



EUMETSAT Headquarters, Darmstadt, Germany

Central Operations Report
for the period January to June 2011





EUMETSAT Central Operations Report for January - June 2011

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The Central Operations Reports can be found under 'Service Status' on www.eumetsat.int



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Introduction

Welcome to the report on EUMETSAT's Central Operations for the first half of 2011.

This half-year in general saw very good performance of the operational services. A difficult, recurring problem on the EUMETCast uplink system caused some service outages, and a Meteosat-9 SEVIRI switch-off in May caused a 3.5 hours' outage of image data (see slide 8). Also a major hardware upgrade caused outages to the meteorological products from Meteosat-8 and -9 in February.

The first significant evolution in the operational services in the period was the extension of the Metop-A AHRPT coverage zone that was implemented in January. This was based on a very thorough risk/benefit analysis, and the extension has provided very significant benefits to the global direct readout community.

In June, the Metop-A Antarctic Dump Acquisition (ADA) at the US McMurdo Ground Station entered into its routine phase, improving the overall Metop-A global products timeliness by about an hour. The excellent cooperation with our US partners NOAA, NASA and the NSF (National Science Foundation) has resulted in huge benefits, in particular for the global Numerical Weather Prediction (NWP) centres, in terms of availability of satellite data for assimilation.



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Introduction (continued)

The EUMETSAT web-based services were enhanced with the EO Portal Integrated Account management introduced in January and the new OSSI (Operational Services Status Indicator) in February.

For a full account of service enhancements, please refer to the Product Update History on the Service Status webpage.

2011 is the year before a launch year, and the last months have seen completion of all major Ground Segment developments in support of Metop-B and MSG-3, and tests have been conducted with direct links to both satellites at the manufacturers' facilities. Another important event has been the 'Topping-Out' of EUMETSAT's new technical infrastructure building in June. This start-of-the-art building will become fully available for accommodation of technical systems in the 2nd quarter of 2012.

Best regards,
Mikael Rattenborg
Director of Operations



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Performance Reporting: Categories

The charts on the following slides present a summary view of the performance of the services within the categories listed here:

- Meteosat Services
- Metop/NOAA Global Data Service
- Metop/NOAA Regional Data Service (EARS)
- Search and Rescue Support
- Jason-2 OGDR Service
- Third-Party Geostationary Satellite Services
- The EUMETSAT Data Centre
- EUMETSAT's User Support Service

Several terms with special meaning (e.g. Nominal RCs) appear in the following slides. A glossary is provided at the end of the report.



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Performance Reporting: Conventions

Availability of EUMETSAT Services:

The availability of most operational services provided by EUMETSAT is measured against service-specific monthly targets. This report presents the performance of the individual services in the form of charts showing their month-by-month availability, accompanied by commentary identifying any significant events or factors (whether satellite or ground-segment in nature) which may have had impact on the provision of them.

Operational Events with General Impact:

An event which significantly affected the availability of a single service (e.g. the malfunction of a single instrument) is indicated on the relevant slide for that service.

Some operational events impact the availability of more than one individual service (e.g. an outage of EUMETCast). Such events are described on separate slides near the start of the '**Meteosat Services**' and '**Metop/NOAA Global Data Service**' sections. Where needed, slides concerning other services make reference to one or the other.



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Meteosat Services

This service category refers to the dissemination of data and products produced with the Meteosat System, which comprises geostationary satellites positioned at longitudes 0°, 9.5°E and 57°E. These satellites nominally support the prime imaging, Rapid-Scan and 'Indian Ocean Data Coverage' (IODC) services respectively.

The individual services addressed in this section are as follows:

- Meteosat 'Full-Earth Scan' image data acquired at 0° and 57°E
- Meteosat 'Rapid Scan' image data acquired at 9.5°E
- Meteorological products derived from that image data
- Data Collection and Retransmission (the DCP service)



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Meteosat Services: Operational Events with General / Significant Impact

The following events impacted the Meteosat Services to the extent described:

7 & 22 January: The EUMETCast system suffered short outages due to the same problem experienced in OPS Incident #43. All services were affected, but to varying degrees of severity. The problem manifested itself as a difficult-to-detect processing 'freeze' on the service-provider's uplink equipment, for which the root cause was only determined this month. As an interim measure to reduce the duration of outage, an automatic monitoring & recovery tool was developed and implemented in February.

16 March 2011 (OPS Incident #45): A SEVIRI outage on Meteosat-9 plus some ensuing recovery problems resulted in a loss of approximately 3½ hours of image data and several related meteorological products.

19 May 2011: The EUMETCast system suffered a 40-minute outage, which affected all services. A double failure in the service-provider's ground equipment necessitated manual intervention to recover the service. This anomaly was unrelated to the one that was the subject of Incident #43.



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Meteosat Services → SEVIRI 0° Image Data

Performance measured in terms of:

- 1) the number of Nominal Level 1.0 Repeat Cycles (RCs) which have been generated 'on-time', as a percentage of those scheduled
- 2) the combined timely availability of nominal HRIT Level 1.5 RCs via EUMETCast (was all L1.5 RCs in previous reports)

Events Which Impacted Availability:

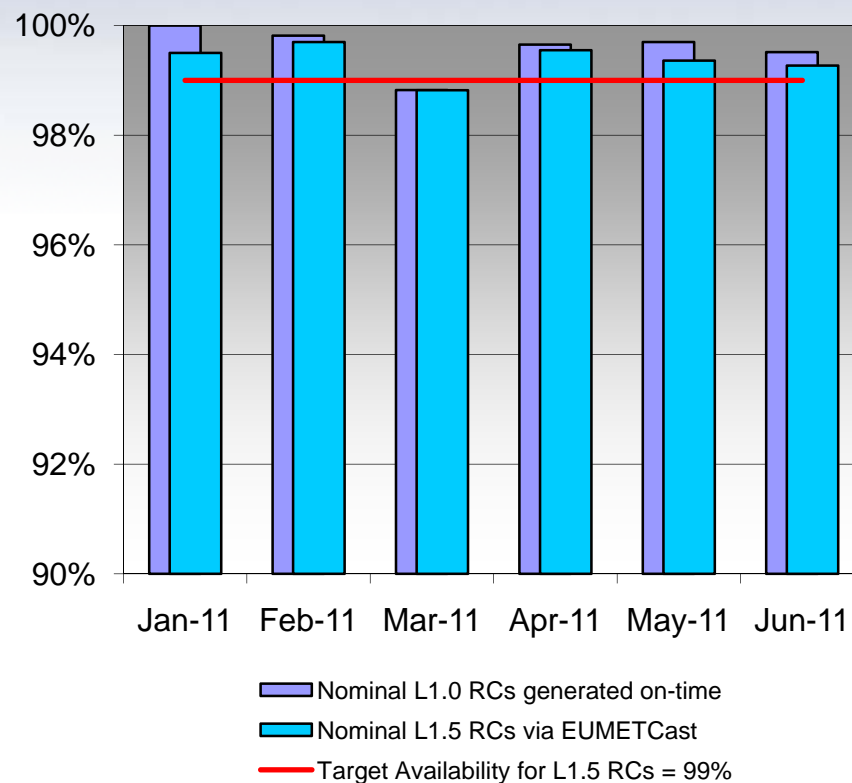
7 & 22 January

and 19 May: L1.5 RCs impacted by short outages of the EUMETCast system (see slide 8)

16 March: Meteosat 9 SEVIRI outage impacted L1.0 RCs (see slide 8)

In general: Levels of nominal L1.5 RCs from mid-March onwards regularly impacted by the satellite's tank heater-switching and resultant fuel movement.

Solutions to improve image-processing's ability to compensate for at least some of the effects of the switching are foreseen for implementation in late-2011.





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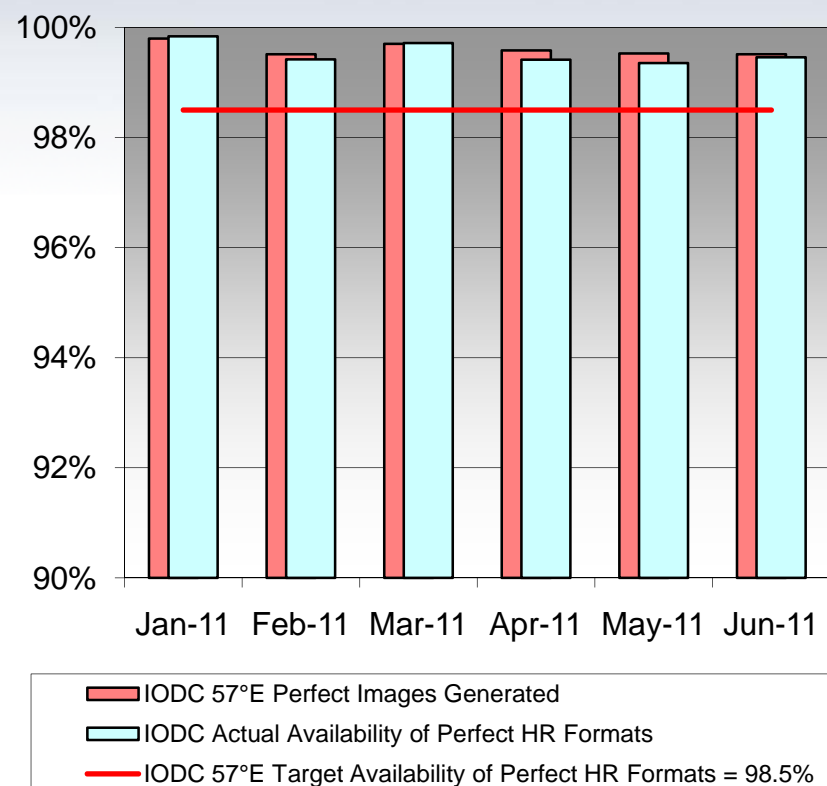
Meteosat Services → IODC 57°E Image Data

Performance measured in terms of:

- (1) the number of Perfect Images which have been generated, as a percentage of those scheduled,
- (2) the availability of Perfect Formats directly disseminated via Meteosat-7, as a percentage of those scheduled.

Events Which Impacted Availability:

None significant.





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Meteosat Services → SEVIRI 9.5°E Rapid-Scan Image Data

Meteosat-8 currently supports the MSG Rapid-Scan Service (RSS), using a scan period of 5 minutes, covering latitudes from 15 to 70°N, using all 12 SEVIRI spectral channels.

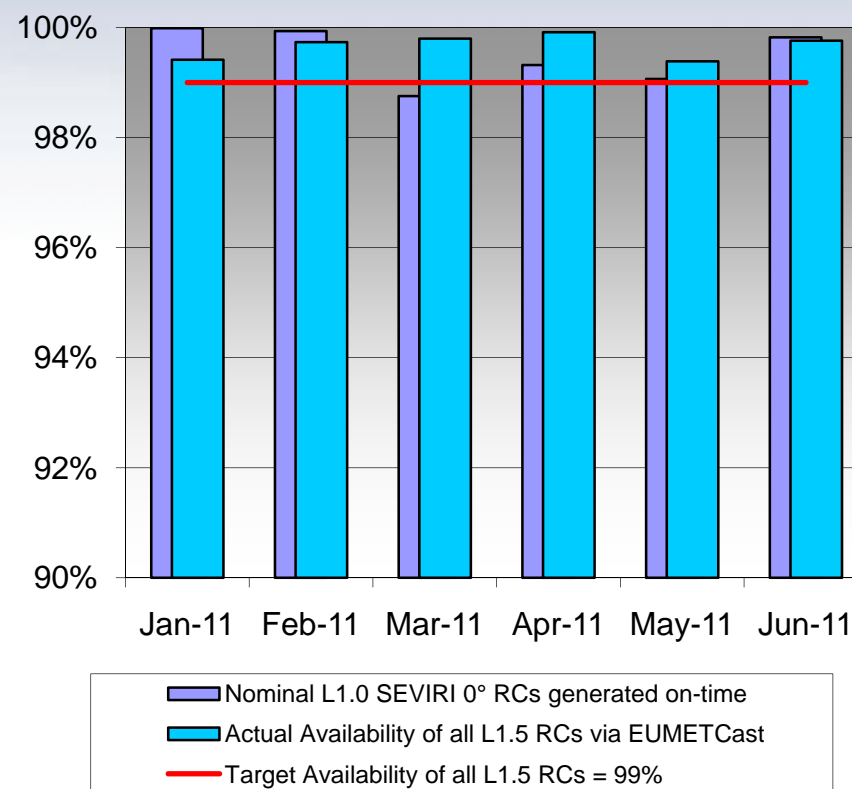
Performance is measured in terms of the number of nominal Level 1.0 Repeat Cycles (RCs) which have been generated 'on-time', as a percentage of those scheduled, plus the availability of all Level 1.5 RCs disseminated via EUMETCast (no distinction between nominal and non-nominal L1.5 RCs can currently be provided).

Note that, due to operational constraints, RSS is interrupted approximately once a month to perform full-Earth scanning, and also for a full month in the November/December timeframe. More info: www.eumetsat.int 'Service Status'.

Events Which Impacted Availability:

Jan and May: L1.5 RCs impacted by short outages of the EUMETCast system (see slide 8)

March – June: Tank heater-switching and the resultant fuel migration onboard Meteosat-8 impacted levels of nominal L1.0 RCs.



(Note that Target and Actual Availability for L1.5 RCs currently covers both nominal and non-nominal RCs. Availability of L1.5 can thus exceed that of L1.0 nominal RCs).



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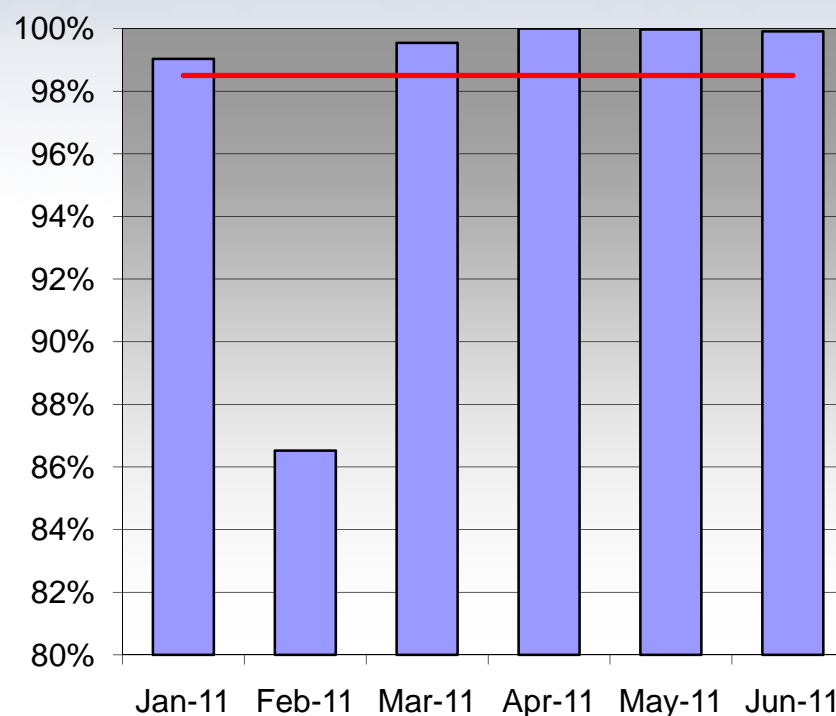
Meteosat Services → Meteorological Products derived from 0° Data

Performance measured in terms of the number of meteorological products which have been generated at EUMETSAT from the Full-Earth Scan images provided by Meteosat-9, as a percentage of those scheduled.

Events Which Impacted Availability:

16 March: Meteosat 9 SEVIRI outage impacted L1.0 RCs (see slide 8)

February: A major upgrade to the MSG meteorological product extraction facility experienced some initial operational problems which impacted the generation of products. Product monitoring was also impacted - actual product generation in February was better than shown.



— 0° Met Product Target Availability 98.5%



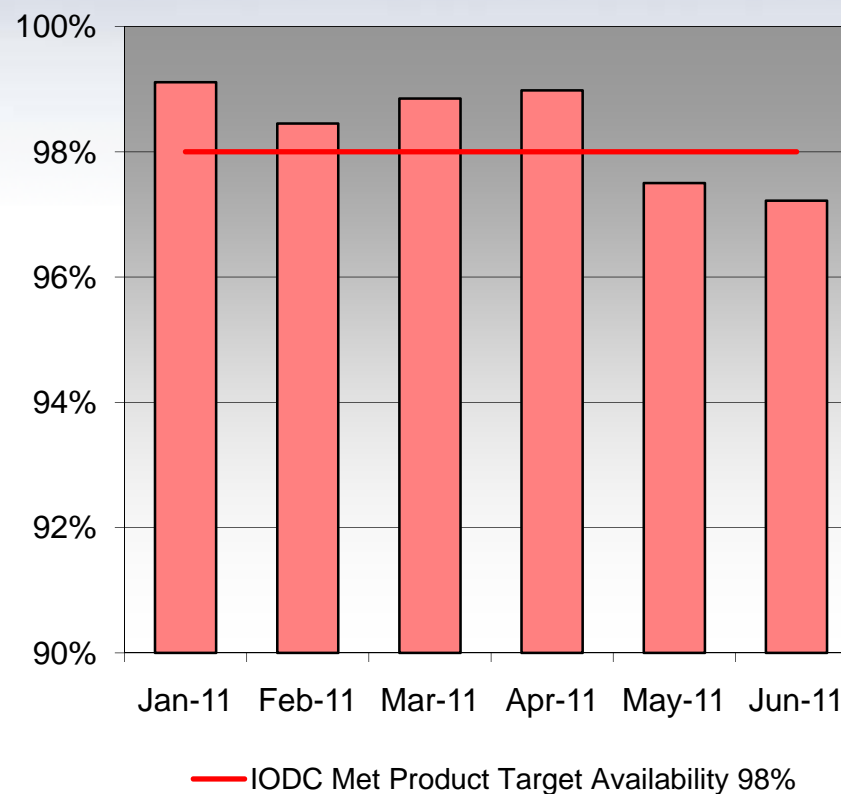
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Meteosat Services → Meteorological Products derived from 57°E Data

Performance of this component of the IODC service is measured in terms of the number of meteorological products which have been generated at EUMETSAT, as a percentage of those scheduled.

Events Which Impacted Availability:

May-June: A recurrent system problem prevented the BUFR-encoding of several meteorological products, impacting overall product availability for the two months. This problem has since been resolved.





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Meteosat Services → Meteorological Products derived from 9.5°E RS Data

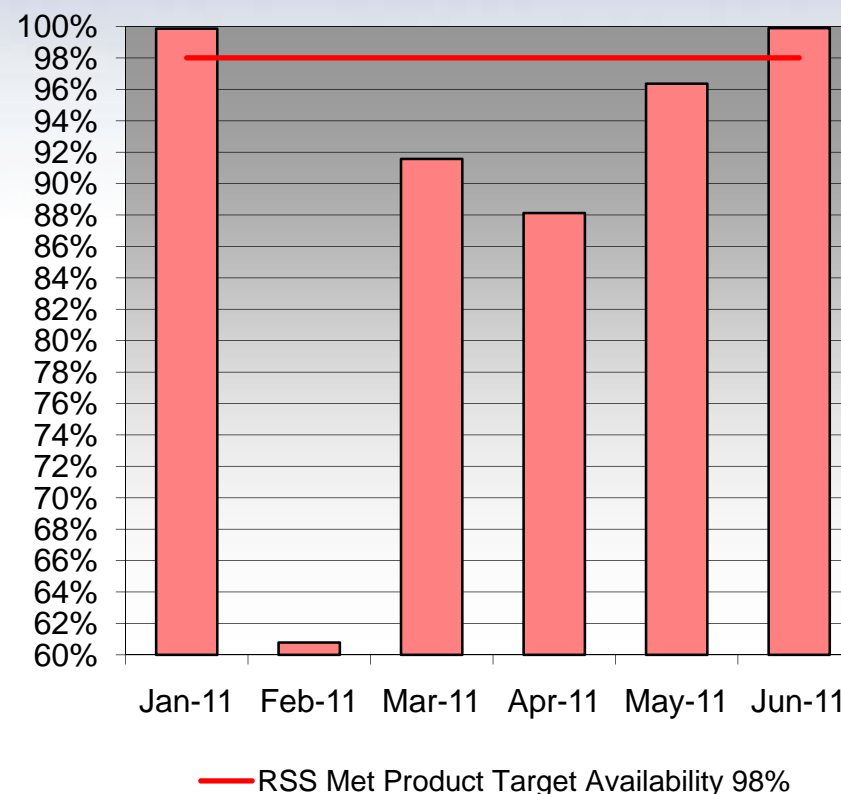
Meteorological products derived from the 5-minute Rapid-Scan (RS) Repeat Cycle images produced using Meteosat-8.

Performance of this service is measured in terms of the number of meteorological products which have been generated at EUMETSAT, as a percentage of those scheduled.

Events Which Impacted Availability:

February

To May: A major upgrade to the MSG meteorological product extraction facility in February experienced some initial operational problems which impacted the generation of products in that month. In addition, product monitoring was significantly impacted, and this continued into the months of March, April and May. Actual product generation for the four months was better than shown.





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Meteosat Services → DCP Channel Availability at 0°

Data Collection and Retransmission operations at 0° utilise Meteosat-9's international and regional DCP channels.

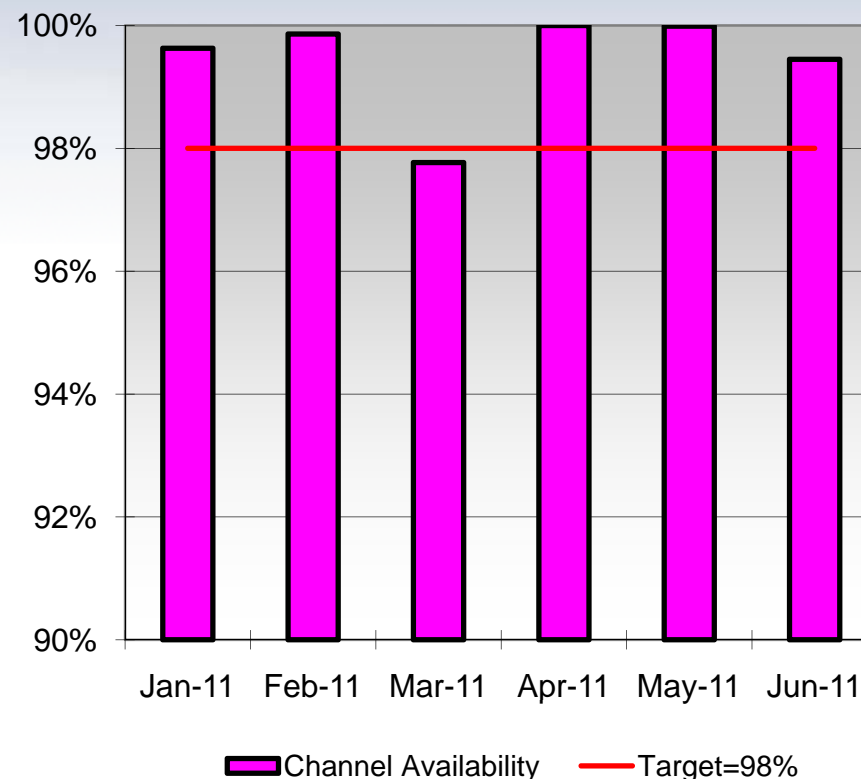
As of the end of June 2011, there were 580 active Data Collection Platforms (DCPs) out of a total of 1030 registered units, belonging to 128 operators.

The chart shows the availability of the 0° DCP service. It is measured in terms of the number of hourly reference DCP messages on all operational regional channels which have been successfully received back by EUMETSAT, as a percentage of those sent.

(Note that the availability of the 4 DCP channels supported by Meteosat-7 as part of the Indian Ocean Tsunami Warning System (IOTWS) is not included)

Events Which Impacted Availability:

March 2011: Ground station maintenance activities between 17 and 30th March impacted the reception of DCP reference messages, but actual channel availability for the period was nominal.





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Metop/NOAA Global Data Service

This service comprises the provision of Level 0 data and Level 1 products derived from the data generated by the following Metop-A instruments:

A-DCS, AMSU-A, ASCAT, AVHRR, GOME-2, GRAS, HIRS, IASI, MHS, SEM

EUMETSAT also produces Level 1 products based on the data from NOAA-19's AMSU, AVHRR, HIRS and MHS instruments.

In addition, the Global Data Service also includes Level 2 products based on Metop-A IASI and ATOVS data.

The charts on the following slides show the month-by-month availability of the products, identifying any significant events which impacted the service.

Note: Unless otherwise indicated, the availability figures are derived as shown here:

- For Level 0: production statistics from EUMETSAT's EPS Product Generation Facility (PGF)
- For Level 1: reception statistics from EUMETSAT's reference EUMETCast User Station (US)
- For Level 2: as for Level 1



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Metop/NOAA Global Data Service: Definition of Availability

Unless otherwise indicated in the availability slides, then the monthly figures are those for 'timely availability', where 'timely' is used to mean the following:

- Level 0 & 1: available within 2 hours 15 minutes of sensing
- Level 2: available within 3 hours of sensing

Availability figures are given per instrument and for one or more data levels thereof. It is measured in terms of the data / products that have been generated / disseminated for each of the months in the reporting period, as a percentage of that which would nominally have been generated / disseminated in the month had continuous operations been achieved without any deviation.

Note that there are certain cases where the availability of Level 2 products is indicated as being marginally higher than that of Level 1, and similarly, for Level 1 compared to Level 0. This arises because of the differences in time-logging between different stages of production influencing the generation of statistics.



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Metop/NOAA Global Data Service: Operational Events with General Impact

The following events impacted the Metop/NOAA Global Data Service to the extent described:

7 & 22 January and 19 May 2011: As for the Meteosat services, short outages suffered by the EUMETCast system impacted the Metop/NOAA Global Data Service. See slide 8 for more information.



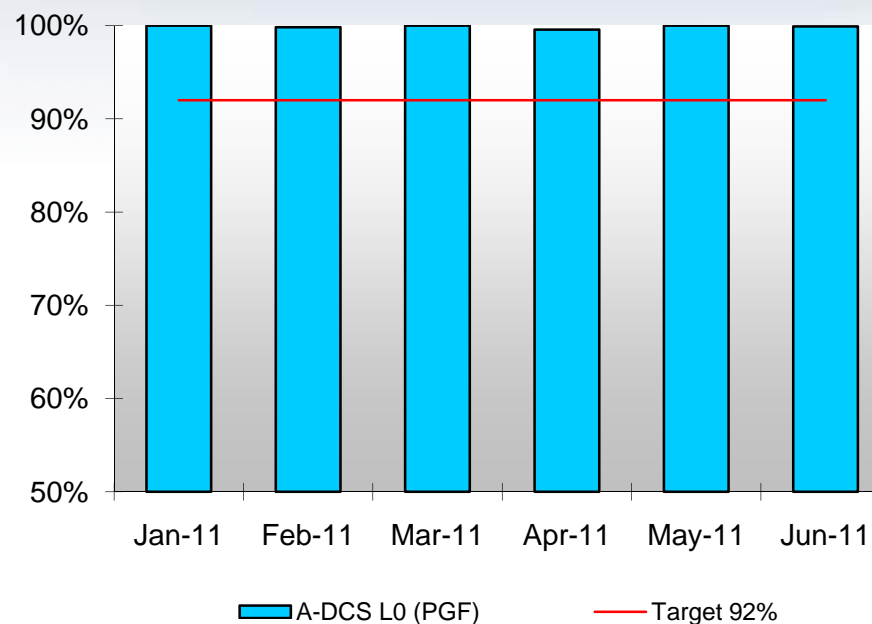
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Metop/NOAA Global Data Service → A-DCS Level 0 Data

Metop-A carries an instrument for the Argos Advanced Data Collection System (A-DCS). Environmental data transmitted by measurement platforms (on land or sea or in the atmosphere) is collected and relayed by EUMETSAT to CLS (a CNES subsidiary) in Toulouse.

Events Which Impacted Availability:

None significant.





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Metop/NOAA Global Data Service → AMSU Level 1B BUFR Products

The Advanced Microwave Sounding Unit (AMSU) is a 15-channel microwave radiometer supplied by NOAA which measures atmospheric temperature profiles.

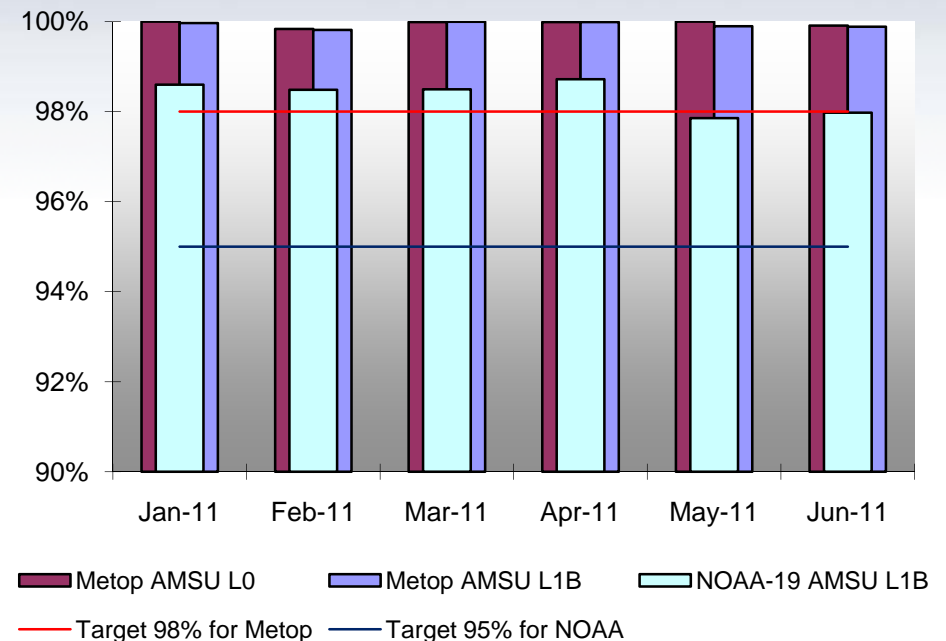
Level 1B products are derived from the data generated by the instruments onboard both Metop-A and NOAA-19 satellites.

Events Which Impacted Availability:

None significant.

Notes:

- (1) Metop-A's AMSU channel 7 has degraded beyond specification and is thus no longer used for product processing.
- (2) NOAA-19's AMSU channel 8 has not degraded further in this reporting period and therefore the data is still considered usable for the time-being.





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Metop Global Data Service → ASCAT Level 1B (SZO & SZR) Products

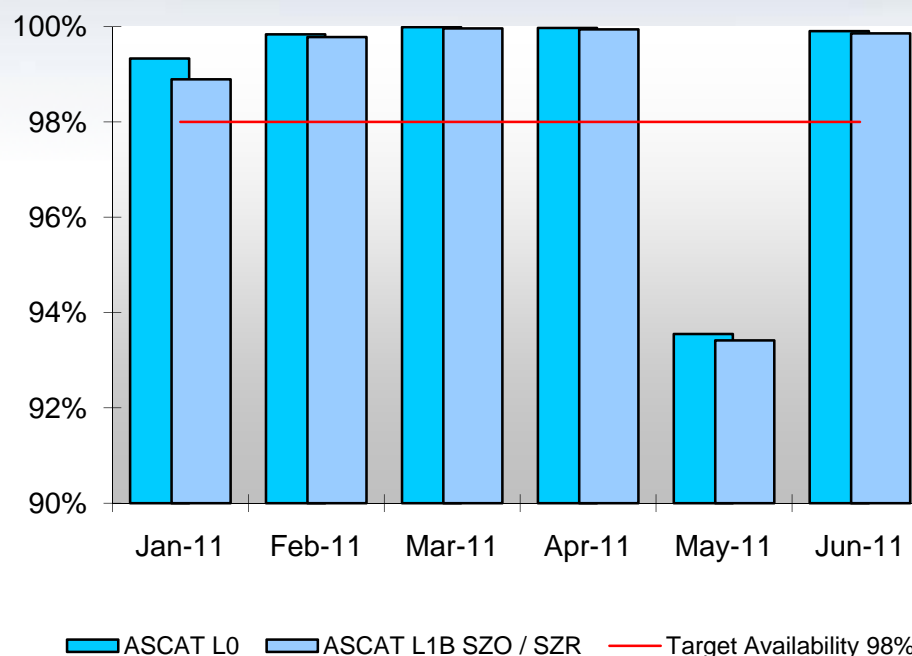
The Advanced Scatterometer (ASCAT) is a C-band radar which measures global ocean wind vectors.

Performance of the Level 1B service is measured in terms of the timely availability of the 'SZO' and 'SZR' products (spatial resolutions of 50 and 25 km respectively) on the EUMETCast reference user station.

Events Which Impacted Availability:

3-4 January: A problem during a routine instrument operation resulted in data degradation for ~37 hours, including an outage of ASCAT wind and soil-moisture products for ~8 hours. Classified as OPS Incident #44. Problem recurred on 23 May, when recovery was achieved in ~2 hours.

14-16 May: A 48-hour data and product outage caused by the instrument autonomously entering into heater-refuse mode.





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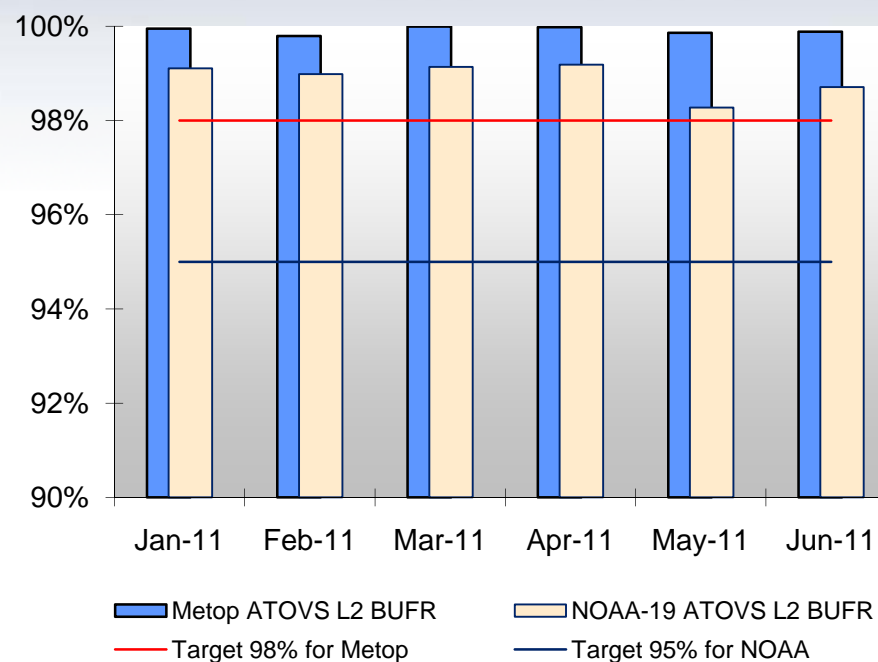
Metop/NOAA Global Data Service → ATOVS Level 2 Products

ATOVS Level 2 product processing transforms the calibrated radiance measurements from the AMSU-A, MHS and HIRS instruments (onboard Metop and NOAA-19 satellites) into information on the vertical distribution of atmosphere state parameters, on cloud and surface parameters and total atmosphere contents. All the parameters derived are assembled in one ATOVS L2 sounding product for each satellite.

Performance of the Level 2 service is measured in terms of the timely availability of the BUFR-encoded products received on the EUMETCast reference user station (US).

Events Which Impacted Availability:

None significant.



Note: Metop-A's AMSU channel 7 has degraded beyond spec and is thus no longer used for ATOVS L2 product processing.



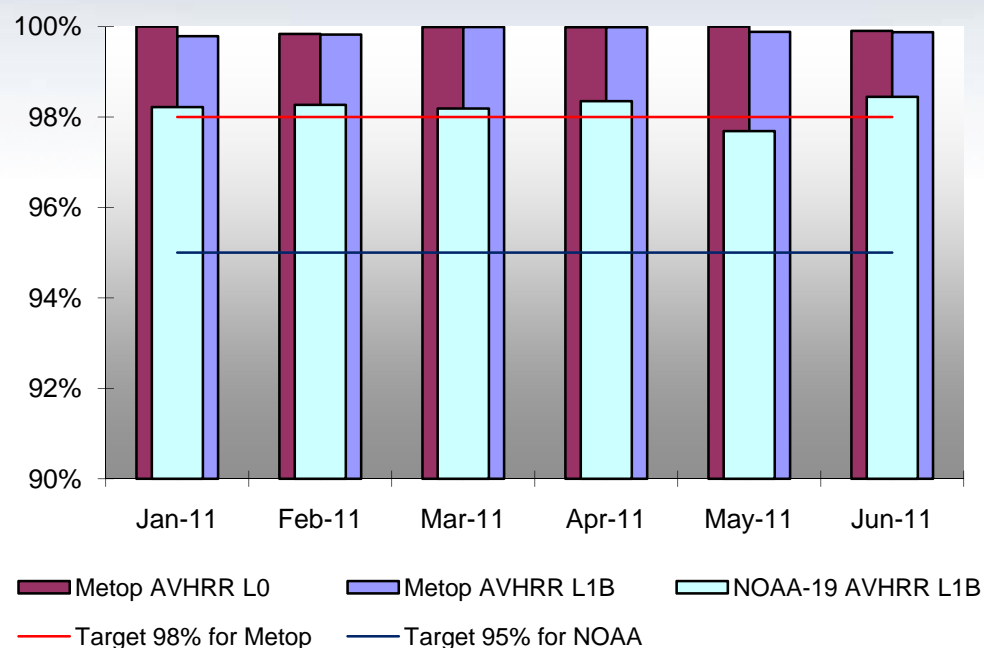
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Metop/NOAA Global Data Service → AVHRR Level 1B Products

The Advanced Very High Resolution Radiometer (AVHRR) is a multi-spectral imaging instrument provided by NOAA which produces global cloud imagery and images of land and sea surfaces. Level 1B products are derived from the data generated by the instruments onboard both Metop-A and NOAA-19 satellites.

Events Which Impacted Availability:

None significant.





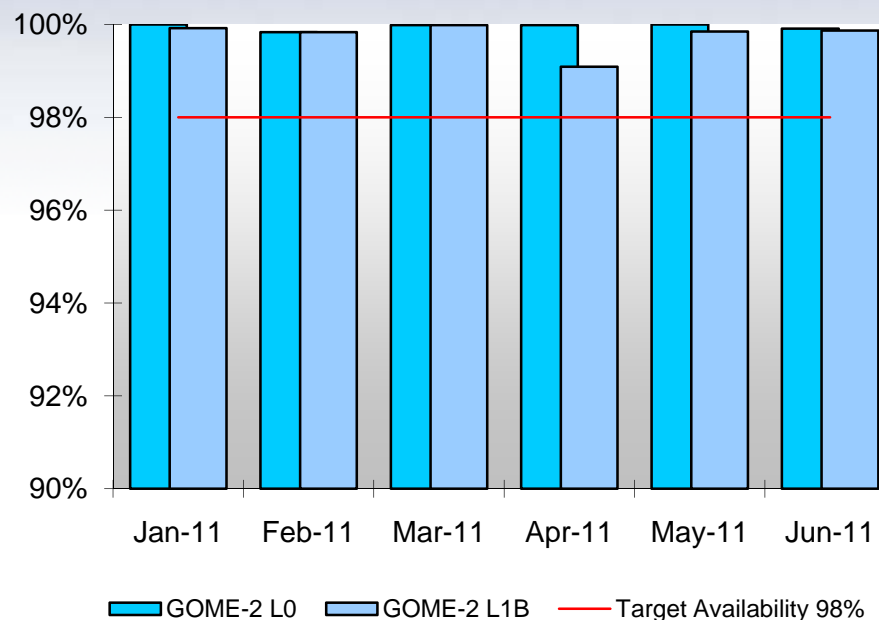
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Metop Global Data Service → GOME-2 Level 1B Products

The Global Ozone Monitoring Experiment-2 (GOME-2) is a scanning spectrometer used to measure profiles and total columns of atmospheric ozone and other trace gases.

Events Which Impacted Availability:

5 April: ~6-hour outage of Level 1B data due to upload of incorrect instrument parameter.



There is a known, but not yet fully understood, degradation of the GOME-2 instrument on Metop-A. Further information on the long-term performance of GOME-2 is available under 'Product Quality Monitoring' on the webpage: www.eumetsat.int > Home > Service Status'

The GOME-2 Newsletter can be found on the same page. See also 'www.eumetsat.int > Data & Products > Resources' for further information on instrument performance and product quality.



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Metop Global Data Service → GRAS Level 1B Products

The GNSS Receiver for Atmospheric Sounding (GRAS) is a radio occultation instrument which determines atmospheric profiles using GPS signals.

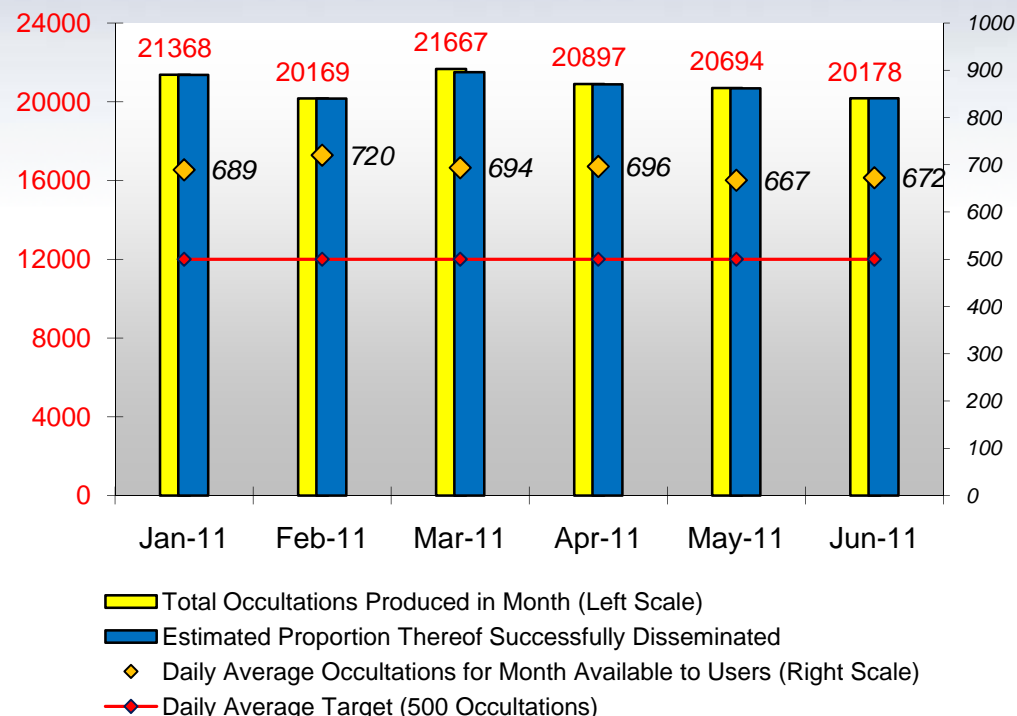
The chart shows:

- (1) the total numbers of GRAS Level 1B occultations produced per month (plus associated geolocation and quality flags)
- (2) the proportion of them which has been successfully disseminated
- (3) the daily average number of occultations for each month provided to users (in *italics*)

Note that all occultations produced are disseminated (with appropriate quality flags, including those produced during manoeuvres and recovery from anomalies).

Events Which Impacted Availability:

5 May: Instrument software patch reduced the possible count for the day by an estimated 20% (~140 occultations).



In addition to the outages associated with Metop-A manoeuvres, GRAS L1B data is flagged 'degraded quality' for a fixed 4 hours following any anomaly, regardless of the actual level.



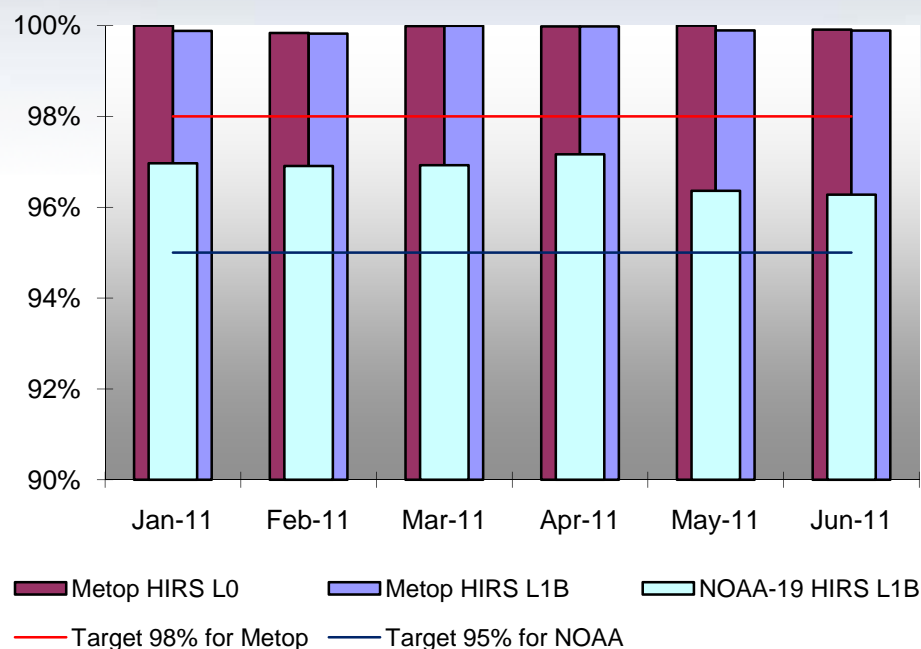
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Metop/NOAA Global Data Service → HIRS Level 1B BUFR Products

The High Resolution Infrared Radiation Sounder (HIRS) measures incident radiation using 19 infrared channels and 1 visible channel, the data contributing to the determination of the atmosphere's vertical temperature profile and water vapour from the Earth's surface to an altitude of about 40 km. Level 1B products are derived from the data generated by the instruments onboard both Metop-A and NOAA-19 satellites.

Events Which Impacted Availability:

None significant.





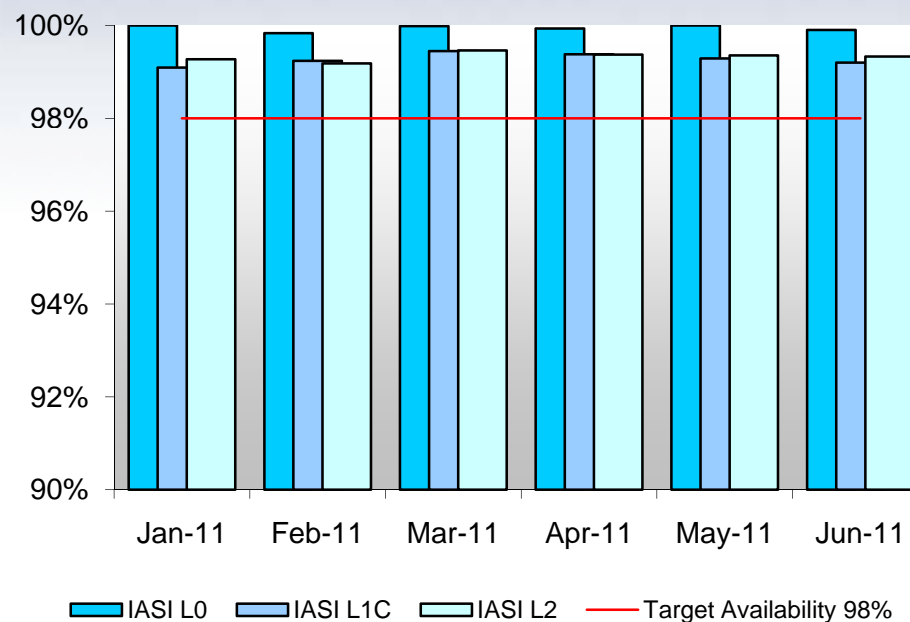
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Metop Global Data Service → IASI Level 1C & Level 2 BUFR Products

The Infrared Atmospheric Sounding Interferometer (IASI) is used for global measurement of atmospheric temperature, water vapour and trace gases, as well as surface temperature, surface emissivity and cloud characteristics.

Events Which Impacted Availability:

None significant.



Note that external calibrations are performed typically on a monthly basis that reduce the availability of Level 1 / Level 2 data relative to that of the Level 0 data by approximately 0.5 - 0.6% of the scheduled availability.



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Metop/NOAA Global Data Service → MHS Level 1B BUFR Products

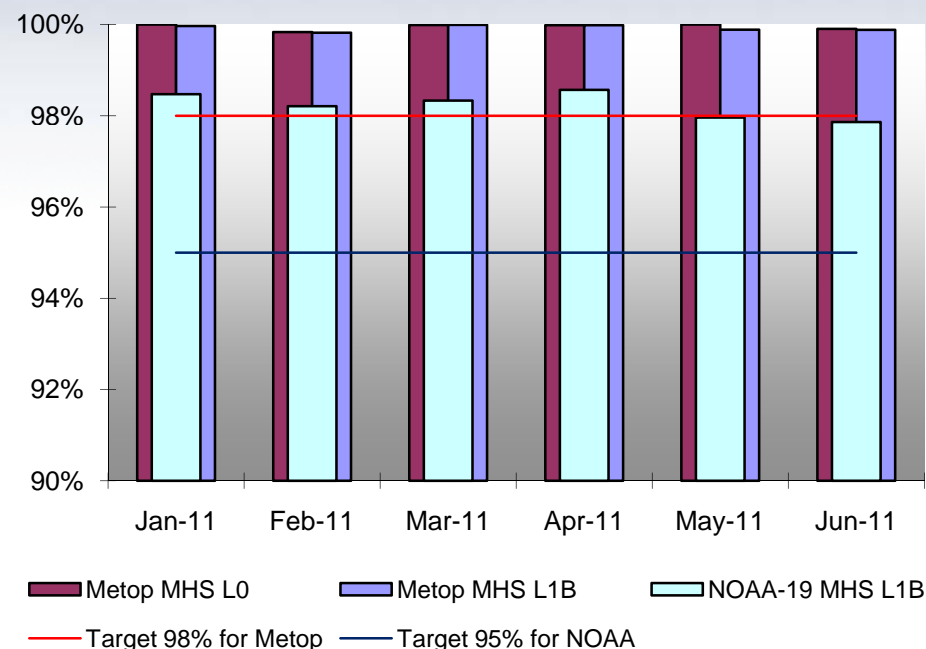
The Microwave Humidity Sounder (MHS) is used to measure atmospheric humidity primarily, but also to measure cloud liquid water content and to provide qualitative estimates of precipitation.

Level 1B products are derived from the data generated by the instruments onboard both Metop-A and NOAA-19 satellites.

Events Which Impacted Availability:

None significant.

Note: NOAA-19's MHS instrument's channel 3 remains out of spec and users are recommended to use channel 4 instead.





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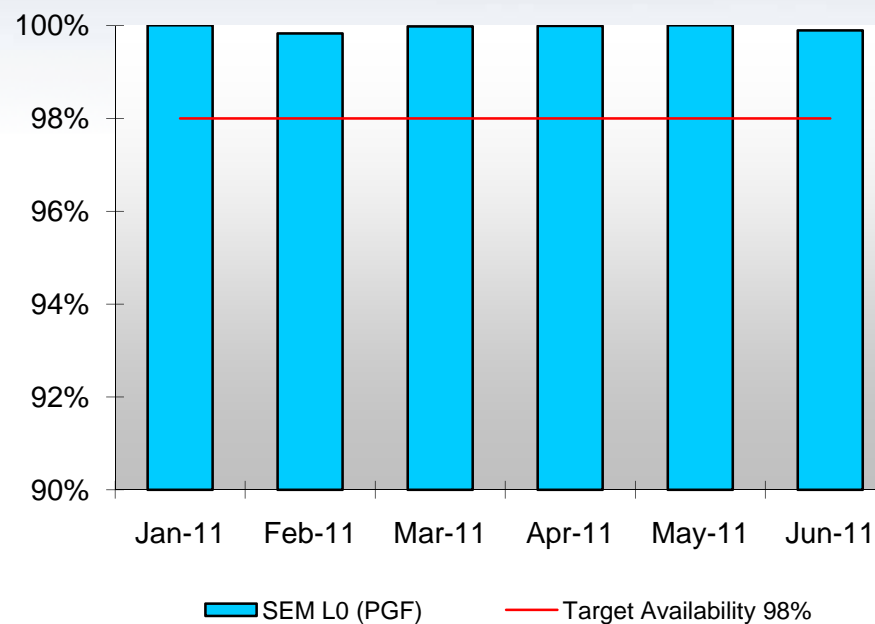
Metop/NOAA Global Data Service → SEM Level 0 Data

The Space Environment Monitor (SEM) consists of a pair of instruments which provide data to determine the intensity of the Earth's radiation belts and the flux of charged particles at the satellite's orbiting altitude.

Level 0 data (consisting of the SEM instrument source packets in EPS native format) is provided to NOAA via dedicated terrestrial line.

Events Which Impacted Availability:

None significant.





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Metop/NOAA Regional Data Service

This service category comprises EARS-ATOVS, EARS-AVHRR and EARS-ASCAT services.

For EARS-ASCAT, Metop-A Level 0 data is provided by the Fast Dump Extract System (FDES) at Svalbard. This system provides fast access to the most recent part of each X-band dump and transfers the relevant data to the EARS system for further Level 1 processing. The resultant Level 1 products are forwarded to KNMI in the Netherlands for the generation of Level 2 data.

ATOVS Level 0 data is acquired by the EARS network of HRPT stations, Level 1 products are generated at those locations and forwarded to EUMETSAT for distribution. ATOVS data is also available from FDES.

AVHRR data is also acquired from both Metop-A and NOAA satellites and processed by the EARS network .

Performance of the EARS services is measured in terms of the availability of the data on the user reception stations being within 30 minutes of the instrument's observations, with the exception of the Ewa Beach, Miami and Monterey stations, for which a less-stringent timeliness of 45 minutes for data availability is allowed.



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Metop/NOAA Regional Data Service → EARS-ATOVS

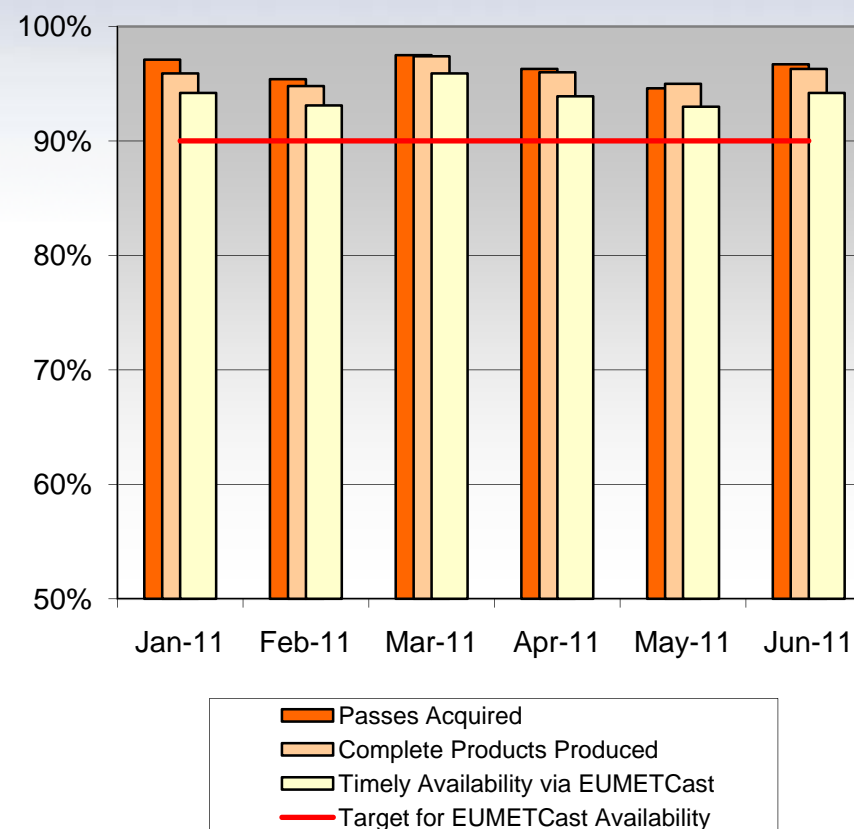
This service provides ATOVS products covering data-sparse areas, derived from data received from the following satellites (listed in order of priority): Metop-A, NOAA's N19, N16, N18, N15 and N17. Both Metop's AHRPT partial coverage data and that from FDES are used.

The availability target shown in red on the chart is that for the products received by users (relative to scheduled ground station passes) and covers Levels 1A and 1C in BUFR and Level 1D products.

Events Which Impacted Availability:

General Issue 1: Ongoing low data quality from Ewa Beach and Miami stations.

General Issue 2: Problems with the AVHRR instruments onboard NOAA's N15 and N17 satellites impact the operation of the ATOVS instruments, resulting in fewer products overall.





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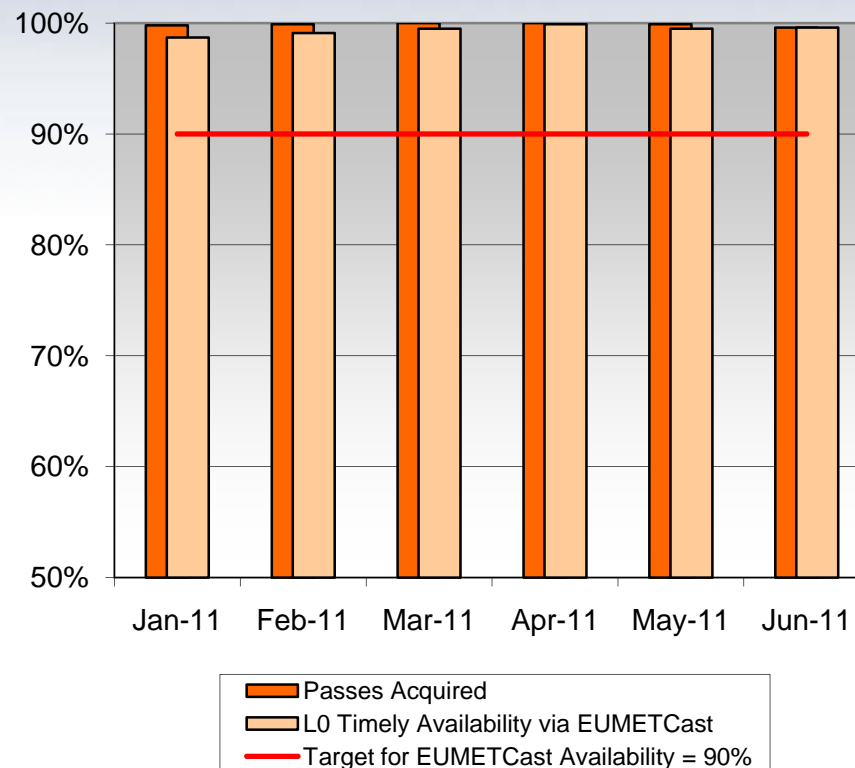
Metop/NOAA Regional Data Service → EARS-AVHRR

This service provides data from the AVHRR instrument onboard the NOAA satellite N19 and from the instrument on Metop-A (AHRPT partial coverage data and FDES).

Availability shown on the chart is for Level 0 data received by users (relative to scheduled regional passes). Note that no higher-level products are generated.

Events Which Impacted Availability:

None significant.





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Metop/NOAA Regional Data Service → EARS-ASCAT

This service provides products derived from the data produced by the ASCAT instrument onboard the Metop-A satellite.

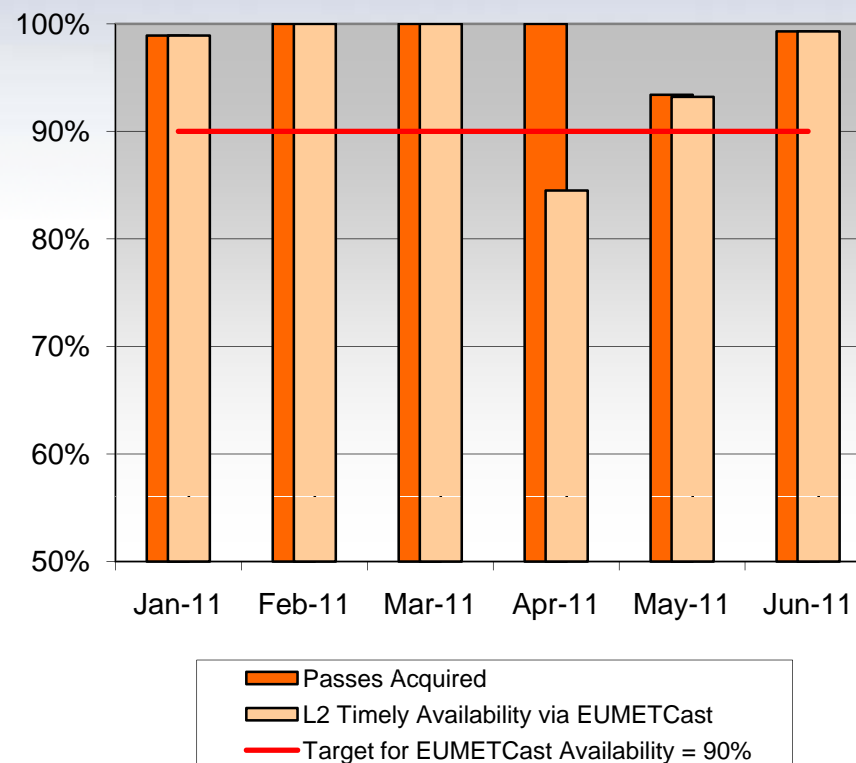
As explained earlier, the Fast Dump Extract System (FDES) at the Svalbard ground station extracts the relevant data from the X-band dump acquired there and provides it to EARS, which performs Level 1 processing and forwards the resultant products to KNMI in the Netherlands for the generation of Level 2 data.

Availability shown on the chart is that of the Level 2 data received by users (relative to scheduled passes).

Events Which Impacted Availability:

April: Availability of Level 2 data shown as below target, but this due to a monitoring problem - actual availability was close to that of passes acquired.

14-16 May: A 48-hour data and product outage caused by the ASCAT instrument autonomously entering into heater-refuse mode.





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Search & Rescue Support

EUMETSAT supports the Cospas-Sarsat System for Search and Rescue (SAR) by flying a transponder onboard each of its more recently-launched satellites, namely Meteosat-8, Meteosat-9 and Metop-A.

The Cospas-Sarsat System is designed to provide distress alert and location data to assist SAR operations, using a constellation of geostationary and low-altitude Earth-orbiting satellites to relay signals from distress beacons to ground terminals. More information concerning the system can be found on www.cospas-sarsat.org.

The availability of the transponders onboard Meteosat-8 and Meteosat-9 was 100% for the reporting period January – June 2011. That for the transponder onboard Metop-A was only very marginally less at 99.99 %, due to a known (infrequent) autonomous hardware-reset limitation.



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Jason-2 OGDR Service

This service delivers the 'Operation Geophysical Data Record' products, derived from the altimetry data acquired from the Jason-2 satellite.

Jason-2 is the second satellite of the space segment of the Ocean Surface Topography Mission (OSTM), a cooperation between AVISO, CNES, NASA and NOAA. EUMETSAT and NOAA work together to process data from the Jason-2 satellite in near real-time and to archive and disseminate the products.

The chart on the next slide shows the availability of the products within timeliness constraints of 3 hours and 5 hours from the time of sensing.



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Jason-2 OGDR Service

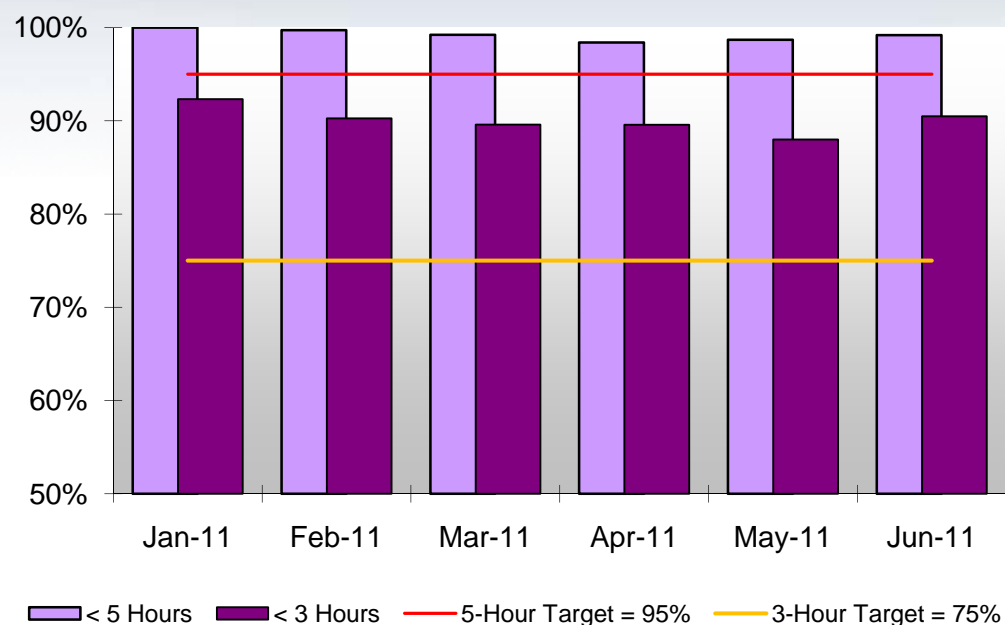
The chart shows the availability of the Jason-2 near real-time Operational Geophysical Data Record products disseminated via EUMETCast.

The target figure of 95% applies to the availability of data received on EUMETCast reception stations with a timeliness of 5 hours. The further target of 75% is for the more demanding objective of 3-hour timeliness.

Events Which Impacted Availability:

None significant.

(In general, redumps are taken at next visibility (or by other ground station) in cases of problematic passes and connection problems – this ensures minimisation of data loss, although some impact on timeliness occurs)





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Third-Party Geostationary Satellite Services

In addition to the Meteosat geostationary satellite data, EUMETSAT relays satellite data from partner organisations. Part of an international cooperation, the geostationary satellite data from the National Oceanic and Atmospheric Administration (NOAA) and the Japanese Meteorological Agency (JMA) are made available via EUMETCast, Direct Dissemination and the Internet.

The chart on the next slide shows availability of image data from the following satellites:

- NOAA's GOES-East (GOES-12) satellite stationed at 75°W
- NOAA's GOES-West (GOES-11) satellite stationed at 135°W
- JMA's MTSAT-2 satellite stationed at 145°E



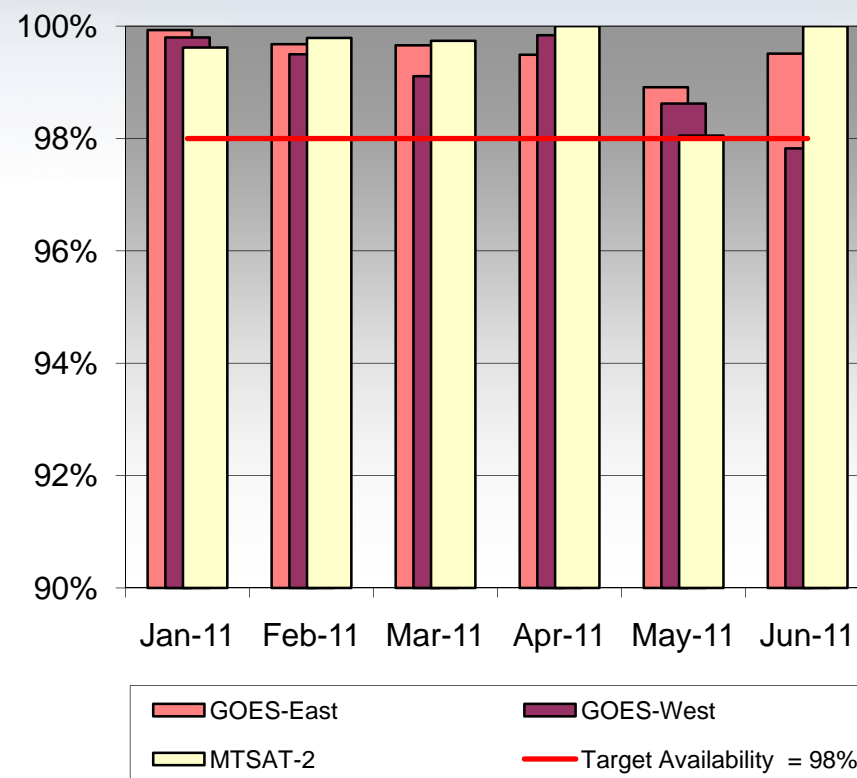
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Third-Party Geostationary Satellite Services → GOES and MTSAT Image Data

The chart shows the timely availability of formats of image data originating from the indicated satellites, as disseminated via EUMETCast .

Events Which Impacted Availability:

- 2 May: Problems with the communication link with CMS Lannion impacted reception of the all relayed third-party data at EUMETSAT.
- 26 May: CMS Lannion experienced GOES-West data reception difficulties





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The EUMETSAT Data Centre

EUMETSAT's Data Centre archives all payload data acquired from EUMETSAT's operational satellites and most of the products derived from that data.

The Data Centre allows registered users to request data and products from the archive by use of its online 'self-service' ordering mechanism and supplies the requested items via physical media and the Internet. It also allows 'bulk orders' for long time-periods of data and 'standing orders' for repeated delivery of data / products over specified time periods to be requested for special needs.

Charts on the following themes appear on the next 2 slides:

- Orders Processed and Data Delivered
- Archive Orders versus Data To Be Retrieved



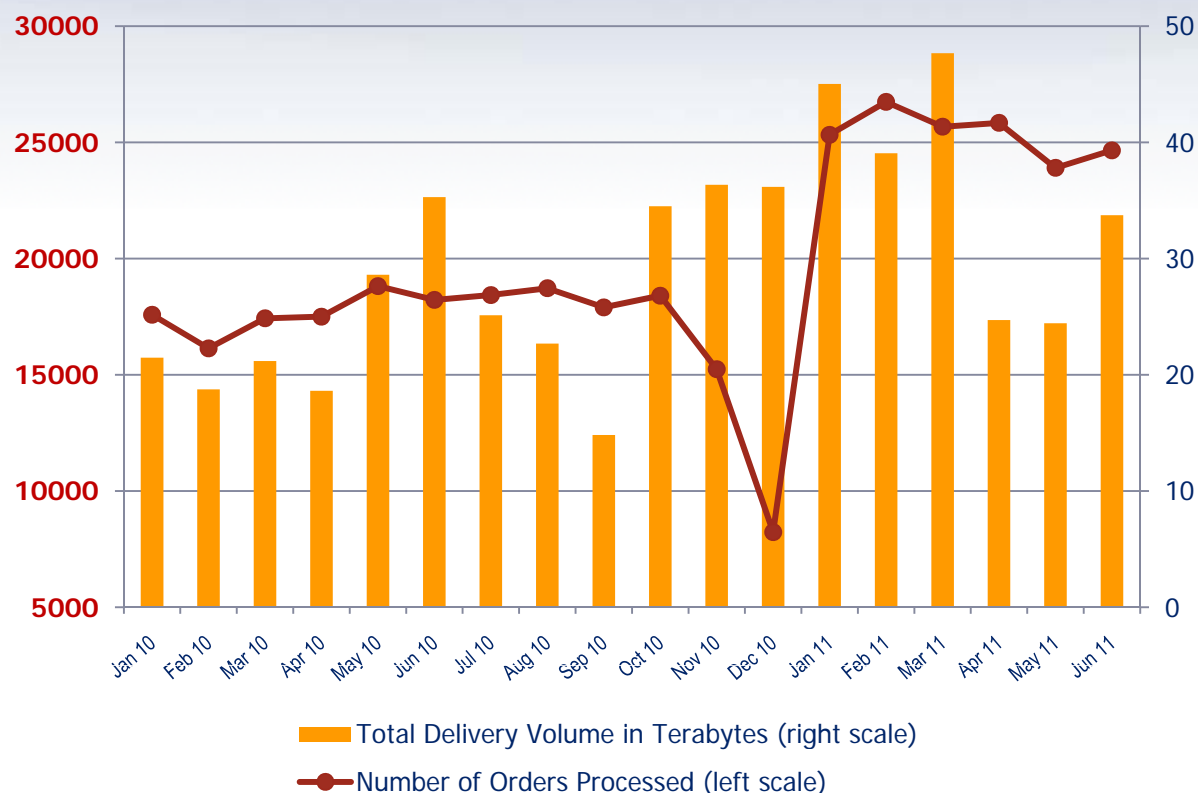
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The EUMETSAT Data Centre → Orders Processed and Data Delivered

The chart here shows the orders processed monthly by the Data Centre and the resulting volumes of data delivered to the users in the period **January 2010 – June 2011**. All types of orders (regular, bulk and standing) are included in the statistics.

There can be significant variation in the amount of data delivered per order, which thus gives rise to only a loose correlation between the numbers of orders processed in a month and the total volume of data delivered.

‘Orders Processed’ decreased at the end of 2010 due to the seasonal expiry of standing orders, but returned to higher figures in January 2011, partly due to a change in composition of deliveries of standing orders.



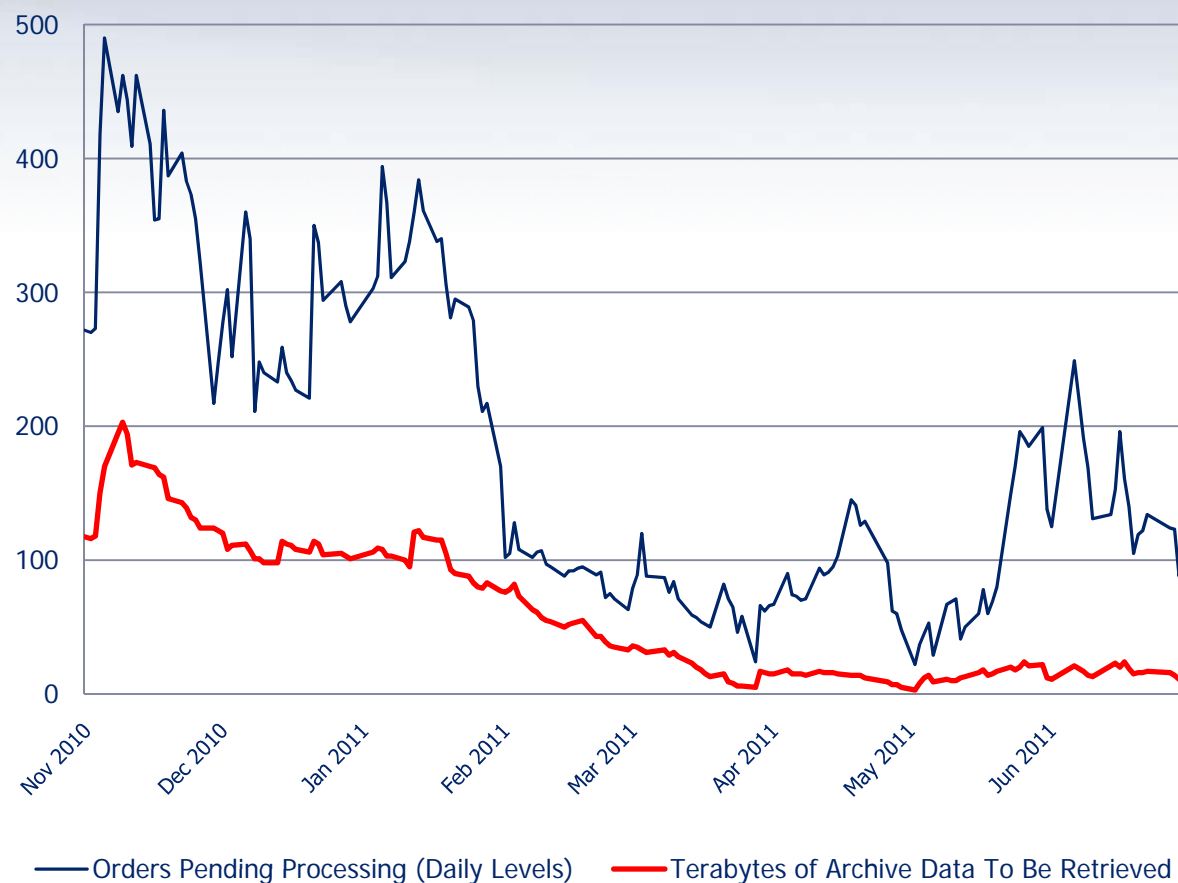


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The EUMETSAT Data Centre → Archive Orders versus Data To Be Retrieved

For this issue of the report, we provide a chart which shows the day-by-day profile of pending archive orders to be processed, together with the related volume of data needing to be retrieved from the archive and processed to satisfy the queued orders.

The chart covers the period 1st November 2010 to 30th June 2011. Each line comprises values for each EUMETSAT working day.





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User Support Service

EUMETSAT's User Helpdesk provides support to the users of its services, handling enquiries, registrations, user feedback comments, problems experienced and enhancement requests.

This section includes charts on the following subjects:

- User interaction history from 2002 onwards
- The countries and groups that gave rise to the largest numbers of user interactions
- Breakdown of user interactions by category
- Distribution of EUMETCast Users Worldwide
- EUMETCast Growth Over the Years



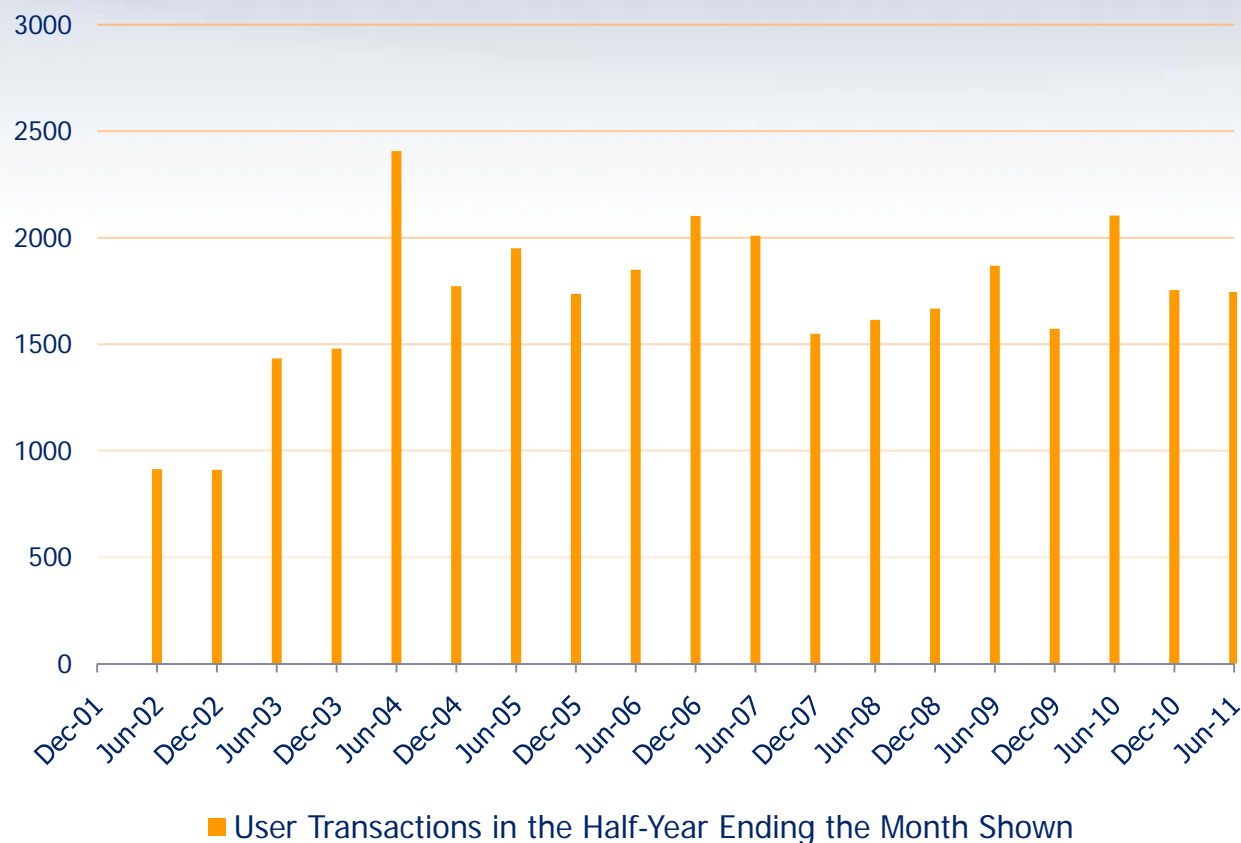
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User Support Service → User Interaction History

The chart here shows the number of user interactions handled by EUMETSAT's User Helpdesk in each half-year since the beginning of 2002.

The all-time high in half-yearly levels of interactions seen in the first half of 2004 correlated with Meteosat-8 (the first second generation satellite) going into operational use and the users registering for EUMETCast to receive its data and derived products.

The next 2 slides focus on the user interactions for the current reporting period, in which a total of 1745 interactions were handled.





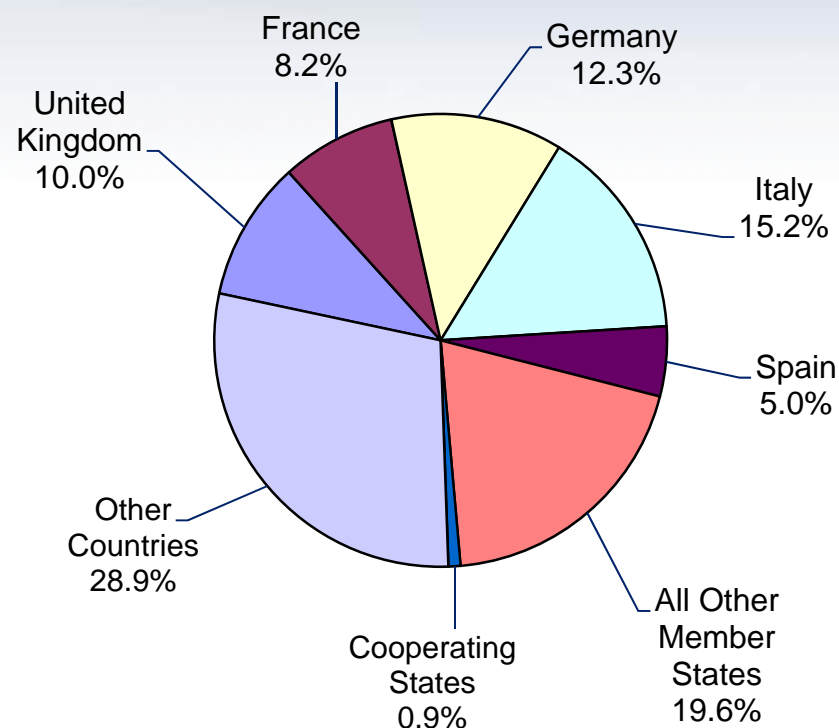
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User Support Service → User Interactions 2011/H1 by Country of Origin

The chart shows the interactions in the first half of 2011 from:

(1) the 5 EUMETSAT Member States that gave rise to the largest numbers of interactions, and

(2) the split of the remainder of the interactions between other Member States, the Cooperating States and other countries.





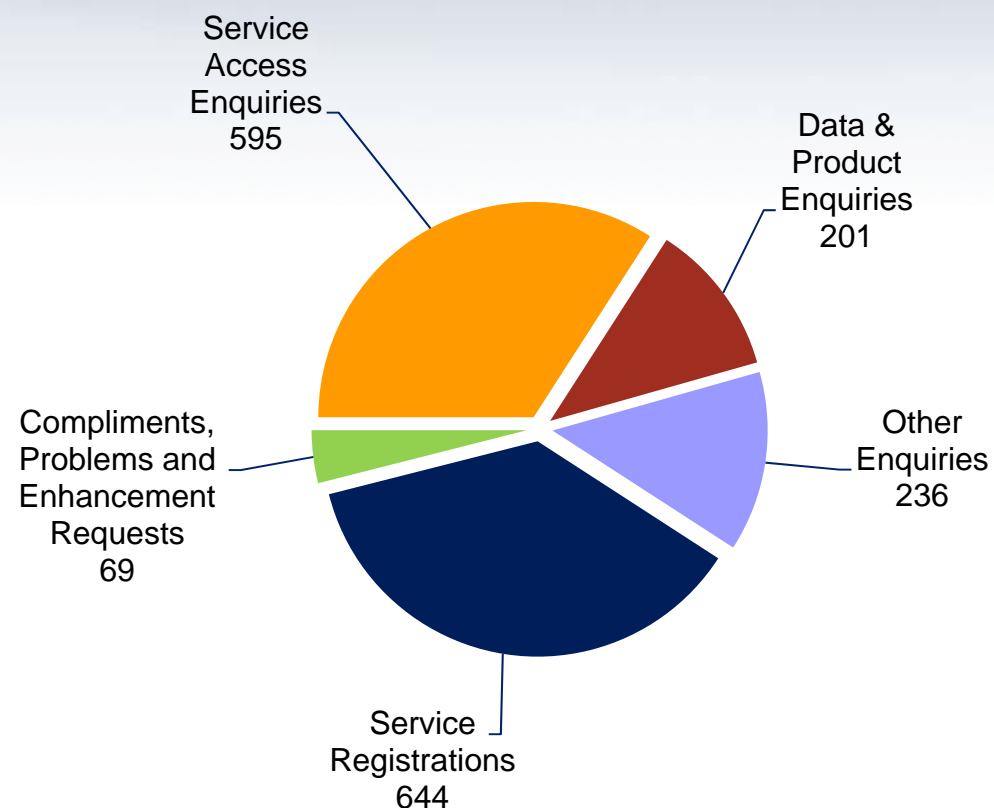
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User Support Service → User Interactions 2011/H1 by Category

The chart shows the numbers of interactions in the first half of 2011 in terms of the main categories of:

- Enquiries (3 types)
- Registrations
- 'Compliments, Problems and Enhancement Requests'

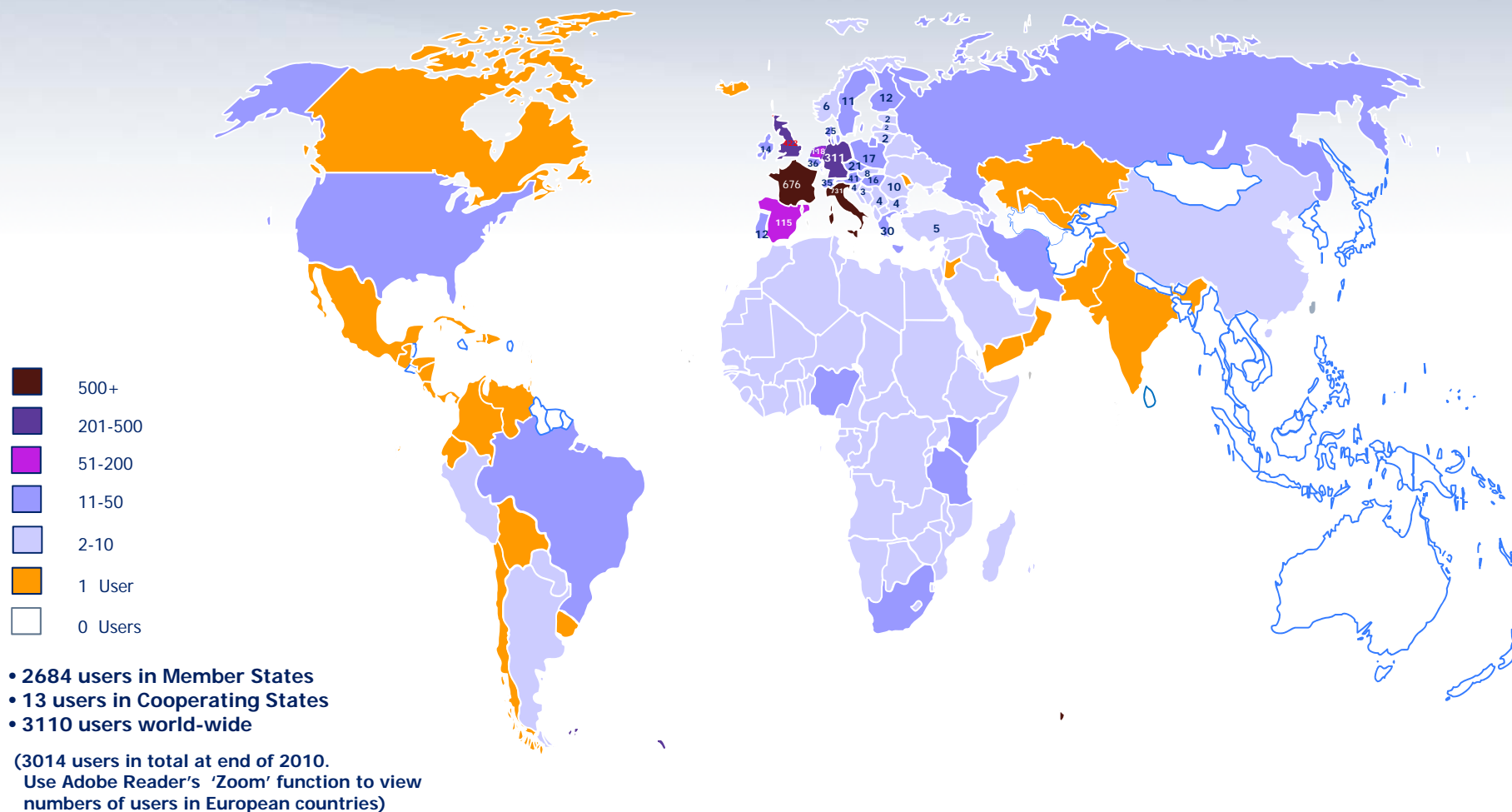
The number of interactions for the half-year totalled 1745.





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User Support Service → EUMETCast Users Worldwide as of June 2011





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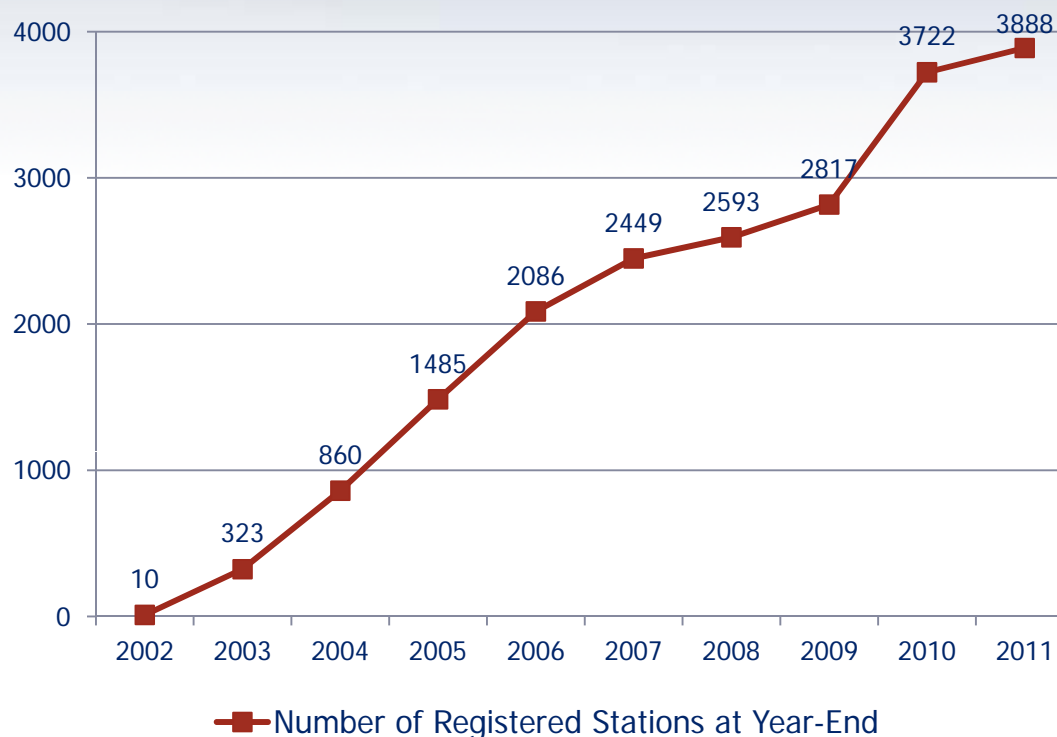
User Support Service → EUMETCast Growth Over the Years

A suitable method of showing the growth of the EUMETCast community is by means of charting the trend of registrations of EUMETCast user stations.

The EUMETCast system was first conceived to disseminate EARS data. It evolved into a means of dissemination for the MSG programme, and was extended to provide Metop and Jason-2 data in more recent years. Products of partner organisations such as NOAA and DWD have also been added to the system.

The significant increase in stations in 2010 was largely a result of the migration of the users of Météo-France's RETIM system to EUMETCast.

Note that the figure given for 2011 is the number of stations registered so far this year, i.e. up to the end of June.





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Changes to EUMETSAT's Services

In previous issues, this section has listed the changes to services that took place in the reporting periods. This information is now available on the EUMETSAT website and so this section is not being continued.

Please see the 'Product Update History' and 'Product & Service News' sections on the [Service Status](#) page, using the 'View All' links at the feet of the sections to go back in time.

Note that details of all products can be found in EUMETSAT's Product Navigator, accessible via the homepage of EUMETSAT's website, www.eumetsat.int



EUMETSAT Central Operations Report for January - June 2011

Glossary

Special terms used in this report are explained in the table below (continued on several subsequent slides).

Term	Context in which used	Description
A-DCS	Metop/NOAA Global Data	The 'Advanced Data Collection System' instrument on Metop contributes to the Argos programme, which is a satellite-based data location and collection system dedicated to monitoring and protecting the environment.
AMSU-A	Metop/NOAA Global Data	The 'Advanced Microwave Sounding Unit-A' is a multi-channel microwave radiometer provided by NOAA, flying on Metop-A, which is used in combination with the HIRS instrument for measuring global atmospheric temperature profiles.
ASCAT	Metop/NOAA Global Data	The 'Advanced Scatterometer' is a C-band radar provided by ESA, flying on Metop-A, which measures global ocean wind vectors.
ATOVS	Metop/NOAA Global Data	Calibrated radiance measurements from the 'Advanced TIROS Operational Vertical Sounders', namely the AMSU-A, MHS and HIRS instruments, are transformed into various parameters and assembled in the ATOVS L2 product.
AVHRR	Metop/NOAA Global Data	The 'Advanced Very High Resolution Radiometer' is a multi-spectral imaging instrument provided by NOAA which produces global cloud imagery and images of land and sea surfaces.
DCP	Meteosat	A 'Data Collection Platform' measures and transmits environmental data which is relayed by Meteosat satellite first to EUMETSAT's central operations, and then forwarded on to the DCP operator via direct, EUMETCast or GTS dissemination.



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Glossary (continued)

Term	Context in which used	Description
Formats	Meteosat (IODC)	This refers to the High-Resolution Image (HRI) formats disseminated via Meteosat's direct dissemination broadcasts.
GOME-2	Metop/NOAA Global Data	The 'Global Ozone Monitoring Experiment-2' instrument flying on Metop-A is a scanning spectrometer used to measure profiles of atmospheric ozone and other trace gases.
GRAS	Metop/NOAA Global Data	The 'GNSS Receiver for Atmospheric Sounding' instrument flying on Metop-A is a radio occultation instrument which determines atmospheric profiles using GPS signals.
GTS	General	The 'Global Telecommunications System', established by the WMO, is used by national meteorological services to exchange meteorological data and products. See also 'RMDCN'.
HIRS	Metop/NOAA Global Data	The 'High Resolution Infrared Radiation Sounder' measures incident radiation in for determining the atmosphere's vertical temperature profile and water vapour from the Earth's surface to an altitude of about 40 km.
IASI	Metop/NOAA Global Data	The 'Infrared Atmospheric Sounding Interferometer' is a multi-purpose sounding instrument used for global measurement of temperature, water vapour, trace gases such as ozone, nitrous oxide, carbon dioxide and methane, as well as surface temperature, surface emissivity, and cloud characteristics.



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Glossary (continued)

Term	Context in which used	Description
Level 0	Metop/NOAA Global Data	An instrument's raw data which has been demultiplexed from the total set of data dumped from one orbit of the Metop satellite.
Level 1.0	Meteosat	The raw image data acquired from a Meteosat satellite and preprocessed at the ground station, which is then received by a EUMETSAT image-processing facility, to be geometrically rectified and radiometrically corrected.
Level 1.5	Meteosat	Level 1.0 image data that has been corrected for radiometric and geometric non-linearity and is accompanied by the appropriate ancillary information that allows the user to calculate the geographical position and radiance of any pixel.
Level 1A	Metop/NOAA Global Data	Instrument data in full resolution with radiometric and geometric (i.e. Earth location) calibration computed and appended but not applied.
Level 1B	Metop/NOAA Global Data	Calibrated, earth-located and quality-controlled product, in the original pixel location, packaged with ancillary, engineering and auxiliary data.
Level 1C	Metop/NOAA Global Data	In the case of the IASI spectra, Level 1B data after the application of the apodization function.
Level 2	Metop/NOAA Global Data	Earth-located values converted to geophysical parameters at the same spatial and temporal sampling as the Level 1B and 1C data.



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Glossary (continued)

Term	Context in which used	Description
MHS	Metop/NOAA Global Data	The 'Microwave Humidity Sounder' is a new 5-channel microwave instrument developed for EUMETSAT to measure profiles of atmospheric humidity. Five flight models in total will be flown on the 3 Metop satellites, plus NOAA-N and NOAA-N'.
Nominal RCs	Meteosat (0° SEVIRI)	SEVIRI repeat cycles consisting of geometrically and radiometrically-corrected data in all 12 channels, with less than 18 missing detector lines in the scanned Earth area for any given spectral channel (54 for HRV), where less than 12 of those lines (36 for HRV) are adjacent to each other.
'On-Time'	All	The data or product has been generated or received 'on-time' at a specified location (e.g. at generation facility or EUMETCast user station respectively) within the relevant timeliness constraint.
Perfect Formats	Meteosat (IODC)	High-Resolution Image (HRI) formats which have no missing lines and are based on the latest scanned image according to schedule.
Perfect Images	Meteosat (IODC)	Rectified images which are 100% complete.
PGF	On Metop performance charts	The Metop 'Product Generation Facility' is the part of the EPS CGS (Core Ground System) which generates Level 0 data and controls the generation of Level 1 and 2 products by the relevant PPFs (Product Processing Facilities).



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Glossary (continued)

Term	Context in which used	Description
Repeat Cycles (or RCs)	Meteosat (0° SEVIRI)	The period in which the MSG SEVIRI instrument performs one scan and then is repositioned ready for the next repeat cycle. A nominal repeat cycle (a scan of the entire Earth disc) has a duration of 15 minutes.
RMDCN	General	The 'Regional Meteorological Data Communication Network' is used by WMO Region VI to carry GTS traffic within Europe. See also 'GTS'.
RSS	Meteosat (9.5° SEVIRI)	Rapid-Scan Service (for MSG), where the repeat cycle has a duration of only 5 minutes, covering the latitude range of 15 to 70°N.
SEM	Metop/NOAA Global Data	The 'Space Environment Monitor' consists of a pair of instruments which provide data to determine the intensity of the Earth's radiation belts and the flux of charged particles at the satellite's orbiting altitude.
SEU	Satellite or instrument outages	'Single Event Upset', the term used to refer to an effect on onboard electronics caused by solar particles, possibly resulting in a switch-off of an electronic system.

(end of report)