

# EUMETSAT

## Monitoring Weather, Climate and the Environment

# HAZARDOUS WEATHER



# HAZARDOUS WEATHER





# EUMETSAT OBJECTIVES

**... The primary objective is to establish, maintain and exploit European systems of operational meteorological satellites.**

**A further objective is to contribute to the operational monitoring of the climate and the environment as well as the detection of global climatic changes.**



# EUMETSAT'S MISSION IS....

**... to deliver operational satellite data and products that satisfy the meteorological and climate data requirements of its Member States - 24 hours a day, 365 days a year.**

**This is carried out according to the recommendations of the World Meteorological Organization (WMO).**

# 20 MEMBER STATES & 10 COOPERATING STATES

## Member States

-  Austria
-  Belgium
-  Croatia
-  Denmark
-  Finland
-  France
-  Germany
-  Greece
-  Italy
-  Ireland
-  Luxembourg
-  The Netherlands
-  Norway
-  Portugal
-  Slovak Republic
-  Spain
-  Sweden
-  Switzerland
-  Turkey
-  United Kingdom



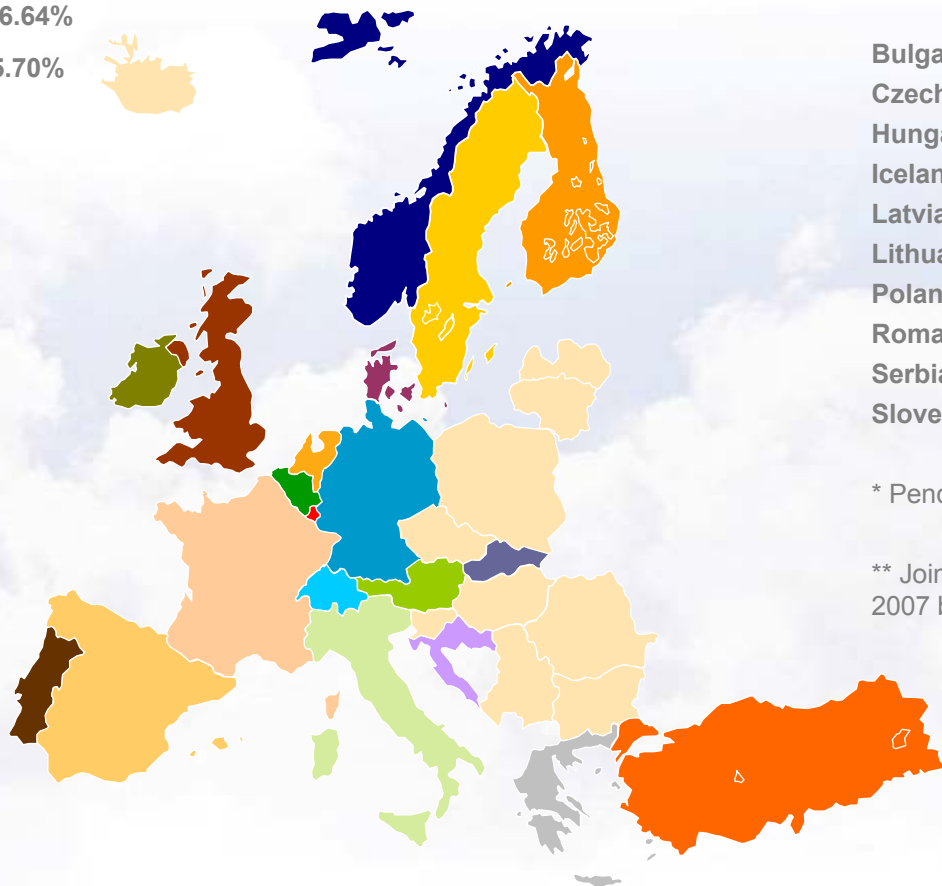
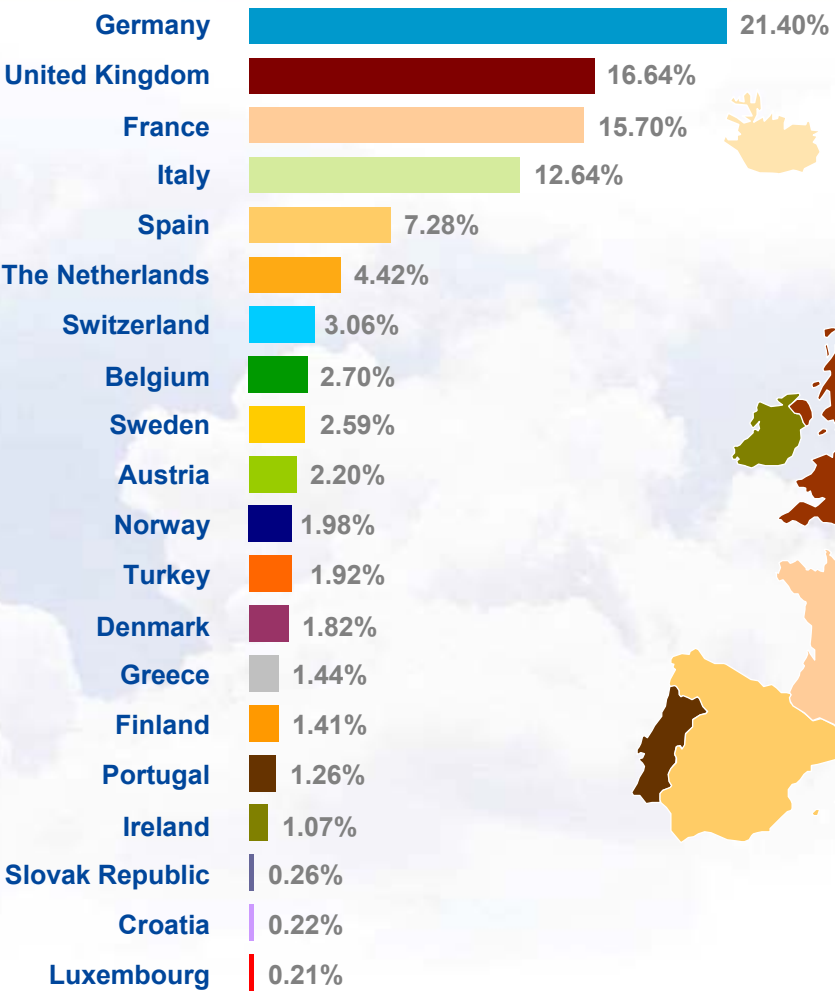
## Cooperating States

-  Bulgaria
-  Czech Republic
-  Hungary
-  Iceland
-  Latvia
-  Lithuania
-  Poland
-  Romania
-  Serbia & Montenegro
-  Slovenia

\*Pending Ratification



# MEMBER STATE CONTRIBUTIONS 2006



## Cooperating States:

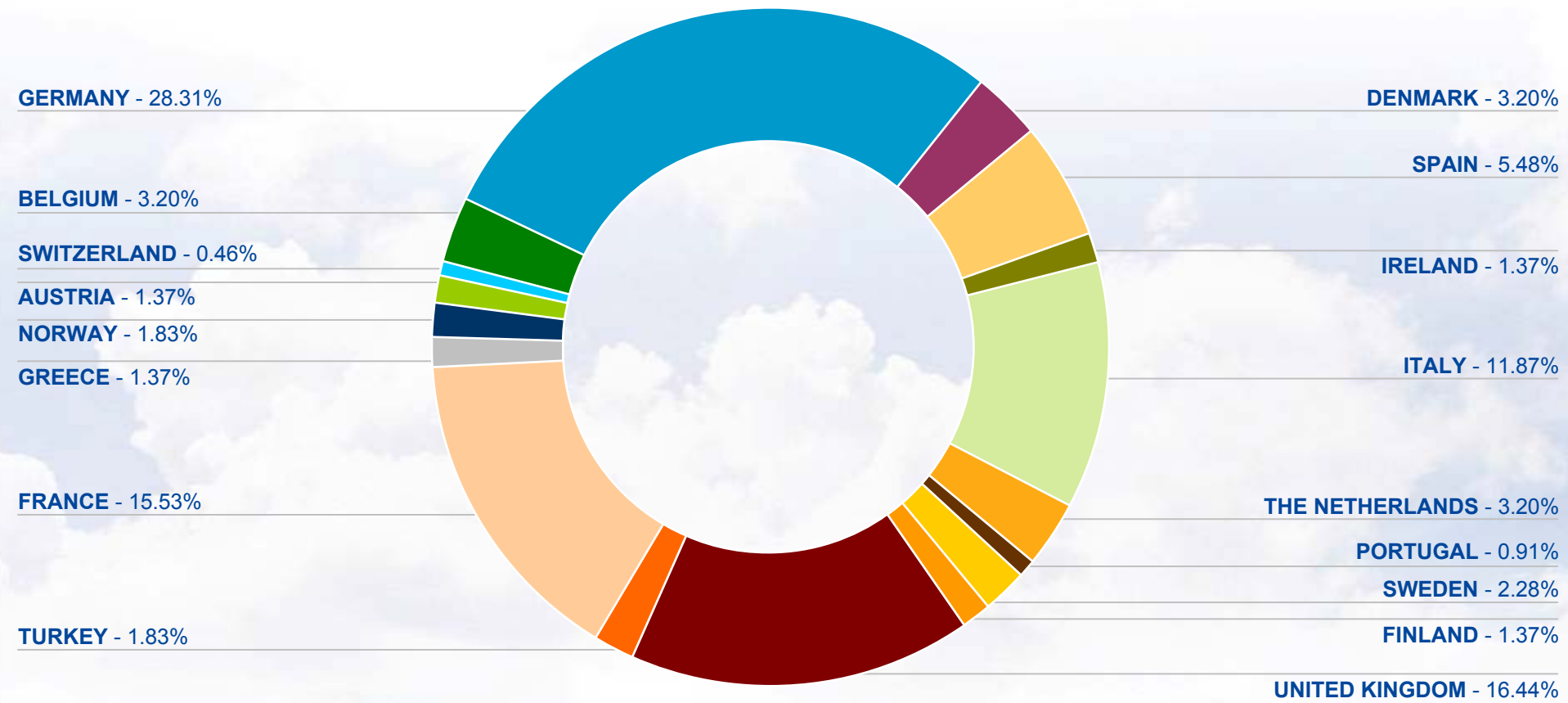
- Bulgaria : 0.16%
- Czech Republic : 0.70%
- Hungary : 0.61%
- Iceland\*\*
- Latvia : 0.09%
- Lithuania : 0.14%
- Poland : 1.88%
- Romania : 0.45%
- Serbia & Montenegro\*
- Slovenia : 0.23%

\* Pending Ratification

\*\* Joined in 2006, to be included in 2007 budget



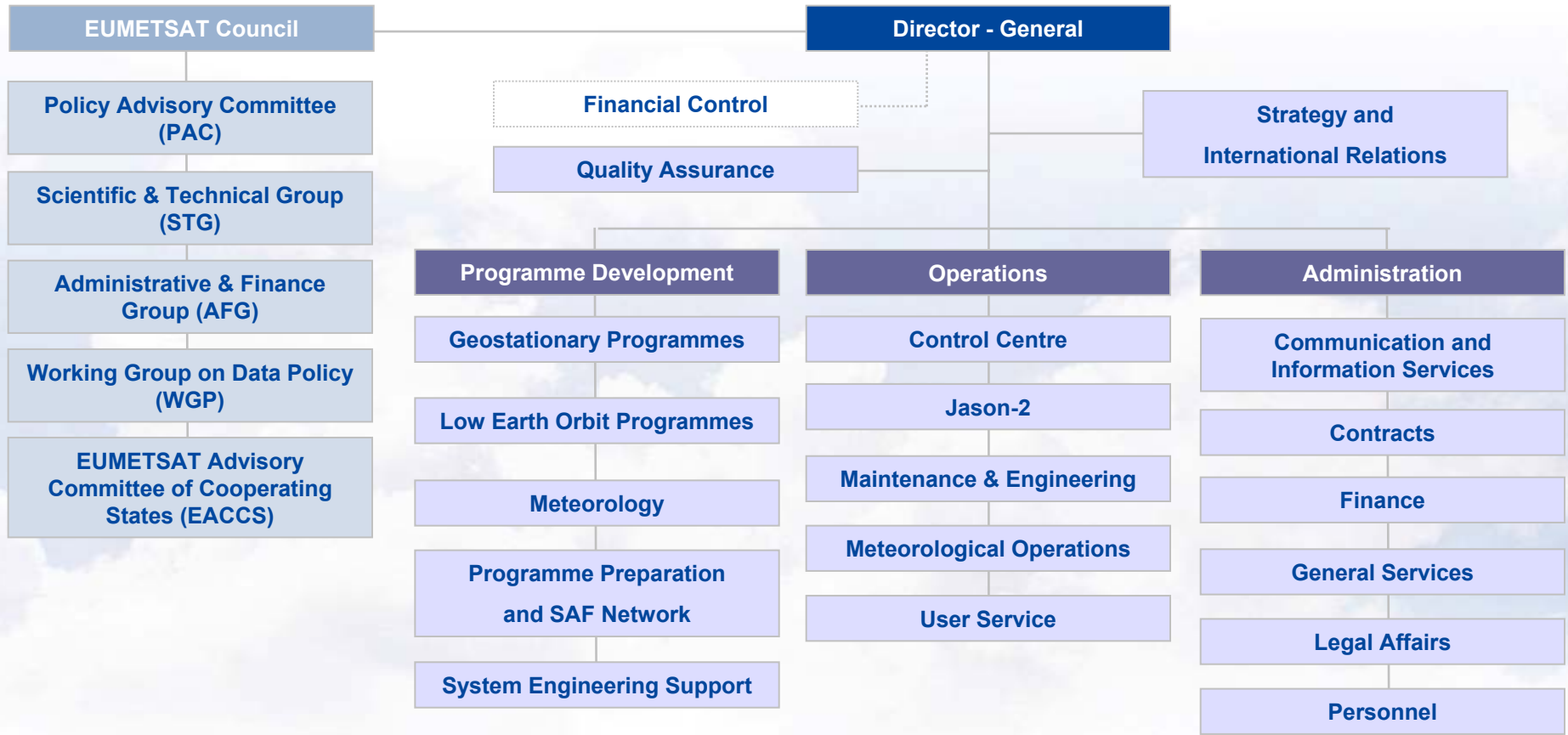
# STAFF NATIONALITIES







# EUMETSAT STRUCTURE



# WHAT WE DO



Operations funded by EUMETSAT Member States – ESA provides some 20% of total system costs for development

National European  
Meteorological  
Services



Private Enterprises,  
Value Added Services,  
End-Users

Operating  
Agency



 **EUMETSAT**



European Space  
Industry

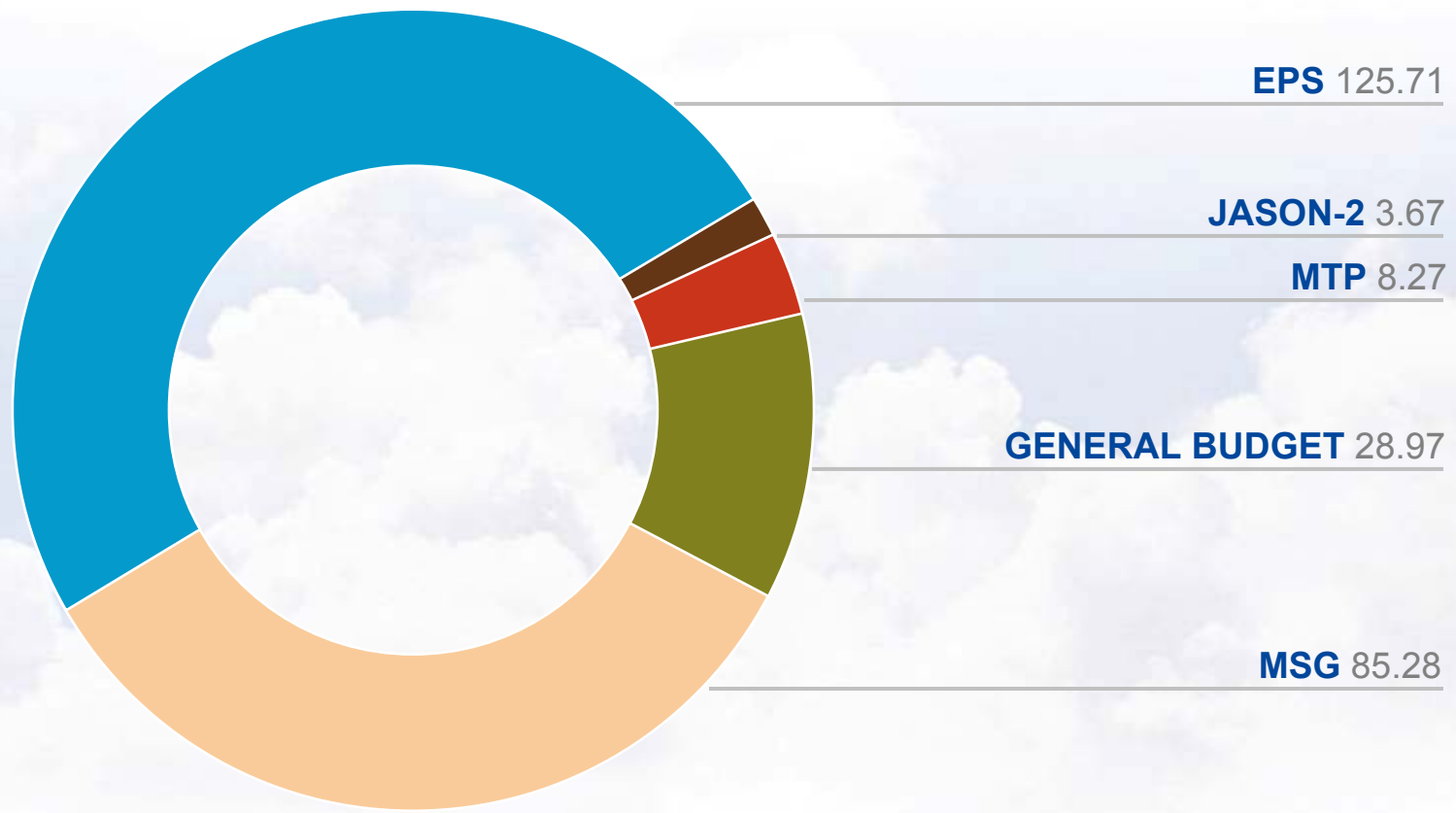


Development and  
Procurement Agency



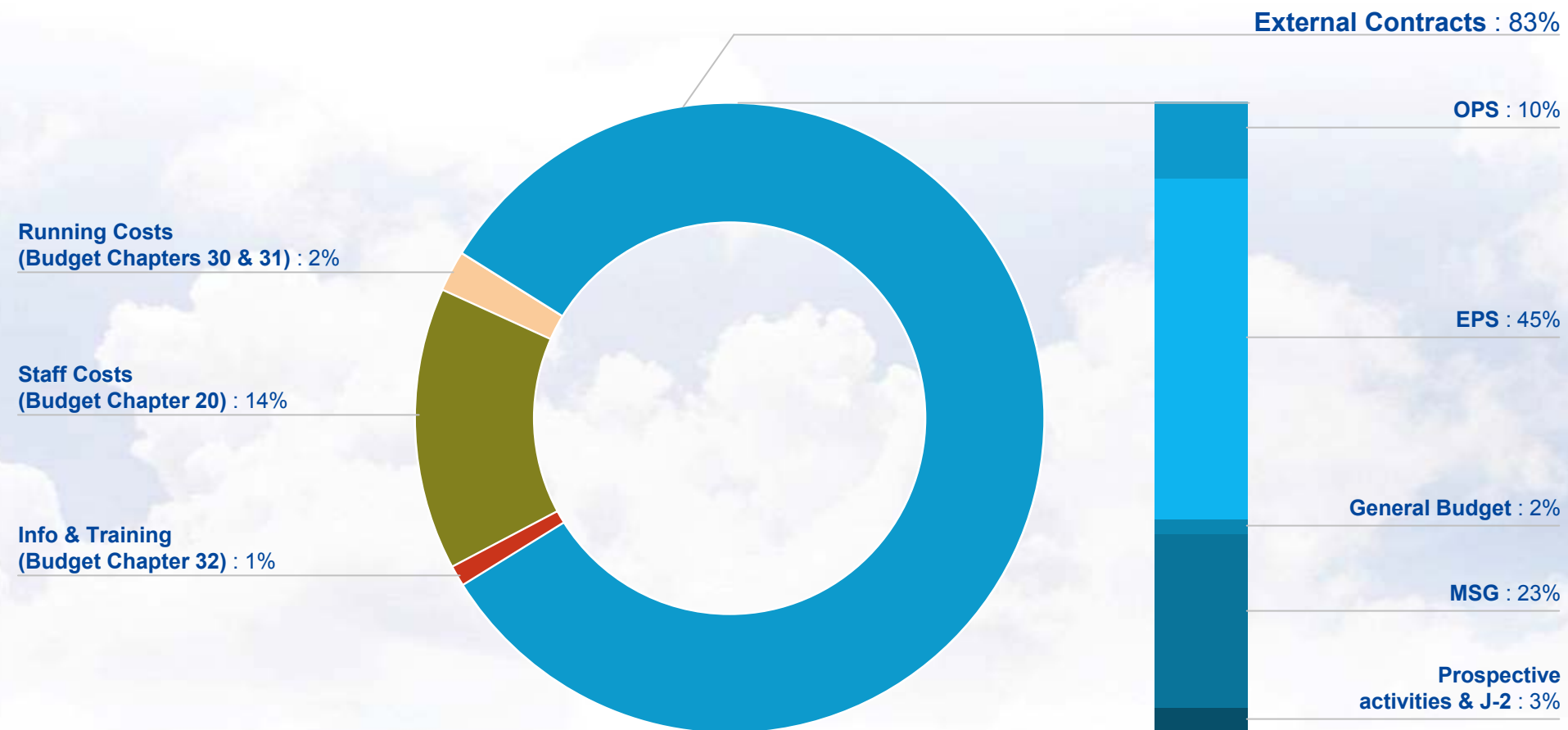
# FINANCIAL ENVELOPES

For satellite programmes



Total Expenditure 2006: MEUR 251.90

# FINANCE: EXTERNAL AND INTERNAL COSTS AS % OF BUDGETS 2006



Total cost 2006: MEUR 251.896

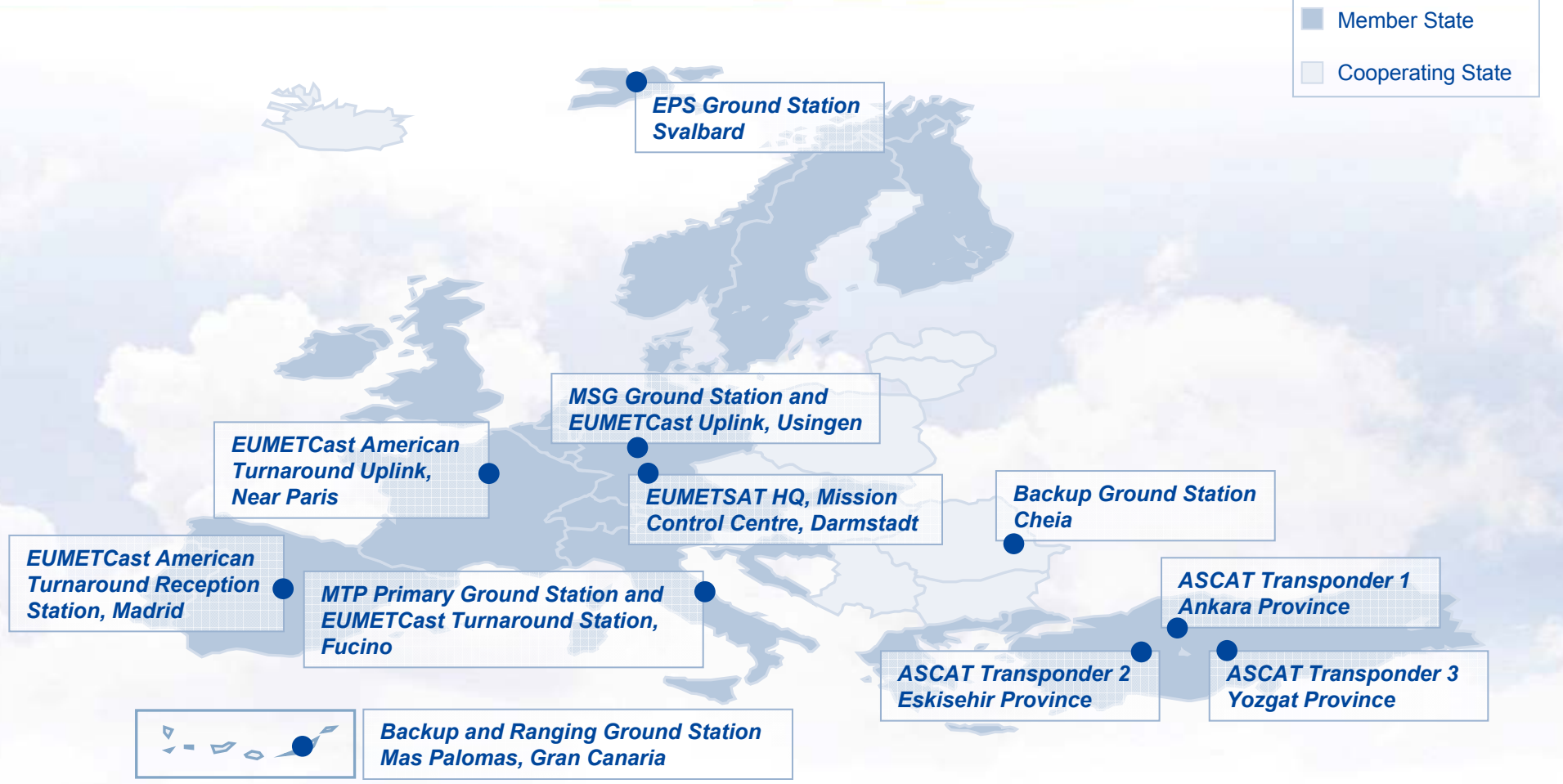
# EUMETSAT HEADQUARTERS





# EUMETSAT GROUND SEGMENT

■ Member State  
■ Cooperating State



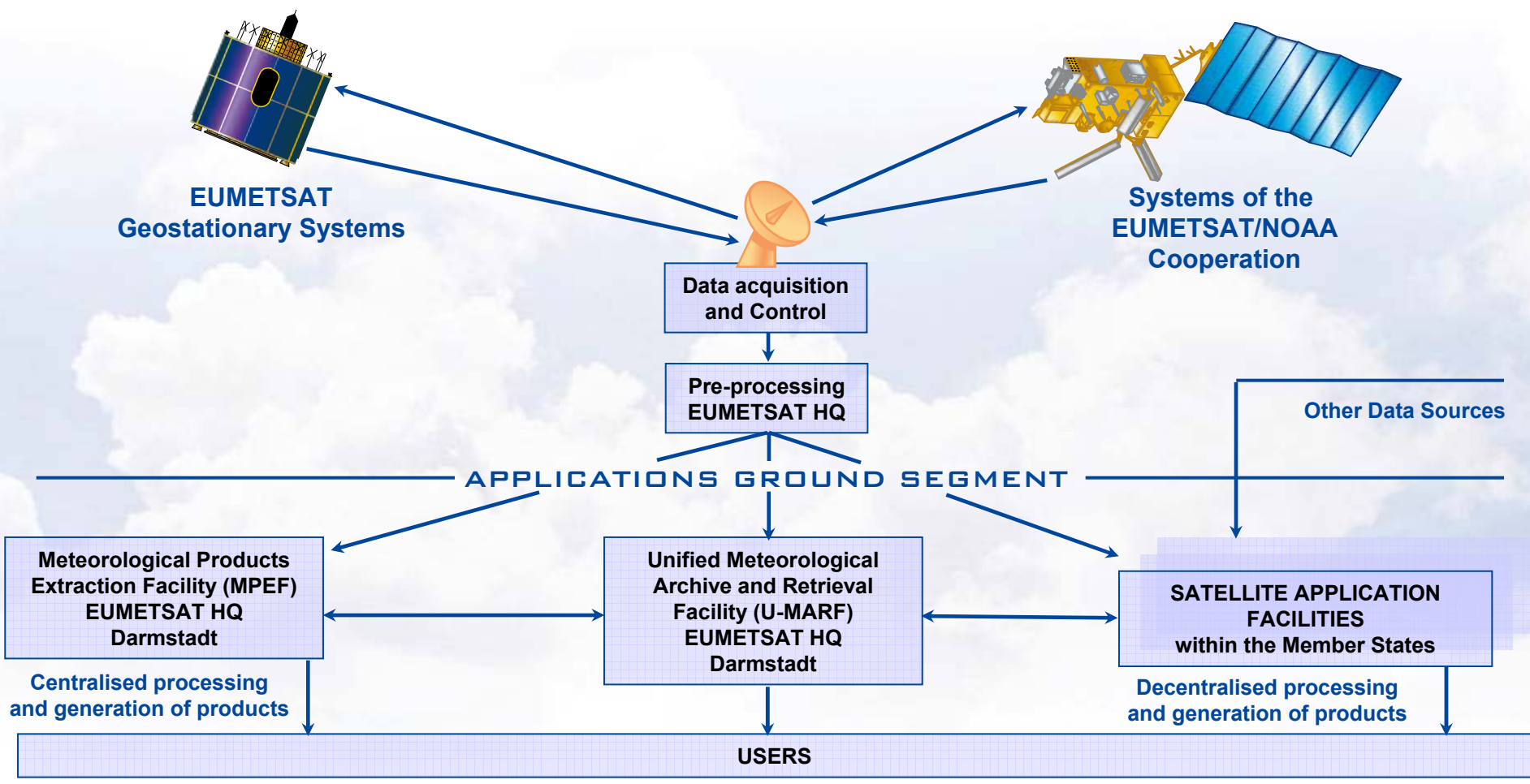


# SATELLITE APPLICATIONS IN EUROPE





# OVERVIEW OF THE EUMETSAT GROUND SEGMENT





# GROUND SEGMENT



**Meteosat Antenna in Usingen, Germany**



# GROUND SEGMENT



**Meteosat Antenna in Fucino, Italy**

# GROUND SEGMENT



MetOp Antenna in Spitzbergen, Norway



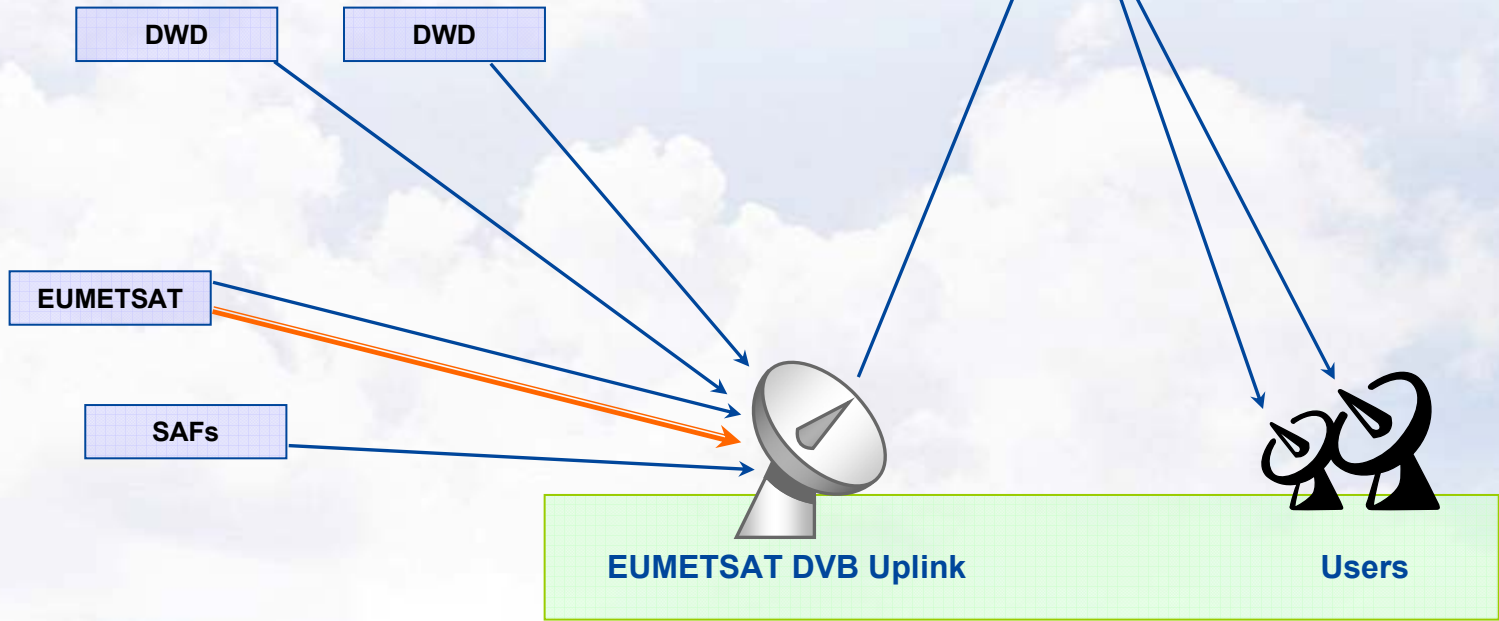
# EUMETSAT CONTROL CENTRE



# EUMETCAST DATA PROVIDERS & SERVICE MANAGEMENT PROVIDER

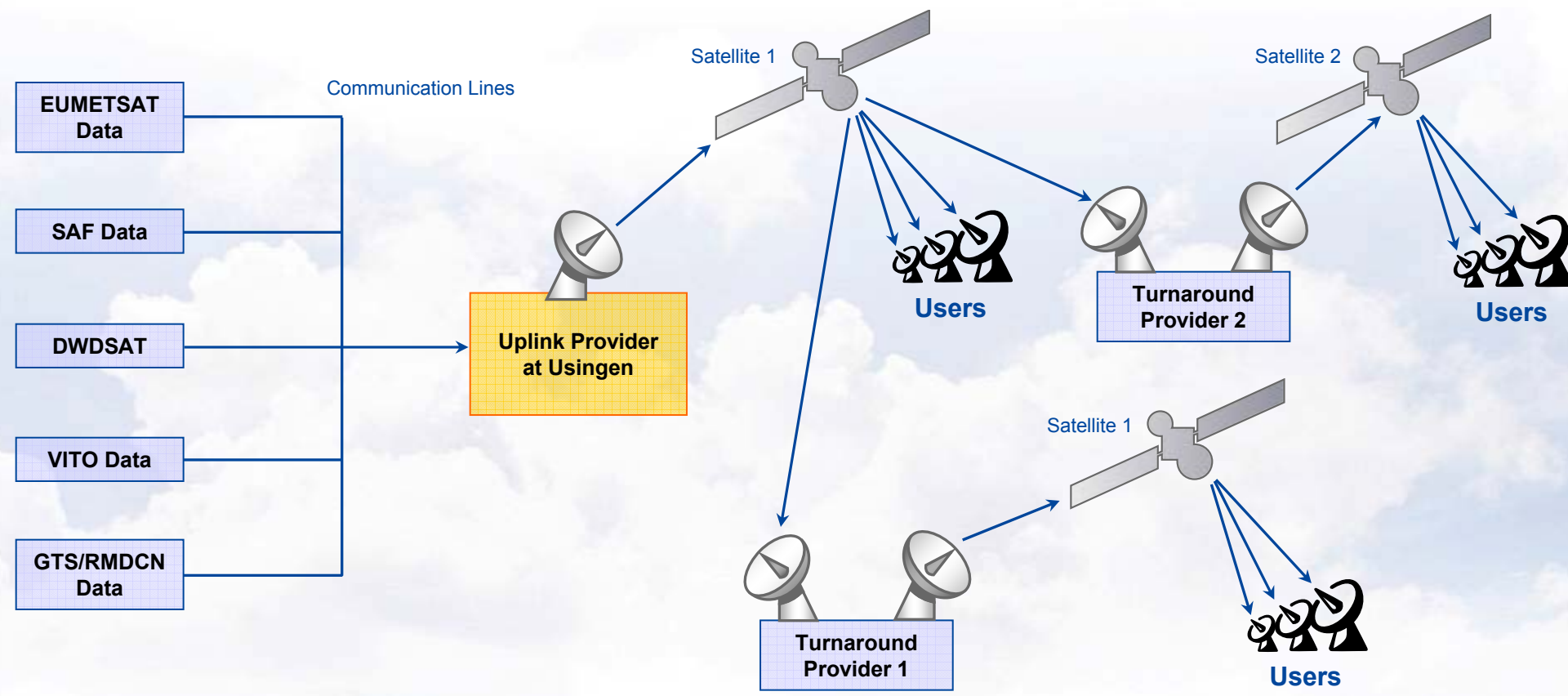
Data  
→  
Service Management

Other Sources





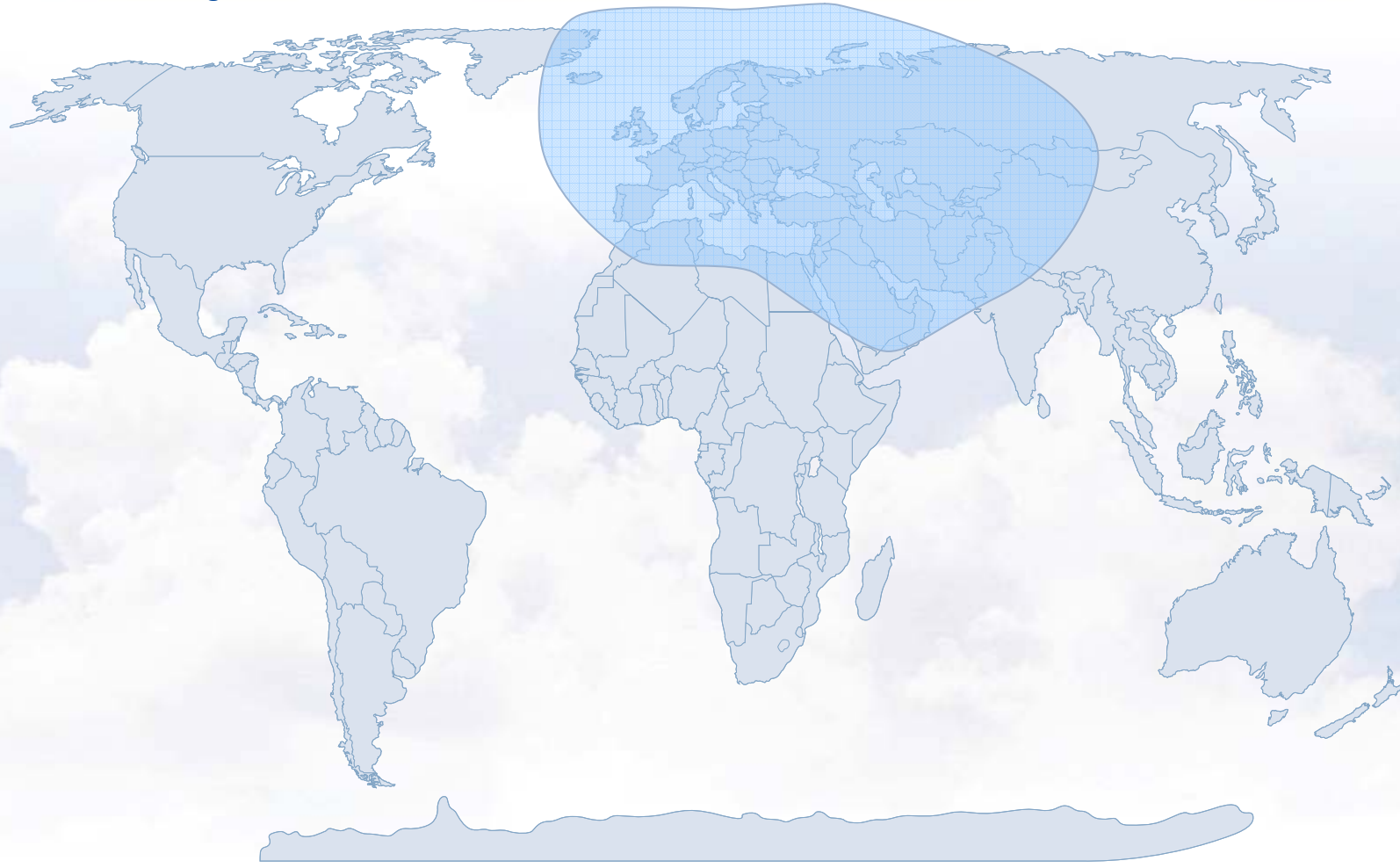
# EUMETCAST SYSTEM





# EUMETCAST EUROPE COVERAGE

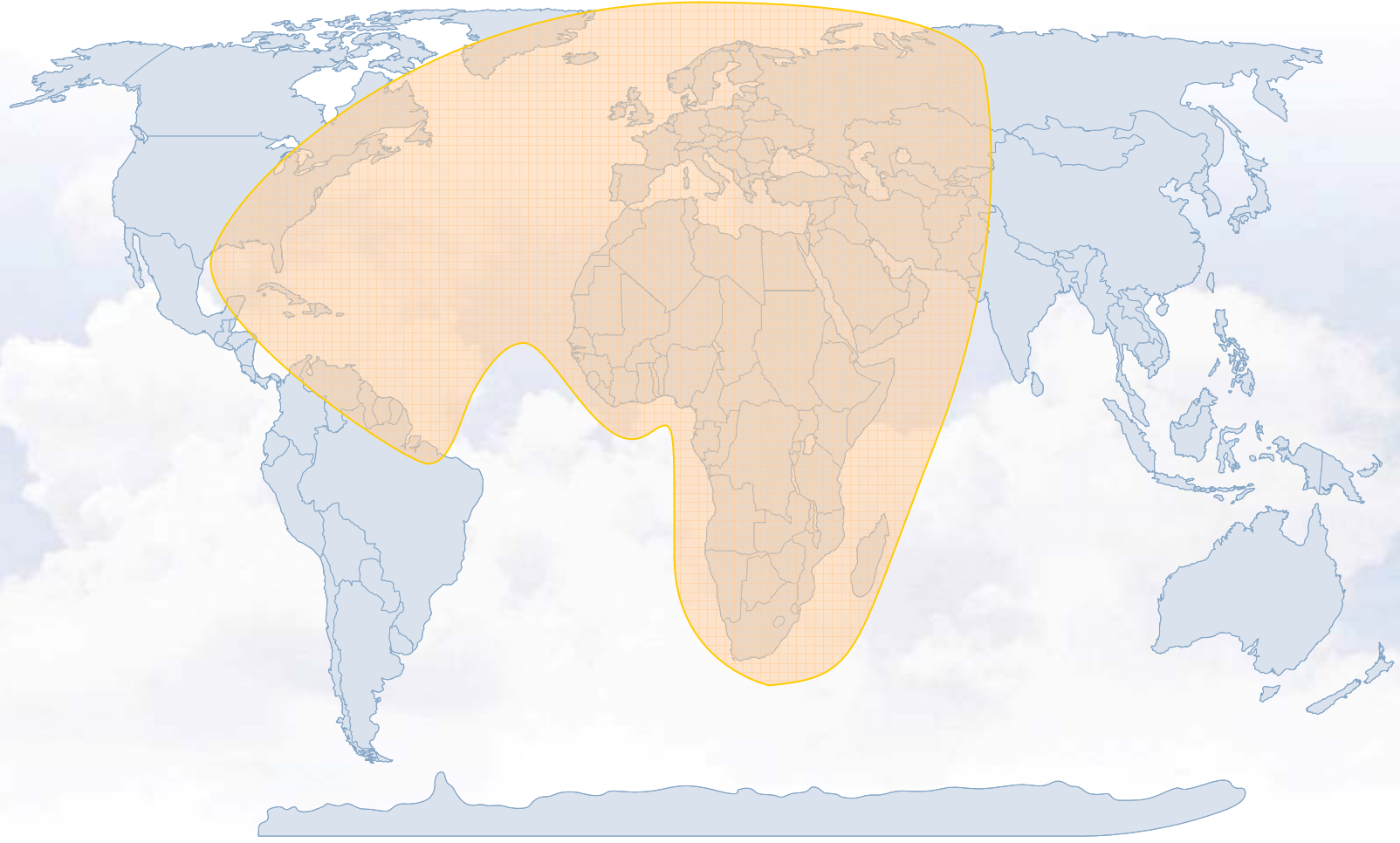
HB-6, Ku-Band Coverage





# EUMETCAST AFRICA COVERAGE

AB-3, C-Band Coverage

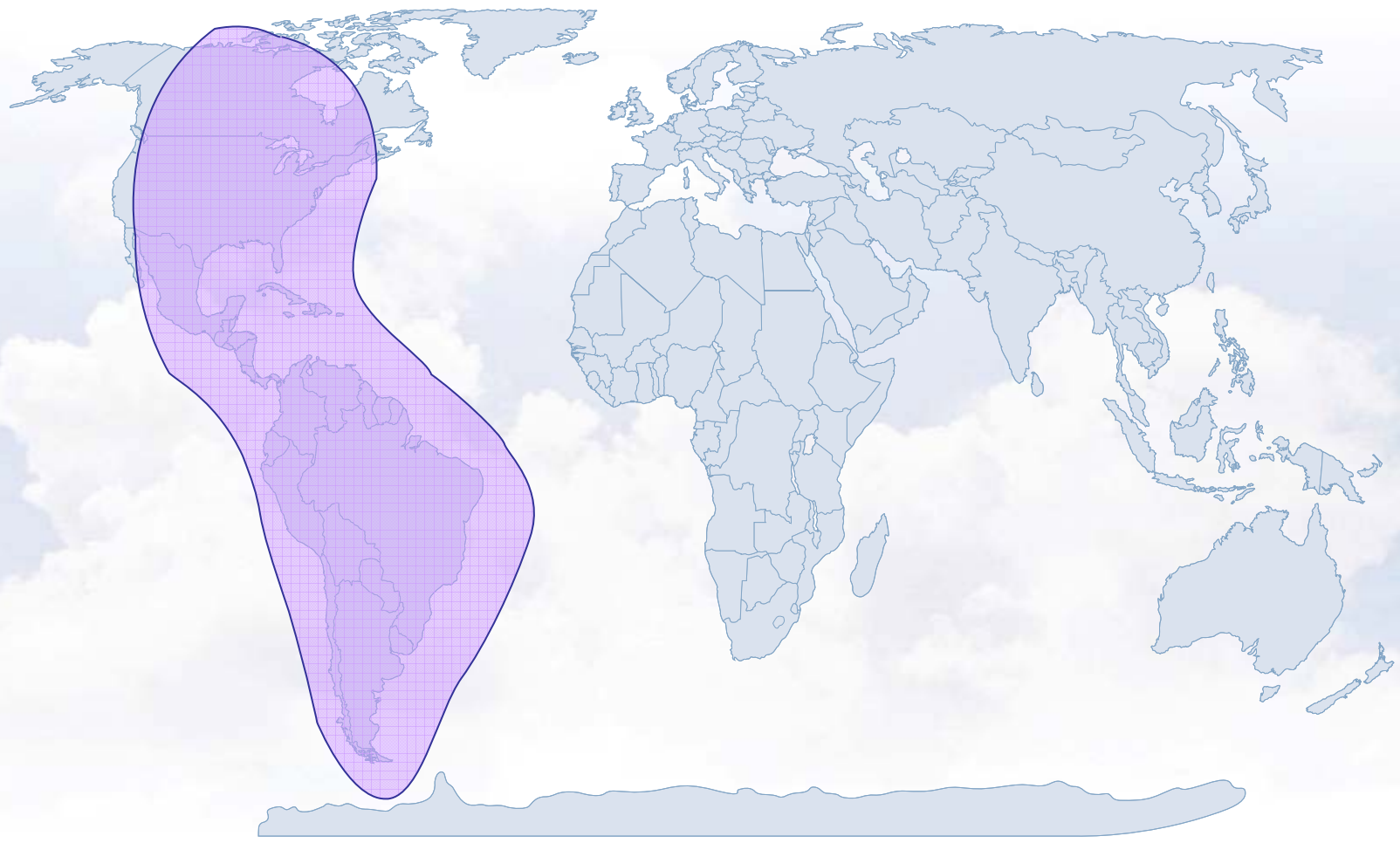






# EUMETCAST SOUTH AMERICA COVERAGE

NSS 806, C-Band Coverage





There are **1714** registered EUMETCast Stations in total at end May 2006:

<b>Meteosat-8 Service / SEVIRI</b>	<b>1337</b>
<b>Rapid Scanning Service (RSS)</b>	<b>590</b>
<b>DWDSAT Service</b>	<b>239</b>
<b>DCP Service</b>	<b>54</b>
<b>HRI-0 (Met-7) Service</b>	<b>669</b>
<b>HRI IODC (Met-5) Service</b>	<b>752</b>
<b>MDD Service</b>	<b>135</b>
<b>Basic Met Data (BMD)</b>	<b>22</b>
<b>Vegetation Data for Africa (VGT)</b>	<b>5</b>



**From 1 September 2005 the RA VI Basic Meteorological Data (BMD) became operational for a two year pilot phase.**

**Service contains:**

- **SYNOP, TEMP, PILOT, Warnings and Tropical Cyclone data:**
- **Forecast data in GRIB format from ECMWF and DWD:**
- **Charts of WAFS, Aerological Diagrams, basic meteorological field parameters and observations in graphical form.**

**Access to BMD is restricted to the WMO members (National Meteorological Services and partner organisations) of the WMO Regional Association VI.**



# DATA APPLICATIONS

For daily weather forecasting...





# DATA APPLICATIONS

For aviation and maritime transport...





# DATA APPLICATIONS

To assist the human forecaster in diagnosing and monitoring the development of hazardous weather systems...



# DATA APPLICATIONS



... and for climate monitoring.

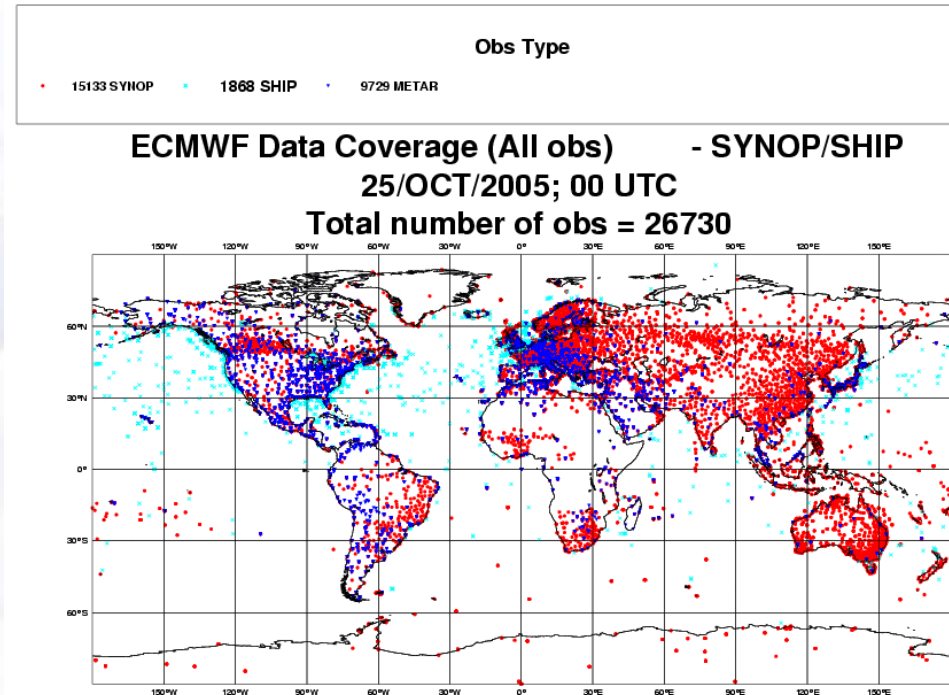


# WHY WEATHER SATELLITES?

- Observations on a global basis
- Unaffected by local weather systems
- Complements local weather stations, weather balloons etc.

**5.7 million satellite data is used daily for data assimilation and weather forecasts**

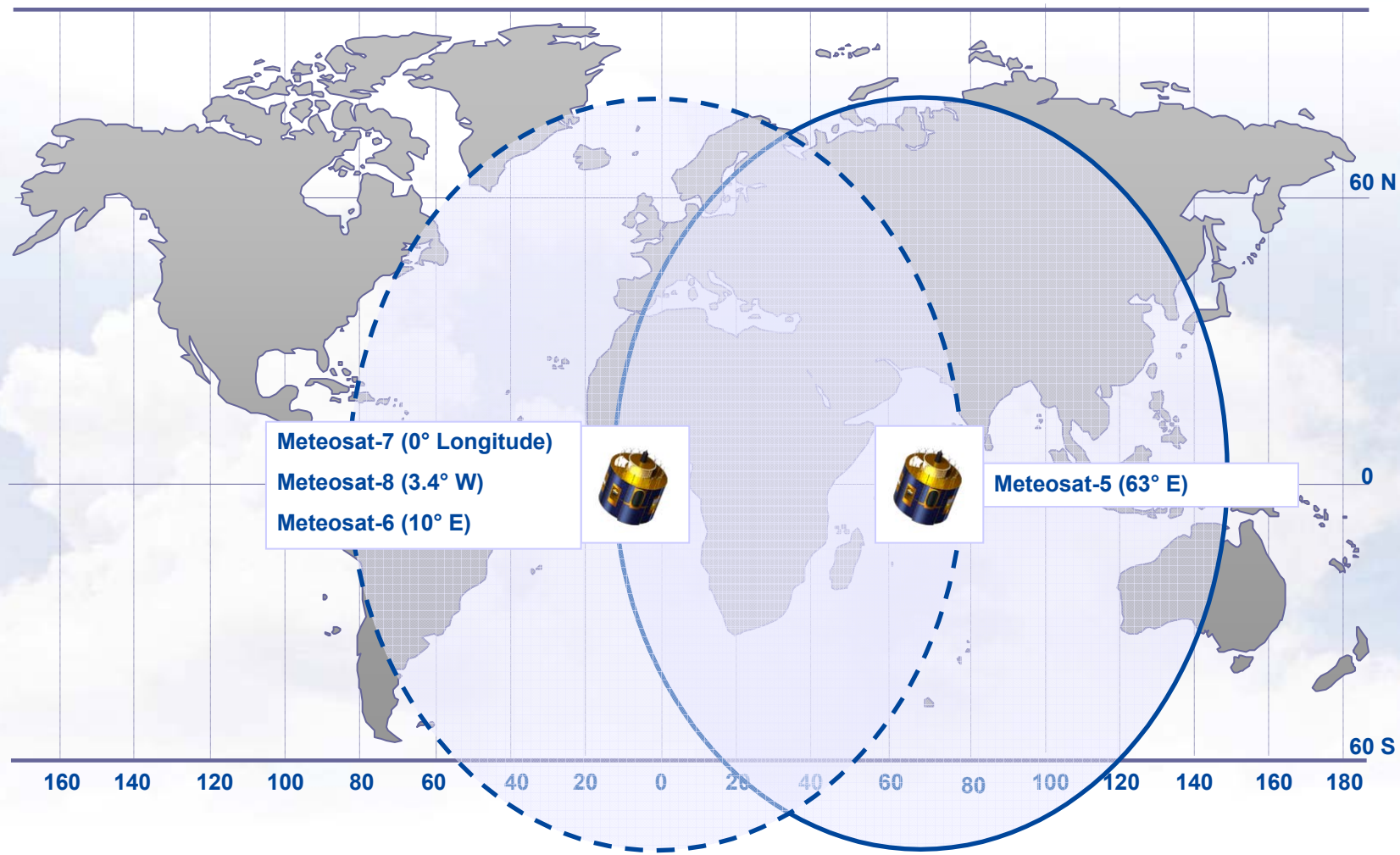
\* Courtesy ECMWF







# EUMETSAT'S SATELLITE COVERAGE





# COMPARING IMAGE QUALITY

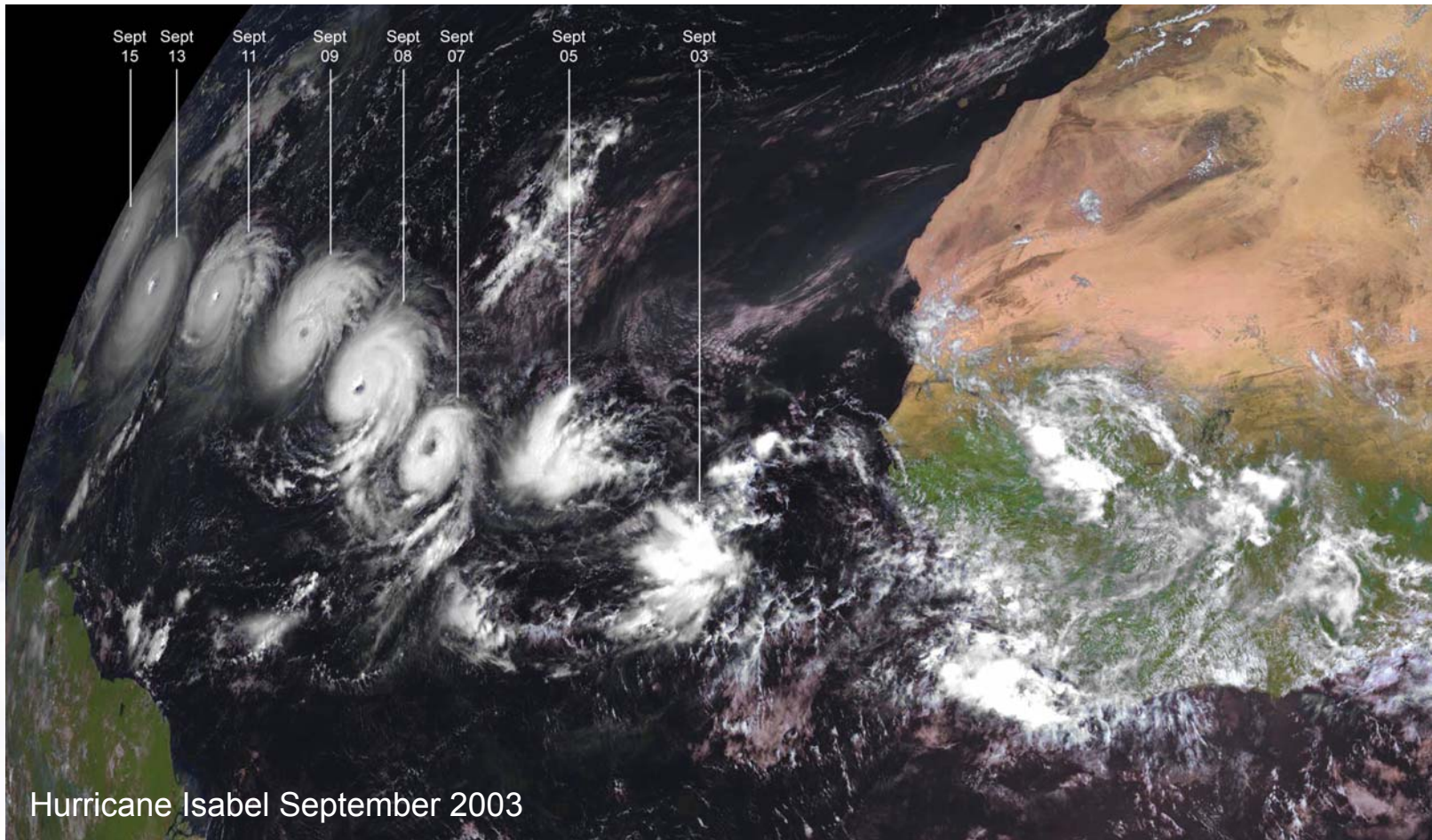


**Meteosat-5**  
(artificially coloured)



**Meteosat-8**  
(artificially-coloured composite of 3 MSG channels)

# COMBINING DATASETS FROM VARIOUS MSG SPECTRAL CHANNELS



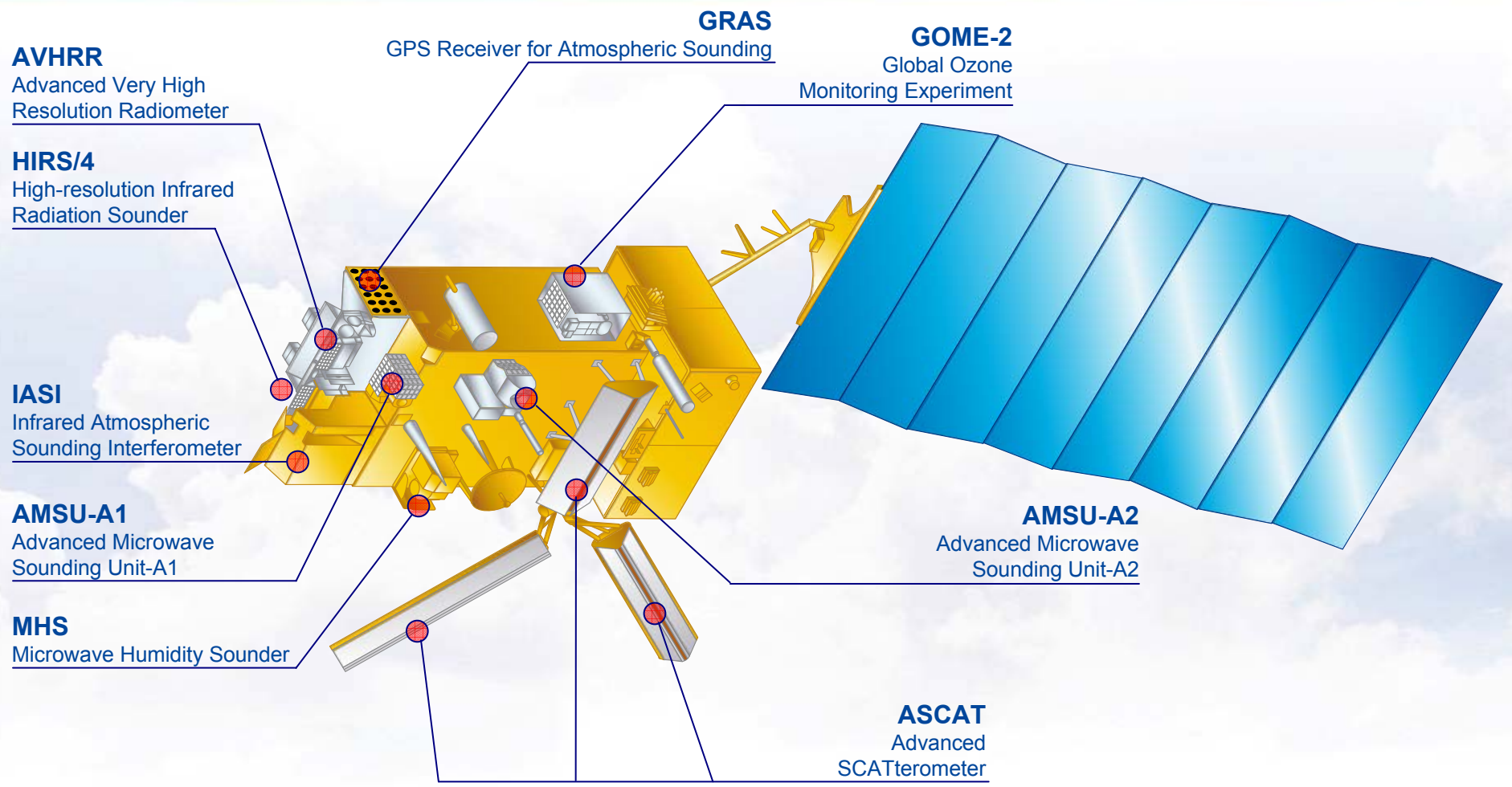
# POLAR-ORBITING SATELLITES



## EUMETSAT Polar System (EPS)

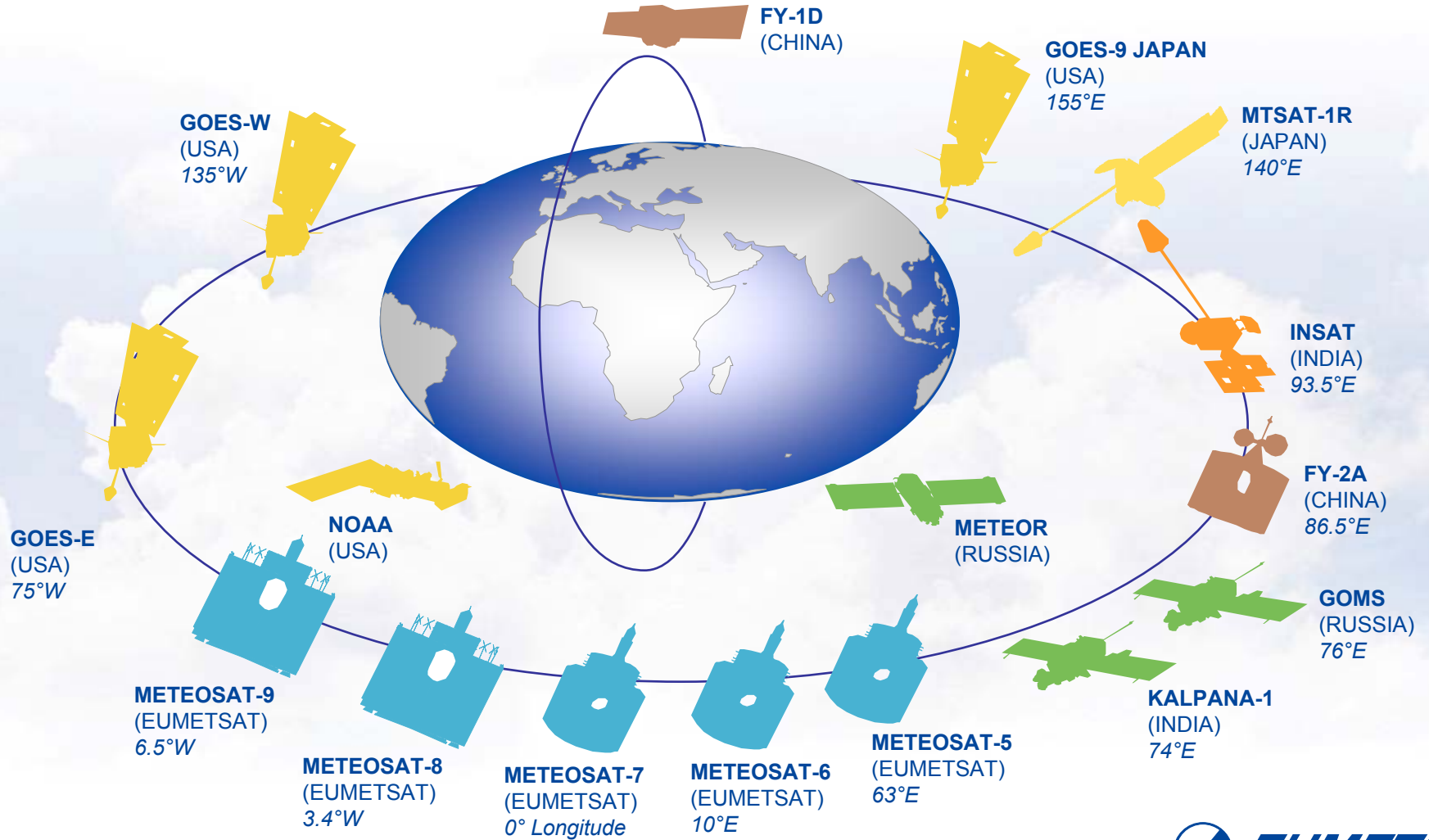


# EUMETSAT POLAR SYSTEM



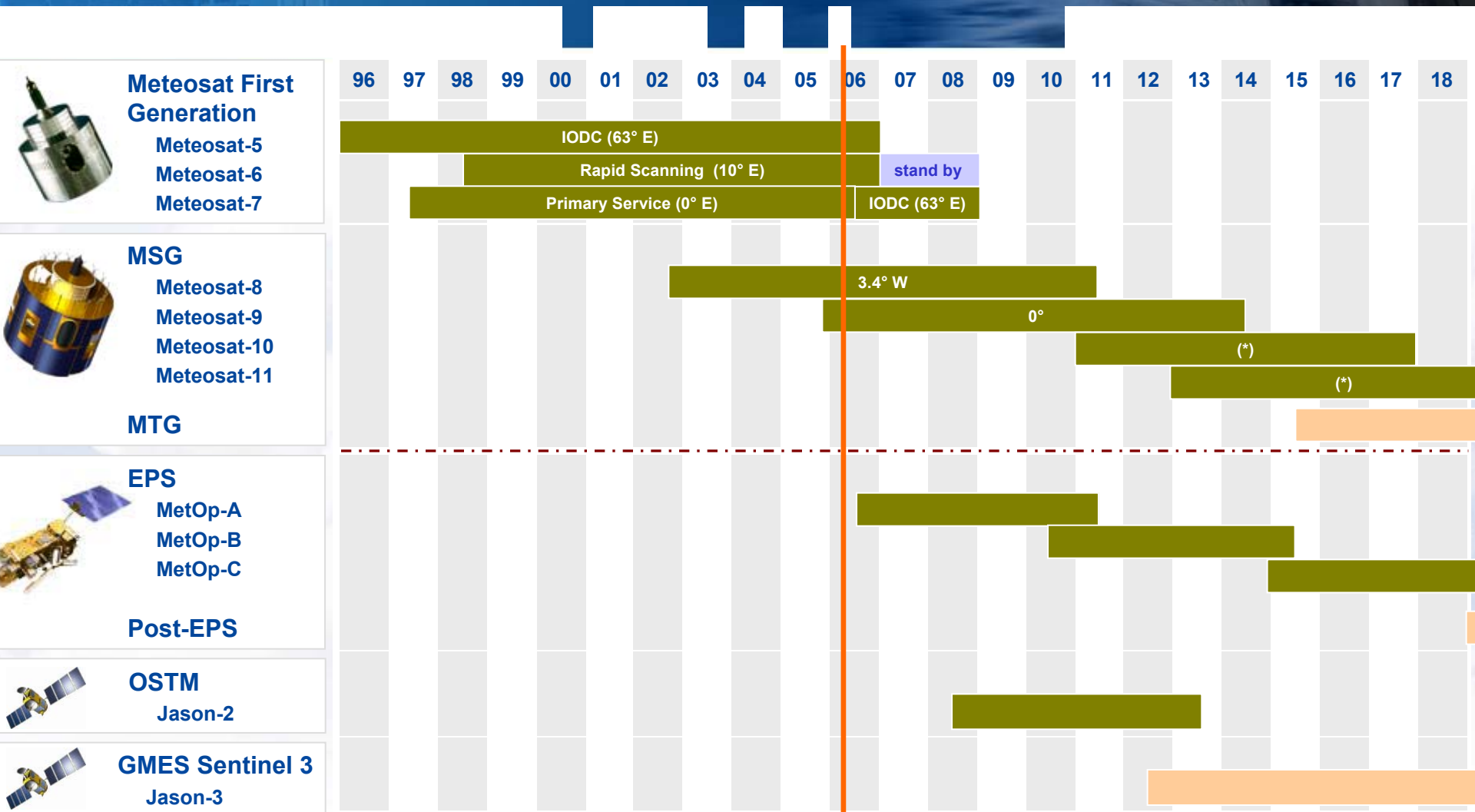


# GLOBAL SATELLITE SYSTEM





# EUMETSAT SPACE SEGMENT



(\*): replanning of launch dates subject to EUMETSAT Council approval in July 2006

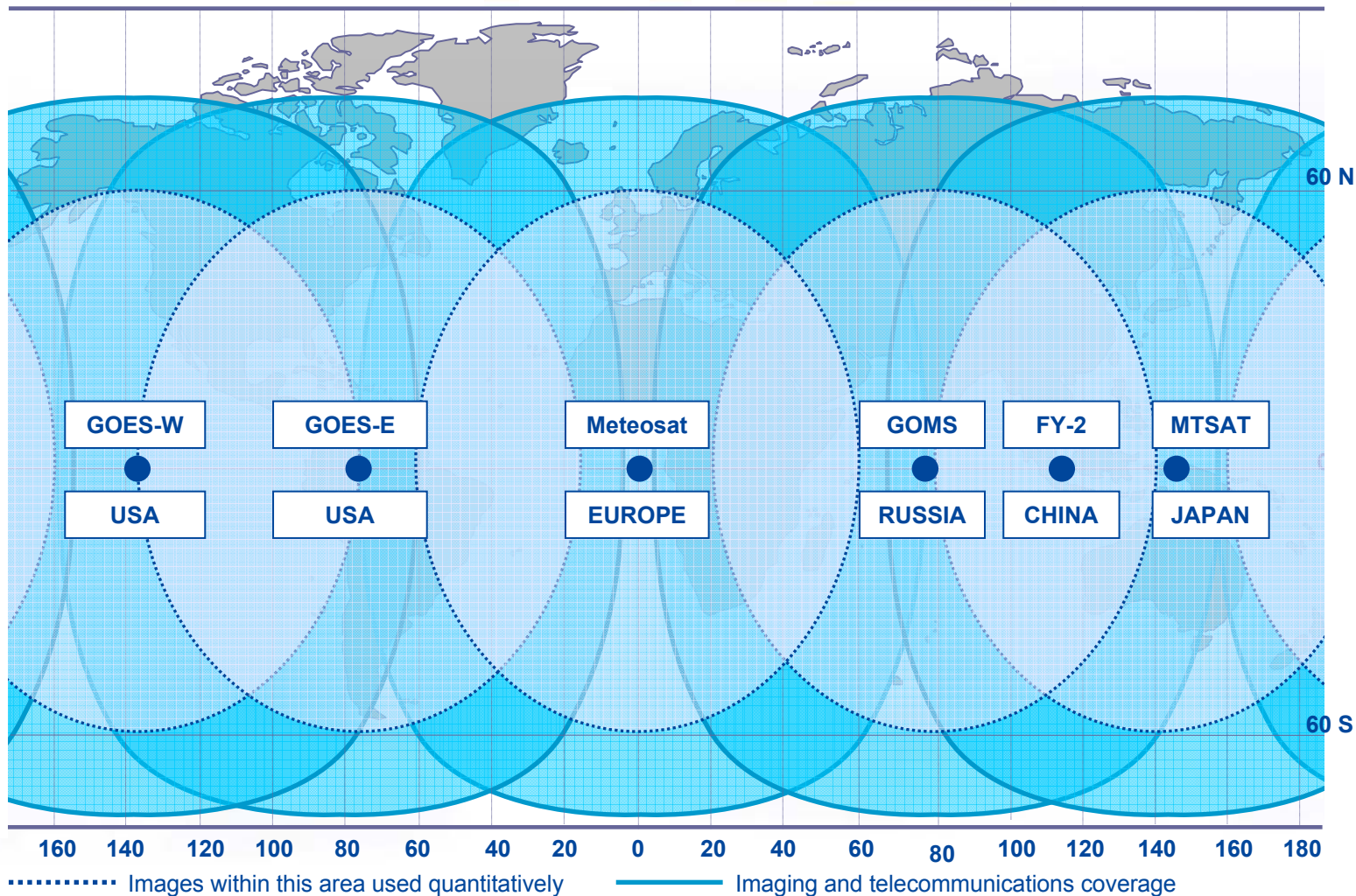


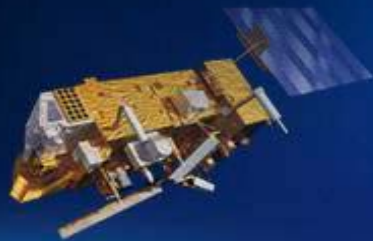
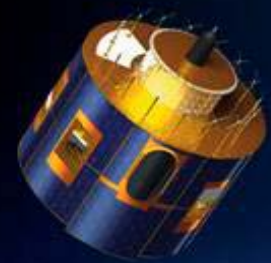
# PROGRAMME SUMMARY

	<b>Programme</b>	<b>Satellites</b>	<b>Period of Operation</b>
<b>Approved</b>	MTP	Meteosat-5,-6,-7	13 years from December 1995
	MSG	MSG-1,-2,-3, 4	16 years from 2002
	EPS	Metop-1,-2,-3	14 years from 2006
	OSTM	Jason-2	5 years from 2008
<b>Planned</b>	MTG	Not yet determined	from 2015
	Post-EPS	Not yet determined	from 2019
	OSTM	Jason-3	from 2012
	GMES	Not yet determined	Not yet determined



# GLOBAL MONITORING THROUGH GEOSTATIONARY SATELLITES





# EUMETSAT

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