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EUMETSAT Report on List of Ocean Products and OSI SAF Products

The products and services from the EUMETSAT Distributed Application Ground Segment include a number of oceanic parameters that are retrieved from satellite data. The Application Ground segment consists of a Central Application Facility (CAF) located at the EUMETSAT headquarter in Darmstadt and eight Satellite Application Facilities (SAFs) within the EUMETSAT member states. The SAF Network includes a dedicated SAF on Ocean and Sea Ice (OSI SAF).

This document lists the ocean products of the CAF and the OSI SAF products and points to more detailed information available in the Web or in other documents.

CGMS is invited to take note.

EUMETSAT Report on List of Ocean Products and OSI SAF Products

1 INTRODUCTION

This document provides an overview on products generated at EUMETSAT related to ocean. The products of the EUMETSAT Central Application Facilities (CAF) are listed in section 2. The EUMETSAT Application Ground Segment includes as well a Satellite Application Facility on Ocean and Sea Ice (OSI SAF). The products of the OSI SAF are covered in section 3. It is beyond this paper to describe every individual data product in detail. The reader is referred to the EUMETSAT Product Navigator as part of the EUMETSAT web site (www.eumetsat.int). Instead, the various clusters of products related specific satellite instrument and missions are listed.

2 OCEAN PRODUCTS OF THE EUMETSAT CENTRAL APPLICATION FACILITIES (CAF)

The EUMETSAT CAF provides many level 1 products and several level 2 products for oceanography in an operational sense. The main underlying bases are the Meteosat and Metop ground segments. Within the Jason-2 program EUMETSAT, together with NOAA is providing the sea surface height and wind/wave/ products in near real time These services will be continued for the Jason-3 mission. The upcoming ESA Sentinel-3 mission is dedicated to serve the GMES Marine Core Service objectives. In July 2009, EUMETSAT started a third party programme to achieve readiness for its role as the operating agency of Sentinel-3, as well as serving the marine user community with near-real-time and off-line products.

Product name	Satellite Input data	Product type	Spatial coverage
ASCAT GDS L1 Sigma0 at 12.5 km and 25 km Swath Grid and in Full Resolution	ASCAT, ASCAT on Metop B,	NRT Product, Data Set Product	Global
AVHRR GDS Level 1 radiances	AVHRR, AVHRR on Metop B, AVHRR on NOAA 19	NRT Product, Data Set Product	<u>Global</u>
IASI L2P Core Sea Surface Temperature	IASI	NRT Product, Data Set Product	Global
Sea Surface Temperature - MFG - Indian Ocean	Meteosat-7	NRT Product, Data Set Product	Indian Ocean
Sea Surface height: Jason Operational Geophysical Data Record	Jason-2 (Jason-3)	NRT Product, Data Set Product	Global (between 66S and 66N)

Table 1 – Level 1 and 2 Products Originating from the EUMETSAT Central Application Facility

The products currently originating from the CAF are listed in Table 1. There are both level 1 and level 2 products although level 2 processing and products are often procured by the OSI SAF. The OSI SAF products are described in section 3. An outlook on the marine products from Sentinel-3 is provided in Table 2.

Product name	Satellite Input data	Product type	Spatial coverage
Ocean Colour, e.g.: Normalised Water Surface Reflectances Chlorophyll Concentration for open and coastal ocean waters, total suspended Matter	Sentinel-3 OLCI	NRT Product, Data Set Product	Global
Sea Surface Temperature	Sentinel-3 SLSTR	NRT Product, Data Set Product	Global
Sea Surface Height	Sentinel-3 SRAL	NRT products as well as offline Data Set Products	Global

Table 2 – Marine Level 2 Products as Planned from the Sentinel-3 Core Ground Segment

It is to be noted that the EUMETSAT Advanced Retransmission Service (EARS) provides AVHRR instrument data from the Metop-A and NOAA-19 satellites collected via a network of HRPT stations. A similar setup is in place for the ASCAT surface vector winds as listed in Table 3 below.

Product name	Satellite Input data	Product type	Spatial coverage
Sea ice concentration	SSM/I, SSMIS AMSR-E, AMSR-2 SSM/I, SMMR, SSM/I, SSMR, SSMIS	NRT Product Data Set Product, Off-line Product	Global
Sea ice drift	SSM/I, SSMIS, ASCAT, AMSR-E, AMSR-2, Oceansat-2, AVHRR, VIIRS	NRT Product	Global
Sea ice edge	SSM/I, SSMIS, ASCAT, AMSR-E, AMSR-2, Oceansat-2, AVHRR, VIIRS	NRT Product	Global Regional
Sea ice emissivity	SSM/I, SSMIS, ATOVS, AMSR-E, AMSR-2	NRT Product	Global
Sea ice type	SSM/I, SSMIS, ASCAT, AMSR-E, AMSR-2, Oceansat-2	NRT Product	Global
Sea surface temperature	AVHRR (METOP), AVHRR (NOAA), VIIRS, SEVIRI, FCI, GOES-E, GOES-R ABI, IASI	NRT Product, Data Set Product	Global North Atlantic Poleward of 50N/50S East Atlantic, West Indian West Atlantic East Pacific
Surface downward LW flux	AVHRR, VIIRS, SEVIRI, FCI, GOES-E, GOES-R ABI	NRT Product	Atlantic North of 50N East Atlantic, West Indian West Atlantic East Pacific
Surface downward SW flux	AVHRR, VIIRS, SEVIRI, FCI, GOES-E, GOES-R	NRT Product	Atlantic North of 50N East Atlantic, West Indian West Atlantic East Pacific
Surface wind vector	ASCAT, ASCAT on Metop B, Oceansat-2 OSCAT, QuikSCAT SeaWinds, ERS-1 and ERS-2 SCAT , Oceansat-2 scatterometer	NRT Product, Data Set Product	Global

Table 3 – Marine Products from the OSI SAF

3 OCEAN PRODUCTS OF THE EUMETSAT SATELLITE APPLICATION FACILITY ON OCEAN AND SEA ICE (OSI SAF)

3.1 The OSI SAF

For complementing its Central Application Facilities capability at its headquarter in Darmstadt and taking more benefit from specialized expertise in Member States, EUMETSAT created Satellite Application Facilities (SAFs), based on co-operation between several institutes and hosted by a National Meteorological Service.

The Ocean and Sea Ice Satellite Application Facility (OSI SAF) is an answer to the common requirements of meteorology and oceanography for a comprehensive information on the ocean-atmosphere interface.

One of the objectives of the OSI SAF is to produce, control and distribute operationally in near real-time OSI SAF products using available satellite data with the necessary Users Support activities.

The OSI SAF Ocean routinely produces and disseminates products characterising the ocean surface and the energy fluxes across the sea surface and operationally produces information on the sea ice characteristics (extend, concentration, ...). The OSI SAF consortium under the Leading Entity of Météo-France includes KNMI, SMHI, DMI and met.no.

OSI SAF is in its Continuous Development and Operations Phase (CDOP) since March 2007. The second CDOP will start in March 2012 and will continue until February 2017 and will see the continuation of the developed products and services, major product evolution and improvement as well as the introduction of new satellite products.

3.2 OSI SAF product list for CDOP-2

The list below includes the products (or rather clusters of products) of the OSI SAF, that are committed for operational generation and distribution for the Second Continuous Development and Operations Phase (CDOP-2), which covers the years 2012-2017. The current operational status of the OSI SAF products and detailed information on the product definition and characteristics can be retrieved through the OSI SAF web page at www.osi-saf.org.

The table indicates the geophysical parameter covered (product name), the satellite sensors used to generate the product, the product type (Near Real Time, Off-line or Data set product) and the spatial coverage.

4 CONCLUSIONS

EUMETSAT through its Central Application Facility and the Satellite Application Facility on Ocean and Sea Ice is providing a broad variety of operational and pre-operational satellite-based ocean products with the related operational services. For most ocean variables the product services comprise level 1 and level 2 products. There are both global and regional services.



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Dissemination is dominantly done via EUMETCAST, GTS and FTP. The current collection of products includes those of the highest priority for NWP, marine meteorology and operational oceanography with realistic ocean models, e.g., sea surface temperature, ocean surface vector winds, sea surface heights and sea ice.