Central Operations Report
for the period July to December 2008

Contents

Introduction

Welcome to the report on EUMETSAT Operations for the second half of 2008.

Performance in the last 6 months of 2008 has generally been very good, with the best half-year results for Metop-related services seen to date since the start of operations.

Please note that new content has been added to the report as of this issue:

- **Meteosat SEVIRI 9.5°E Rapid Scan Image Data service**
- **NOAA-18 Level 1 product availability added to the slides for AMSU, AVHRR, HIRS and MHS**
- **EARS-ASCAT service (started December 2008)**
- **Search & Rescue Support**
- **Archive Service: Reprocessed GOME-2 Level 1 data and Registered Users**

The dissemination of Jason-2 operational products commenced mid-December. The satellite was launched on the 20th of June and the system handover to the operational partners NOAA and EUMETSAT was completed by the end of the year.

Jason-2 products are being distributed to operational meteorology users in near-real time (around

Introduction (continued)

→ three hours after sensing). Climate users will have access to high-precision offline data later in 2009.

Please be reminded that Central Operations Reports can be found in their own section under 'Publications' on the EUMETSAT website. Further information on all products is available via the 'Product Navigator', a direct link for which is provided on the EUMETSAT home-page.

Best regards,
Mikael Rattenborg
Director of Operations

Service 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
- EUMETSAT's Archive Service
- 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.

Service Reporting: Conventions

The Availability Charts:

These typically show the month-by-month availability of the services and are accompanied by commentary identifying any events which may have had impact on the provision of them.

Events Impacting Availability:

Some operational events impact the availability of more than one service category or component service within a category. Such events are described on a separate slide preceding all the component services on which the events had impact.

Events (whether satellite or ground-segment in nature) which significantly affected the availability of a single service (e.g. data associated with a single instrument) are indicated on the relevant slide for that service.

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 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)**

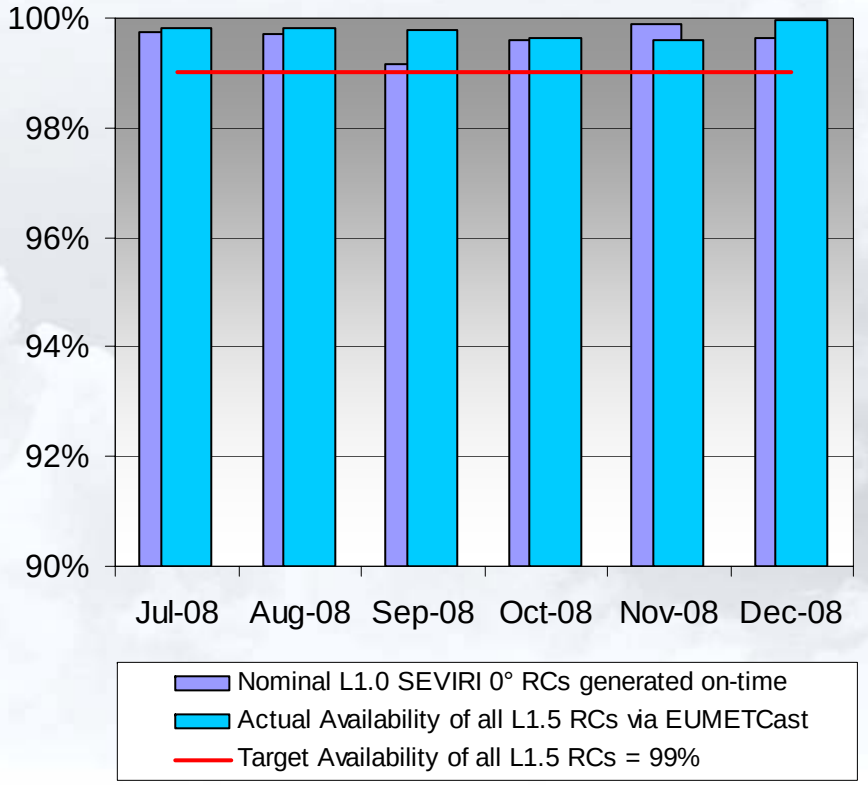
Meteosat Services → SEVIRI 0° Image Data

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 all (nominal and otherwise) Level 1.5 RCs (High-Rate and Low-Rate) via EUMETCast**

Events Which Impacted Availability:

Sept 2008: Nominal RCs impacted by reduced geometric quality resulting from eclipse and from satellite tank heater-switching.



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,

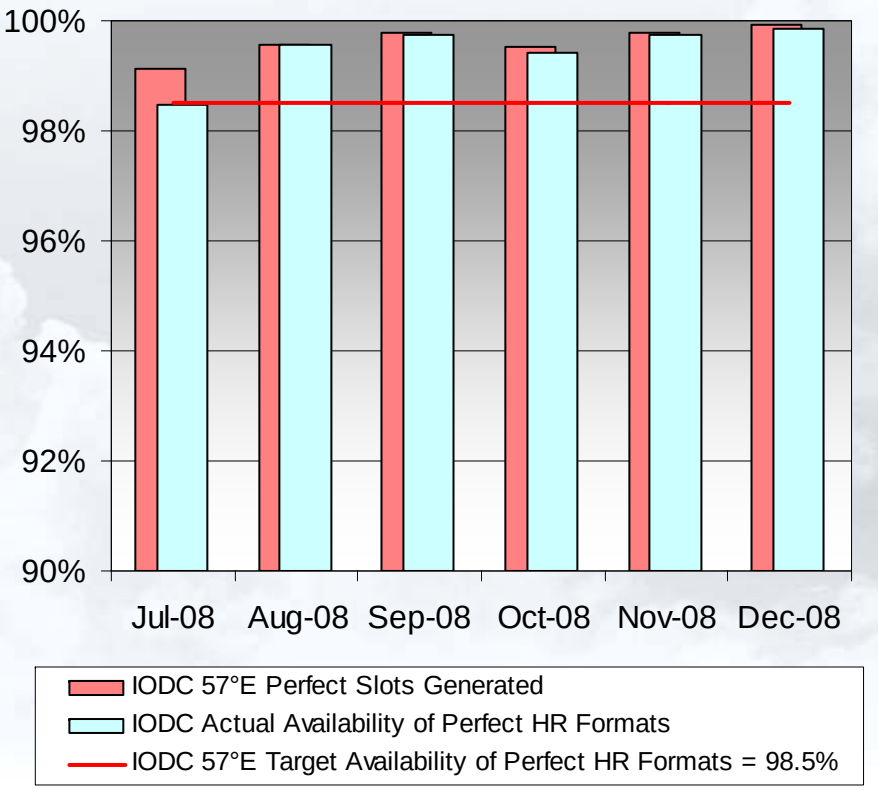
(2) the availability of Perfect Formats directly disseminated via Meteosat-7, as a percentage of those scheduled.

Events Which Impacted Availability:

July 2008:

(1) Planned ground-segment maintenance activity on 2-July caused a system outage, resulting in loss of 5 repeat cycles and associated dissemination formats. The event was classified as OPS Incident No. 33 and various preventive measures have been put in place as a consequence of the review.

(2) Ground station uplink hardware problem on 13-July impacted dissemination of 12 HR formats.



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

Meteosat-8 currently supports the MSG rapid-scan service, using a scan period of 5 minutes, covering the latitude range of 15 to 70°, 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 nominal Level 1.5 RCs produced.

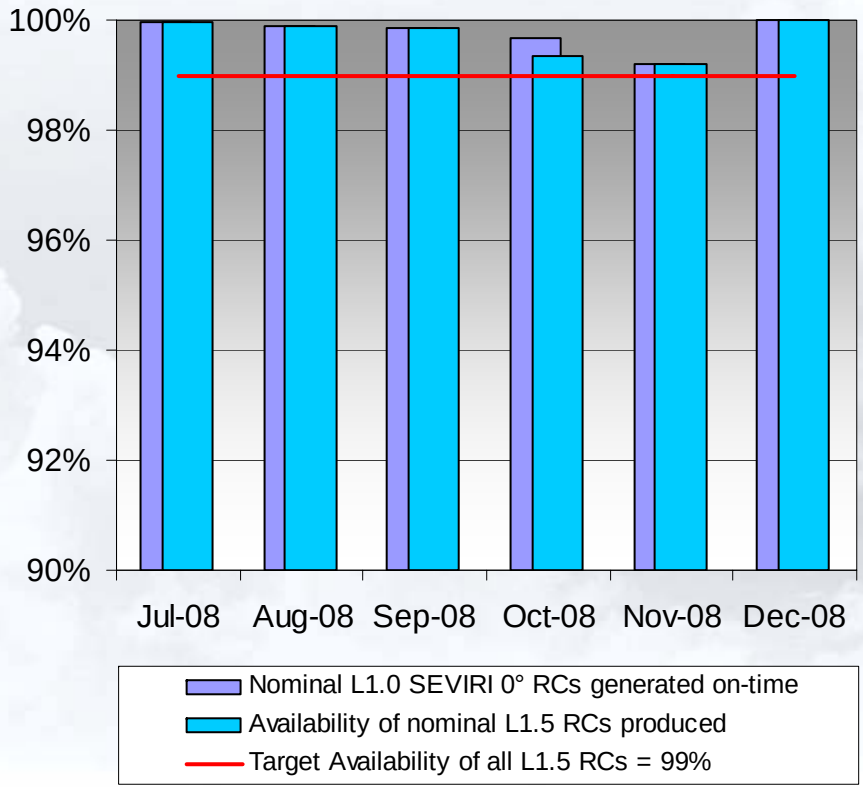
Note that, due to operational constraints, rapid-scanning is interrupted approximately once a month to perform full-Earth scanning, and also for a full month in the December/January timeframe. More information can be found on www.eumetsat.int under 'Access to Data'.

The statistics here include the periods of full-Earth scanning.

Events Which Impacted Availability:

1st-2nd October: Nominal RCs (esp. L1.5) impacted by a satellite North-South station-keeping manoeuvre.

11th November: Nominal RCs impacted by a satellite East-West station-keeping manoeuvre and resultant fuel migration.

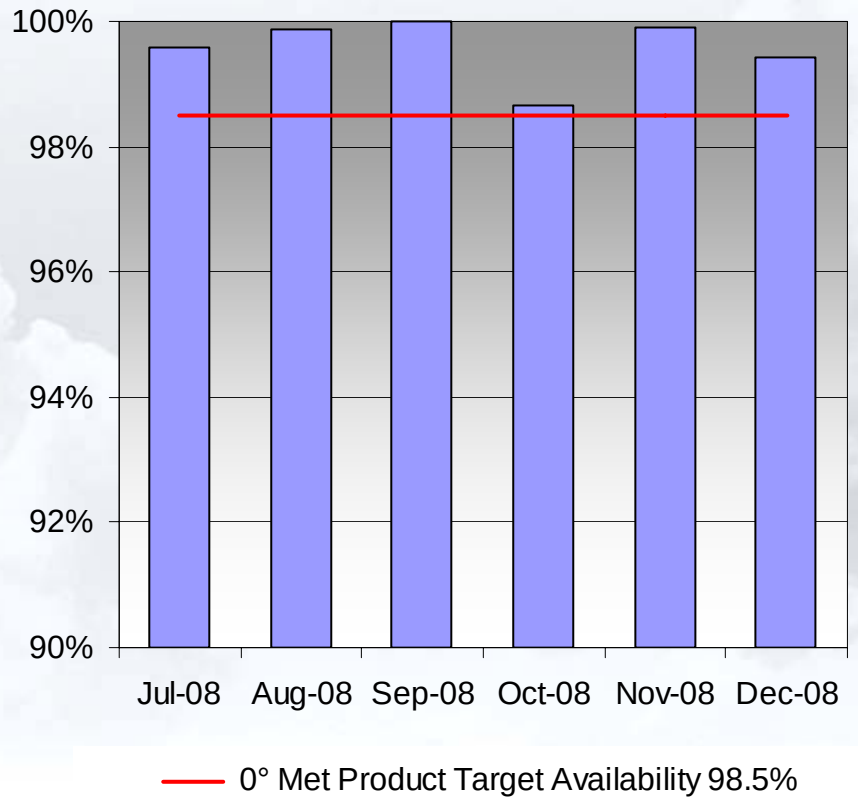


Meteosat Services → Meteorological Products derived from 0° Data

Performance 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:

October 2008: Software problems suffered by the product extraction system in the period 19 – 23-October impacted the generation of products.

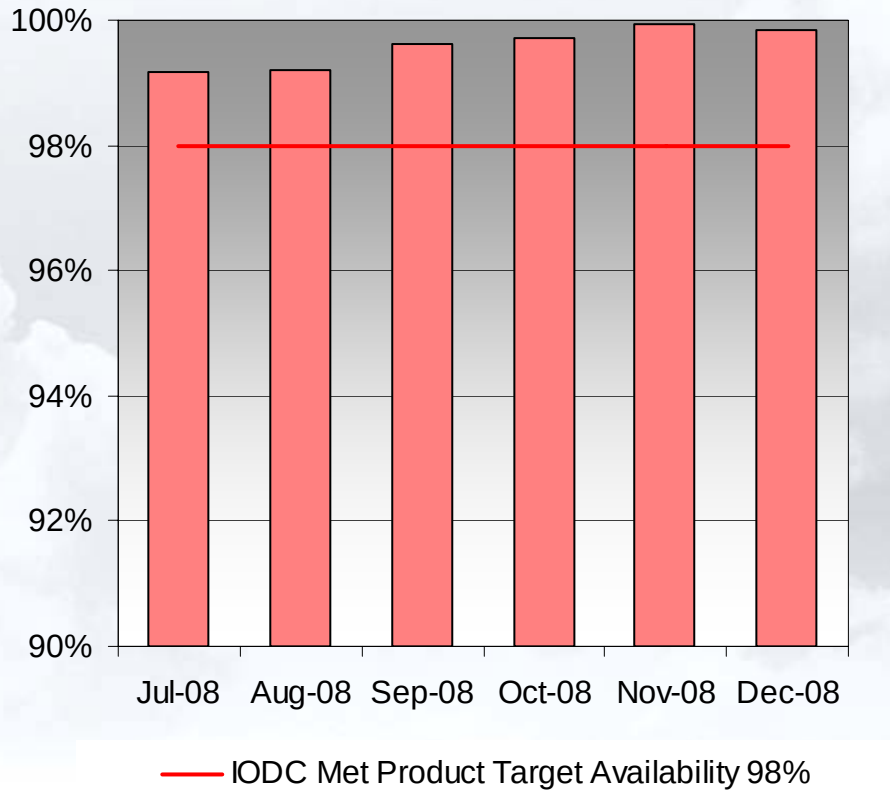


Meteosat Services → Meteorological Products derived from 57°E Data

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:

None significant.



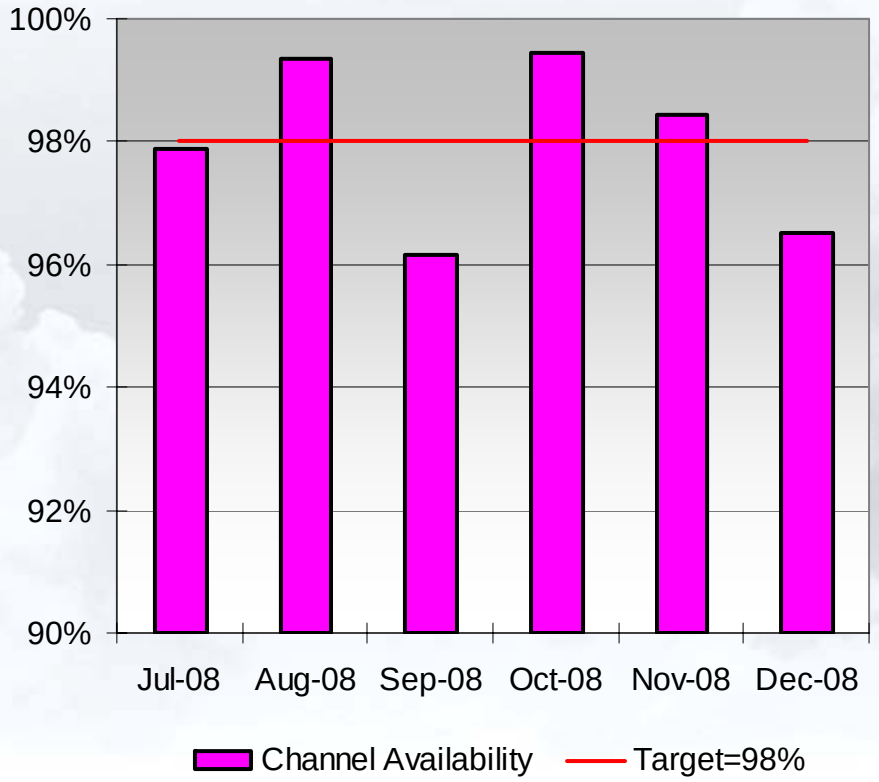
Meteosat Services → DCP Channel Availability at 0°

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

As of the end of December 2008, there were 548 active Data Collection Platforms (DCPs) out of a total of 959 registered units, belonging to 115 operators.

Availability of the 0° service is shown on the chart to the right. 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 international DCP channels supported by Meteosat-6 as part of the Indian Ocean Tsunami Warning System (IOTWS) is currently not included)



Events Which Impacted Availability:

4-5 September: A scheduled 24-hour outage of reference DCP transmissions unavoidably impacted statistics (although DCP channels continued operating without any problems).

December: Intermittent comms router problems impacted the handling of DCP messages in the ground segment.

Other 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.

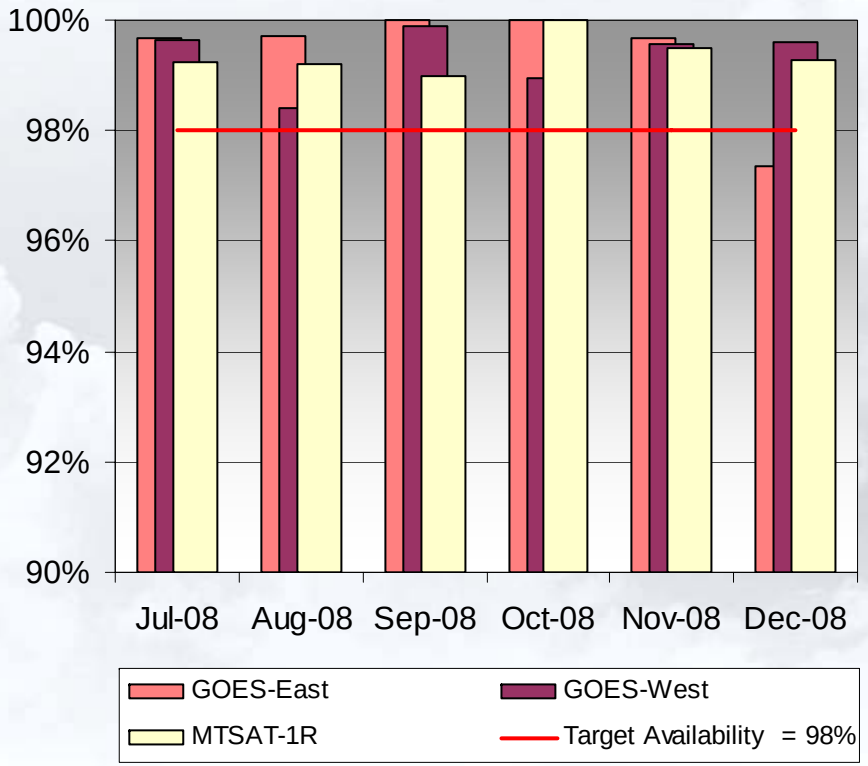
The chart on the next slide shows availability of image data from the following satellites:

- **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-1R satellite stationed at 140°E**

Other Geostationary Satellite Services → GOES and MTSAT Image Data

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

Note that the statistics are currently based on segments of formats and not on complete formats.



Events Which Impacted Availability:

7/8 August: ground segment problems delayed / prevented the relay of GOES-West data.

14 December: the nominal GOES-East satellite (GOES-12) suffered an imager problem and this necessitated a switch to 3-hourly formats produced from GOES-10 data. Availability shown is for the combined sequence of GOES-12 – GOES-10 formats in December.

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, ASCAT, AVHRR, GOME-2, GRAS, HIRS, IASI, MHS, SEM

EUMETSAT also produces Level 1 products based on the data from NOAA-18'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 pages 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

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.

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

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

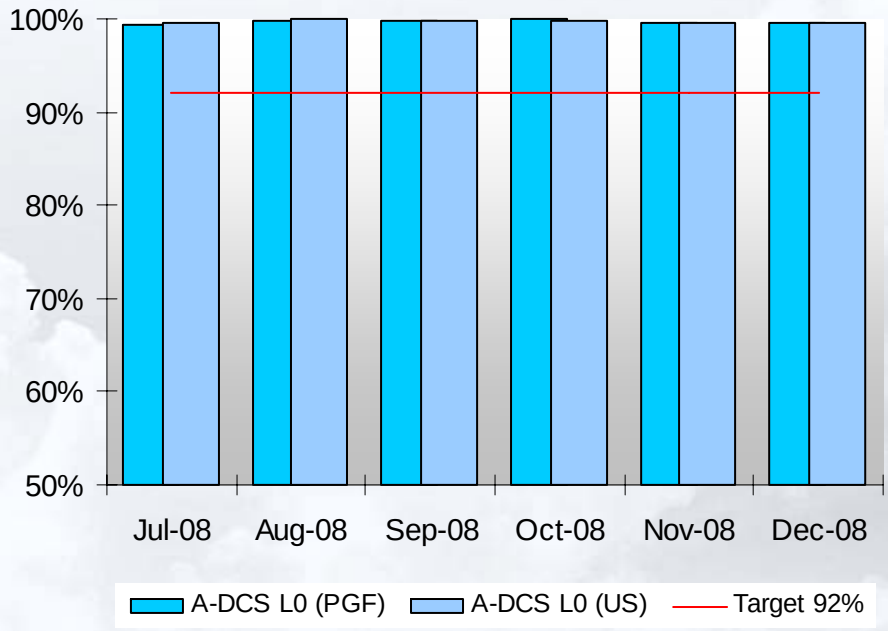
23 October 2008: A Metop-A 'Out-Of-Plane' manoeuvre necessitated a deactivation of the AMSU, ASCAT, GRAS, HIRS, IASI, MHS and SEM instruments for approximately 5-6 hours. In addition, the GOME instrument's mirror was returned to launch position for about 1.7 hours.

31 December 2008: A software problem with satellite-tracking equipment at the Ground Station in Svalbard resulted in the partial loss of data for 6 orbits.

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.

Availability of the Level 0 via EUMETCast is measured on EUMETSAT's reference user station (US). Performance in all months of the reporting period was above target.



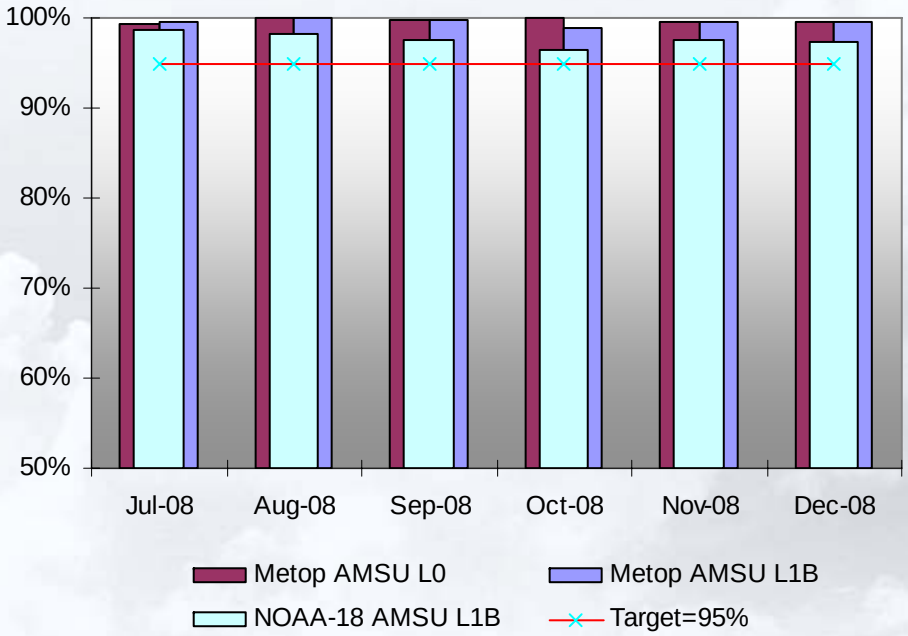
<u>Events Which Impacted Availability:</u>

None significant.

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-18 satellites.



<u>Events Which Impacted Availability:</u>

Metop-A manoeuvre of 23 October (see slide 18).

(note that Metop-A's AMSU-A1 channel 7 Noise-Equivalent differential Temperature (NEdT) was found to be approaching its specified threshold in mid-December and has since exceeded it, rendering the data potentially unusable)

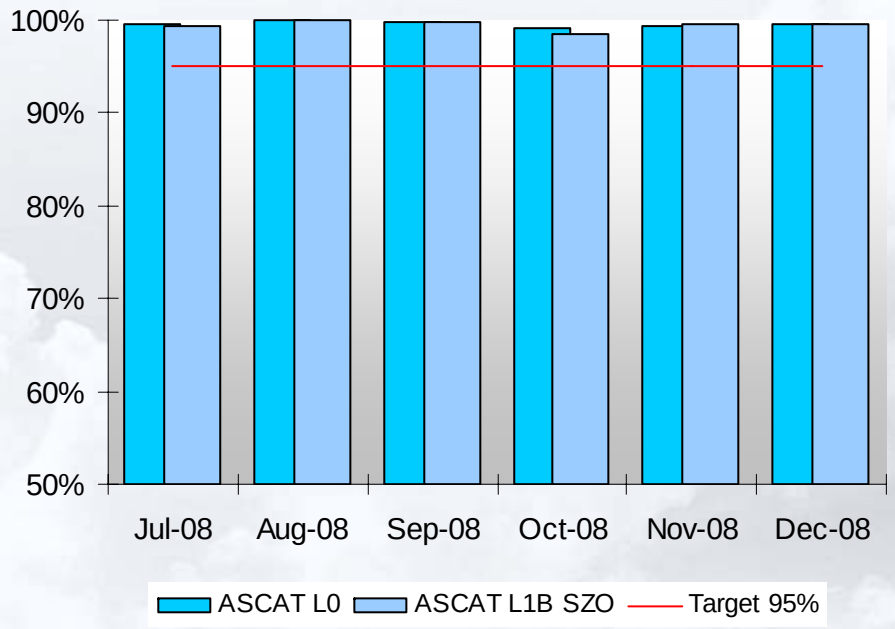
Metop Global Data Service → ASCAT Level 1B (SZO) Products

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

Performance of the Level 1B service is measured in terms of the timely availability of the 'SZO' product with spatial resolution of 50 km on the EUMETCast reference user station (US).

<u>Events Which Impacted Availability:</u>

Manoeuvre of 23 October (see slide 18).



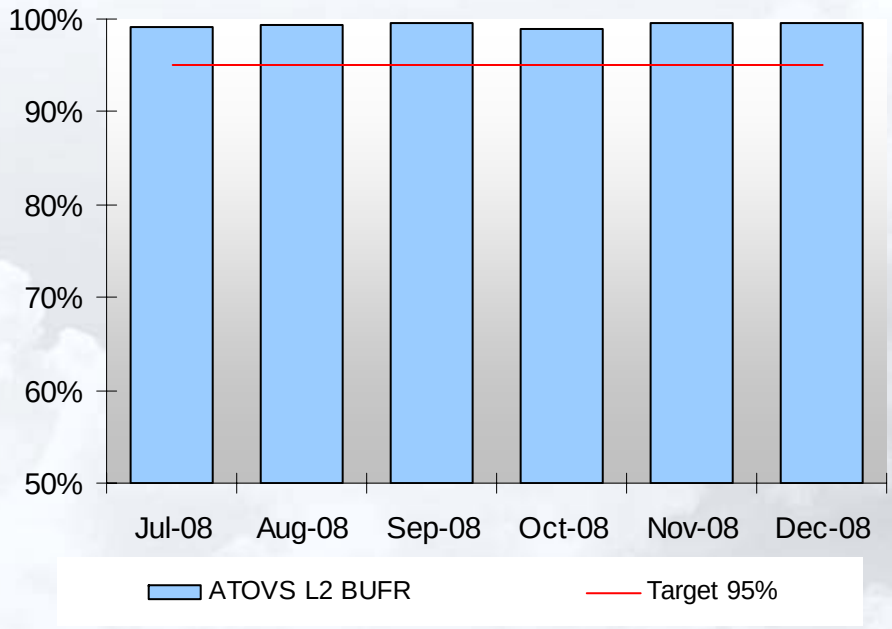
Metop/NOAA Global Data Service → ATOVS Level 2 Products

ATOVS Level 2 product processing transforms the calibrated radiance measurements from the AMSU-A, MHS and HIRS instruments 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 product.

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

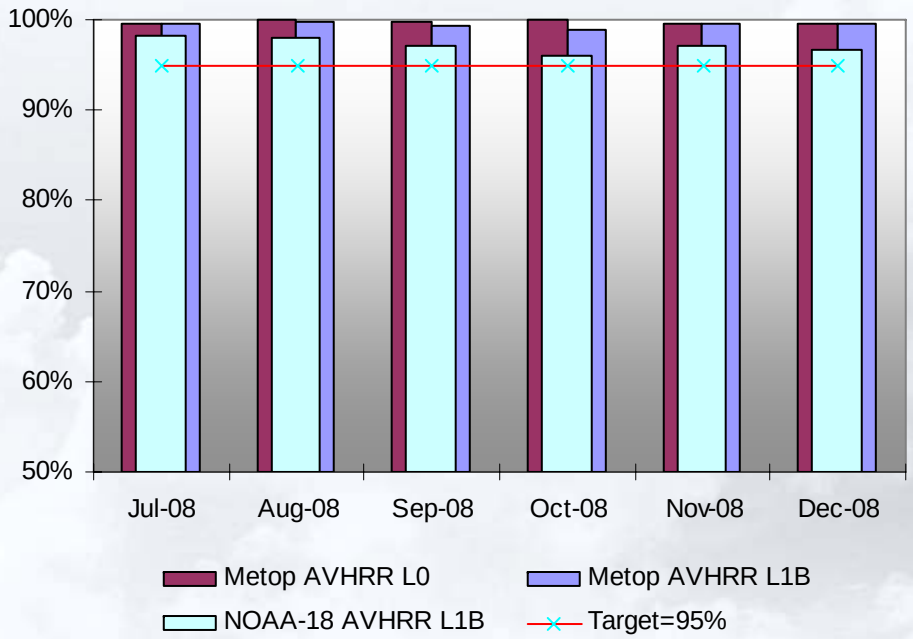
Events Which Impacted Availability:

None significant.



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-18 satellites.



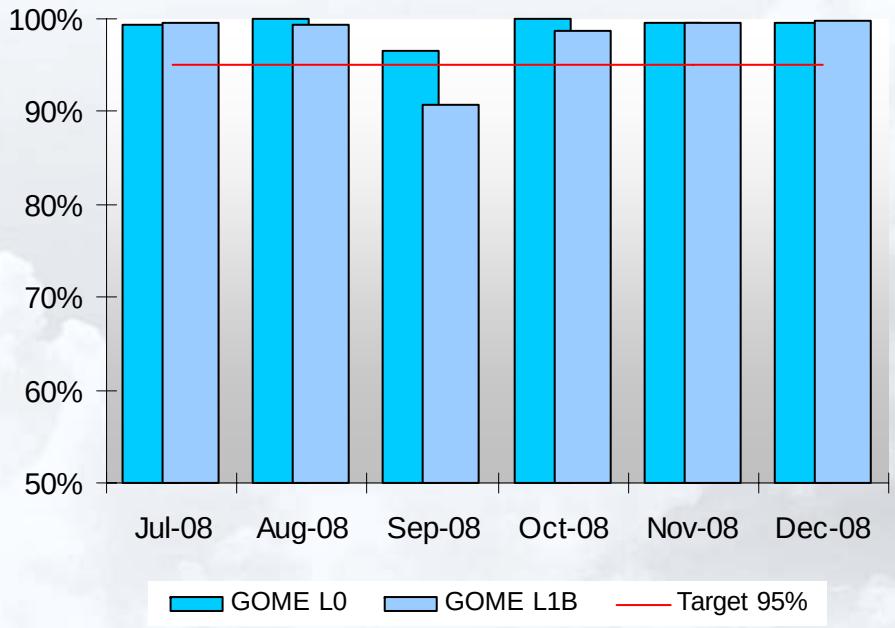
Events Which Impacted Availability:

None significant.

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 of atmospheric ozone and other trace gases.

GOME-2 level 1B data has been operational since 12-March-2008.



Events Which Impacted Availability:

September 2008: onboard science processor software maintenance for the instrument has been performed in order to attempt a correction for 'spectral jumps' between channels 3 and 4.

These activities resulted in approximate totals of 23 hours' outage of Level 0 data and 62 hours' outage of Level 1B data of nominal quality in the periods 2-3 Sept. and 10-11 Sept. respectively.

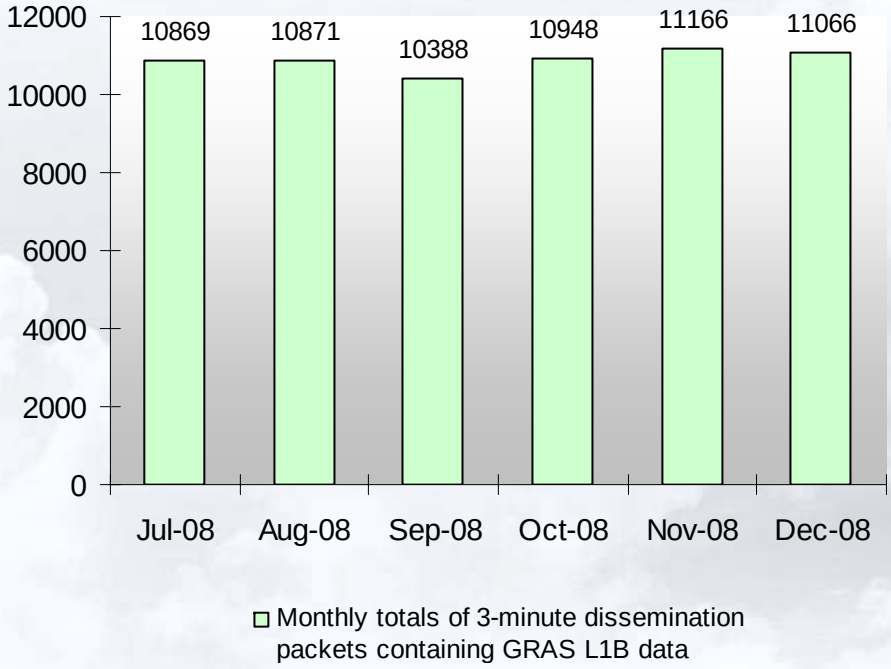
23 October: OOP manoeuvre (see slide 18).

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 the numbers of those dissemination packets produced per month which contain at least one GRAS Level 1B occultation and the associated geolocation and quality flags. Each packet covers a 3-minute period and holds between 1 and 4 occultations.

The number of occultations achieved in general is dependent on the positions of the GPS satellites relative to Metop-A. A mechanism to provide more precise measurement of the numbers of occultations is being developed in 2009.

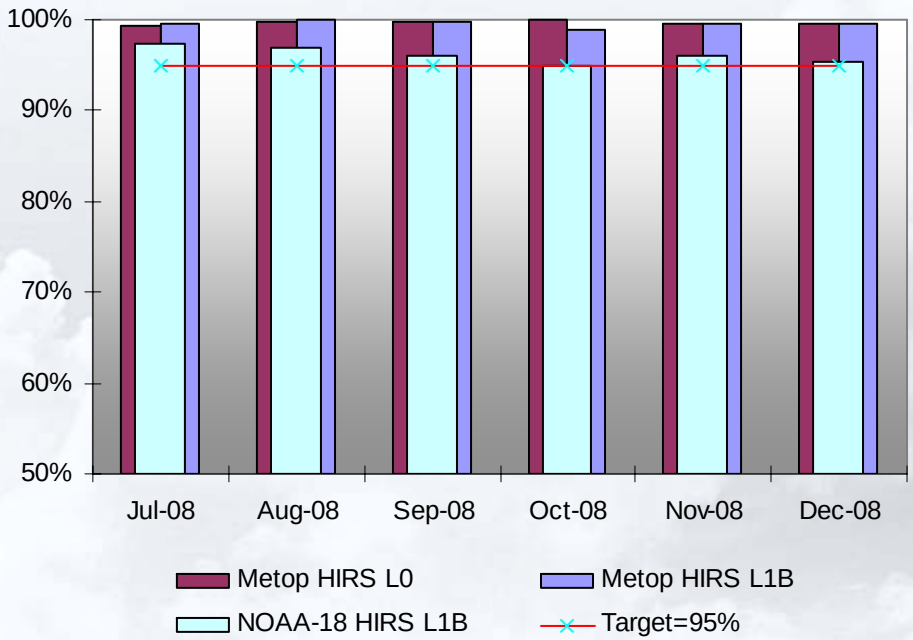


Events Which Impacted Availability:

Metop-A manoeuvre of 23 October (see slide 18).

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-18 satellites.



Events Which Impacted Availability:

Metop-A manoeuvre of 23 October (see slide 18).

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:

21-22 July: IASI entered heater-refuse mode (attributable to an SEU (Single Event Upset)) which resulted in a small data outage of 3 hours.

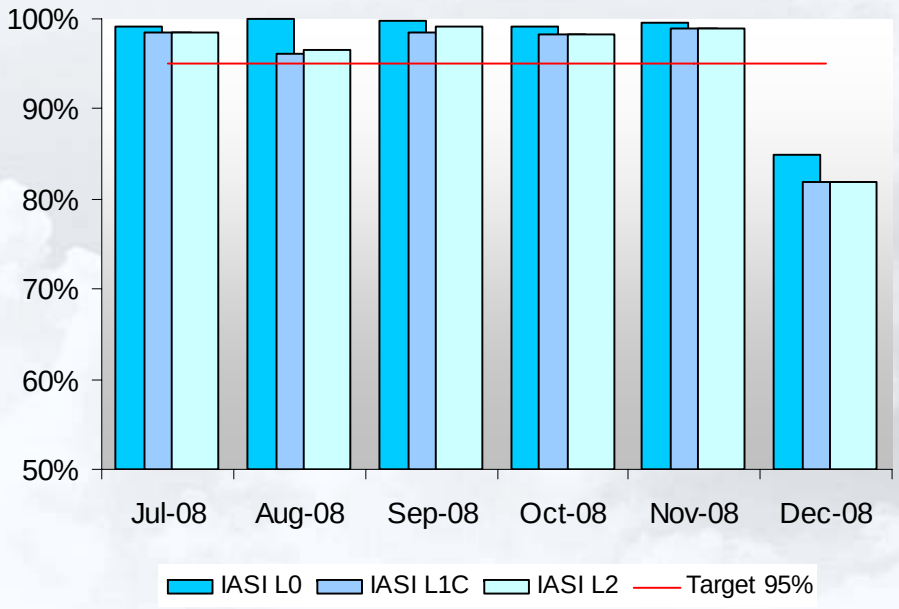
20-21 August: Actions taken to avoid the moon entering the IASI instrument's field of view reduced the availability of Levels 1 and 2 by 20 hours.

23 October: OOP manoeuvre (see slide 18).

9th December: IASI entered standby-refuse mode (also attributable to an SEU) which resulted in a data outage of approximately 2 days & 18 hours.

16th December: Further moon avoidance action reduced the availability of Level 1 and 2 data by 18 hours.

29th December, an onboard equipment switch-off occurred (also attributable to an SEU) which resulted in a data outage of approximately 3 days & 15 hours.

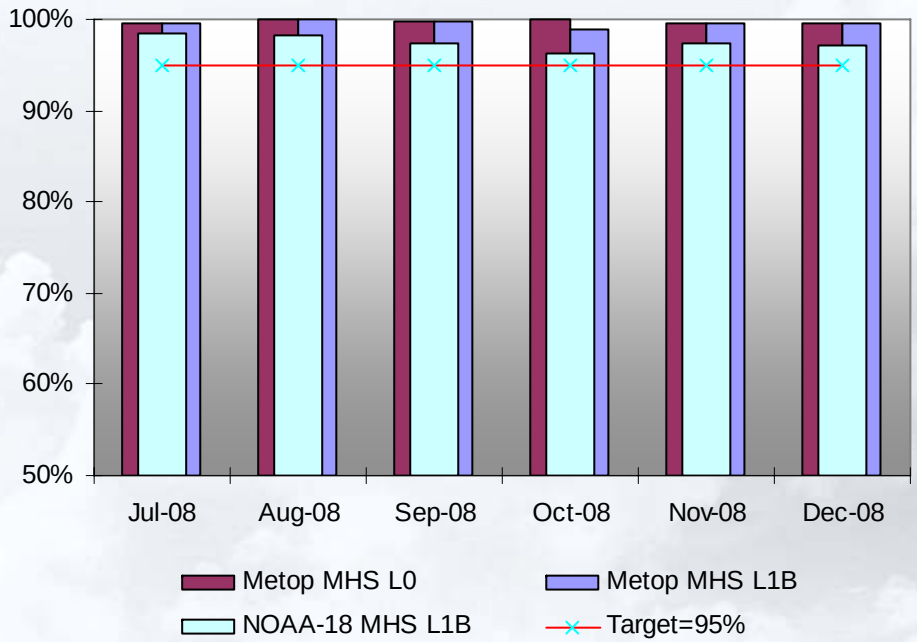


Metop/NOAA Global Data Service → MHS Level 1B BUFR Products

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-18 satellites.

Events Which Impacted Availability:

Metop-A manoeuvre of 23 October (see slide 18).



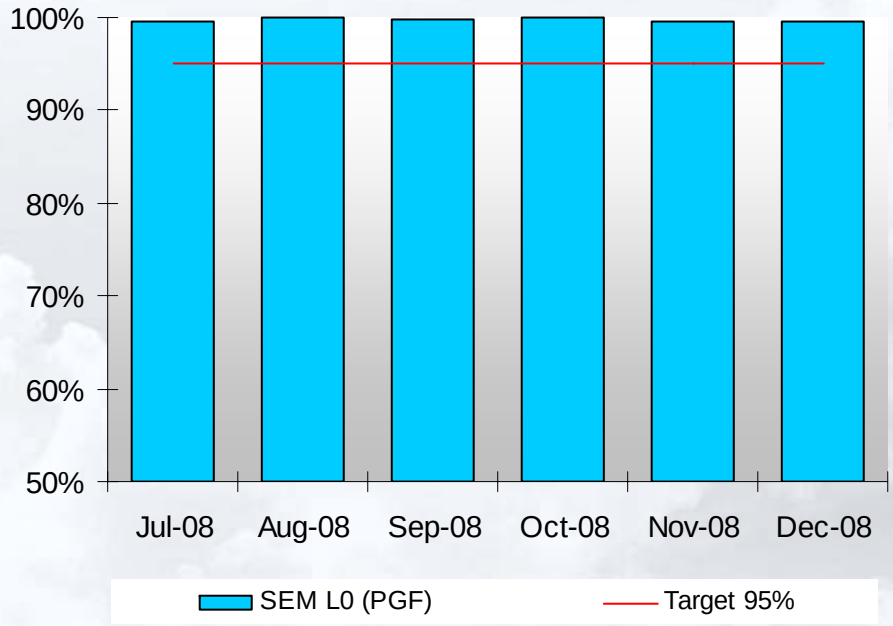
Metop/NOAA Global Data Service → SEM Level 0 Data

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.

<u>Events Which Impacted Availability:</u>

Metop-A manoeuvre of 23 October (see slide 18).



Metop/NOAA Regional Data Service

This service category comprises EARS-ATOVS and EARS-AVHRR services, and as of 16 December 2008, a third service, namely EARS-ASCAT. For the latter, 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.

Performance of the ATOVS and AVHRR services is measured in terms of the availability of the data on the user reception stations within 30 minutes of the instrument's observations. For the ASCAT service, because of the changed approach to Level 0 data acquisition, the timeliness constraint is under redefinition.

The target for the availability of the EARS service is 90% (according to EARS Operational Service Specification v3A, Oct 2005).

Metop/NOAA Regional Data Service → EARS-ATOVS

This service provides ATOVS products covering data-sparse areas, derived from data received from the NOAA satellites N15, N16, N17 and N18, and as of 10-November, from Metop-A (AHRPT partial coverage data).

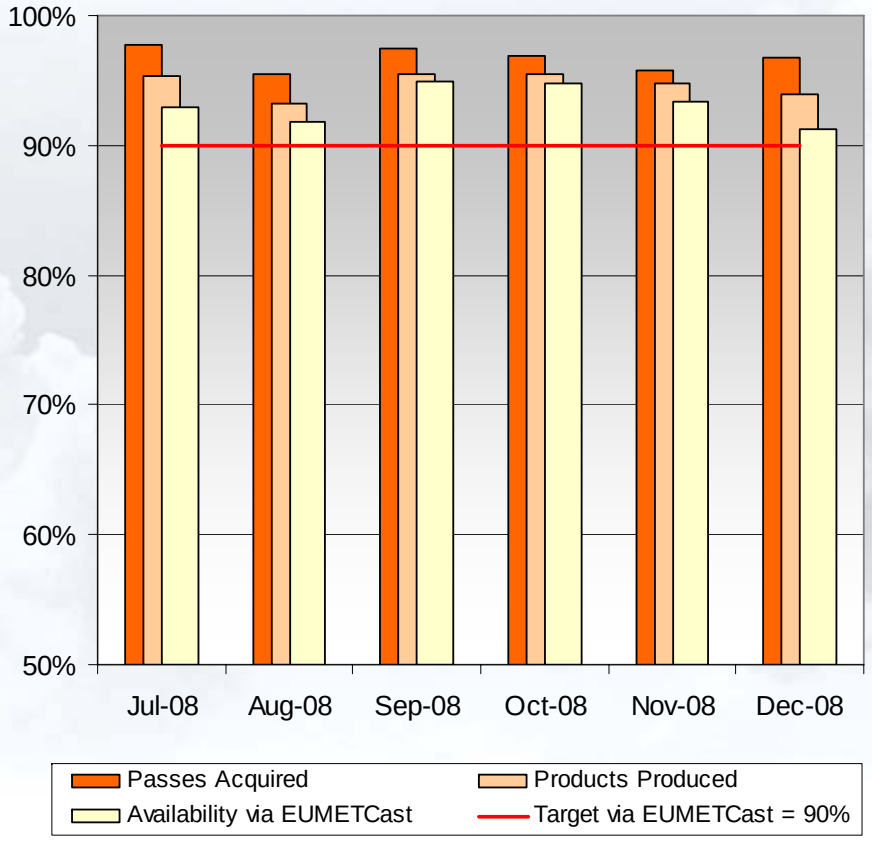
Availability shown on the chart is for the products received by users (relative to scheduled ground station passes) and covers Levels 1A and 1C in BUFR and Level 1D products.

Events Which Impacted Availability:

August 2008: The communications link with the Kangerlussuaq station in Greenland suffered an outage in the period 26 – 28 August.

November-December 2008: The Athens station outage due to an antenna motor failure from 27 November to 3 December.

December 2008: degraded data provision from Maspalomas, due to communications line problem, in the time period 5 – 23 December.



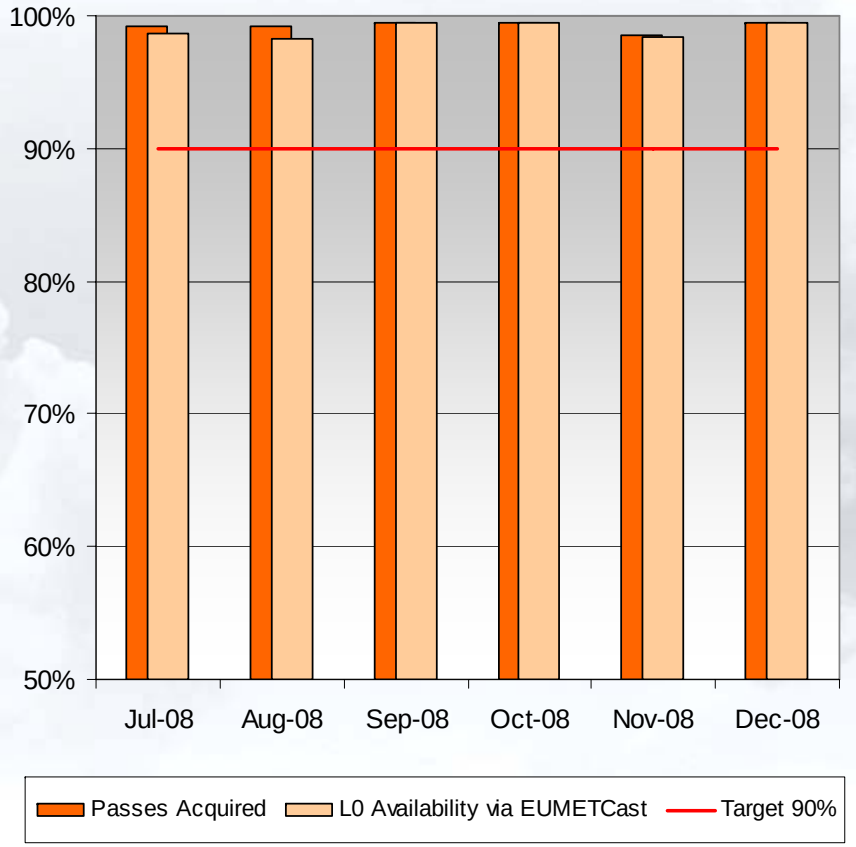
Metop/NOAA Regional Data Service → EARS-AVHRR

This service provides data from the AVHRR instruments onboard the two contributing NOAA satellites (N17 and N18).

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.

<u>Events Which Impacted Availability:</u>

None significant.



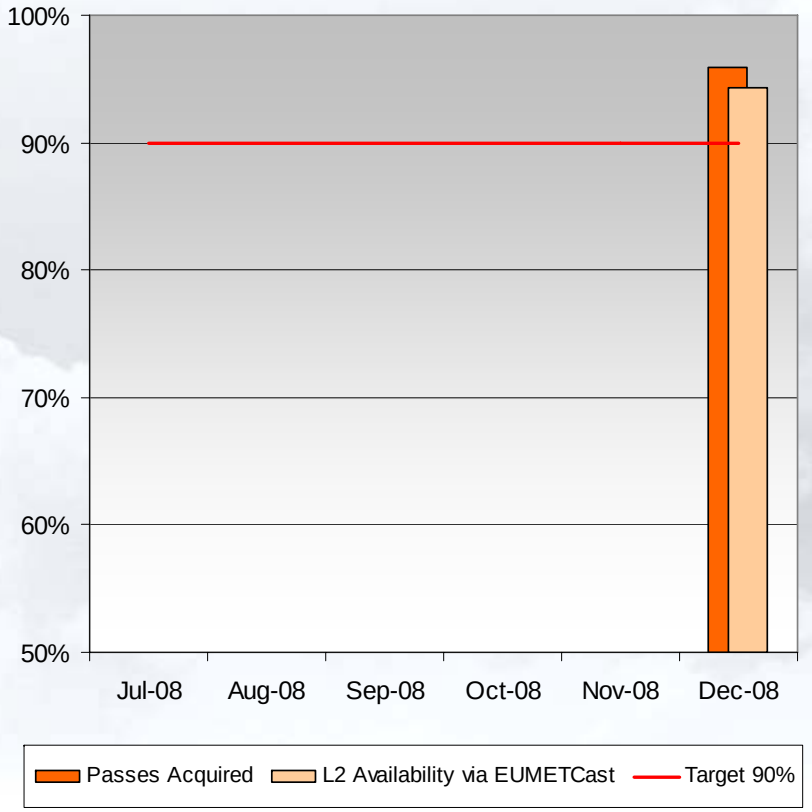
Metop/NOAA Regional Data Service → EARS-ASCAT

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.

Dissemination of Level 2 products via EUMETCast commenced on 16 December.

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



<u>Events Which Impacted Availability:</u>

A 3-day EARS-ASCAT system outage which started on 31 December impacted the availability figure for the first month of operation to a degree.

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 SAR transponders onboard the EUMETSAT satellites are normally always in operation. The transponder onboard Meteosat-8, however, was switched off at the start of Meteosat-9 routine operations, to avoid possible ground reception equipment interference due to the proximity of the two satellites. The transponder on Meteosat-8 was switched on again following the relocation of Meteosat-8 from 3.4°W to 9.5°E. No interference was found with the increased distance between the two satellites and an overall increased coverage for SAR operations was achieved.

The availability of all transponders onboard the 3 spacecraft was otherwise close to 100% for the reporting period.

Archive Service

This service allows registered users to request and receive data acquired from any of EUMETSAT's operational satellites and any products derived from the data. EUMETSAT provides an online 'self-service' ordering mechanism and supplies requested data and products from its archive via physical media and the Internet.

Charts currently provided show the following :

- **Meteosat Image Availability**
- **Total Data Volumes Retrieved**
- **Reprocessed GOME-2 Level 1 Data (new slide added)**
- **Registered Users (new slide added)**

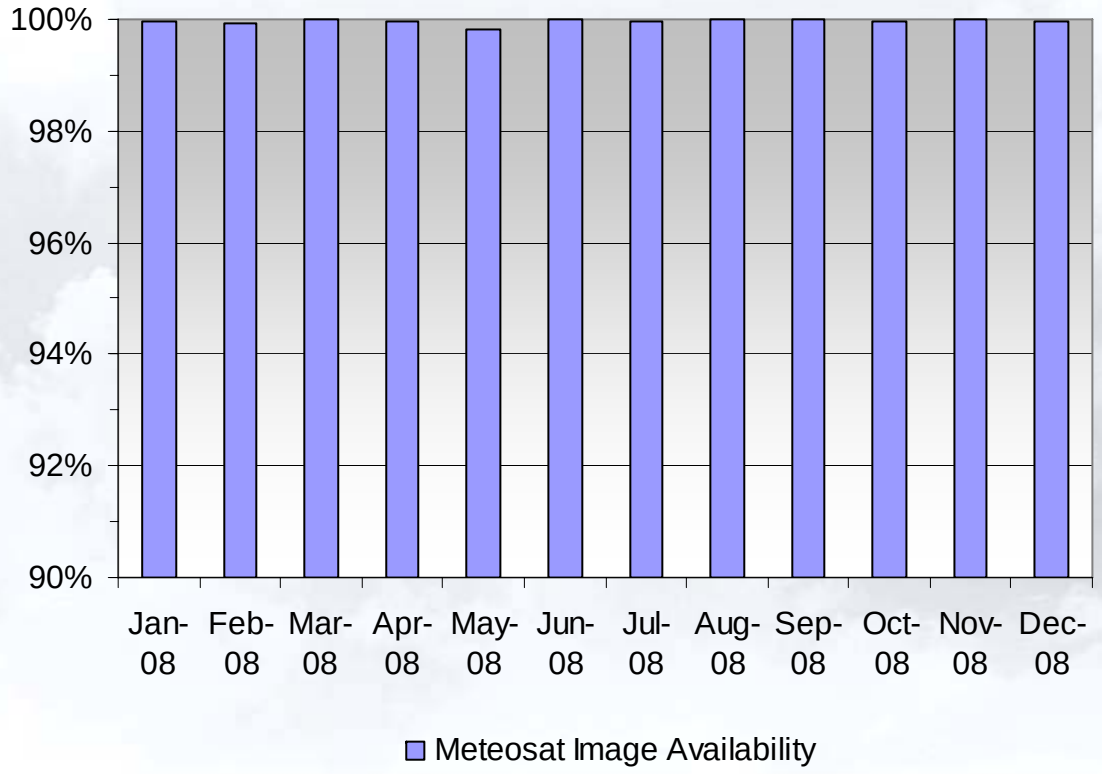
Note that availability figures for Metop-A Level 0 data in the archive are currently not available, but we hope to be able to supply them in a future issue of the report.

Archive Service → Meteosat Image Availability

The chart here shows the availability of all Meteosat images (0°, 9.5°E & 57°E) held by EUMETSAT's archive facility for each of the 12 months in the last 2 reporting periods, as a percentage of what was scheduled to be produced (eclipse seasons taken into account).

Various factors influence the final availability of data in the archive (and its quality), from the point when a satellite generates the raw data, through ground acquisition and processing, to the point where it is ingested and stored.

(note: compared with that in the previous issue of the report, this chart now excludes Meteosat 'level 2' meteorological products, the availability of which is deemed to be less critical than that of the Level 1.0 and 1.5 data)



Events Which Influenced Availability:

13-14 May: Meteosat-9 entered safe-mode, necessitating the swap of the prime mission to Meteosat-8, which required almost 4 hours and resulted in a loss of 16 RCs.

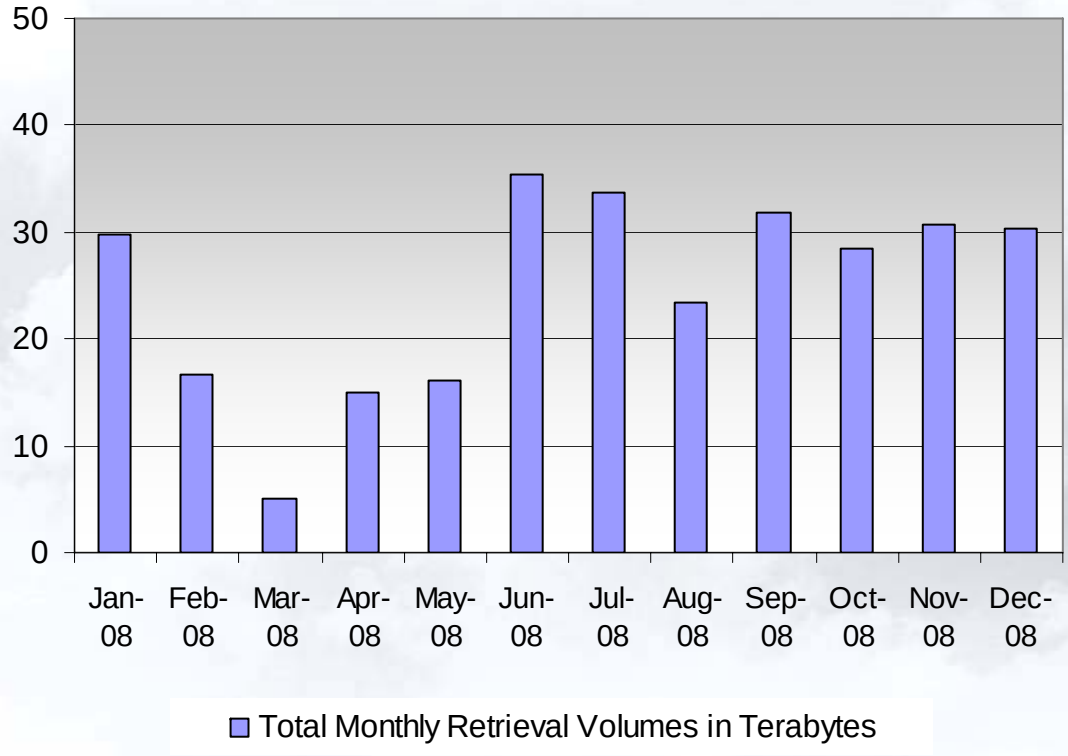
Archive Service → Total Data Volumes Retrieved

The chart here shows total volumes of data retrieved from EUMETSAT's archive facility month-by-month. Note that retrieved data is subject to various processing activities prior to its being written to media or being forwarded electronically to Internet recipients.

Events Which Influenced Retrieval Volumes :

March 2008: the migration to new tape library hardware encountered a problem, extending the planned week's downtime of order processing by a further week.

Note that the figures presented in the last issue of the COR for retrieved volumes were incorrect – the correct ones for 2008 are shown here.



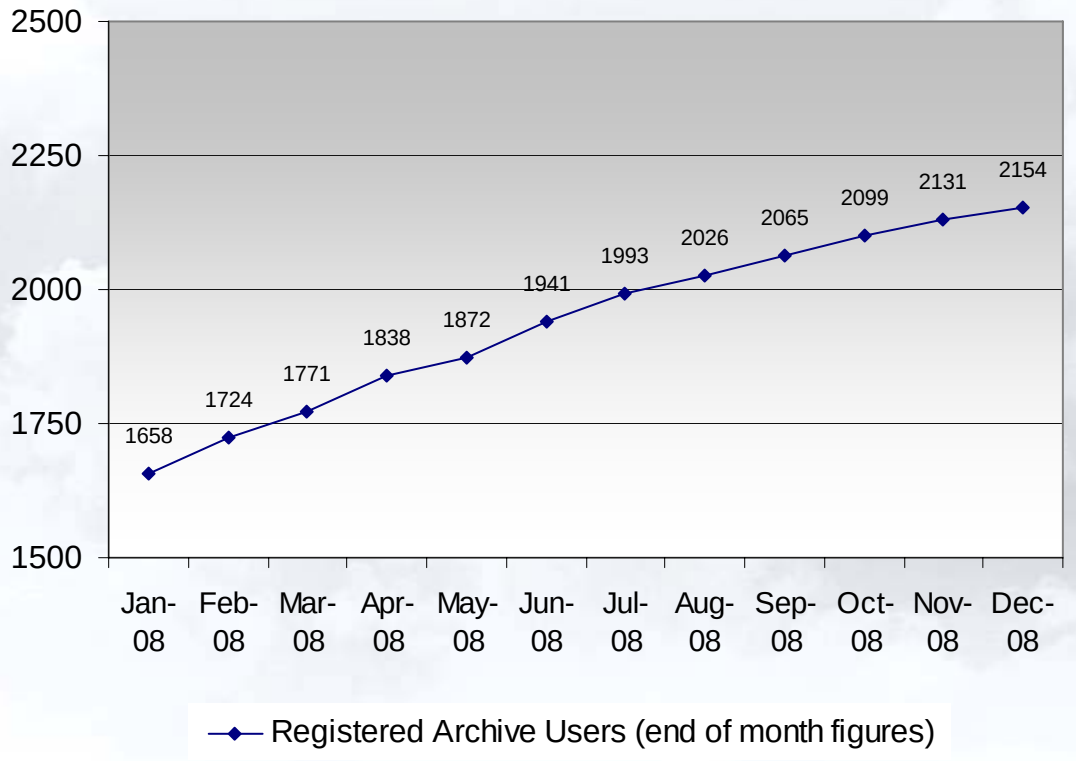
Archive Service → Reprocessed GOME-2 Level 1 Data

A campaign was conducted in the period June – July 2008 to reprocess GOME-2 Level 0 data generated by the instrument from January 2007 up to the date of implementation of version 4.0 of the Level 0 - Level 1 processor. The resultant Level 1 data was stored in EUMETSAT's Archive and the full set made available to each interested user on high-density tape.

Total volume of reprocessed data from January 2007 – June 2008 : 10.5 TB (uncompressed)
Compressed volume of data for that period : 5 TB
Number of users to date supplied with the compressed reprocessed data : 14

Archive Service → Registered Users

The chart here shows the progression of the total numbers of registered users of EUMETSAT's archive facility.



User Support Service

As part of its role, EUMETSAT's User Helpdesk receives requests from users that are classified as either 'enquiries' (related to services provided) or 'registrations' for one or more of the services.

Charts on the following slides show:

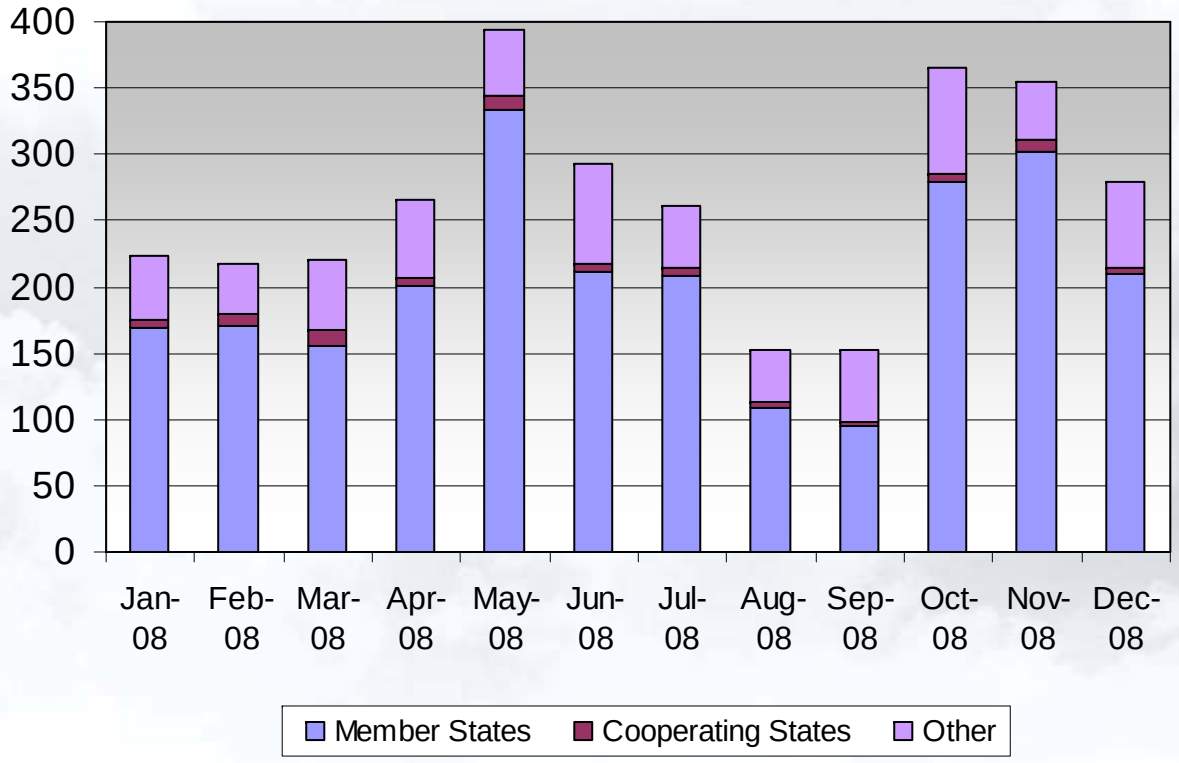
- **User requests received from Member States, Cooperating States and 'Other Countries'**
- **The countries and groups that gave rise to the most significant numbers of user requests**
- **User registrations and user enquiries by category**

User Support Service → User Requests Month-by-Month

The chart here shows the month-by-month split of requests originating from EUMETSAT Member States, Cooperating States and all other countries.

The number of requests received in the 12 months ending December 2008 totalled 3181, of which 1667 were received in the period July to December 2008. Requests comprise registrations and enquiries.

The next slides show user requests by country of origin, user registrations by category and user enquiries by subject area. The subject timeframe for each is the period July-December 2008.

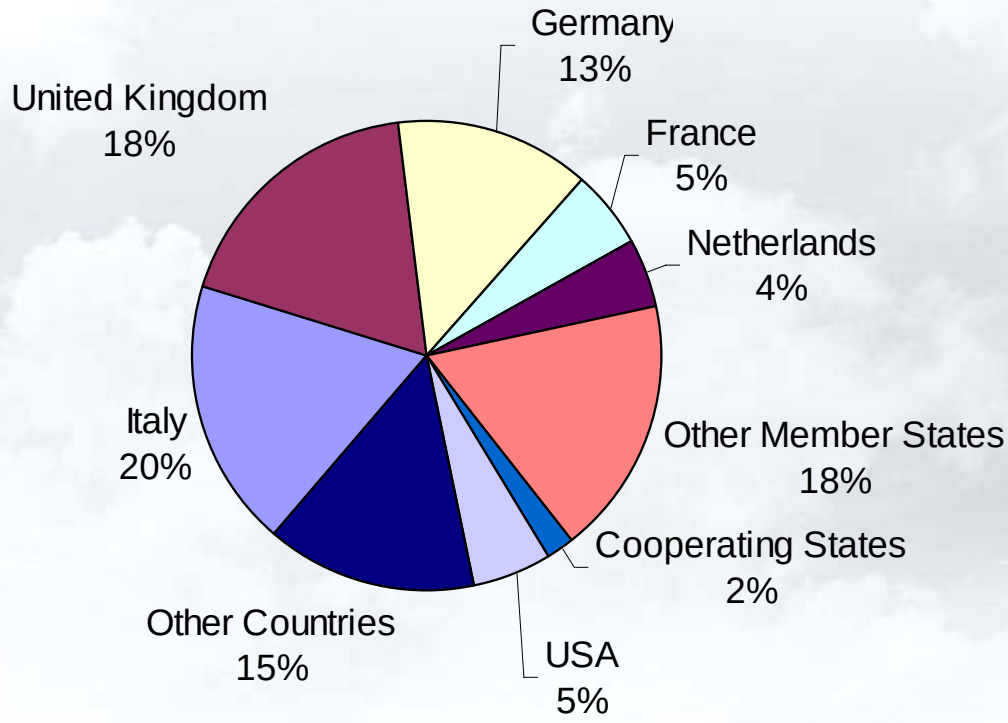


User Support Service → User Requests by Country of Origin

The pie chart here shows the requests received in the second half of 2008 from:

(1) the 6 countries that gave rise to the largest numbers of requests, and

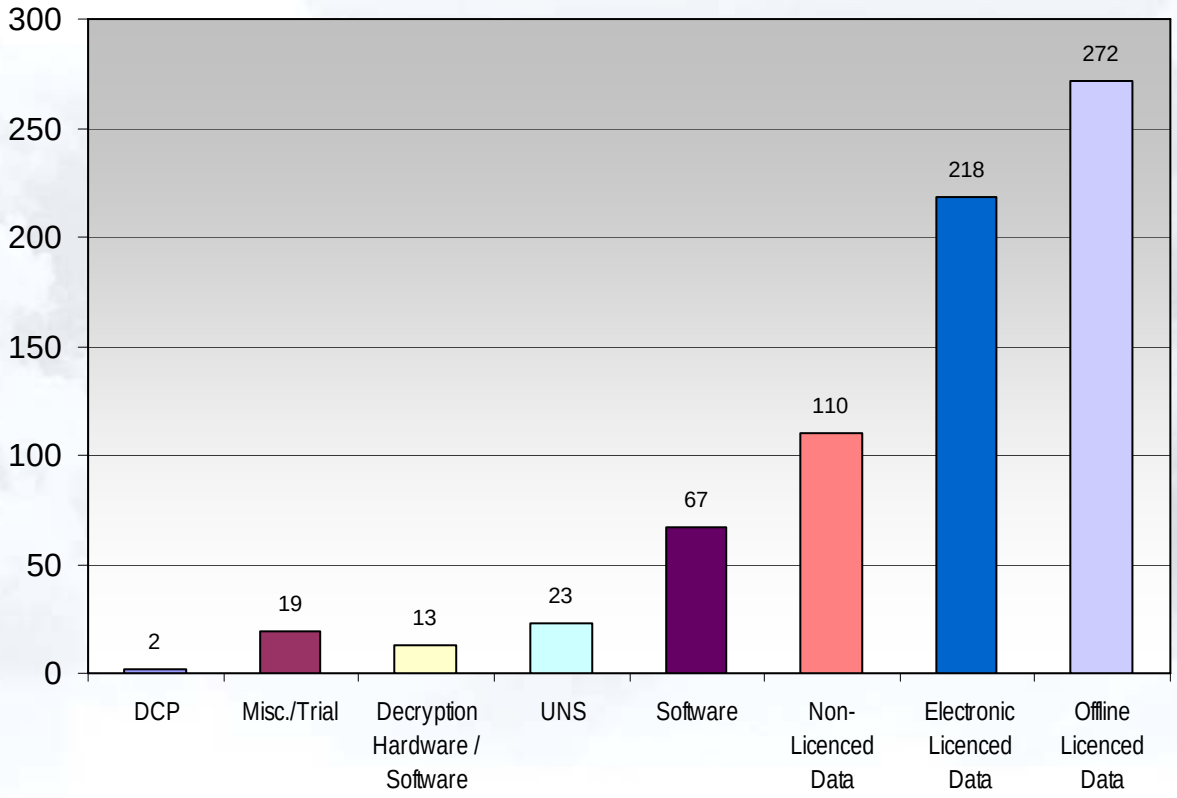
(2) the split of the remainder of the requests between other Member States, the Cooperating States and other countries.



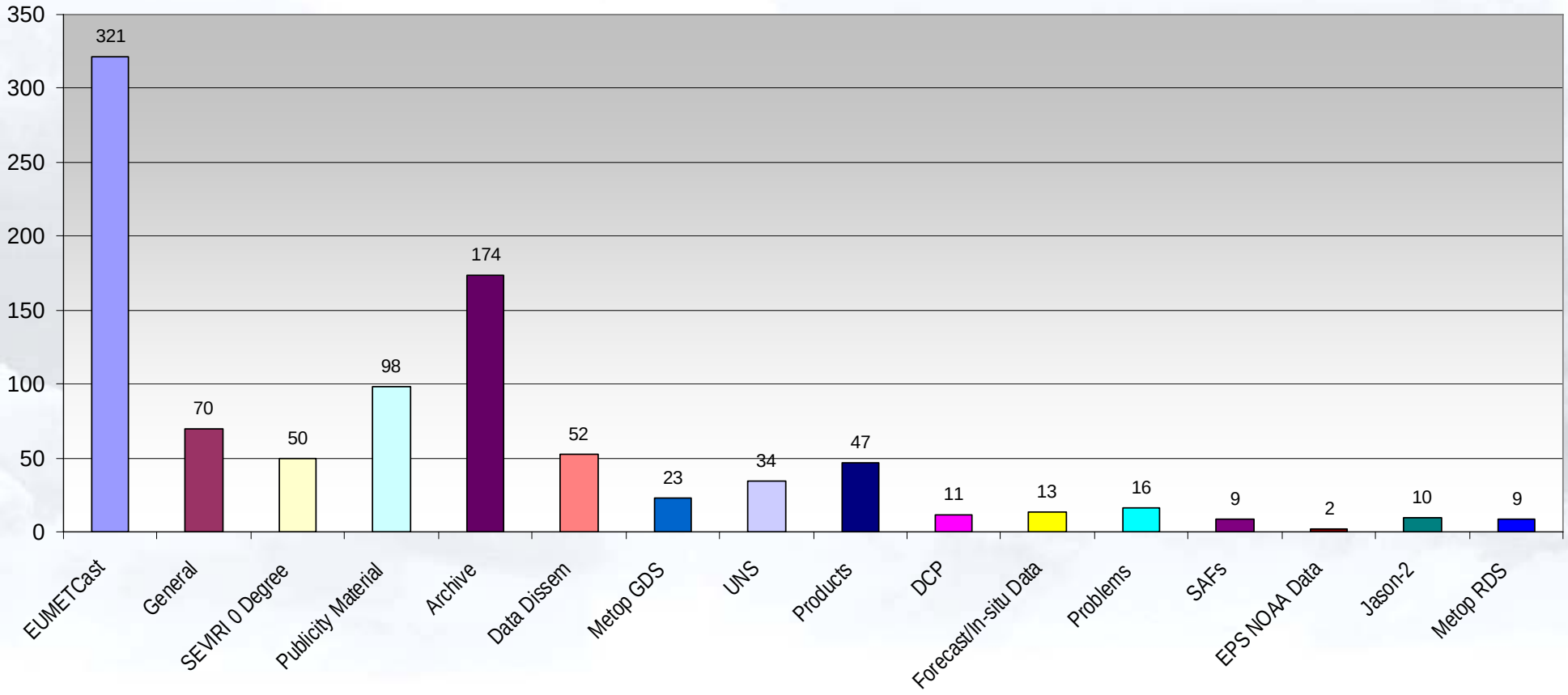
User Support Service → User Registrations by Category

The chart shows the spread of registrations processed in the reporting period across the various service categories.

'Electronic' refers to the registrations for data made by users using the self-service mechanism on the EUMETSAT website, whereas 'offline' includes registrations involving external licensing agents, paying customers and all non-member states.



User Support Service → User Enquiries by Subject Area



Changes to EUMETSAT's Services (page 1 of 2)

This section lists the changes to services that have taken place in this reporting period:

Date	Service / Product(s)	Description
July	SAF products	EUMETCast dissemination of O3M SAF's BUFR Ozone Profile and LSA SAF's MSG vegetation products commenced
28 August	EARS-AVHRR Pilot	NOAA-17 & 18 data from new Athens HRPT stations became available via EUMETCast-Europe
29 September	Metop AHRPT	Partial coverage (from 60°N to 10°N on southbound passes) commenced using AHRPT side B
23 October	RSS meteorological products	EUMETCast and GTS dissemination of operational AMV, CSR, MPE, FIRG, FIRA and GII products commenced
10 November	EARS-ATOVS	Dissemination of Metop data from Athens and Lannion stations commenced
18 November	Earth Observation Portal	New version of the Product Navigator went online, supporting the 'Collection Discovery Service'

Changes to EUMETSAT's Services (page 2 of 2)

This section lists the changes to services that have taken place in this reporting period:

Date	Service / Product(s)	Description
November	CMA Products	EUMETCast pre-op dissemination of a variety of products from the Chinese Meteorological Agency (CMA) commenced.
19 November	MODIS Active Fire (Southern Africa) product	EUMETCast dissemination of this product from CSIR (South Africa) commenced.
9 December	EUMETCast admin info	EUMETCast dissemination of new daily logs for product groups commenced on 'Info-Channel-2'.
12 December	Metop ASCAT	EUMETCast dissemination of the operational ASCAT Surface Soil Moisture Level 2 product commenced.
15 December	Jason-2 OGDR Data	EUMETCast dissemination of Near-Real Time 'Operational Geophysical Data Record' products commenced.
16 December	EARS-ASCAT Pilot Service	EUMETCast-Europe dissemination of the pre-operational ASCAT Level 2 wind products (25km & 12.5km) commenced.
4 November – 17 December	EUMETCast-Europe	Transition of broadcast service from Hotbird-6 to Eurobird-9

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 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.

Glossary (continued)

Term	Context in which used	Description
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.
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'.

Glossary (continued)

Term	Context in which used	Description
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.
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.

Glossary (continued)

Term	Context in which used	Description
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.
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'.

Glossary (continued)

Term	Context in which used	Description
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).

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°.
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.