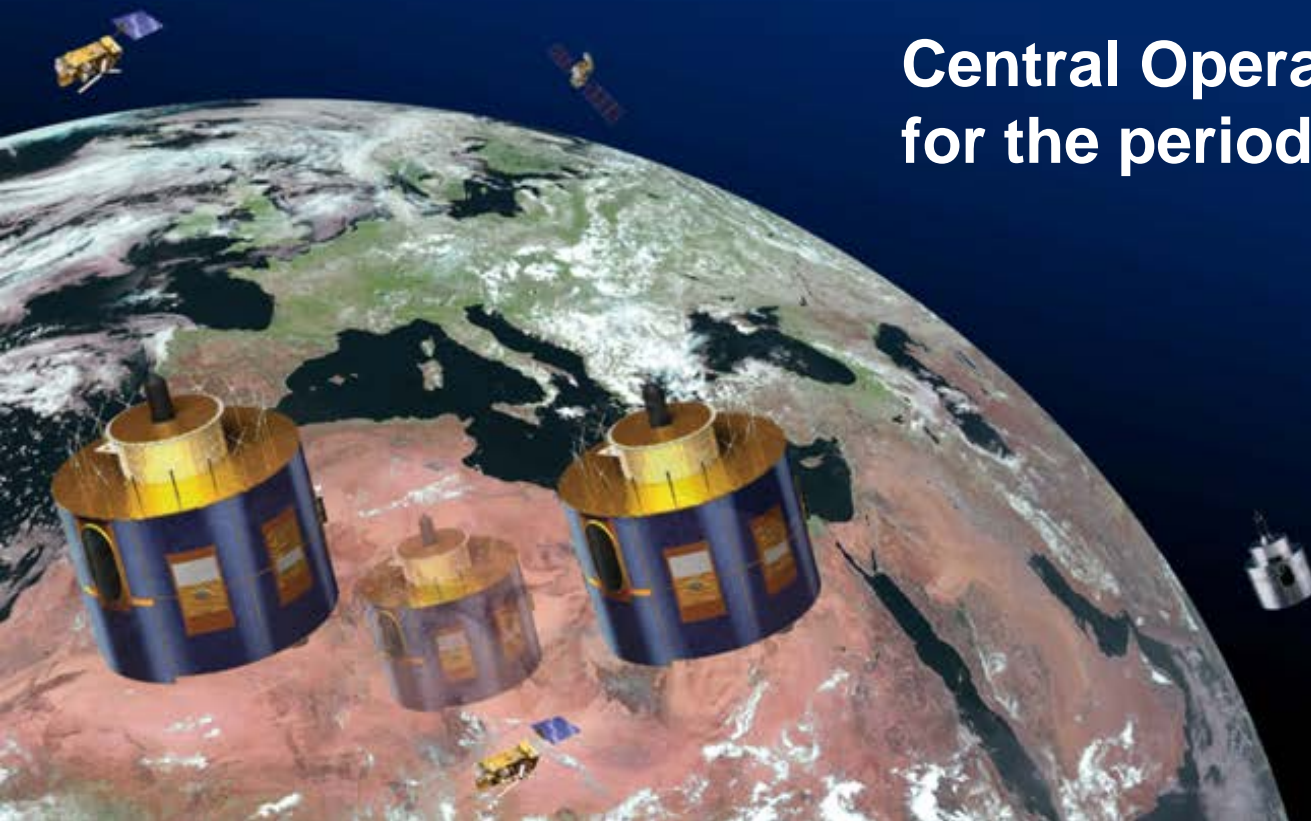


# EUMETSAT Headquarters Darmstadt, Germany

## Central Operations Report for the period January to June 2015



# EUMETSAT Central Operations Report for January - June 2015

## Member States



AUSTRIA



BELGIUM



BULGARIA



CROATIA



CZECH REPUBLIC



DENMARK



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THE NETHERLANDS



NORWAY



POLAND



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ROMANIA



SLOVAK  
REPUBLIC



SLOVENIA



SPAIN



SWEDEN



SWITZERLAND



TURKEY



UNITED KINGDOM

## Cooperating States



SERBIA



## Contents

- Introduction
- Performance Reporting covering EUMETSAT's Services
- Glossary

The Central Operations Reports can be found under 'Data' → 'Service Status' on [www.eumetsat.int](http://www.eumetsat.int)

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

# EUMETSAT Central Operations Report for January - June 2015

## Introduction

Welcome to the Central Operations Report for the first half of 2015.

Once again, good levels of availability were achieved for the majority of services during the reporting period.

One major event of recent months was the number of EUMETSAT satellites in orbit increasing to 7 with the launch of the last MSG satellite, MSG-4.

Some of the teams which support routine operations and the provision of EUMETSAT's operational services have also been involved in the preparations for launch and commissioning of MSG-4. The satellite's successful launch took place on 15 July, courtesy of Arianespace, with the transfer to geostationary orbit and various manoeuvres being performed by ESA's Operations Centre and finally control of MSG-4 was handed over to EUMETSAT on 26 July.

In-orbit commissioning commenced with MSG-4 in a geostationary drift orbit, and a stop manoeuvre was performed on 2 August, to bring the satellite into its position at 3.4°W. The SEVIRI instrument was activated the next day and, following detector tuning, the first image was scanned on 4 August. Commissioning is now in full swing, and is expected to last until the end of the year.

One new Operational Incident (number 65) occurred during the reporting period – the Telemetry and Telecommanding (TTC) receiver #1 onboard Meteosat-10 suffered a sudden power drop, causing temporary commanding failures. Please see [slide 8](#) for further information.



## Introduction (continued)

New content appears in this issue, to reflect a recently-added service:

- **EARS-VIIRS:** a new chart added for the Regional Data Service delivering data from the 'Visible Infrared Imaging Radiometer Suite' (VIIRS) instrument onboard NASA-NOAA's Suomi-NPP satellite, which commenced via EUMETCast in late October last year. Please see [slide 38](#).

Finally, worthy of note is a change in the China Meteorological Agency's (CMA's ) utilisation of its Fengyun geostationary satellites, which means that the associated Third-Party Service is now delivering products based on the data from the satellites it has now moved to the locations 86.5°E and 105°E. Please see [slide 44](#) for more information.

Best regards,

Livio Mastroddi

Director of Operations and Services to Users

## 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, Suomi-NPP & NOAA Global Data Services \(GDS\)](#)
- [Regional Data Services \(EARS\)](#)
- [Search and Rescue Support](#)
- [Jason-2 OGDR Service](#)
- [Third-Party Data Services](#)
- [EUMETCast](#)
- [The EUMETSAT Data Centre](#)
- [EUMETSAT Climate Services](#)
- [Helpdesk 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.

## Performance Reporting: Conventions

This report presents an overview of EUMETSAT's operational services in the half-year reporting period by means of the following two indicators:

### Service Availability:

The availability of the operational services to users is measured monthly against the maximum amount of products/data which theoretically could be delivered each calendar month of the reporting period, i.e. from a “perfect” satellite system.

### Operational Performance:

This quantifies how well EUMETSAT has performed operationally with respect to its service targets, taking into account all planned routine operational activities such as instrument calibration and spacecraft manoeuvres, i.e. the intrinsic limitations of the satellite system.

These two indicators are used for Meteosat and Metop services as delivered over the prime dissemination mechanism, namely EUMETCast Europe. Where statistics are available, they are presented in the charts on the following slides. Comments are provided alongside, which identify any significant events or factors (satellite or ground-segment in nature) that have had impact on the service availability and/or operational performance. Currently, only product generation statistics are available for the Meteosat meteorological products.

**Note:** Events having significant impact on operational services are described on a dedicated slide following this one.

## Events Leading To Significant Operational Impacts

The following event concerned the operation of Meteosat-10:

### Operational Incident 65 – Meteosat-10 TTC receiver 1 power drop

**11 March 2015:** A sudden degradation in the Telemetry and Telecommanding receiver power level onboard Meteosat-10 was observed, giving rise to some commanding failures. A switch to receiver 2 circumvented the problem, allowing the resumption of full commanding of Meteosat-10 from any MSG ground station. Further measurements confirmed a loss of power on receiver 1 of about 20 dB, suspected due to an electronic component failure or similar. Further degradation is not expected.

There has been no impact on the 0° operational imaging service – Meteosat continues to perform nominally.

The following event (a further instance of the anomaly which is the subject of Operational Incident 27) impacted the Rapid-Scanning Service:

### Meteosat-9: further degradation of thermal control

**3 April 2015:** An attitude anomaly occurred on Meteosat-9, which, after investigation, was attributed to further degradation of the thermal control on the ageing satellite. The recurrence of the anomaly, first seen on Meteosat-9 on 12-August-2012, resulted this time in a loss of 40 RSS Repeat Cycles.

## Meteosat Services

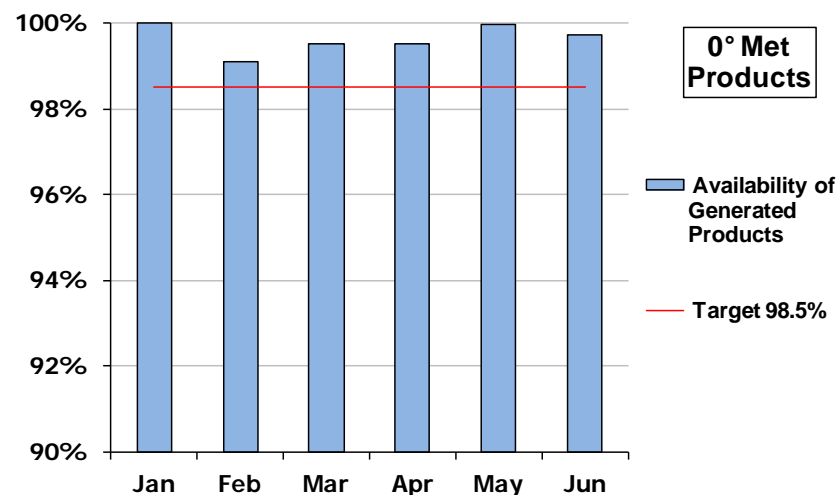
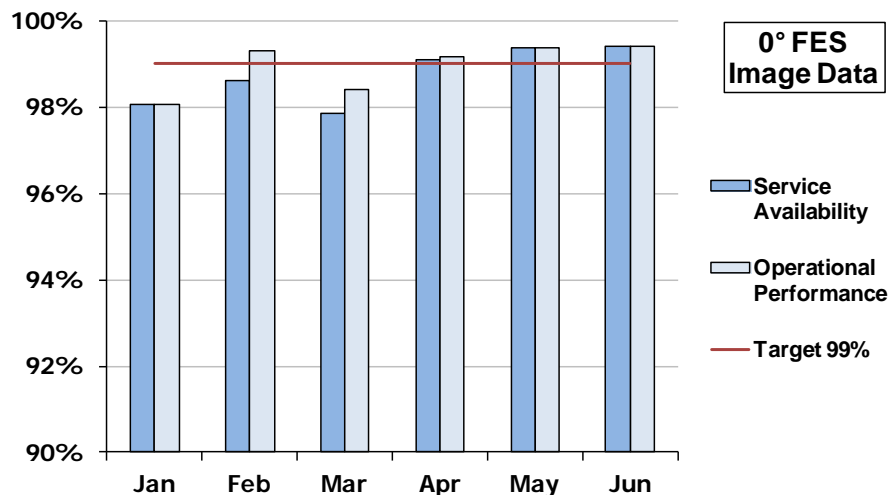
This service category comprises the data and products produced with the Meteosat System, i.e. derived from geostationary satellites positioned at longitudes 0°, 9.5°E and 57°E. These satellites nominally support the Full-Earth Scan (FES), Rapid-Scan (RSS) and 'Indian Ocean Data Coverage' (IODC) services respectively. A further satellite at 3.5°E provides backup for the FES and RSS services and is used for RSS 'image gap-filling' in the rapid-scan pauses of Meteosat-9, when operational constraints permit.

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)

# EUMETSAT Central Operations Report for January - June 2015

## Meteosat Services → 0° FES Image Data & Derived Meteorological Products



Prime satellite supporting the service is Meteosat-10, with Meteosat -8 as backup.

Service Availability and Operational Performance are measured on the basis of nominal Level 1.5 Repeat Cycles (RCs) disseminated 'on-time' via EUMETCast Europe. See [slide 7](#) for an explanation of the two indicators.

### Events which impacted availability:

- January:** 58 RCs delayed due to Ground Segment (GS) dissemination timeliness problems.
- February:** Eclipse effects and sun-satellite colinearity impacted 17 RCs and 2 Station-keeping manoeuvres impacted a further 19 RCs.
- March:** Eclipse effects and sun-satellite colinearity impacted once again 17 RCs in total, and a system timeliness problem related to ongoing equipment migration activities delayed 38 RCs.
- Mar-June:** 23 RCs impacted by tank-heater switching and fuel migration (single RCs, distributed over the 4 months).

Meteorological products derived from the Full-Earth Scan (FES) images produced nominally by Meteosat-10 at 0°.

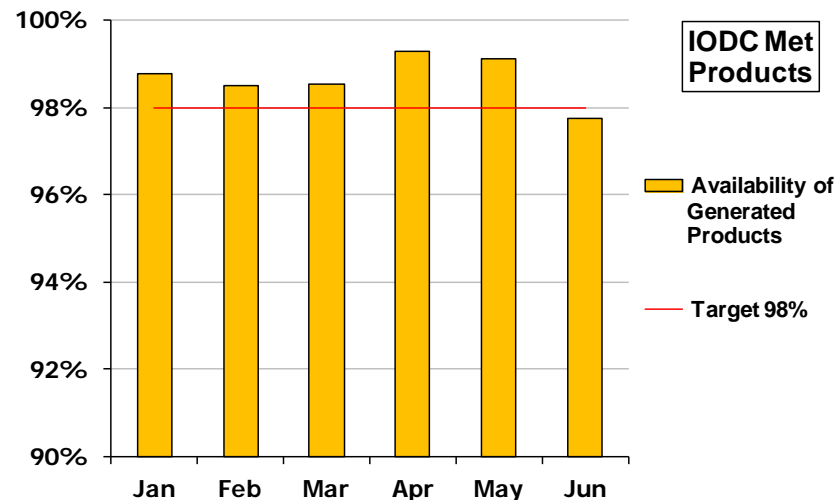
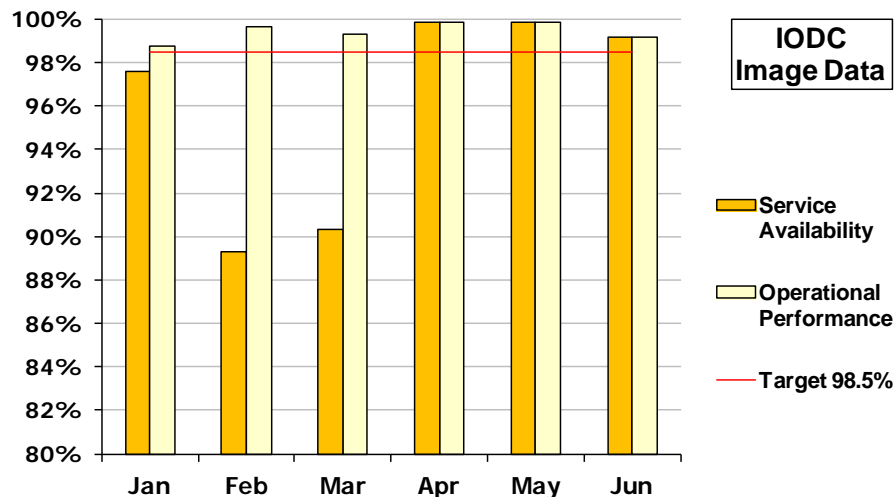
Performance of this service is still currently measured in terms of the number of meteorological products which have been generated at source in EUMETSAT, as a percentage of those scheduled.

### Events which impacted availability:

- Feb-April:** Software problems had intermittent impact on generation of meteorological products.

# EUMETSAT Central Operations Report for January - June 2015

## Meteosat Services → IODC 57°E Image Data & Derived Meteorological Products



Meteosat-7 supports the IODC service.

Service Availability and Operational Performance are measured on the basis of perfect formats disseminated 'on-time' via EUMETCast Europe. See [slide 7](#) for an explanation of the two indicators.

### Events which impacted availability:

8-January: 5 slots lost due to ground station problem.  
27-Jan to 28 Mar: Spring eclipse season: Service Availability reduced by up to 5 slots per day.

Meteorological products derived from Full-Earth Scan images produced by Meteosat-7 at 57°E.

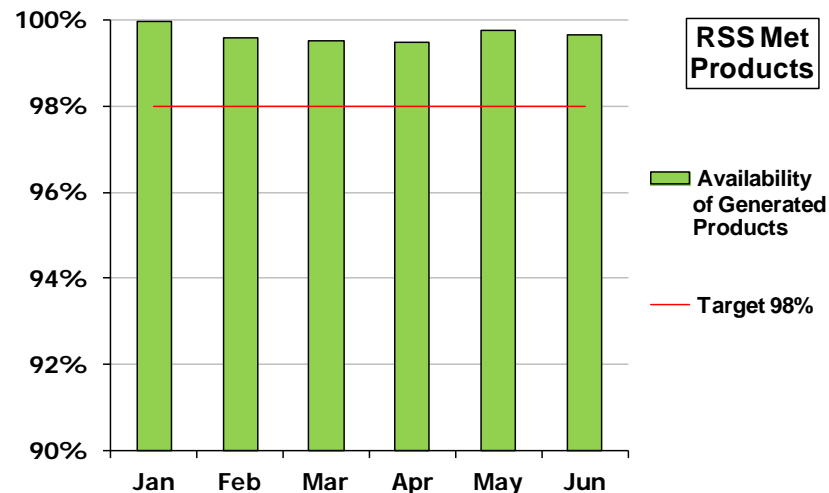
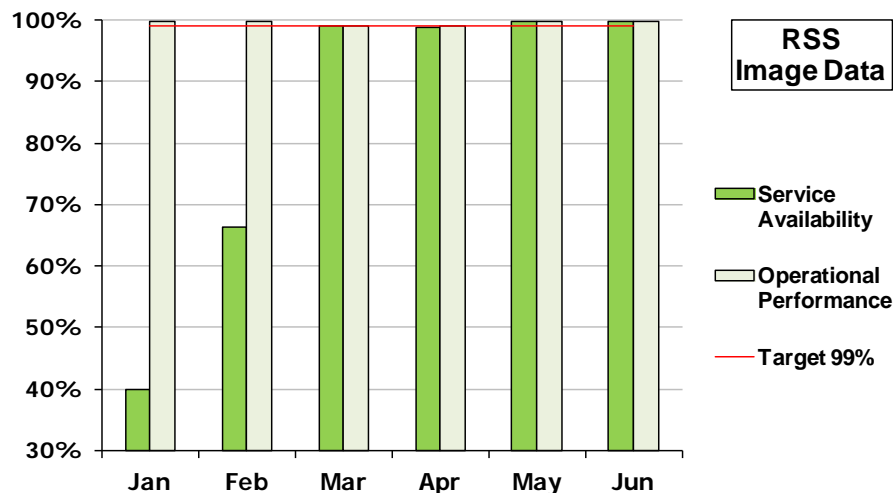
Performance of this service is still currently measured in terms of the number of meteorological products which have been generated at source in EUMETSAT, as a percentage of those scheduled.

### Events which impacted availability:

June: (1) Degraded quality of some HWW products due to image quality related to satellite's high inclination.  
(2) A 19-hour outage of data provider's provision of SSMI data on 5-June impacted MPE products.

# EUMETSAT Central Operations Report for January - June 2015

## Meteosat Services → 9.5°E RSS Image Data & Derived Meteorological Products



Prime satellite supporting the service is Meteosat-9, with Meteosat-8 as backup, when available.

For more info on RSS: [www.eumetsat.int](http://www.eumetsat.int) → [Rapid-Scanning Service](#).

Service Availability and Operational Performance are measured on the basis of nominal Level 1.5 Repeat Cycles (RCs) disseminated 'on-time' via EUMETCast Europe. See [slide 7](#) for an explanation of the two indicators.

### Events which impacted availability:

**13-Jan to 10-Feb:** Annual 28-day pause in RSS, where Met-9's SEVIRI was operated in Full-Earth Scan mode. Note that Met-8 was used for the monthly 48-hour 'gap-filling' March– June.

**March:** Various ground segment problems impacted a total of 68 RCs.

**3-April:** Thermal frame loss on Met-9 impacted 40 RCs (recurrence of Operational Incident #27 – see [slide 8](#)).

Meteorological products derived from Rapid-Scanning images produced at 9.5°E.

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

### Events which impacted availability:

None significant.

# EUMETSAT Central Operations Report for January - June 2015

## Meteosat Services → DCP Channel Availability at 0°

Data Collection and Retransmission operations at 0° utilise the international and regional DCP channels of the satellite supporting the service (nominally Meteosat-10).

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.

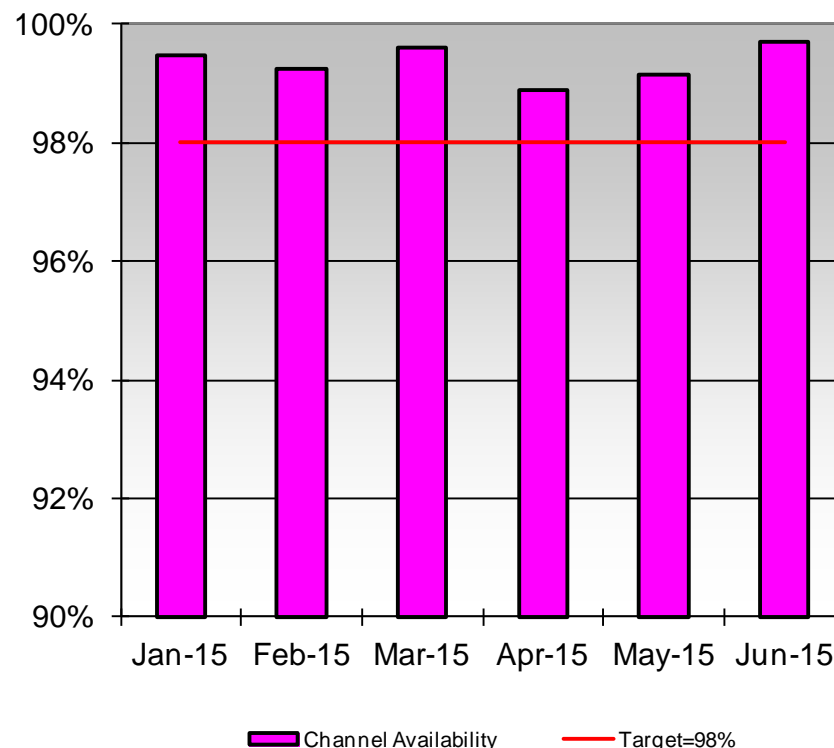
(Note that the availability of the 4 DCP channels supported by Meteosat-7 as part of the Indian Ocean Tsunami Warning System (IOTWS) is not included)

For information concerning the geographical distribution of registered DCPs, please see the next slide.

### Events Which Impacted DCP Channel Availability:

None significant.

**Note:** Some DCP messages continue to be corrupted/lost due to interference on the satellite link. It is not expected that the cause will be resolvable. EUMETSAT continues to monitor the situation.



# EUMETSAT Central Operations Report for January - June 2015

## Meteosat Services → Geographical Distribution of DCPs

DCPs	Country	DCPs	Country	DCPs	Country	DCPs	Country
6	Albania	5	Falklands	1	Malta	24	Ukraine
51 ↑	Algeria	1	Finland	4	Mauritania	1	Union des Comores
13	Angola	130 ↑	France	4	Mauritius	64 ↑	USA
2	Armenia	1	Gambia	23	Mozambique	1	Yemen
2	Austria	30 ↓	Germany	2	Myanmar	16	Zambia
3	Belarus	11	Ghana	23	Namibia	13	Zimbabwe
2	Benin	1	Gibraltar	19	Niger		
5	Bhutan	1	Greece	18 ↑	Nigeria		
14	Botswana	11	Guinea	10	Oman		
1	Brazil	2	Guinea-Bissau	4	Pakistan		
1	Bulgaria	12	Indonesia	3	Philippines		
7	Burkina Faso	2	Iran	11	Republic of Moldova		
60	Cameroon	192 ↑	Iraq	11	Republic of Seychelles		
1	Canada	8	Ireland	7	Romania		
4	Cap Verde	73	Italy	11	Senegal		
2	Central African Republic	3	Ivory Coast	41	South Africa		
3	Chad	3	Kenya	8	Spain		
3	Congo	6	Lesotho	124	Sri Lanka		
3	Croatia	11	Libya	2	Swaziland		
1	Cyprus	6	Madagascar	10	Tanzania		
26	Dem. Rep. of the Congo	9	Malawi	2	Togo		
1	Djibouti	3	Maldives	0 ↓	Turkey		
1	Egypt	19	Mali	48 ↓	UK		

As of the end of June 2015:

**1257 registered Data Collection Platforms (DCPs),**

**belonging to 127 operators,**

**deployed amongst the 74 countries shown in the table.**

**Out of the total number of registered DCPs, there were 643 units in active operation.**

Larger numbers of DCPs are highlighted with darker colours.

Table entries in green = new.  
Country name in red = DCPs no longer registered.

↑ ↓ = indicates an increase /decrease in DCPs registered, compared with previous report.

## Metop, Suomi-NPP & NOAA Global Data Services (GDS)

These services refer to the dissemination of global data and products produced as part of the Initial Joint Polar System (IJPS) and the Joint Transition Activities (JTA) agreements between EUMETSAT and NOAA. The JTA is an interim agreement, providing continuity between the Initial Joint Polar System (IJPS) and future Joint Polar System (JPS).

The services provide Level 0, 1 and 2 products derived from the data from instruments onboard the satellites Metop-A & -B, Suomi-NPP and NOAA-19, as summarised in the following table:

	A-DCS	AMSU	ASCAT	ATOVs	AVHRR	GOME-2	GRAS	HIRS	IASI	MHS	SEM	ATMS & CrIS
Level 0	Mx2 <sup>(1)</sup>	-	-	-	-	-	-	-	-	-	Mx2	-
Level 1	-	Mx2, N	Mx2	-	Mx2, N	Mx2 <sup>(2)</sup>	Mx2	Mx2, N	Mx2	Mx2, N	-	SDR
Level 2	-	-	-	Mx2, N	-	-	-	-	Mx2	-	-	-

Legend: 'Mx2' = Metop-B (prime) and Metop-A (secondary) - dual data & products, with the following exceptions:

<sup>(1)</sup> Due to reduced capability of A-DCS on Metop-B, Metop-A provides the prime Argos-3 A-DCS service (Metop-B provides Argos-2 mode).

<sup>(2)</sup> GOME-2 Tandem operations: Metop-A instrument has swath width of 960 km, Metop-B's has full width of 1920 km.

'N' = Data and products from the AMSU, AVHRR, HIRS and MHS instruments onboard NOAA-19.

'SDR' = Sensor Data Records from the ATMS and CrIS instruments onboard Suomi-NPP.

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

## Metop, Suomi-NPP & NOAA GDS: Definition of Availability

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

- Levels 0 & 1: Available within 2 hours 15 minutes of sensing (Metop and NOAA)
- Level 2: Available within 3 hours of sensing (Metop and NOAA)
- SDRs: Currently: available within 2 hours of sensing, will be refined (Suomi-NPP)

The above timeliness targets are those originally specified for the Metop and NOAA-19 data and delivery is currently measured against them. The Level 0 and 1 targets for the primary Metop are easily met since the introduction of (1) the Antarctic Data Acquisition (ADA) service which improved the timeliness of the data, and (2) the multiplexed data transfer between the Svalbard Ground Station and Darmstadt which gave a further timeliness improvement for the data of both Metops.

Availability figures are based on the following:

- Level 0: Production statistics from EUMETSAT’s EPS Product Generation Facility
- Levels 1 & 2: Reception statistics from EUMETSAT’s reference EUMETCast User Station

The next slide shows the profile of Metop-B passes acquired via the ADA service, which relays half-orbits’-worth of data for most of the 14 to 15 passes possible per day, delivering the first half of each orbit approximately 50 minutes earlier than that via Svalbard.

On [slide 18](#) onwards, service availability and operational performance are presented for the data (mostly delivering Level 1) from instruments onboard Metop-A, Metop-B, N19 and Suomi-NPP. Please see [slide 7](#) For explanation of the two metrics.

# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS: Antarctic Data Acquisition (ADA)

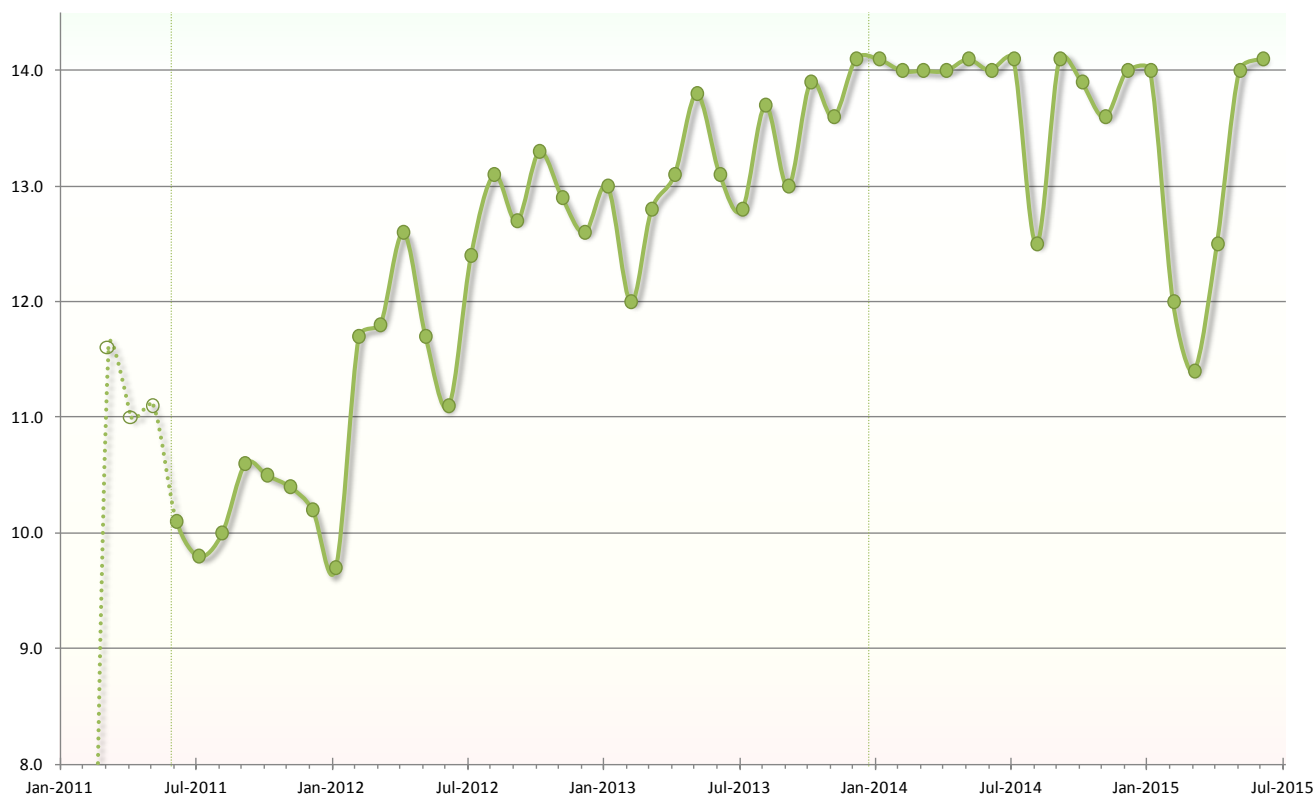
Data from the primary Metop satellite (currently Metop-B) is acquired at NOAA-NSF's ground station on McMurdo Sound in Antarctica and routed to EUMETSAT HQ. This acquisition complements that of Svalbard, and allows the data of the first half of each orbit to be processed and disseminated earlier, thus improving data timeliness of Metop-based products.

The chart shows the average daily passes per month that have been successfully acquired at McMurdo and relayed to Darmstadt since the system was established in early 2011.

The daily average number of passes of Metop-B is 14.2. The majority of them have been acquired since the start of the operational phase in 2014.

An exception to this in the reporting period was an average of ~11.4 in March 2015, where operational priority at the McMurdo station was given to the launch of NASA's SMAP satellite, thus reducing the number of Metop-B passes which could be supported.

Monthly average of acquired passes per day



# EUMETSAT Central Operations Report for January - June 2015

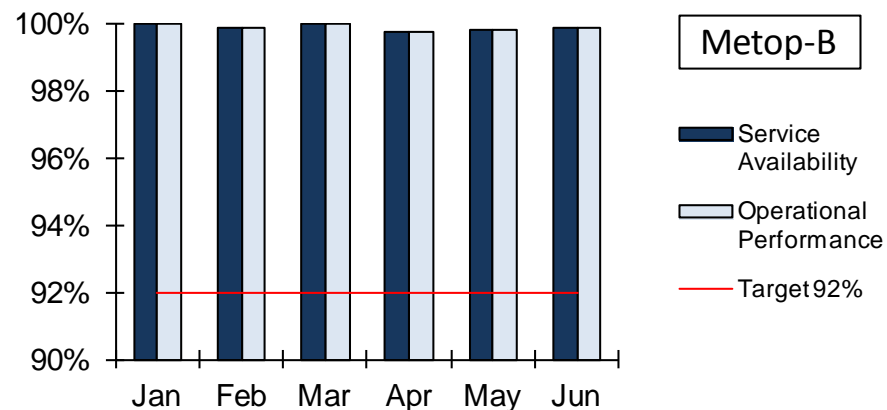
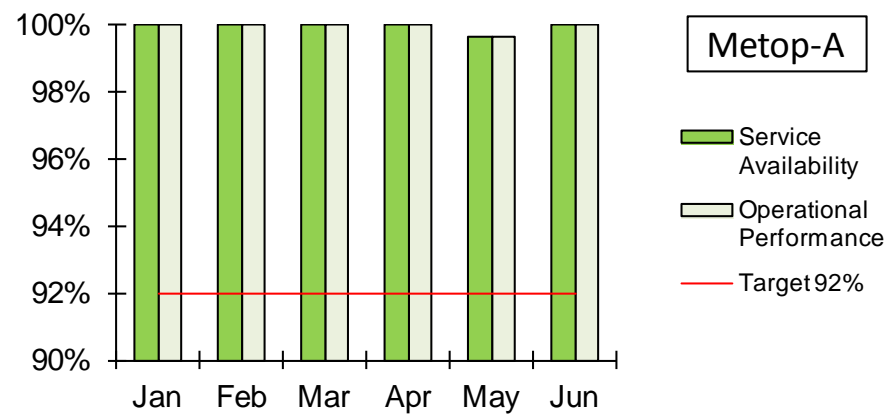
## Metop, Suomi-NPP & NOAA GDS → A-DCS Level 0 Data

Metop A & B carry instruments for supporting the Argos Advanced Data Collection System (A-DCS). Environmental data is transmitted by measurement platforms on land or sea, or in the atmosphere, and this is relayed via the Metop satellites and EUMETSAT to CLS in Toulouse, in accordance with an cooperation agreement with CNES.

Metop-A provides the prime Argos-3 A-DCS service, with Metop-B providing just Argos-2 mode, due to the reduced capability of A-DCS onboard that satellite.

### Events which impacted availability:

None significant.



# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → AMSU Level 1B BUFR Products

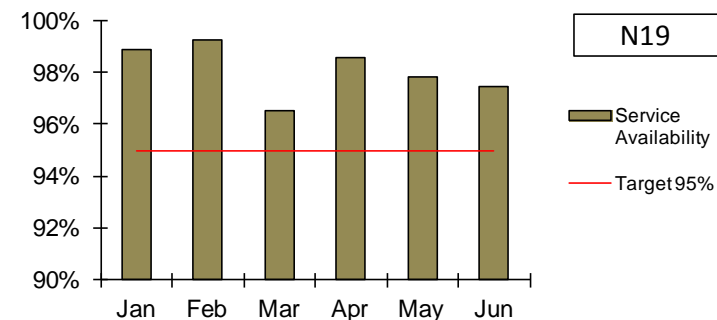
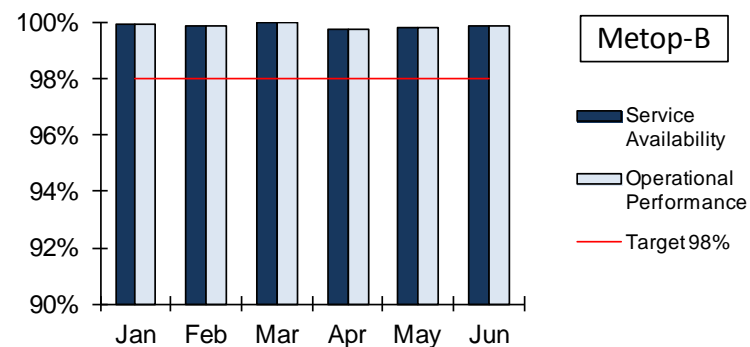
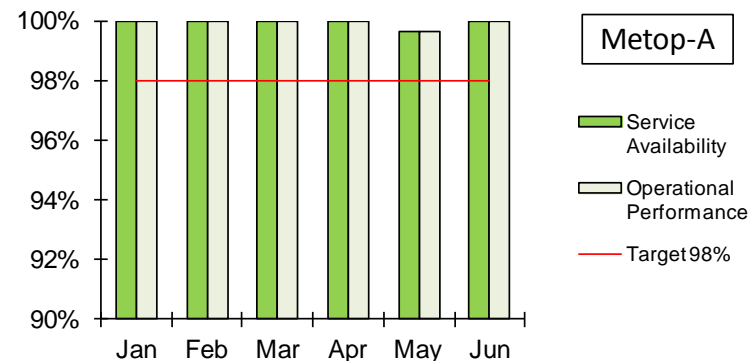
The Advanced Microwave Sounding Unit (AMSU) is a 15-channel microwave radiometer supplied by NOAA which provides information on atmospheric temperature profiles.

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

### Events which impacted availability:

14-15 March: N19: power problems at Fairbanks.

**Notes:** (1) Metop-A's AMSU: channels 3 & 8: out of specification with an increasing NEdT trend, but both are still currently usable for higher-level products; channel 7 has failed completely.  
(2) Metop-B's AMSU: all channels well within specification  
(3) NOAA-19's AMSU: channels 7 & 8: out of specification but the data is still considered usable for the time-being



# EUMETSAT Central Operations Report for January - June 2015

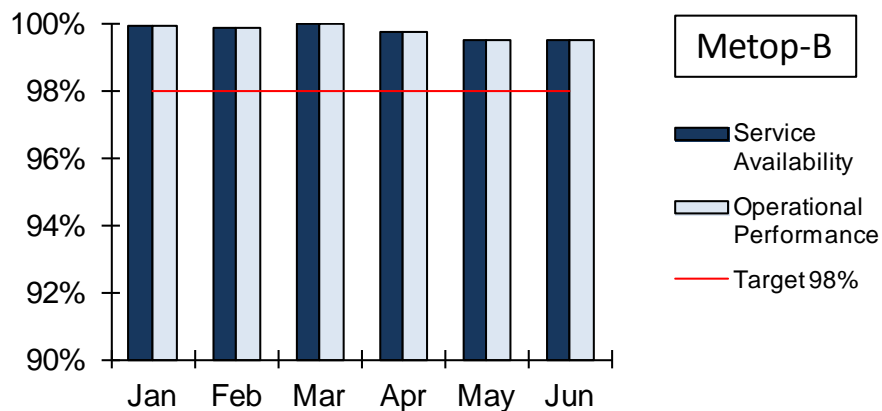
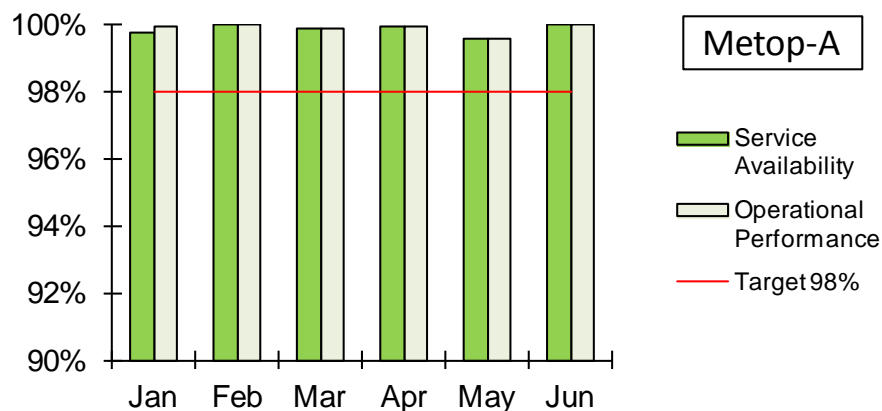
## Metop, Suomi-NPP & NOAA GDS → ASCAT Level 1B (SZO & SZR) Products

The Advanced Scatterometer (ASCAT) is a C-band radar on the Metop satellites which measures normalised backscatter from the Earth's surface. The prime objective of ASCAT is to measure wind speed and direction over the oceans, as an input to NWP models. ASCAT data is also used to extract information on soil moisture, sea-ice extent and permafrost boundary. EUMETSAT disseminates sampled Level 1B data from both Metop-A and Metop-B over EUMETCast and full resolution is available from the Data Centre on request.

Performance of the Level 1B service is measured in terms of the timely availability of the 'SZO' and 'SZR' products (swath grid sampling resolutions of 25 and 12.5 km respectively) on the EUMETCast reference user station.

### Events which impacted availability:

None significant.



# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → ATOVS Level 2 Products

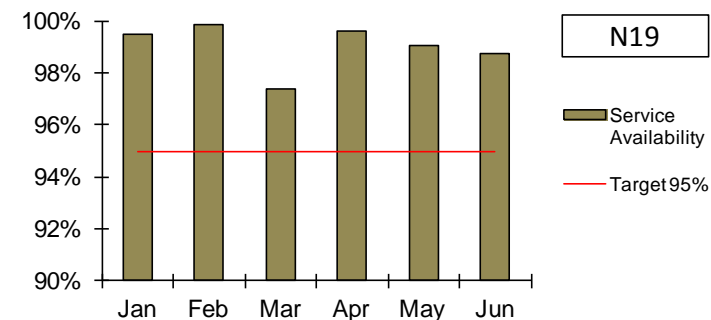
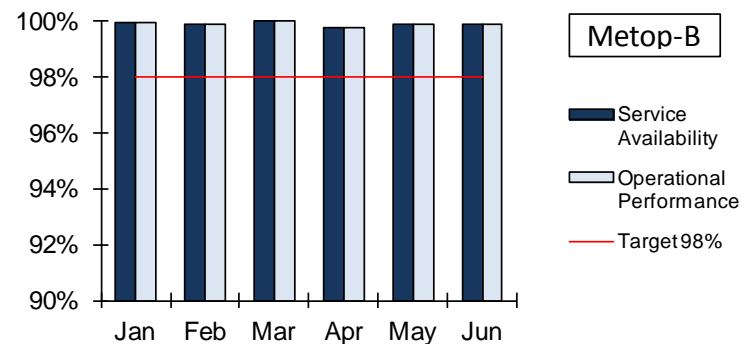
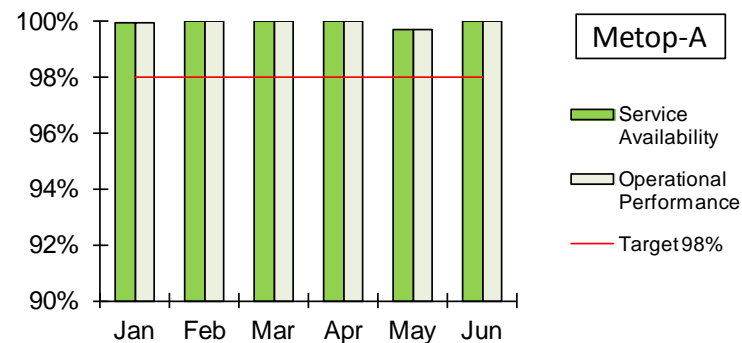
ATOVS Level 2 product processing transforms the calibrated radiance measurements from the AMSU-A, MHS and HIRS instruments (onboard Metop and NOAA-19 satellites) into information on the vertical distribution of atmosphere state parameters, on cloud and surface parameters and total atmosphere contents.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

14-15 March: N19: power problems at Fairbanks.

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



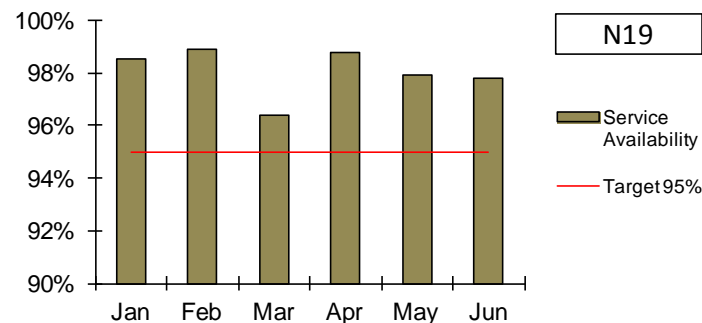
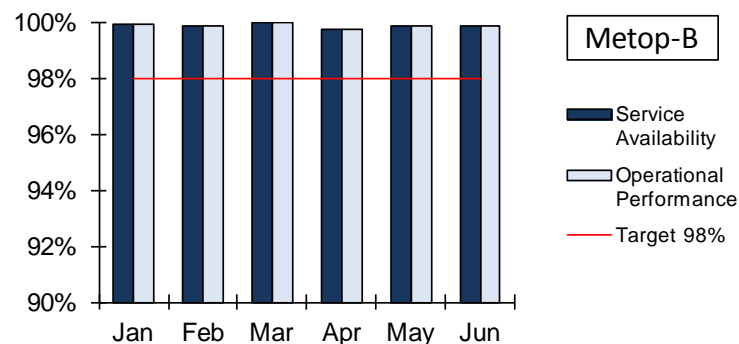
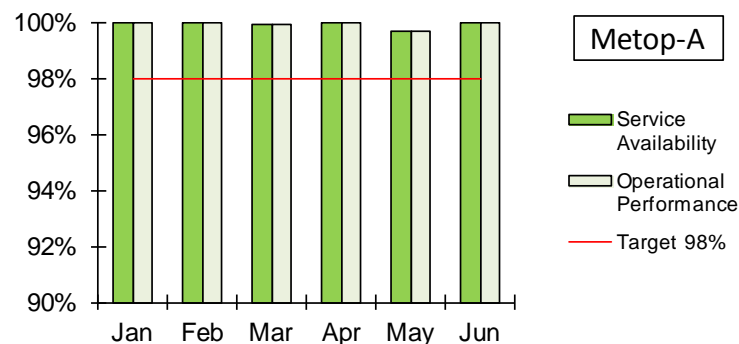
# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → 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 information on land and sea surfaces. Level 1B products are derived from the data generated by the instruments onboard the Metop and NOAA-19 satellites.

### Events which impacted availability:

14-15 March: N19: power problems at Fairbanks.



# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → GOME-2 Level 1B Products

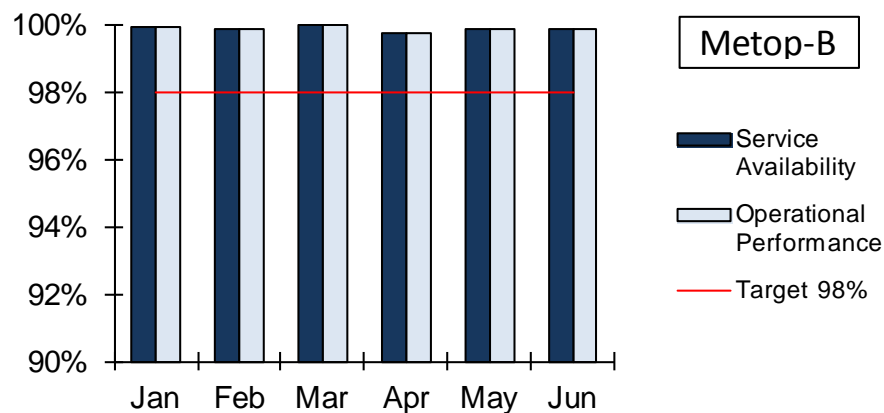
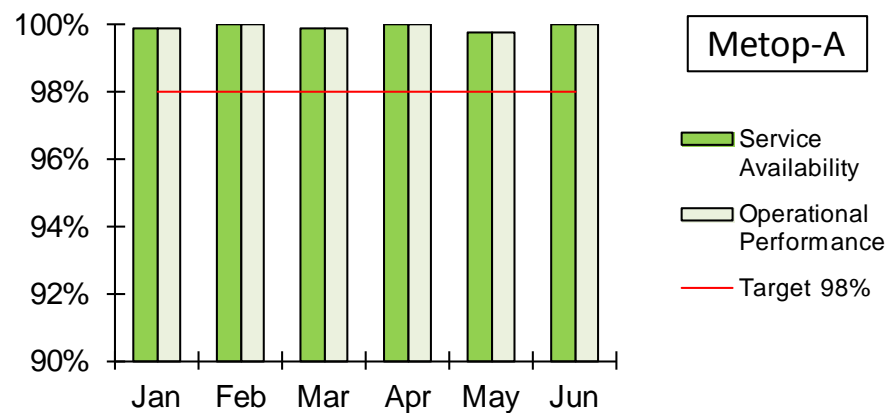
The Global Ozone Monitoring Experiment-2 (GOME-2) is a scanning spectrometer used to measure profiles and total columns of atmospheric ozone and other trace gases.

### Events which impacted availability:

None significant.

GOME-2 on Metop-B suffers degradation of throughput similar, but not identical, to that seen on Metop-A. The performance of the GOME-2 instruments on Metop-A and Metop-B and the evolution of their degradation will continue to be monitored.

See the 'Product Quality Monitoring Reports' via dedicated links on the '[Service Status](#)' page of [www.eumetsat.int](http://www.eumetsat.int) for further performance information. The GOME-2 Newsletter can be found under either of the two report sections.



# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → GRAS Level 1B Products

The GNSS Receiver for Atmospheric Sounding (GRAS) instruments provide information on atmospheric profiles using radio occultation of GPS signals from typically between 28 and 30 GPS navigation satellites in operational use.

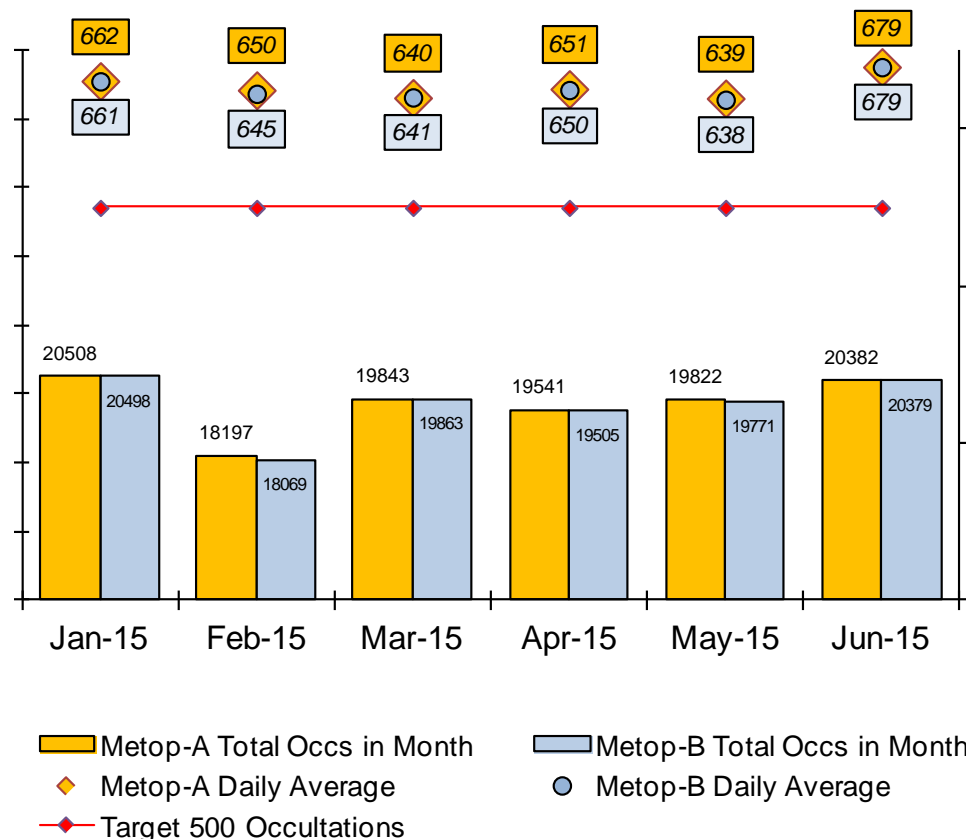
The chart shows for each month:

- (1) the total numbers of GRAS Level 1B occultations (plus geolocation and quality flags) from Metop-A and Metop-B disseminated via EUMETCast
- (2) the daily average number of occultations from each Metop provided to users (numbers 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:

None significant.



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

# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → HIRS Level 1B BUFR Products

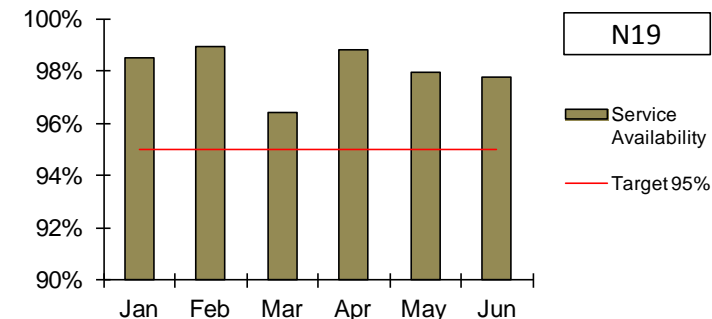
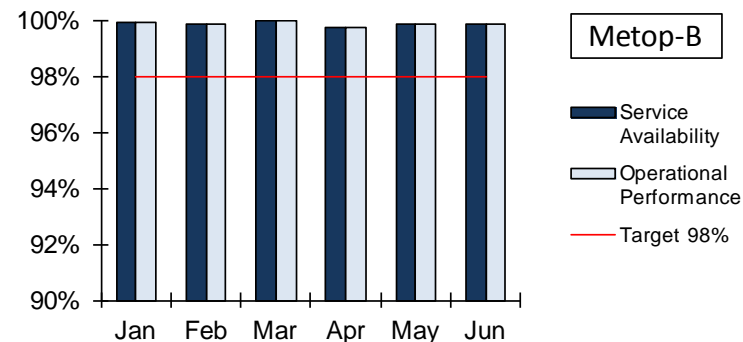
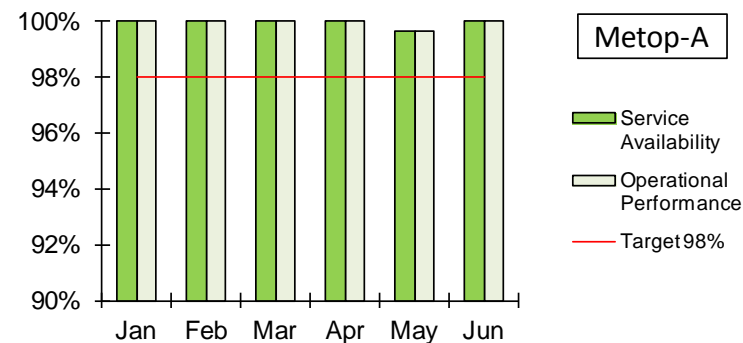
The High Resolution Infrared Radiation Sounder (HIRS) measures incident radiation using 19 infrared channels and 1 visible channel, providing information on the atmosphere's vertical temperature profile and water vapour from the Earth's surface to an altitude of about 40 km. Level 1B products are derived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

### Events which impacted availability:

14-15 March: N19: power problems at Fairbanks.

**Notes:**

- (1) Metop-A's HIRS: all channels within specification
- (2) Metop-B's HIRS: all channels within specification, but 5, 6 and 10 wander out of spec occasionally
- (3) NOAA-19's HIRS: channels 1-12: close to, or out of specification, but the data is still considered usable for the time-being.



# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → IASI Level 1C & Level 2 BUFR Products

The Infrared Atmospheric Sounding Interferometer (IASI) measures the spectrum of infrared radiation in 6000 channels, providing information on atmospheric profiles of temperature, water vapour and trace gases, as well as surface temperature, surface emissivity and cloud characteristics.

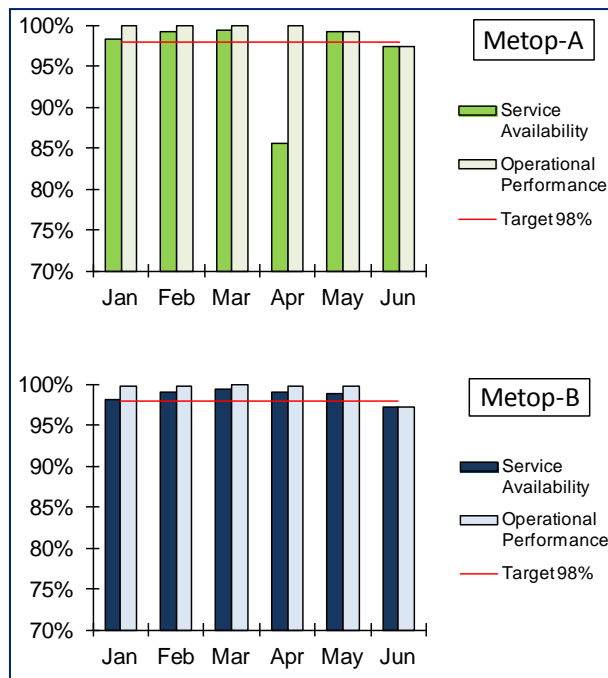
### Events which impacted availability:

**9-15 April:** Scheduled investigative testing of Metop-A IASI – no products.

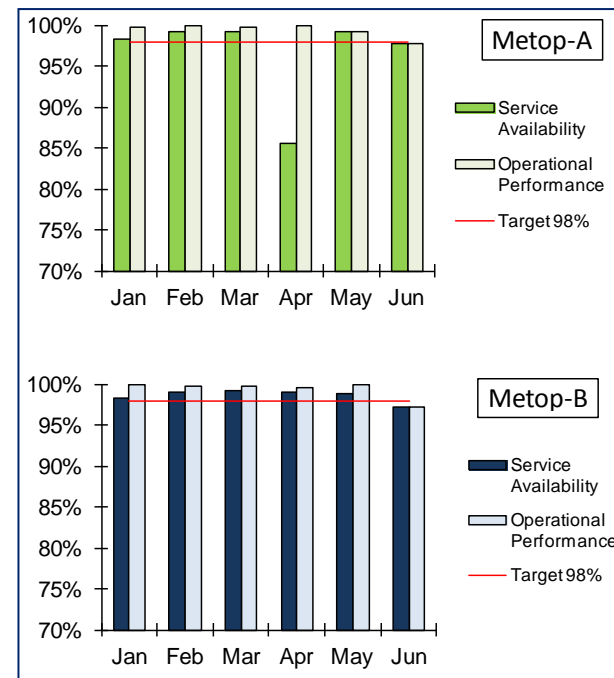
**June:** Metop-A: IASI heater refuse-mode suspected due to SEU on 12-June.  
Metop-B: IASI heater switch-off suspected due to SEU on 28-June.

Note that the testing in April included a swap to the redundant on-board electronics which cured the problem of the high frequency of corner-cube speed quality flags being raised on the products.

IASI Level 1C



IASI Level 2



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

# EUMETSAT Central Operations Report for January - June 2015

## Metop, Suomi-NPP & NOAA GDS → MHS Level 1B BUFR Products

The Microwave Humidity Sounder (MHS) is a 5-channel microwave radiometer providing information on atmospheric humidity profiles primarily, but also cloud liquid water content and precipitation.

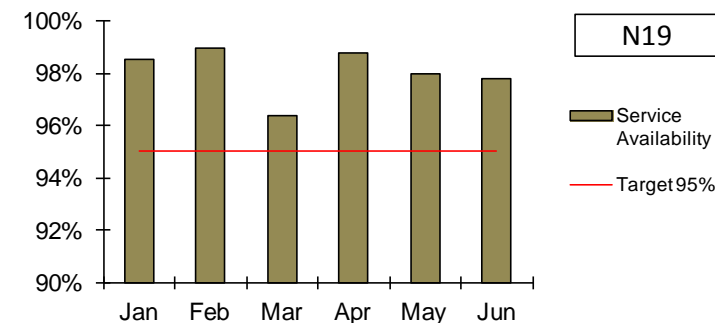
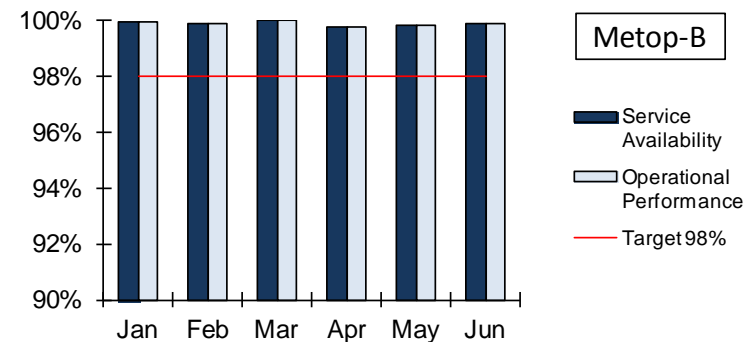
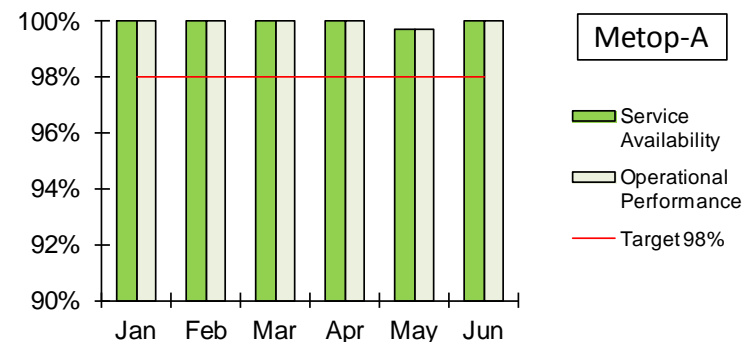
Level 1B products are derived from the data generated by the instruments onboard both Metop-A/B and NOAA-19 satellites.

### Events which impacted availability:

14-15 March: N19: power problems at Fairbanks.

#### Notes:

- NOAA-19's MHS instrument's channel 3 remains out of spec
- Metop-A and Metop-B instruments: all channels within specification



# EUMETSAT Central Operations Report for January - June 2015

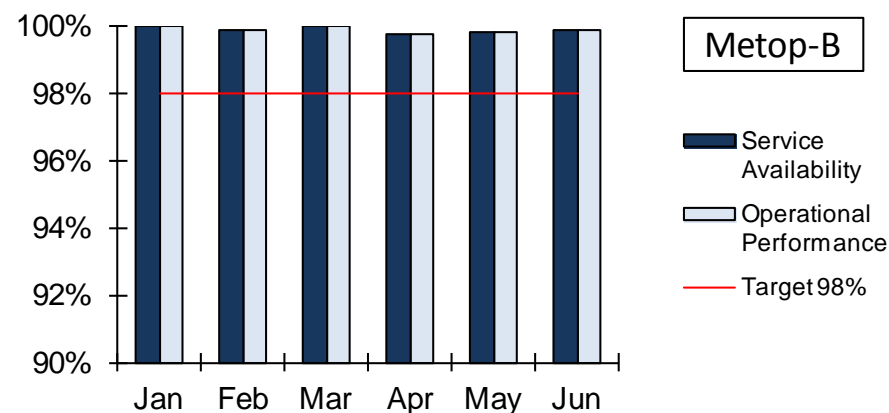
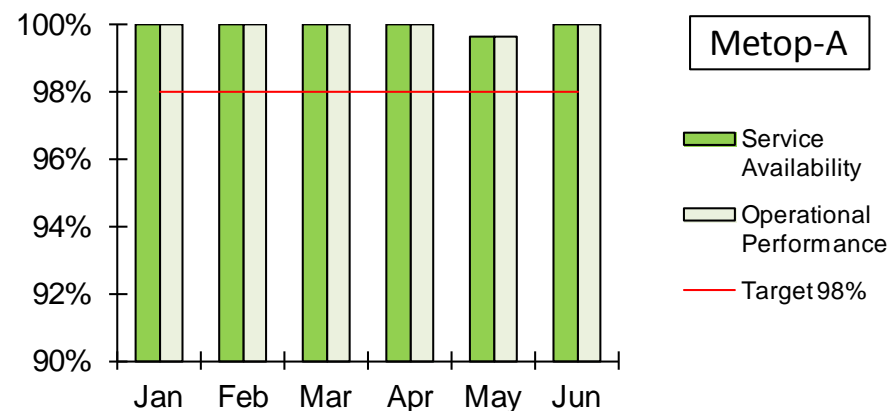
## Metop, Suomi-NPP & NOAA GDS → SEM Level 0 Data

The Space Environment Monitor (SEM) consists of a pair of instruments on each Metop satellite 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.



# EUMETSAT Central Operations Report for January - June 2015

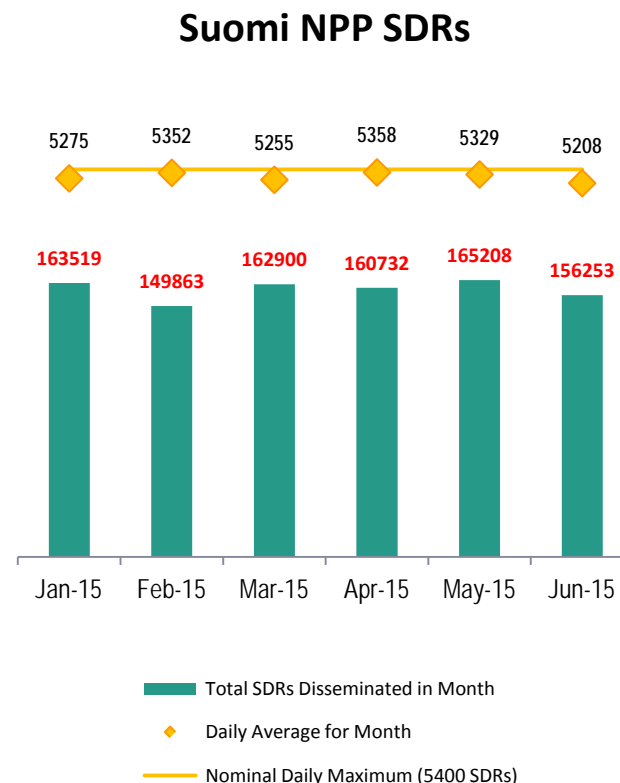
## Metop, Suomi-NPP & NOAA GDS → Suomi-NPP Sensor Data Records

The Global Data Service has been extended in May 2014 to include data (Sensor Data Records) from the ATMS and CrIS instruments (Advanced Technology Microwave Sounder and Cross-track Infrared Sounder respectively) onboard NASA-NOAA's Suomi-NPP (National Polar-orbiting Partnership) satellite.

Currently, it is not possible to provide service availability statistics for data from the two instruments individually, but they are expected to be available in the report for the next half-year.

### Events which impacted availability:

None significant.



## Regional Data Services

The Regional Data Services (RDS) are based on direct acquisition of data from Metop and NOAA satellites by a network of HRPT stations, known as EARS (EUMETSAT Advanced Retransmission System). At each station, an EARS node processes the data locally and then relays it on to EUMETSAT for very timely distribution to the user community via EUMETCast and the GTS.

The RDS comprises the following services :

EARS-ASCAT, EARS-ATMS, EARS-ATOVS, EARS-AVHRR, EARS-CrIS,  
EARS-IASI, EARS-NWC, EARS-VIIRS

Service performance is measured in terms of the availability of the data on the EUMETCast user reception stations being within 30 minutes of the instrument's observations, unless specified otherwise in the following slides.

See EUMETSAT's document TD14, available from the [‘Regional Data Services’](#) page of EUMETSAT's website (see ‘Related Links’) for more information generally on the various EARS services, including which HRPT stations contribute to each of the services.

# EUMETSAT Central Operations Report for January - June 2015

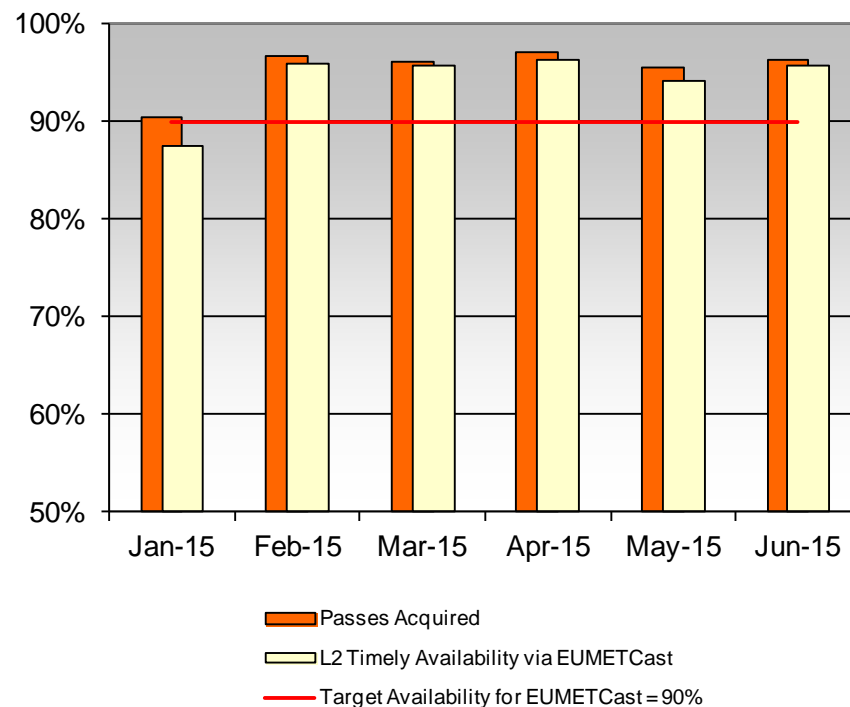
## Regional Data Services → EARS-ASCAT

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

Level 1 data is produced by the EARS system, and then forwarded to KNMI (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:

**January:** Muscat station outage (antenna failure) from 8<sup>th</sup> December to 28<sup>th</sup> January.



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-ATMS

This service provides SDRs derived from the data produced by the ATMS (Advanced Technology Microwave Sounder) instrument onboard NASA-NOAA's Suomi-NPP satellite.

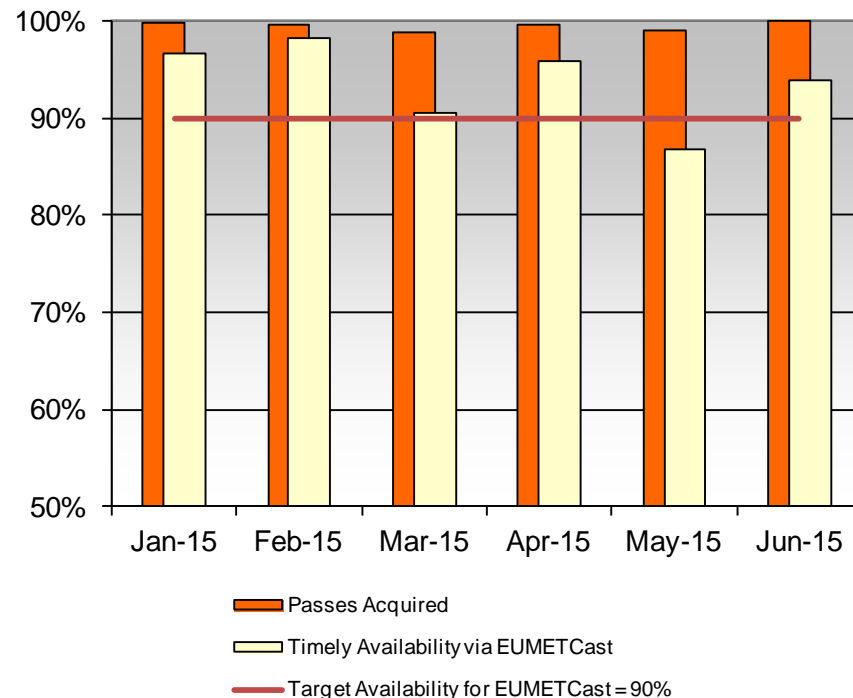
Availability shown on the chart is that of the BUFR-formatted SDRs received by users (relative to scheduled passes).

### Events which impacted availability:

**March:** EUMETCast timeliness issue affecting EARS-ATMS, EARS-CrIS and EARS-VIIRS, intensified by bandwidth saturation caused by seasonally larger volumes of Metop GDS data.

**May:** Timeliness issue with data processing at the Svalbard and Kangerlussuaq stations.

Steps taken in June/July 2015 to resolve the above dissemination and processing shortcomings.



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-ATOVS

This service provides ATOVS products covering data-sparse areas, derived from data received by the HRPT stations from the following satellites (listed in order of priority): Metop-B, Metop-A, NOAA's N19, N18 and N15. Note that Metop's AHRPT partial coverage data is 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, 1C and 1D products.

Note the less-stringent timeliness target for data from the following HRPT stations:

Edmonton, Gander, Miami & Monterey: 45 mins.

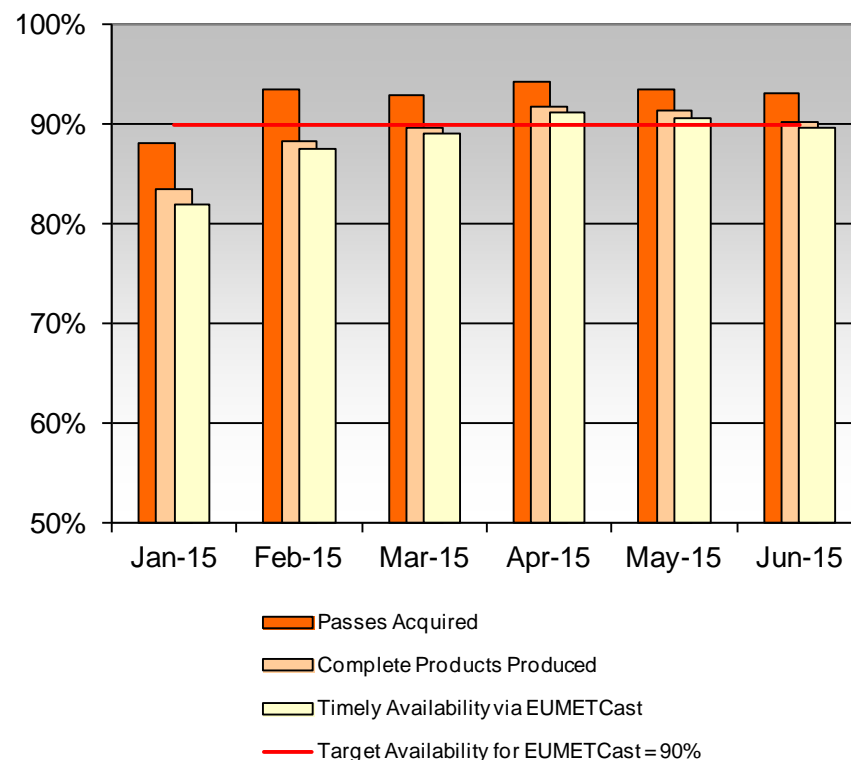
Ewa Beach: 2 hours

### Events which impacted availability:

January: (1) Muscat station outage (antenna failure) from 8<sup>th</sup> December to 28<sup>th</sup> January

(2) Ewa Beach missing all N18 / N19 passes

General Issue: Problems with the HRPT transponder onboard NOAA's N15 satellite impacts the operation of the ATOVS service generally, resulting in fewer products overall.



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-AVHRR

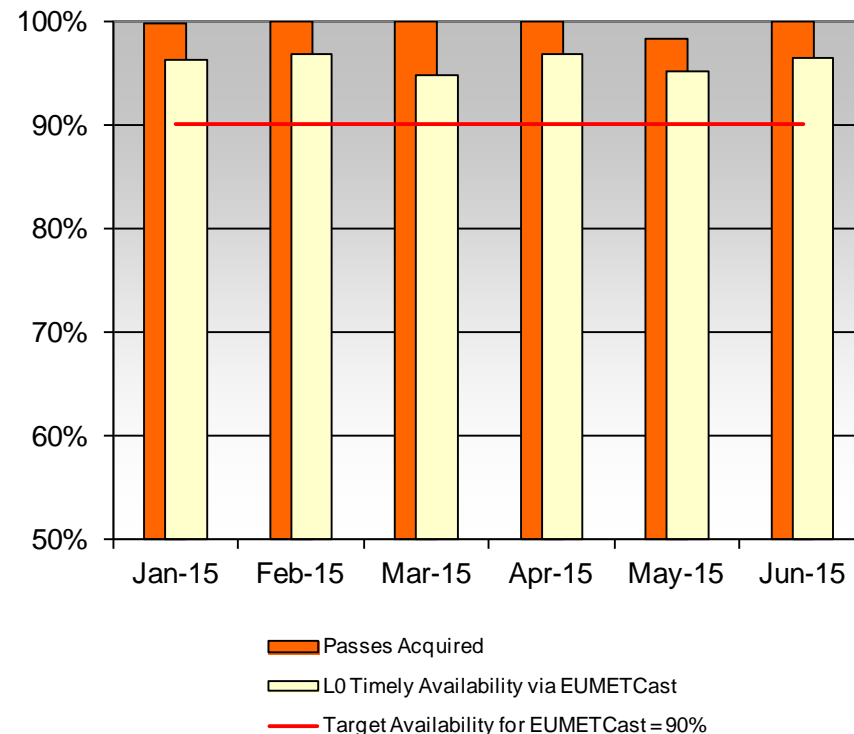
This service provides data from the AVHRR instruments onboard NOAA-19 and the Metop satellites. AHRPT partial coverage data and data from the Fast Dump Extract System (FDES) are used from the Metops.

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:

**March:** Some EUMETCast timeliness impact due to seasonal bandwidth saturation.

**Steps taken in June/July 2015 to resolve the above dissemination and processing shortcomings.**



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-CrIS

This service provides SDRs derived from the data produced by the CrIS (Cross-track Infrared Sounder) instrument onboard NASA-NOAA's Suomi-NPP satellite.

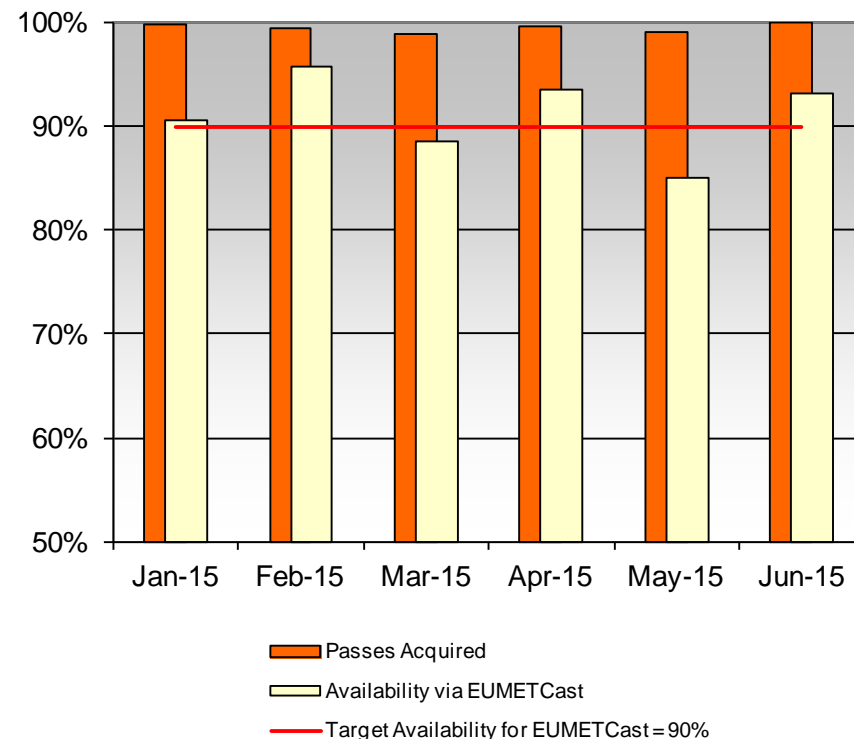
Availability shown on the chart is that of the BUFR-formatted SDRs received by users (relative to scheduled passes).

### Events which impacted availability:

**March:** EUMETCast timeliness issue affecting EARS-ATMS, EARS-CrIS and EARS-VIIRS, intensified by bandwidth saturation caused by seasonally larger volumes of Metop GDS data.

**May:** Timeliness issue with data processing at the Svalbard and Kangerlussuaq stations.

**Steps taken in June/July 2015 to resolve the above dissemination and processing shortcomings.**



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-IASI

This service provides products derived from the data produced by the IASI instrument onboard the Metop-A and B satellites.

Availability shown on the chart is that of the Level 1C data received by users (relative to scheduled passes). The products comprise calibrated and geolocated IASI observations containing both 300 Principle Component Scores and 500 original IASI channels, cloud/scene analysis information, BUFR formatted, suitable for nowcasting applications.

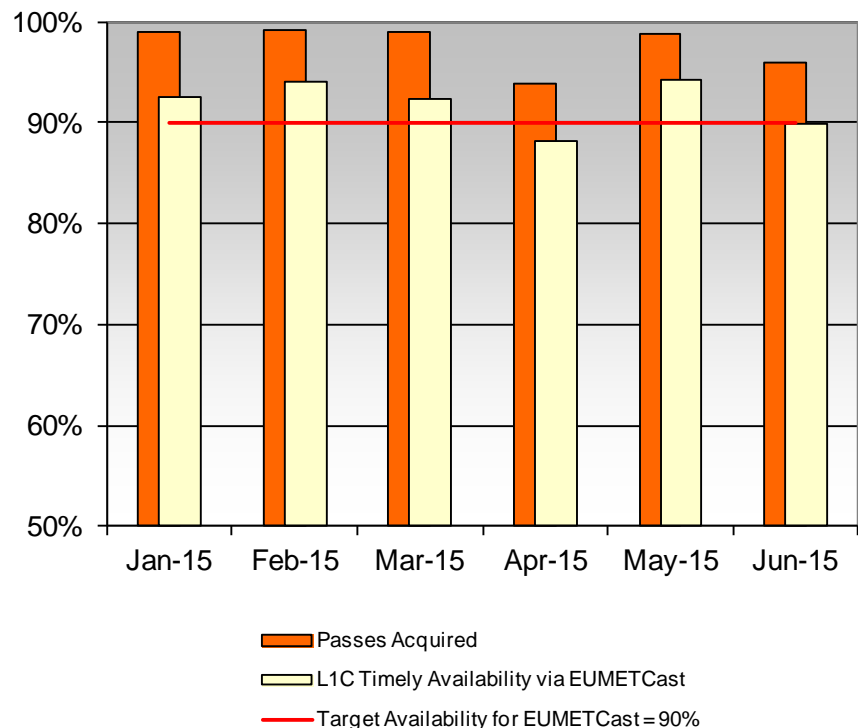
### Events which impacted availability:

**9-15 April:** Scheduled investigative testing of Metop-A IASI – no products.

**June:** Metop-A: IASI heater refuse-mode suspected due to SEU on 12-June.

Metop-B: IASI heater switch-off suspected due to SEU on 28-June.

**General Issue:** Incomplete passes in the HRPT zone cannot be processed, hence the marginally lower availability of products compared to the passes.



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-NWC

This service delivers Level 2 cloud products derived from data produced by the AVHRR instruments onboard Metop-B and NOAA-19.

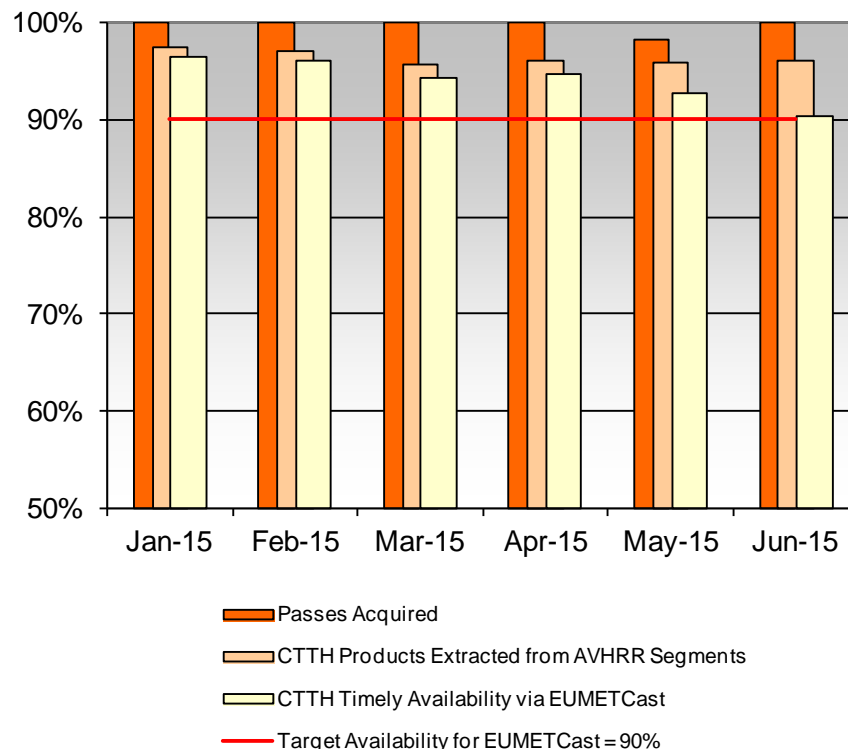
Three types of product are delivered:

- Cloud-Top Temperature and Height (CTTH)
- Cloud Mask (CM)
- Cloud Type (CT)

Availability shown on the chart is currently only that of the CTTH products received by users (relative to scheduled passes).

### Events which impacted availability:

**June:** As of the end of May, the Gander station has been contributing to the NWC service. Some timeliness impact experienced due to the routing of the data.



# EUMETSAT Central Operations Report for January - June 2015

## Regional Data Services → EARS-VIIRS

This service delivers products based on M-Band data from the Visible Infrared Imaging Radiometer Suite (VIIRS) instrument onboard NASA-NOAA's Suomi-NPP satellite.

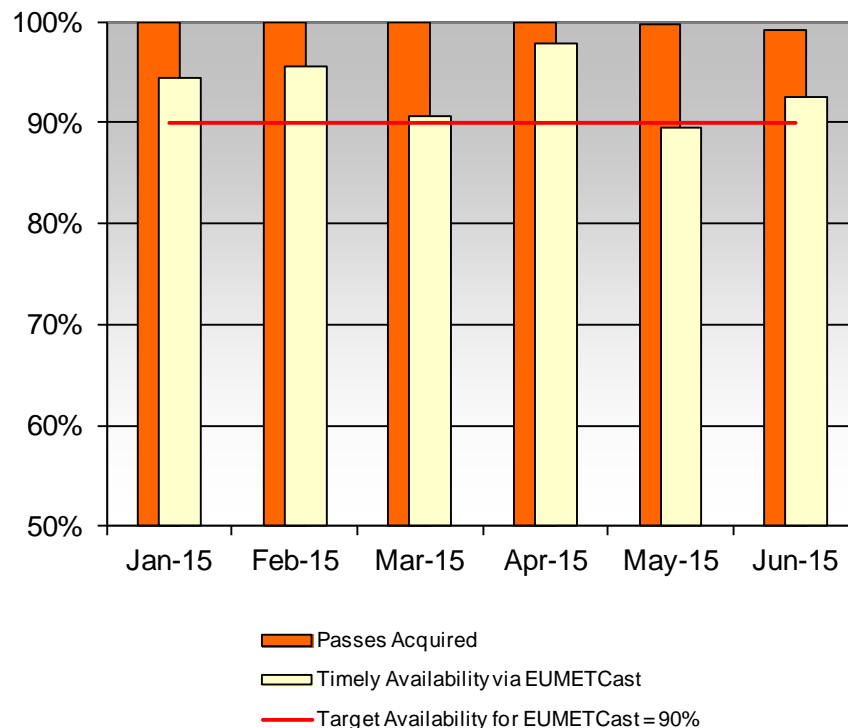
Availability shown on the chart is that of the L1 SDR products received by users (relative to scheduled passes).

### Events which impacted availability:

**March:** EUMETCast timeliness issue affecting EARS-ATMS, EARS-CrIS and EARS-VIIRS, intensified by bandwidth saturation caused by seasonally larger volumes of Metop GDS data.

**May:** Timeliness issue with data processing at the Svalbard and Kangerlussuaq stations.

Steps taken in June/July 2015 to resolve the above dissemination and processing shortcomings.



## Search & Rescue Support

EUMETSAT supports the Cospas-Sarsat System for Search and Rescue (SAR) by flying transponders onboard its MSG and Metop satellites.

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](http://www.cospas-sarsat.org).

**MSG:** Meteosat-9 and 10 have provided nominal SAR coverage for the duration of the reporting period. Meteosat-8's SAR remained off during the reporting period.

**Metop:** Both satellites, Metop-A and Metop-B, have provided full-time SAR support during the reporting period.

## 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 EUMETSAT, NOAA, CNES and NASA. EUMETSAT and NOAA process the data from the Jason-2 satellite in near real-time and 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.

# EUMETSAT Central Operations Report for January - June 2015

## Jason-2 OGDR Service

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

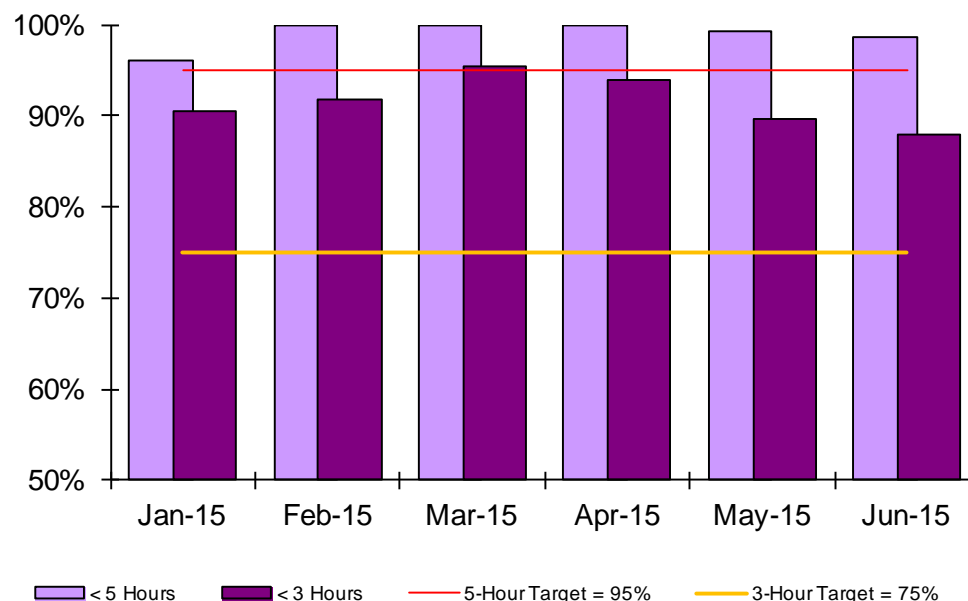
The target figure of 95% applies to the availability of data received on EUMETCast reception stations with a timeliness of 5 hours. The further target of 75% is for the more demanding objective of 3-hour timeliness.

### Events which impacted availability:

**January:** Problem with Fairbanks connection in the first week of the year resulted in a total of 12 lost passes.

**18 June:** EUM-NOAA link outage delayed 4 OGDRs.

(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)



## Third-Party Data Services

In addition to its own satellite data and meteorological products, EUMETSAT also distributes data and products from partner organisations as part of an international cooperation.

Image data from the following **geostationary satellites** is made available via EUMETCast, Direct Dissemination and the Internet:

- NOAA's GOES-13 ('GOES-East'), at 75°W, and GOES-15 ('GOES-West'), at 135°W
- JMA's MTSAT-2, at 145°E
- CMA's FY-2D, at 86.5°E, and FY-2E, at 105°E (also selected meteorological products)

**Meteorological products based on LEO satellite data are also disseminated:**

- Microwave Sounder products from CMA's FY-3B and FY-3C (only provided to National Met. Services)
- Level 1, 2 and 3 products derived from data of the MODIS instrument on NASA's Terra & Aqua satellites
- EUMETSAT SSMIS products derived from sounder data of the DoD's DMSP satellites F16, F17, and as of the end of April, F18
- Operational Geophysical Data Records (OGDRs) from the AltiKa instrument of ISRO/CNES's SARAL mission.

**The charts on the following slides show the availability of the data via EUMETCast.**

# EUMETSAT Central Operations Report for January - June 2015

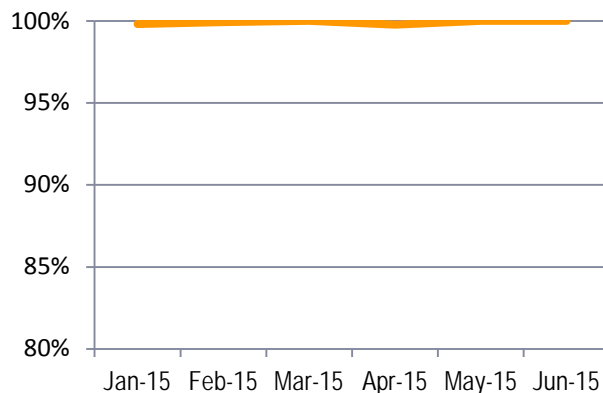
## Third-Party Data Services → Geostationary Satellite Data & Products

The charts on this slide show the timely availability (as a percentage of expected) of image data originating from **geostationary satellites** operated by NOAA and JMA (Japan Meteorological Agency), as disseminated via EUMETCast.

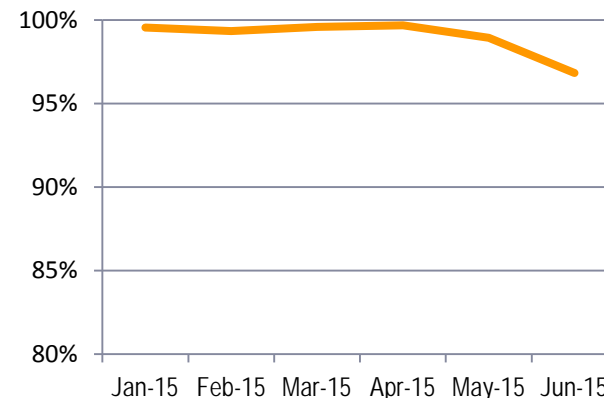
### Events which impacted availability:

**June:** **GOES-West:** file delivery by the data provider impacted by network issues.

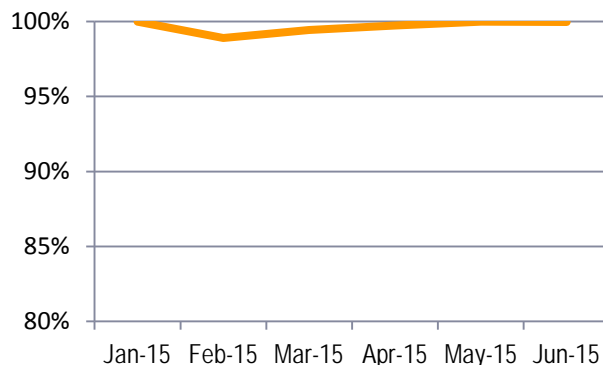
**GOES-East (75°W)**



**GOES-West (135°W)**



**MTSAT-2 (145°E)**



# EUMETSAT Central Operations Report for January - June 2015

## Third-Party Data Services → Geostationary Satellite Data & Products (cont.)

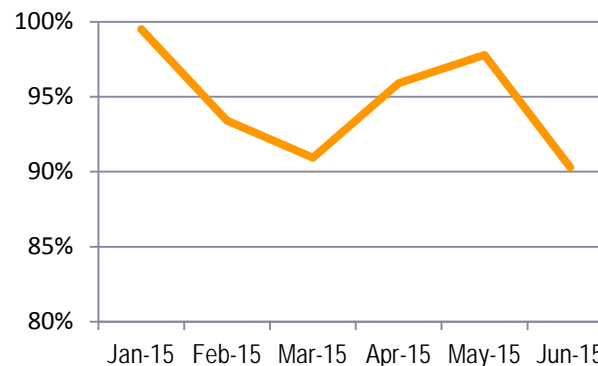
The charts here show the timely availability (as percentage of expected) of selected meteorological products generated from the data acquired by the Fengyun **geostationary satellites** operated by the China Meteorological Agency (CMA), as disseminated via EUMETCast.

### Events which impacted availability:

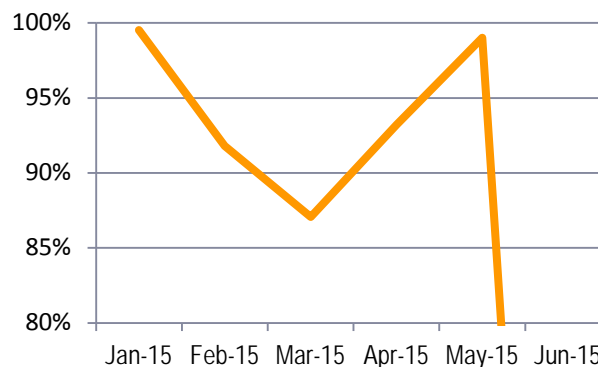
- Feb-April:** For both FY-2D & FY-2E:  
Fewer products due to eclipse-season
- 3-June:** Satellite FY-2G took over from FY-2E at 105°E
- 1-July:** Satellite FY-2E took over from FY-2D at 86.5°E, which was relocated to 123.5°E, to serve as a backup satellite

Updated charts to reflect the change in usage of the satellites will be provided in the next issue of the report.

**FY-2D (86.5°E)**



**FY-2E (105°E)**



# EUMETSAT Central Operations Report for January - June 2015

## Third-Party Data Services → LEO Satellite Data & Products

This slide presents charts which show the availability of data & products for **LEO satellites** operated by partner organisations, as disseminated via EUMETCast.

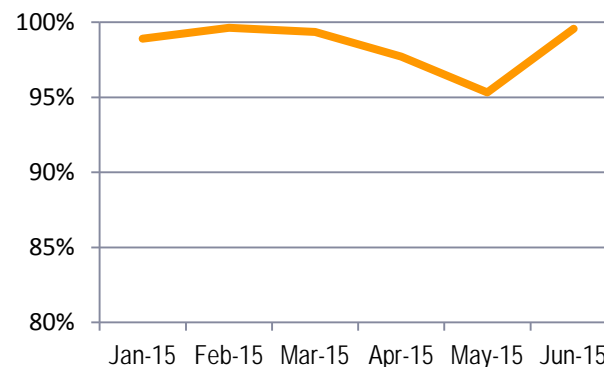
**FY-3B and FY-3C:** Level 1 data from microwave sounder instruments onboard Fengyun LEO satellites (made available only to National Met. Services and ECMWF). Availability shown as percentage of expected.

### Events Which Impacted Availability:

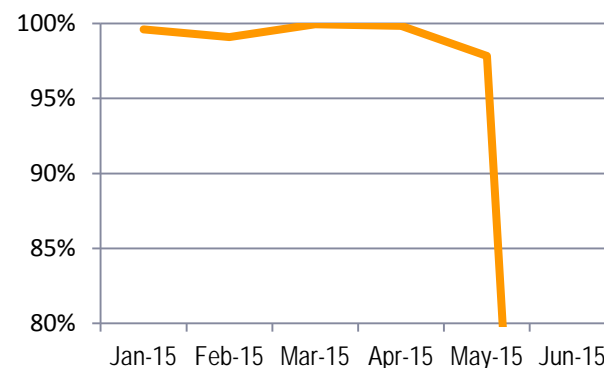
**Apr/May: FY-3B:** Product losses, especially 4-7 May

**31-May: FY-3C:** Taken out of operational service for anomaly investigation (returned to service on 29-July)

**FY-3B Level 1 Data**



**FY-3C Level 1 Data**



# EUMETSAT Central Operations Report for January - June 2015

## Third-Party Data Services → LEO Satellite Data & Products (cont.)

This slide presents further charts showing the availability of certain LEO satellite products from partner organisations, as disseminated via EUMETCast. Availability shown in terms of total products disseminated /month and equivalent daily average/month.

**MODIS:** Level 1, 2 and 3 regional products derived from the MODIS instrument hosted on NASA's Terra and Aqua LEO satellites.

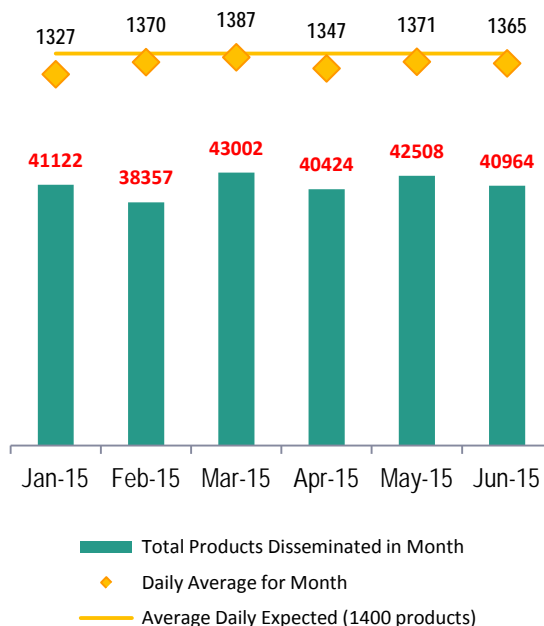
**SSMIS Products:** Extracted from SDR data from the 'Special Sensor Microwave Imager Sounder' radiometer onboard the near-polar-orbiting, sun-synchronised DMSP satellites F16, F17 and F18. Each product contains one orbit of data, comprising 4 BUFR component products: IMA, ENV, LAS and UAS.

### Events which impacted availability:

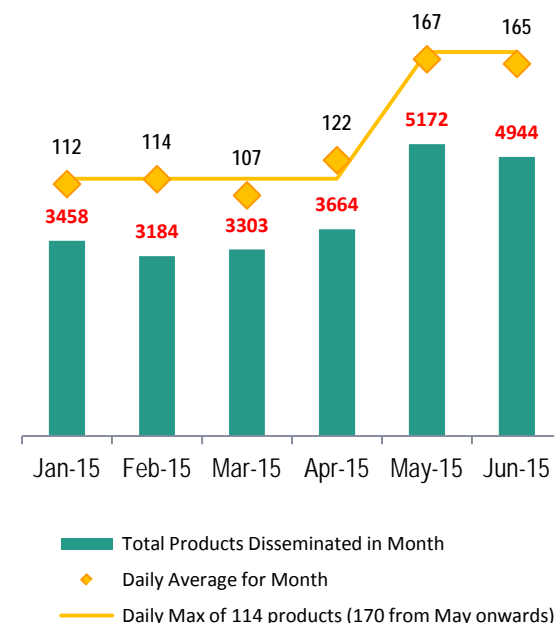
End of April onwards:

**SSMIS:** Addition of products generated from F18 data.

### MODIS Products



### SSMIS Products



# EUMETSAT Central Operations Report for January - June 2015

## Third-Party Data Services → LEO Satellite Data & Products (cont.)

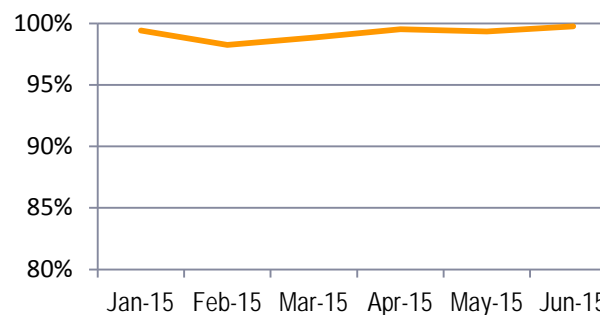
This slide presents a chart showing the availability via EUMETCast of near-real-time Operational Geophysical Data Records (OGDRs), which are produced from the data from the 'AltiKa' Ka-band altimeter instrument of ISRO/CNES's SARAL mission.

Each OGDR corresponds to one orbit of data, and availability is shown as a percentage of the scheduled passes.

### Events which impacted availability:

None significant.

**SARAL OGDRs (3-hour timeliness)**



## EUMETCast

EUMETCast is EUMETSAT's primary dissemination mechanism for the near real-time delivery of satellite data and products generated by the EUMETSAT Application Ground Segment. Third-party data and products from partner organisations are also delivered by the system, which is based on Digital Video Broadcast (DVB) technology. Up until the end of 2014, EUMETCast Europe was based on the DVB-S standard, but as of 1<sup>st</sup> January, 2015, has been fully operational using DVB-S2, which allows higher throughput, important in view of forthcoming services associated with new programmes.

For more information about EUMETCast and the services which it supports, please visit the [‘EUMETCast’](#) page on the EUMETSAT website (via ‘Data’ → ‘Data Delivery’).

The chart on the following slide shows the availability of the system for the last 12 months, which includes the half-year reporting period.

# EUMETSAT Central Operations Report for January - June 2015

## EUMETCast → System Availability for the Year-To-Date

The chart here shows the monthly system availability for the 3 EUMETCast services covering Europe, Africa and South America respectively. Both EUMETCast Africa and EUMETCast South America systems are, in effect, extensions of EUMETCast Europe and thus the end-to-end system availability is calculated taking due account of the availability of EUMETCast Europe and of the respective extensions.

### Events which impacted availability:

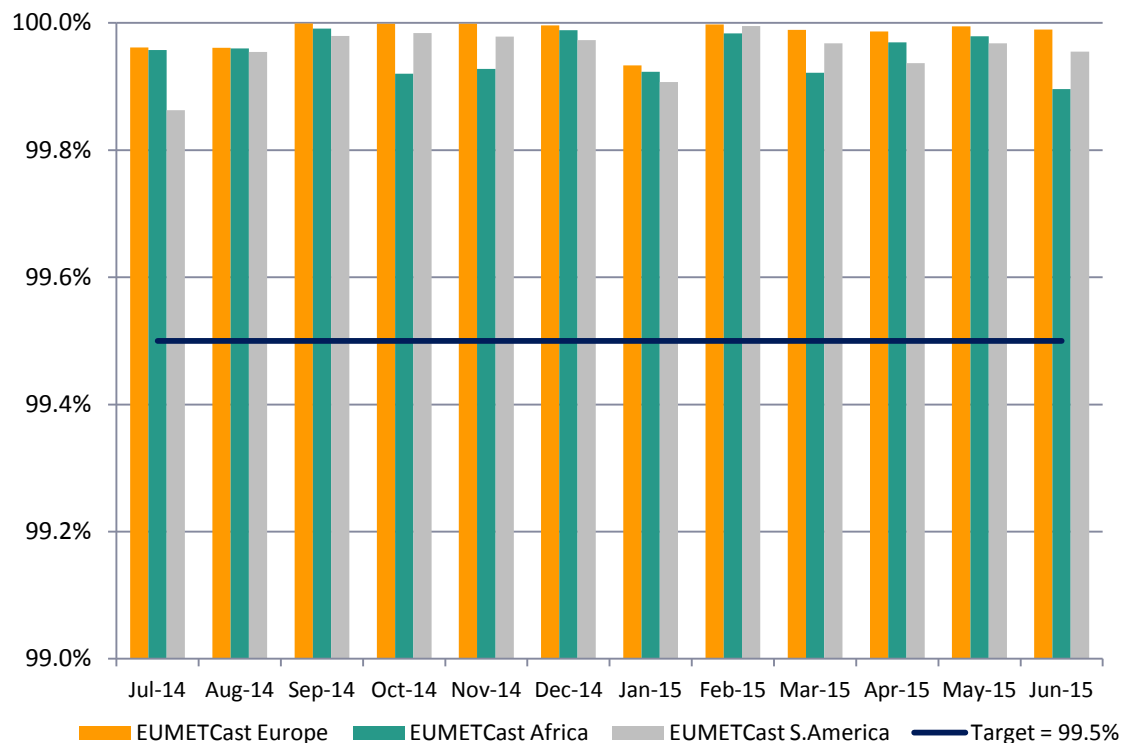
**July 2014:** EUMETCast S. America impacted by a network problem.

**Jan 2015:** EUMETCast Europe impacted by service provider's network maintenance and some transponder interference.

**June 2015:** EUMETCast Africa impacted by a receiver problem at the turnaround station.

**NOTE:** The chart shows the statistics for EUMETCast Europe based on DVB-S until the service ended officially on 31-Dec-2014.

EUMETCast Europe based on DVB-S2 ran in parallel from 14-Aug-2014 onwards, and became the only service as of 1-Jan-2015. Its availability during the period of parallel operations was as high as that of DVB-S.



# EUMETSAT Central Operations Report for January - June 2015

## EUMETCast → Registered User Stations

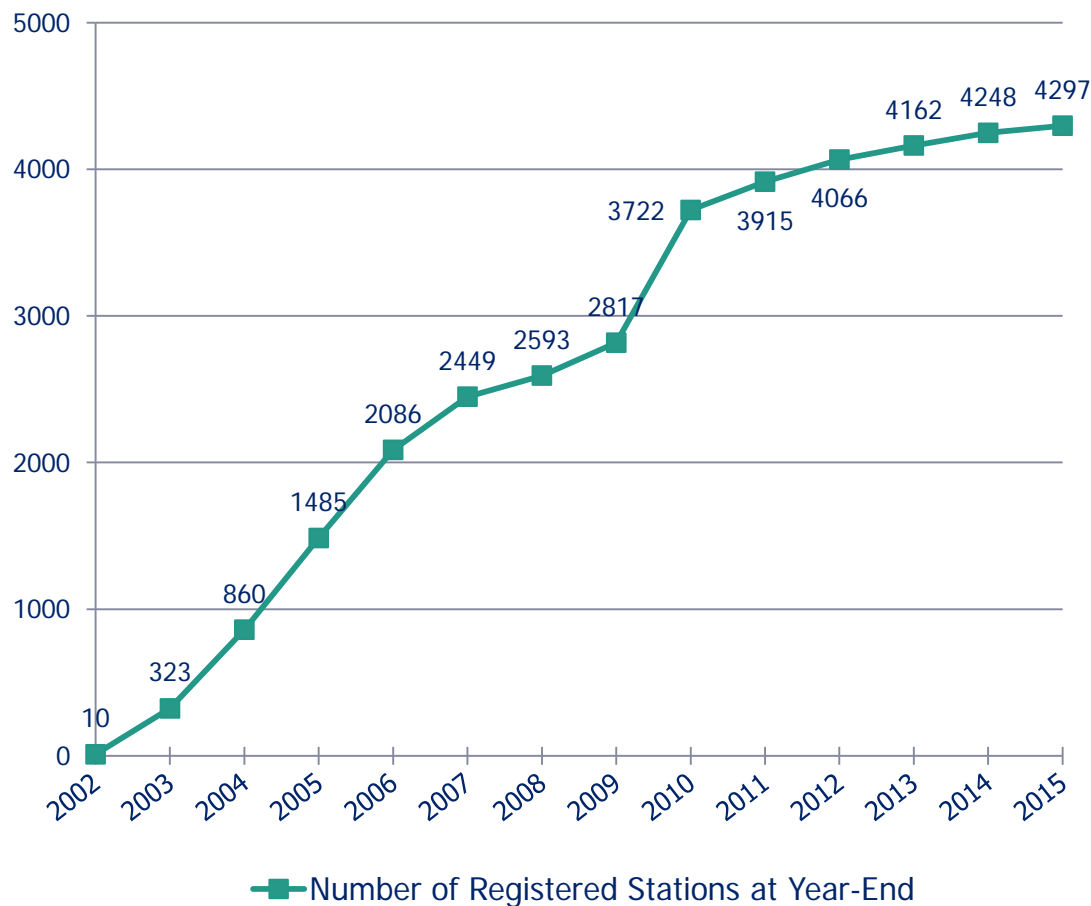
The chart shows the trend of registrations of EUMETCast user stations.

The EUMETCast system had its 10<sup>th</sup> anniversary in April 2013.

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

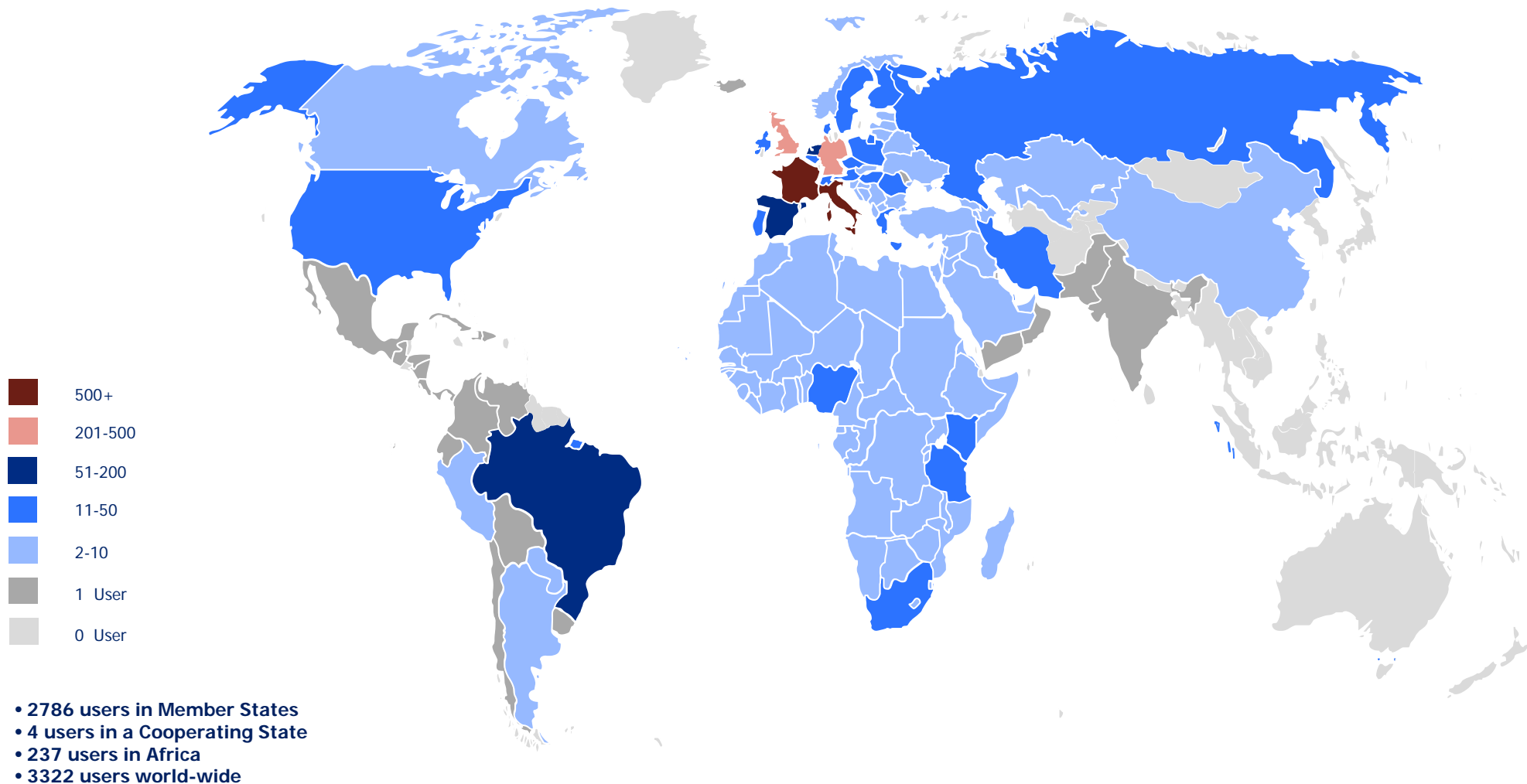
The figure given for 2015 shows the number of registered stations at the end of June of this year.

**Note:** The number of registered user stations is larger than the number of users (shown on the next slide) due to some organisations possessing several user stations.



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## EUMETCast → Users Worldwide as of 30 June 2015



## 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 3 slides:

- Data Delivered: Total Volume versus Items
- Archive Orders versus Data To Be Retrieved
- Archive Order Delivery-Time Trends

Note that the charts do not include orders and deliveries of Climate Data Records (CDRs). Although the volumes of CDR deliveries are large (typically many TBs), they are not logged in the automated statistics provided by EUMETSAT's Data Centre.

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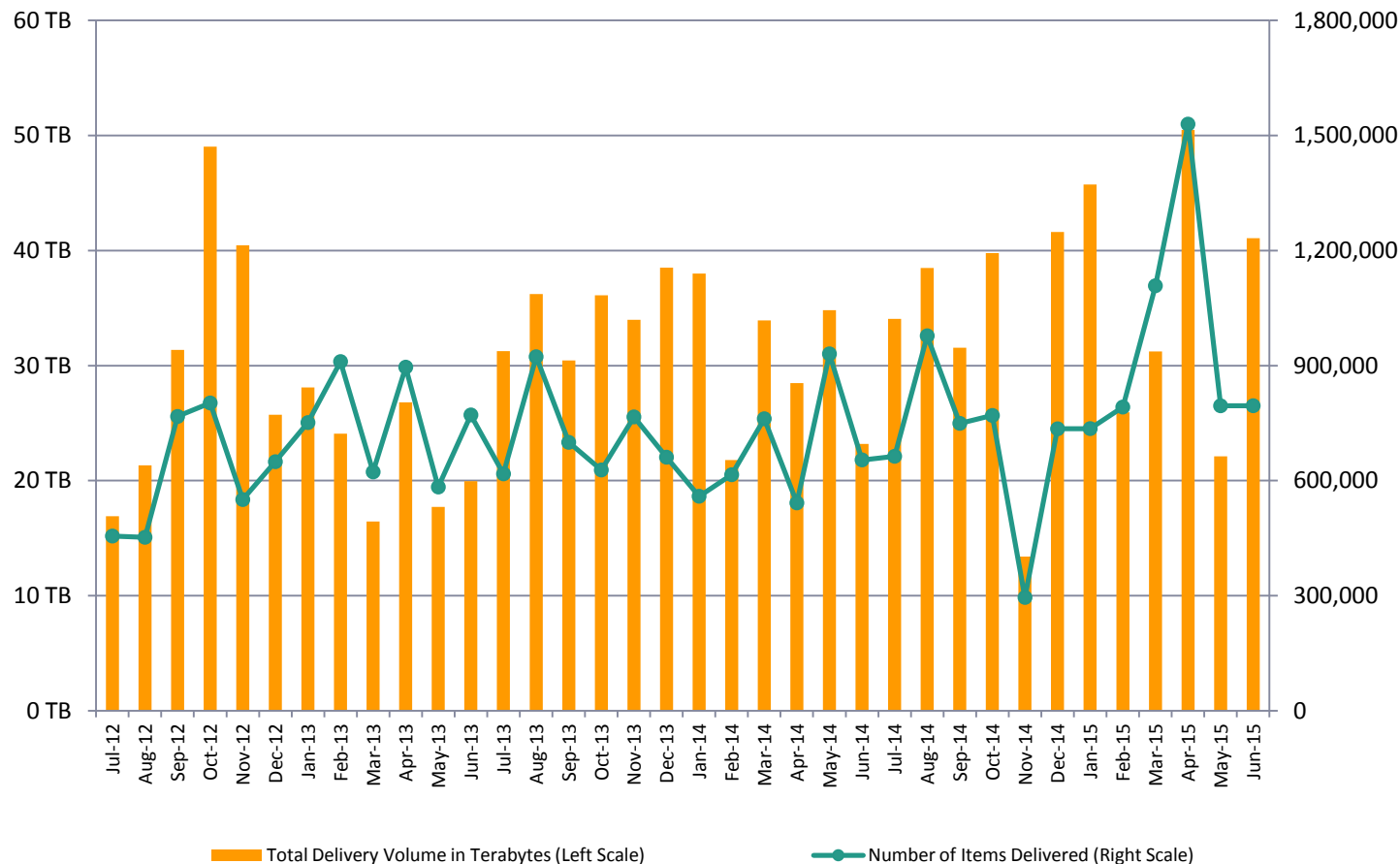
## The EUMETSAT Data Centre → Data Delivered: Total Volume versus Items

The chart shows the number of items delivered monthly to the users by the Data Centre, and the corresponding monthly total volumes of data delivered, in the 3 years up to the end of the first half of 2015.

Items comprise images, products and ancillary files, and the statistics include all items supplied for all types of orders (regular, bulk and standing).

### Notes:

- (1) Oct / Nov 2012: The peaks in delivery volumes were partly attributable to orders for newly-available Metop-B data.
- (2) Nov 2014: A drop in deliveries due to problems encountered with a major software upgrade.
- (3) April 2015: peak volume and items due to very large orders (see next slide)



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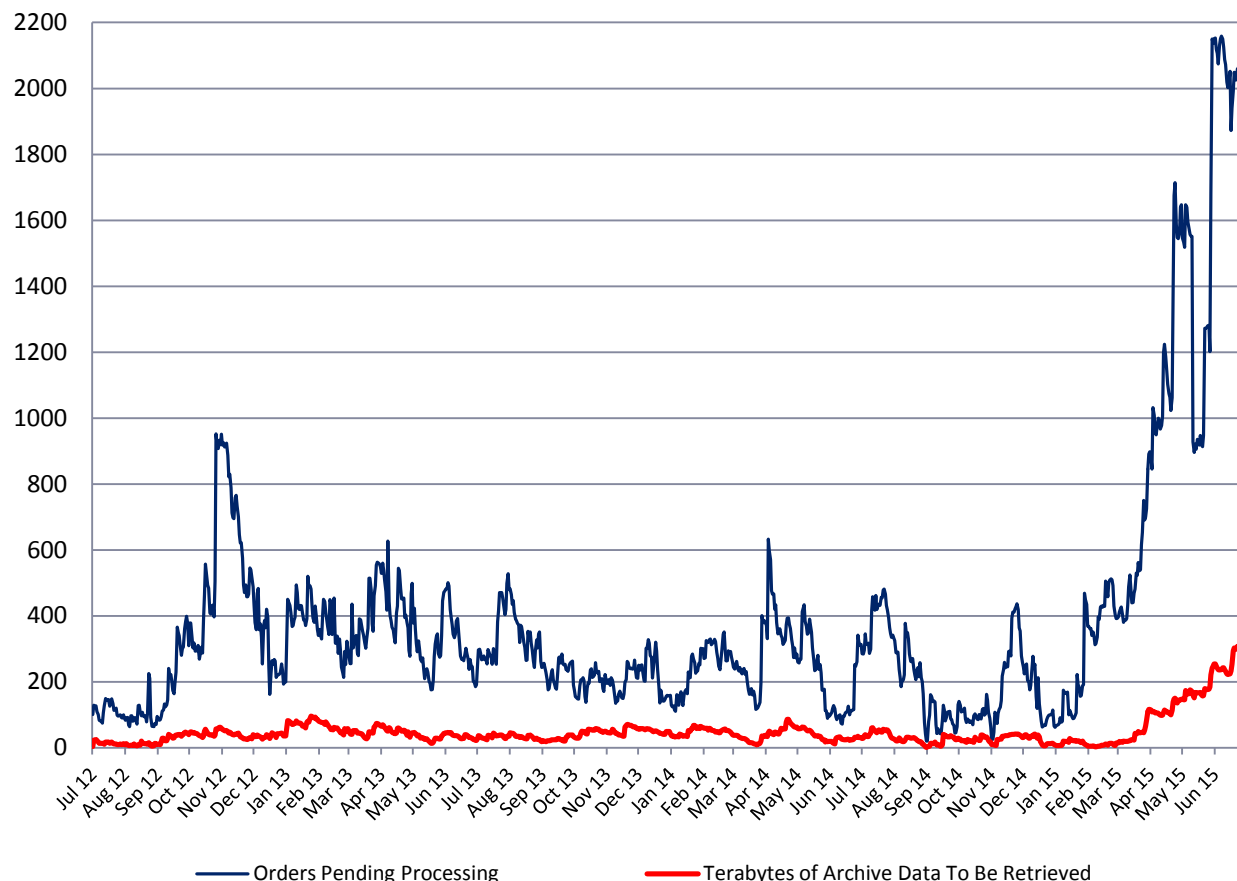
## The EUMETSAT Data Centre → Archive Orders versus Data To Be Retrieved

The chart shows the day-by-day profile of archive orders awaiting processing, against the related volume of data needing to be retrieved from the archive and processed to satisfy the queued orders.

The chart is based on observed daily maximum orders and estimated retrieval volumes which are recorded automatically for each day of the year.

### Notes:

- (1) Peak in Oct/Nov 2012: large number of orders of few items, many requiring media delivery, competing for system resources.
- (2) March 2015 onwards: significant increase in both orders pending and terabytes to be retrieved, attributable to high interest in archived data and a few exceptionally large orders from a small group of users. The situation is being actively managed to ensure overall order turnaround times of the system remain good.



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## The EUMETSAT Data Centre → Archive Order Delivery-Time Trends

The 3 charts show delivery-time ranges for Data Centre orders according to 3 categories of order size (Small, Medium & Large), for each of the half-year periods shown on the horizontal axis. The left-hand scales help to show the proportions of the total orders delivered in the indicated time ranges (note: standing orders not included).

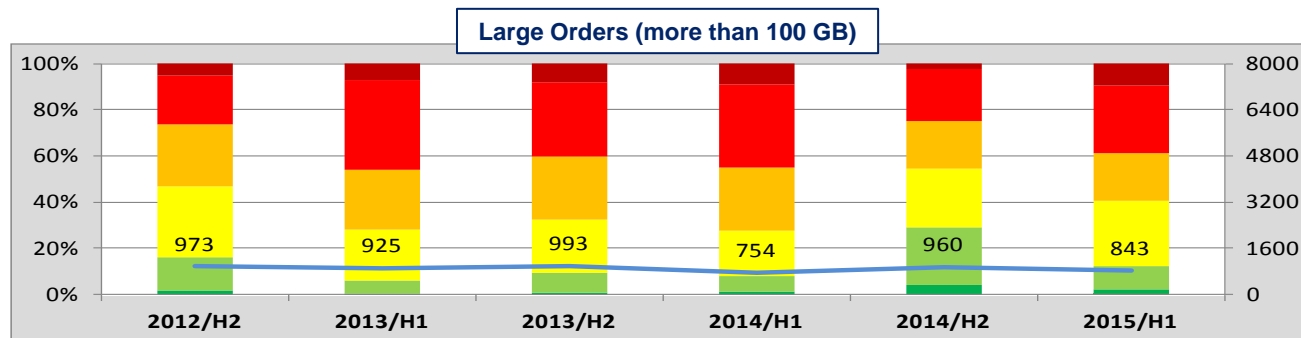
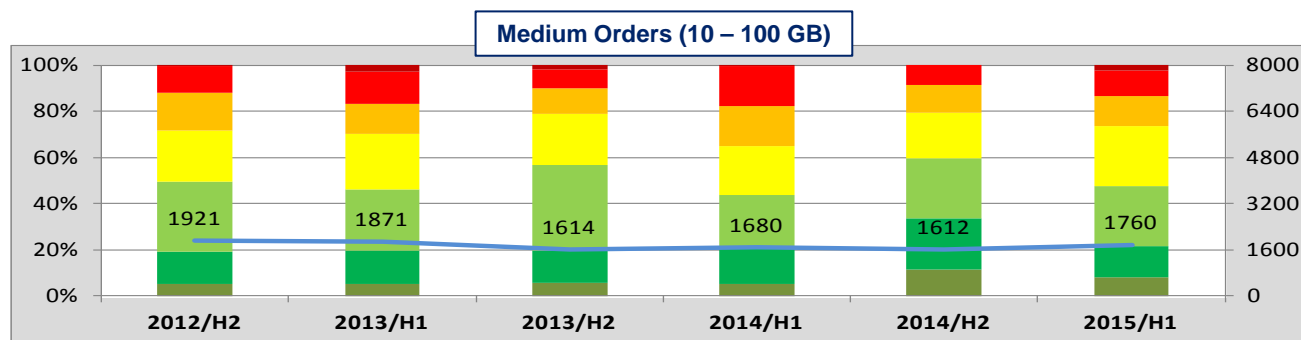
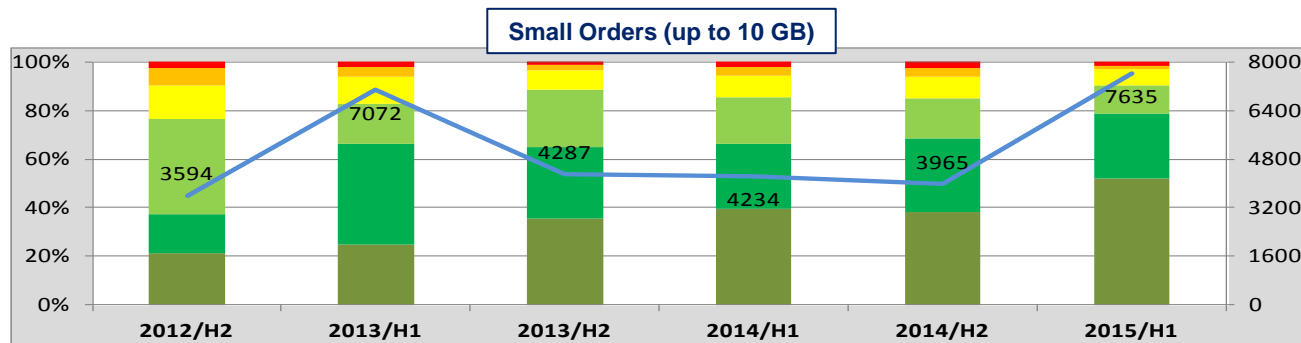
The colour-coding for the delivery-time bands on each of vertical bars on each chart is as follows:



The blue lines indicate the total orders per half year for each category (right-hand scales apply).

Total orders across all 3 categories were:

2012/H2: 6488	2013/H1: 9868
2013/H2: 6894	2014/H1: 6668
2014/H2: 6537	2015/H1: 10238



## EUMETSAT Climate Services

EUMETSAT contributes to climate monitoring and climate change analysis by reprocessing sensor data and products from Meteosat and Metop satellites held in its archive. Improved processing algorithms are applied to the data collected since the 1980's, producing data records with improved overall consistency, with artefacts introduced during past satellite lifetimes corrected.

The following slide gives an overview of the new Climate Data Records made available in EUMETSAT's archive in the reporting period.

For further information on EUMETSAT's role in Climate Monitoring and the European Climate Projects in which it is involved, please see the '[Monitoring Climate](#)' page whose link can be found on the 'What We Do' section under 'About Us' on the EUMETSAT website.

## EUMETSAT Climate Services → Climate Data Record (CDR) Generation

Climate Data Records (CDRs) production status at the end of the reporting period:

**Metop-A AVHRR Polar Atmospheric Motion Vectors**

Period: March 2007 – December 2014:

Rerun of CDR with updated processor finalised, evaluation ongoing.

**Metop-A ASCAT L1b**

Period: January 2007 – March 2014:

FCDR Release 2 finalised, archiving completed, can be ordered from the Data Centre.

**Metop-A GRAS L1b (Geometric Optics approach)**

Period: January 2007 – March 2014:

Processing run with wave optics approach finalised, evaluation ongoing.

**Meteosat-8 and 9 SEVIRI Atmospheric Motion Vectors, Clear and All Sky Radiance**

Period: January 2004 – December 2012:

CDR finalised, available on request, archiving planned for August/September.

## Helpdesk Service

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

This section includes charts on the following subjects:

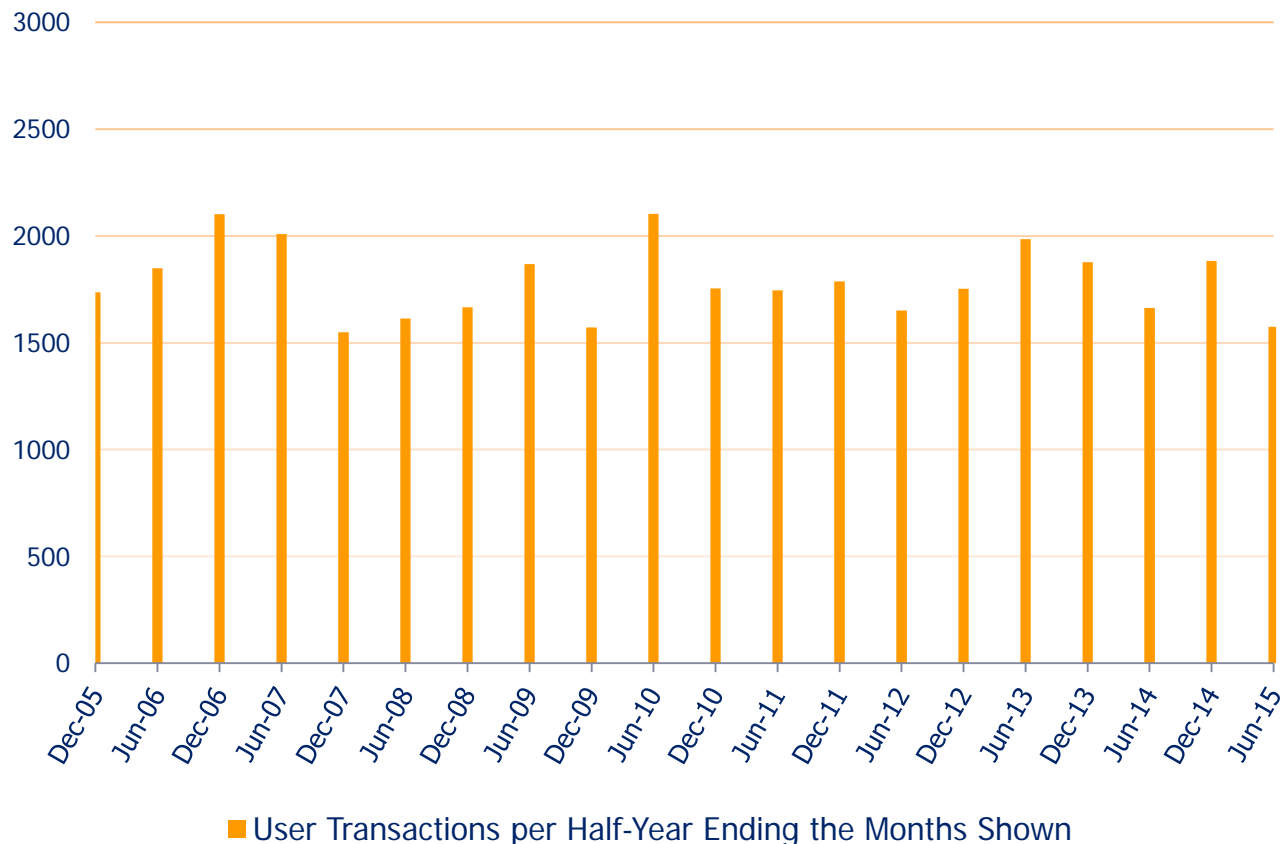
- User interaction history of the last 10 years
- The countries and groups that gave rise to the largest numbers of user interactions in the reporting period
- Breakdown of those user interactions by category

# EUMETSAT Central Operations Report for January - June 2015

## Helpdesk Service → User Interaction History

The chart shows the number of user interactions handled by EUMETSAT's User Helpdesk in each half-year of the last 10 years.

The next 2 slides focus on the user interactions for the current reporting period, in which a total of **1575** interactions were handled.



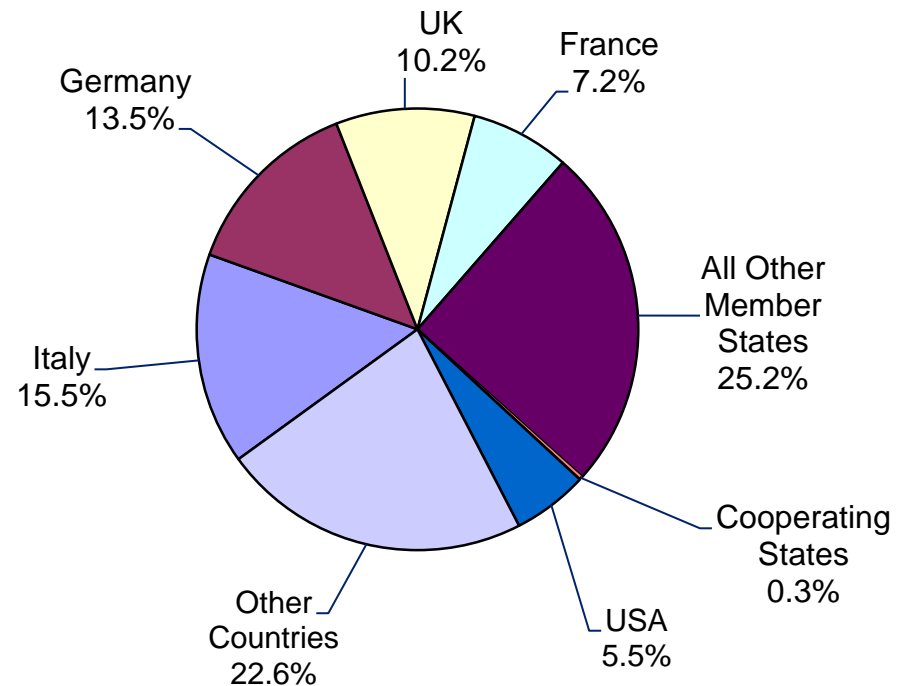
# EUMETSAT Central Operations Report for January - June 2015

## Helpdesk Service → User Interactions 2015/H1 by Country of Origin

The chart shows the interactions in the first half of 2015 from:

(1) the 5 countries 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.



# EUMETSAT Central Operations Report for January - June 2015

## Helpdesk Service → User Interactions 2015/H1 by Category

The chart shows the numbers of user interactions in the first half of 2015 for:

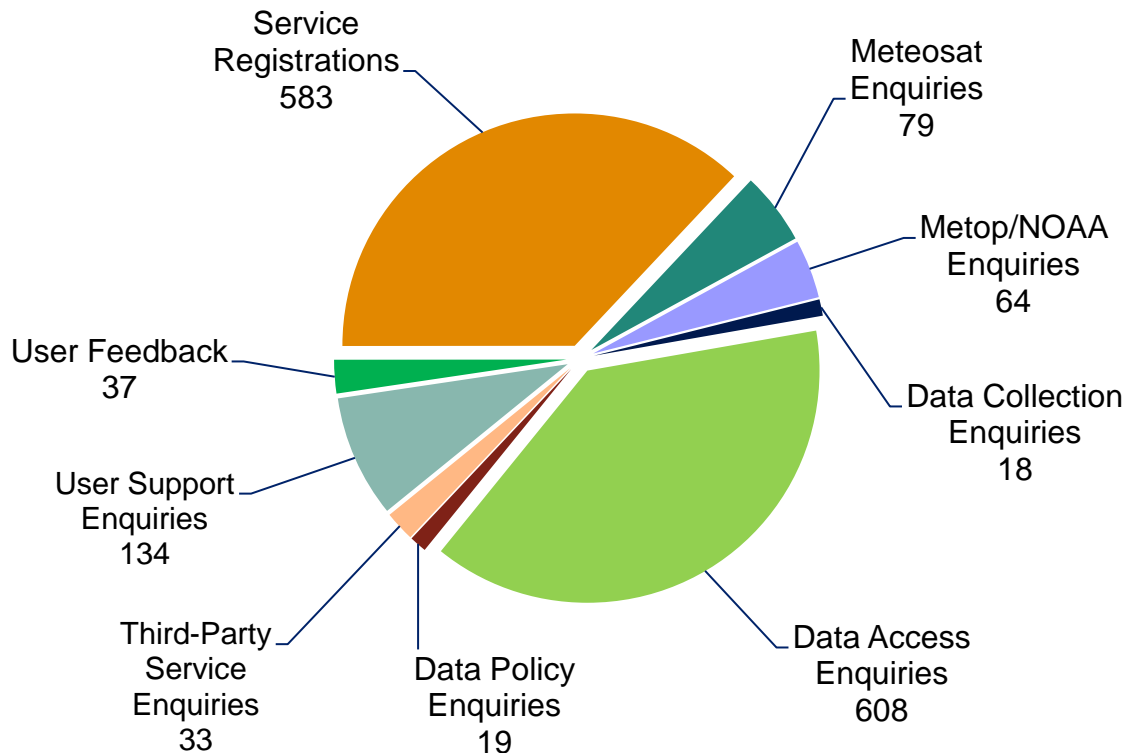
- Service Enquiries (7 categories)
- Service Registrations
- User Feedback

Total interactions for the half-year came to **1575**.

### Notes:

(1) 'User Support Enquiries' on the chart refer to enquiries related to service messages, web information and training.

(2) 'User Feedback' includes comments on our services and suggestions for improvement



## Changes to EUMETSAT's Services

Please see the following on the EUMETSAT website, [www.eumetsat.int](http://www.eumetsat.int) :

- For new releases: from the menu-bar: [Data](#) → 'Related News' on left, use 'View All' at the foot of the section
- For past releases: 'Data' → 'Service Status' (scroll down) → [Product History](#)

Details of all products can be found in EUMETSAT's Product Navigator, accessible under 'Quick Links' from the website's menu-bar.

# EUMETSAT Central Operations Report for January - June 2015

## 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-SNPP-NOAA GDS	ADVANCED DATA COLLECTION SYSTEM. Metop instruments contributing to Argos programme. Acquisition and transmission of signals from transmitters on buoys, ships, land sites and mobiles.
AMSU-A	Metop-SNPP-NOAA GDS	ADVANCED MICROWAVE SOUNDING UNIT-A. Multi-channel microwave radiometer used in combination with the HIRS instrument for measuring global atmospheric temperature profiles.
ASCAT	Metop-SNPP-NOAA GDS	ADVANCED SCATTEROMETER. C-band radar which measures near-surface wind speed and direction over the global ocean, and soil moisture.
ATOVS	Metop-SNPP-NOAA GDS	ADVANCED TIROS OPERATIONAL VERTICAL SOUNDERS. 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-SNPP-NOAA GDS	ADVANCED VERY HIGH RESOLUTION RADIOMETER. Multi-spectral imaging instrument which produces global visible, near-infrared and infrared imagery of clouds, oceans and land surfaces.
CMA	Third-Party Data	China Meteorological Administration ( <a href="http://2011.cma.gov.cn/en/aboutcma/">http://2011.cma.gov.cn/en/aboutcma/</a> )
Colinearity	Meteosat	Sun, satellite and ground station come into alignment twice a year, giving rise to disruption of uplink and downlink signals, resulting in partial loss of some images.
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.
FDES	Regional Data Services	Fast Dump Extract System: This mechanism provides fast access to the most recent part of each X-band dump and transfers the relevant data to the EARS system for Level 1 processing.
FES	Meteosat	Full-Earth Scanning, where the SEVIRI instrument scans the full Earth disc (c.f. RSS).

# EUMETSAT Central Operations Report for January - June 2015

## Glossary (continued)

Term	Context in which used	Description
Formats	Meteosat (IODC)	This refers to the High-Resolution Image (HRI) formats disseminated via Meteosat-7's direct dissemination broadcasts.
GDS	Metop-SNPP-NOAA GDS	<b>GLOBAL DATA SERVICE.</b> This is EUMETSAT's service delivering L0, L1 and L2 data and products based on instrument data acquired from the Metop, S-NPP and NOAA Low-Earth-Orbiting satellites.
GOME-2	Metop-SNPP-NOAA GDS	<b>GLOBAL OZONE MONITORING EXPERIMENT-2.</b> Scanning spectrometer instrument used to measure profiles and columnar amounts of ozone and other atmospheric constituents.
GRAS	Metop-SNPP-NOAA GDS	<b>GNSS RECEIVER FOR ATMOSPHERIC SOUNDING.</b> Radio occultation instrument for temperature profiling in the troposphere and stratosphere with high vertical resolution.
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-SNPP-NOAA GDS	<b>HIGH-RESOLUTION INFRARED RADIATION SOUNDER.</b> Heritage atmospheric soundings of temperature and humidity in cloud-free conditions.
IASI	Metop-SNPP-NOAA GDS	<b>INFRARED ATMOSPHERIC SOUNDING INTERFEROMETER.</b> A multi-purpose sounding instrument used for enhanced atmospheric soundings of temperature, humidity and trace gases in cloud-free and partly-cloudy conditions, as well as surface temperature, cloud characteristics and surface emissivity.
JMA	Third-Party Data	Japan Meteorological Agency ( <a href="http://www.jma.go.jp/jma/indexe.html">http://www.jma.go.jp/jma/indexe.html</a> )

# EUMETSAT Central Operations Report for January - June 2015

## Glossary (continued)

Term	Context in which used	Description
Level 0	Metop-SNPP-NOAA GDS	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-SNPP-NOAA GDS	Instrument data in full resolution with radiometric and geometric (i.e. Earth location) calibration computed and appended but not applied.
Level 1B	Metop-SNPP-NOAA GDS	Calibrated, earth-located and quality-controlled product, in the original pixel location, packaged with ancillary, engineering and auxiliary data.
Level 1C	Metop-SNPP-NOAA GDS	In the case of the IASI spectra, Level 1B data after the application of the apodization function.
Level 1D	Metop-SNPP-NOAA Regional Data	For EARS-ATOVS, AVHRR derived cloud information on HIRS grid.
Level 2	Metop-SNPP-NOAA GDS	Earth-located values converted to geophysical parameters at the same spatial and temporal sampling as the Level 1B and 1C data.

# EUMETSAT Central Operations Report for January - June 2015

## Glossary (continued)

Term	Context in which used	Description
MHS	Metop-SNPP-NOAA GDS	MICROWAVE HUMIDITY SOUNDER. 5-channel microwave instrument for atmospheric humidity sounding in all weather conditions.
NOAA	Metop-SNPP-NOAA GDS and Third-Party	National Oceanic and Atmospheric Administration ( <a href="http://www.noaa.gov/">http://www.noaa.gov/</a> )
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.
OOP	Metop	‘Out-Of-Plane’ manoeuvre, i.e. one conducted with a Metop satellite in order to adjust the inclination of its orbit.
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.

# EUMETSAT Central Operations Report for January - June 2015

## Glossary (continued)

(end of report)

Term	Context in which used	Description
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).
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-SNPP-NOAA GDS	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 charged particles (e.g. solar), possibly resulting in a switch-off of an electronic system.
SEVIRI	Meteosat Second Generation (MSG)	Spinning Enhanced Visible and Infra-Red Imager