on the evolution of the governance of space in Europe

For developing its own programmes :

- EUMETSAT shall remain a “Mission driven” – User governed organisation
- The successful cooperation model with ESA shall be maintained, making maximum use of the competencies of each organisation (system architect vs satellite development and procurement agency)

Evolution of Space governance in Europe

For third-party programmes - run on behalf of the EU – a similar role could be captured.

- In 2007, ESP – EUMETSAT is seen as an entity owning infrastructures, to be consulted when building the “European Space Programme”;
- The Signature of a Delegation Agreement with the EU on support to Copernicus has demonstrated the possibility to implement activities on behalf of the EU;
- In a revised ESP, the role of user-governed entities might be more explicitly reflected : true for Copernicus, but also for other EU Flagship programmes : Galileo,...
- U.S. Space Policy is an example : precise role defined for civil applications: NOAA, and USGS (User entities owning requirements and systems) – NASA (satellite development and procurement agency)