

ENHANCEMENT TO THE EUMETSAT USER NOTIFICATION SERVICE

Working Paper Abstract

Providing the correct level of service notification to a diverse user community is a challenge. EUMETSAT hopes that through its planned enhancements these diverse user needs will be met.

EUMETSAT plans to centralise all service notification information through the use of a common message generation tool, which incorporates common templates and terminology and by developing central web applications to display service status information. The enhanced UNS incorporates the following modifications:

1. User Messaging System (UMS) – a new central tool for generating service messages (alert notifications and planned operational activities);
2. Web-based message archive to display current and historical service messages generated by the UMS;
3. Operational Service Status Indicator (OSSI) – an enhanced traffic-light indicator to show in near real-time the status of all the data and product services generated by the EUMETSAT Application Ground Segment;

Through the consolidation of user message generation and a central web display, EUMETSAT expects to maximise the benefits for the user community whilst streamlining the internal procedures and mechanisms used to generate and maintain multi-mission service news and notifications.

The above enhancements to the UNS are currently in development with close out expected by mid-2011.

Enhancement to the EUMETSAT User Notification Service

1 INTRODUCTION

The current EUMETSAT User Notification Service (UNS) refers to a web-based application providing messages for users of services delivered via EUMETCast and the Metop Direct Readout Service. There are however other separate service notification mechanisms in use for other services, such as the Meteosat Direct Dissemination service, partner and EUMETSAT Delegate Bodies notifications and automated information to users, e.g. EUMETCast daily logs all of which could be considered part of an extended UNS.

EUMETSAT plans to centralise all service notification information through the use of a common message generation tool, which incorporates common templates and terminology and by developing central web applications to display service status information. The enhanced UNS incorporates the following modifications:

1. User Messaging System (UMS) – a new central tool for generating service messages (alert notifications and planned operational activities);
2. Web-based message archive to display current and historical service messages generated by the UMS;
3. Operational Service Status Indicator (OSSSI) – an enhanced traffic-light indicator to show in near real-time the status of all the data and product services generated by the EUMETSAT Application Ground Segment;

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2 USER MESSAGING SYSTEM

2.1 User Messaging System Overview

The purpose of the User Messaging System (UMS) is to provide a single, centrally controlled, application for interactions with the users concerning the status of the EUMETSAT operational services. This interface will be used by the internal teams at EUMETSAT to send information about the operational services to end users and partners via a variety of distribution mechanisms: EUMETCast, Web, Email, GTS/RMDCN.

The UMS system is expected to have an operational life spanning several satellite programmes and will be used across programmes (MTP, MSG, EPS, Jason, Sentinel-3, MTG). It is expected that during this time, a number of changes and evolutions to the user roles, recipients and message types can be expected. The system is being scoped to enable these changes to be incorporated with minimum impact on on-going operational use.

2.2 Message Types

The UMS will be used to create user notifications. These notifications fall into the following categories or types:

- **Schedule Information:**
 - planned maintenance activities, e.g. spacecraft manoeuvres, instrument decontamination, ground station antenna maintenance, etc. all of which may result in a temporary service outage/degradation
 - service enhancement information, e.g. product format changes, product content changes and the introduction of new products.
- **Service Alerts:** notification of unplanned spacecraft or ground segment anomalies which cause service outage/degradation for an extended period such as:
 - Payload Switch Off and Safe Modes;
 - Missing satellite dump/s (Metop/NOAA) or missing products derived from instrument data processing cycles
 - Ground segment outages caused by failed data communication links, or delays caused by dissemination systems, etc.
- **Service Messages:** notifications to industry, partners and special user groups, e.g. Delegate Bodies

2.3 Message output

The messages generated by the new UMS will be made available to the user community via the following distribution methods:

Email:

- In early 2011, users will be able to register via the EUMETSAT Earth Observation Portal for those messages they wish to receive via email

Web pages:

- A new web application which will allow users to search and display current and historical user announcements is under development, for details see Section 3;

EUMETCast:

- For the announcements relevant to the services disseminated on EUMETCast

Direct Dissemination

- For announcements which form part of the Administrative messages of the LRIT Direct Dissemination and Metop Direct Readout services

2.4 Message Templates

A new set of standard templates for all alert and scheduled messages are being defined. A message will consist of "*Message Generic Information*". The Message Generic Information consists of information relevant to the entire message, e.g. Message Title, ID, Creation date/time, contact details. Each message will comprise of one or more "*Announcements*". An announcement will have an associated sequence number, validity period, subject and text content. Each announcement will be applicable to one or more "*Service*". Each announcement will relate to one or more "*Announcement-Group*", this group determines the method of distribution (email groupings, EUMETCast, web-page, satellite direct dissemination).

See Figure 1 for an example of the message structure concept applied to a schedule message, the Weekly Operations Schedule.

In the case of Service Alerts which are typically issued as a result of spacecraft or ground segment anomalies, three “*Announcements*” categories are envisaged per event:

- **Error**, identifying the fact that a period of degraded service has been entered, and clarifying the reason for the degradation;
- **Status**, clarifying the activities being undertaking to facilitate the recovery, and the expected period of outage (depending upon the duration of the anomaly several status announcements may be generated);
- **Recovery**, identifying that the Error has been resolved and that normal services have been resumed.

The tagging of announcements with their own sequence number and characteristics allows for more flexibility in the announcement distribution, e.g. via email, or through web display.

Message	Weekly Operations Schedule	
Message Generic Information	<i>Message name</i>	Weekly Operations Schedule
	<i>Message ID</i>	WOS-0001-seq-1
	<i>Generation date/time</i>	15/04/10 at 13:07:30
	<i>Contact details</i>	INFORMATION: For further information, please contact the EUMETSAT User Services Helpdesk Tel: +49 6151 807 366 Fax: +49 6151 807 379 Email: ops@eumetsat.int www.eumetsat.int
Section	Planned Maintenance activities for week 32/2010:	
Announcement-group	Meteosat RSS	
Announcement	<i>Sequence Number</i>	WOS-PA-RSS-0001
	<i>Subject</i>	Planned Maintenance
	<i>Service</i>	Meteosat Meteorological Products
	<i>Validity time</i>	20 April 2010 11:00 - 13:00 UTC
	<i>Text</i>	Essential software upgrade on Image Processing Facility High risk of interruption to all Meteosat-8 image data and meteorological products
Section	Planned Data and Product Enhancements for week 32/2010:	
Announcement-group	Global Data Service - Metop	
Announcement	<i>Sequence Number</i>	WOS-PE-GDSM-0001
	<i>Subject</i>	Product Modification
	<i>Service</i>	IASI Sounding Products
	<i>Validity time</i>	07 September 2010
	<i>Text</i>	Upgrade of IASI Level 2 processor This will bring overall improvement of TWT (Atmospheric Temperature

		Water Vapour), CLP (Cloud Parameters) product and operational quality for Ozone products and CO in the TRG (Trace Gases) product.
Announcement-group	Global Data Service	Service - Metop
Announcement	<i>Sequence Number</i>	WOS-PE-GDSM-0002
	<i>Subject</i>	Product Introduction
	<i>Service</i>	IASI PCS
	<i>Service</i>	IASI Level 1 GDS
	<i>Validity time</i>	15 September 2010
	<i>Text</i>	IASI Principal Component Scores products available on EUMETCast For full details, please see : http://www.eumetsat.int/Home/Main/News/OperationalNews/800964?l=en

Figure 1: UMS Message Template

3 MESSAGE ARCHIVE AND DISPLAY

One important development in the planned upgrade to the UNS will be the enhanced message display and archive on the EUMETSAT website. The current UNS provides an archive of the messages it generates, but it does not provide the functionality to easily search all recorded changes, be they as a result of an instrument sensor modification, enhancement to a product processing chain or a temporary service outages as a result of planned maintenance activities.

The goal of the new user notification archive is to provide users with an application which allows them to view future, current and historical product/service enhancements and planned operational maintenance activities. The application through pre-configured filters will allow users to query and display announcements according to their own requirements. The following categorisations are being considered for inclusion:

Instrument/sensor Filter:

Meteosat Second Generation:

- SEVIRI
- GERB

Metop-A:

- ASCAT
- GRAS
- GOME-2
- IASI, etc....

Service Filter:

Global Data Service – Metop-A – covering:




- AVHRR L1b
- AMSU L1b
- MHS L1b
- HIRS L1b
- ASCAT L1b

- IASI L1c
- IASI PCS
- GRAS L1b
- GOME L1b
- ATOVS Sounding Products
- IASI Sounding Products
- ASCAT Surface Soil Moisture
- AVHRR Polar Winds

Meteosat 0° - covering:

- High Rate SEVIRI
- Low Rate SEVIRI
- Meteosat Meteorological Products, etc.....

Announcement Filter:

-  - Service/product enhancement/change. Users may need to modify their downstream processing systems in order to benefit from the enhancement/change
-  - Service alert due to a scheduled maintenance activity resulting in service outage/degradation
-  - Service alert due to an unplanned service outage/degradation

Date Filter: to allow the selection by time range (announcements for future planned events and historical scheduled and unscheduled events).

In addition to the message archive application, EUMETSAT is considering the introduction of an interactive calendar to display planned operational activities.

To ensure visibility of significant service outages a web alert ticker will be developed aimed at drawing the user's attention to specific alert triggered by an unplanned event. A prototype of the alert ticker is being trialled on the Service Status page of the EUMETSAT website, see Figure 2.

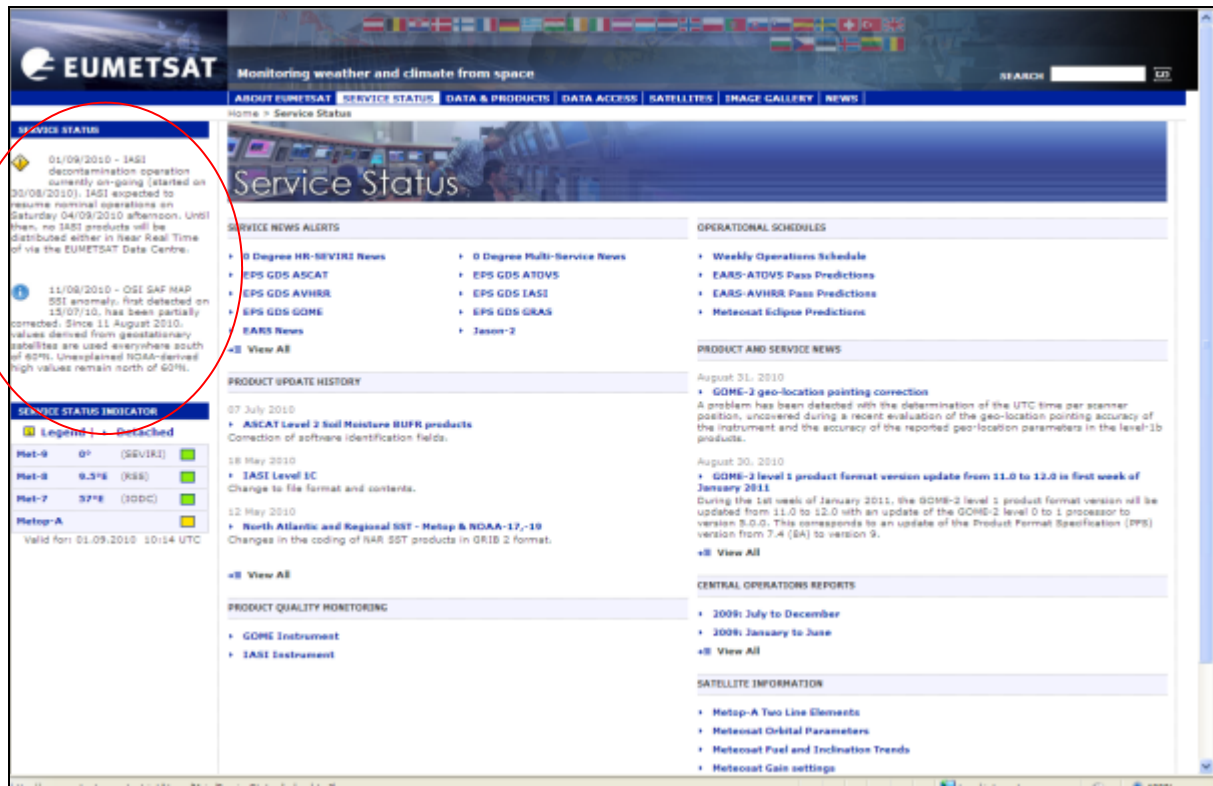


Figure 2: Alert Ticker on Service Status Page

4 OPERATIONAL SERVICE STATUS INDICATOR

The Operational Service Status Indicator (OSSI) provides a quick view of disseminated services and their availability over a given elapsed period of time. The OSSI is an output of an automated end-to-end monitoring tool which monitors the services against preset availability and timeliness expectations.

Currently only a summary level is provided to the user community in the form of a traffic light colour-coded indicator. However, it is proposed to extend this to allow the user to drill down to a specific “repeat cycle” in the case of Meteosat services, or “PDU”s in the case of Metop services, thus providing the user with more precise information on the service outage.

The enhanced OSSI will provide in near-real-time service availability and timeliness information categorised into the following levels:

Level 1 – Service Status Overview

- High level service overview e.g. Metop Global Data Service or Meteosat 0° Service

Level 2 – Product Status Overview

- Breakdown by processing chain per service, (e.g. for Metop Global Data Service a breakdown per instrument processing chain - AVHRR 1b, ASCAT Level 1b,

etc.) and per dissemination mechanism (EUMETCast-Europe, EUMETCast-Africa and EUMETCast-Europe, etc.)

Level 3 – Detailed Product Status

- Detailed information per processing chain, e.g. Meteosat Meteorological Products, indicating the specific repeat cycle and/or PDUs effected.

Figure 3, provides an indication of how the information per level will be displayed to the user.

The enhanced OSSI complements the other user notification services. With the provision of detailed service availability information in near real time via the website, users will be able to easily check any local reception losses against the information provided in the OSSI. In turn this will reduce the need to send email notifications for short, i.e. single repeat cycle, outages. Email notifications will be reserved for significant service outages, e.g. spacecraft safe modes, or ground segment anomalies impacting product generation and/or product delivery for an extended period of time, e.g. outages which extend beyond 60-minutes.

The enhanced OSSI complements the already existing Daily Log service. The Daily Logs are ASCII reports which provide completeness information for files disseminated on EUMETCast. These reports are based upon EUMETCast reference station end-to-end monitoring outputs and provide an indication of whether data files from a particular product group (service) were successfully sent or not sent on EUMETCast. The reports which are disseminated on EUMETCast are typically generated in the morning and cover the previous 24-hour period.

The development of the enhanced OSSI is due to begin in September 2011 with the final service expected to be available on the EUMETSAT web site by the end of 2011.










LEVEL 1			LEVEL 2				LEVEL 3																														
Service Status Overview			Product Status Overview				Detailed Product Status Report																														
			0° Service																																		
						Day	Time	Time	Event Name	Status	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h05m00s	95%	100%	
0° Service	Met-9		0° HR-SEVIRI Data				2009/10/29 302	29/10/2009 14:30	14:30	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h05m00s	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h04m14s	95%	100%	0h05m00s	0h04m14s	95%	100%	0h05m00s	0h04m14s	95%	100%
			0° LR-SEVIRI Data				2009/10/29 302	29/10/2009 14:45	14:45	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m33s	95%	100%	0h05m00s	0h03m29s	95%	100%	0h05m00s	0h03m29s	95%	100%	0h05m00s	0h04m17s	95%	100%	0h05m00s	0h04m17s	95%	100%	0h05m00s	0h04m17s	95%	100%
			0° Meteosat Meteorological Products				2009/10/29 302	29/10/2009 15:00	15:00	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m25s	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h04m08s	95%	100%	0h05m00s	0h04m08s	95%	100%	0h05m00s	0h04m08s	95%	100%
							2009/10/29 302	29/10/2009 15:15	15:15	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m43s	95%	100%	0h05m00s	0h03m43s	95%	100%	0h05m00s	0h03m43s	95%	100%	0h05m00s	0h04m31s	95%	100%	0h05m00s	0h04m31s	95%	100%	0h05m00s	0h04m31s	95%	100%
							2009/10/29 302	29/10/2009 15:30	15:30	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h03m25s	95%	100%	0h05m00s	0h03m25s	95%	100%	0h05m00s	0h04m14s	95%	100%	0h05m00s	0h04m14s	95%	100%	0h05m00s	0h04m14s	95%	100%
							2009/10/29 302	29/10/2009 15:45	15:45	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m46s	95%	100%	0h05m00s	0h03m46s	95%	100%	0h05m00s	0h03m46s	95%	100%	0h05m00s	0h04m23s	95%	100%	0h05m00s	0h04m23s	95%	100%	0h05m00s	0h04m23s	95%	100%
							2009/10/29 302	29/10/2009 16:00	16:00	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m29s	95%	100%	0h05m00s	0h03m27s	95%	100%	0h05m00s	0h03m27s	95%	100%	0h05m00s	0h04m11s	95%	100%	0h05m00s	0h04m11s	95%	100%	0h05m00s	0h04m11s	95%	100%
							2009/10/29 302	29/10/2009 16:15	16:15	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m33s	95%	100%	0h05m00s	0h03m34s	95%	100%	0h05m00s	0h03m34s	95%	100%	0h05m00s	0h04m10s	95%	100%	0h05m00s	0h04m10s	95%	100%	0h05m00s	0h04m10s	95%	100%
							2009/10/29 302	29/10/2009 16:30	16:30	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m32s	95%	100%	0h05m00s	0h03m32s	95%	100%	0h05m00s	0h03m32s	95%	100%	0h05m00s	0h04m16s	95%	100%	0h05m00s	0h04m16s	95%	100%	0h05m00s	0h04m16s	95%	100%
							2009/10/29 302	29/10/2009 16:45	16:45	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m26s	95%	100%	0h05m00s	0h03m27s	95%	100%	0h05m00s	0h03m27s	95%	100%	0h05m00s	0h04m15s	95%	100%	0h05m00s	0h04m15s	95%	100%	0h05m00s	0h04m15s	95%	100%
							2009/10/29 302	29/10/2009 17:00	17:00	0deg HR-SEVIRI Data	Met-9	95%	100%	0h05m00s	0h03m00s	95%	100%	0h05m00s	0h03m27s	95%	0%	0h05m00s	0h03m27s	95%	0%	0h05m00s	0h04m12s	95%	0%	0h05m00s	0h04m12s	95%	0%	0h05m00s	0h04m12s	95%	0%

Figure 3: OSSI Display Overview

5 CONCLUSIONS

Providing the correct level of service notification to a diverse user community is a challenge. EUMETSAT hopes that through its planned enhancements these diverse user needs will be met.

The multi-notification approach: email notification; web-based message display and delivery through dissemination systems; allows users to select the delivery method most appropriate to their needs. Likewise, the introduction of the new message categorisation will provide users with the ability to filter announcements according to activity type, thus helping users to better identify those activities which may require modification to their own reception systems and/or product processing chains.

Through the consolidation of user message generation and a central web display, EUMETSAT expects to maximise the benefits for the user community whilst streamlining the internal procedures and mechanisms used to generate and maintain multi-mission service news and notifications.