

Geostationary Nowcasting Cloud Products: Factsheet

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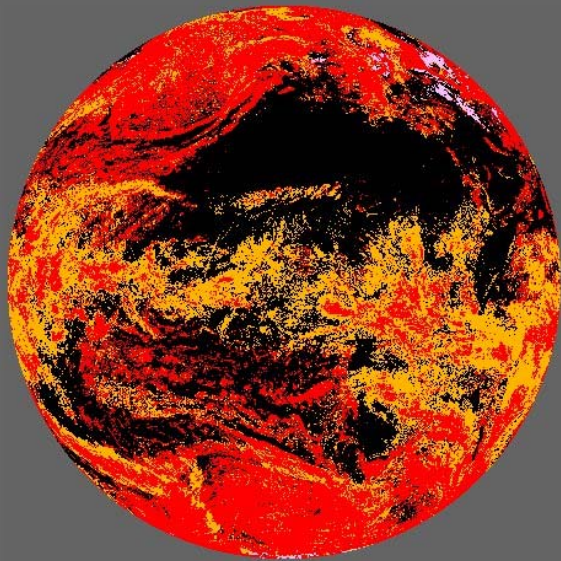
Document Change Record

<i>Issue / Revision</i>	<i>Date</i>	<i>DCN. No</i>	<i>Summary of Changes</i>
First issue	17 Feb 2014		
1A	3 March 2014		Update distribution list. Prepare document for web delivery.
1B	20 March 2014		Updates to Product Generation data for Meteosat -10

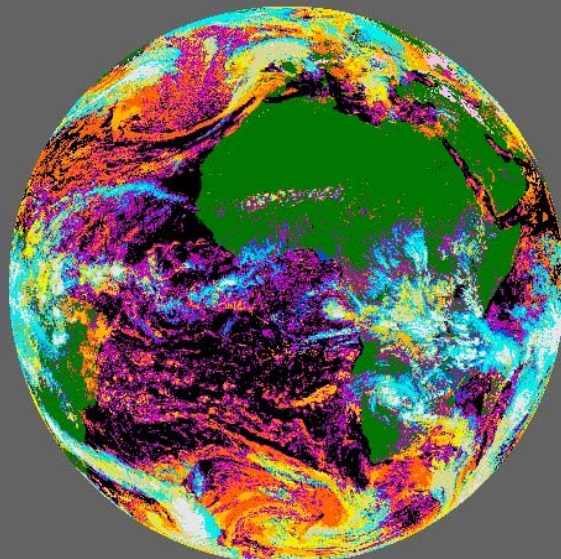
1 GEOSTATIONARY NOWCASTING CLOUD PRODUCTS

Nowcasting and very short-term weather forecasting require very timely satellite data. In addition to image data, satellite-derived cloud products play an essential role in the analysis of the current weather situation. To support these types of applications, EUMETSAT established a dedicated SAF in Support of Nowcasting and Very Short Term Forecasting (NWC SAF). This SAF produces application software packages to generate, among other things, cloud parameters from images of Meteosat satellites and the polar-orbiting satellites NOAA and Metop. The software packages are available to users for local implementation <http://www.nwcsaf.org>. For those who cannot or do not want to set up the software, EUMETSAT produces the basic cloud products and disseminates these cloud products via EUMETCast. The disseminated data consists of the three separate products:

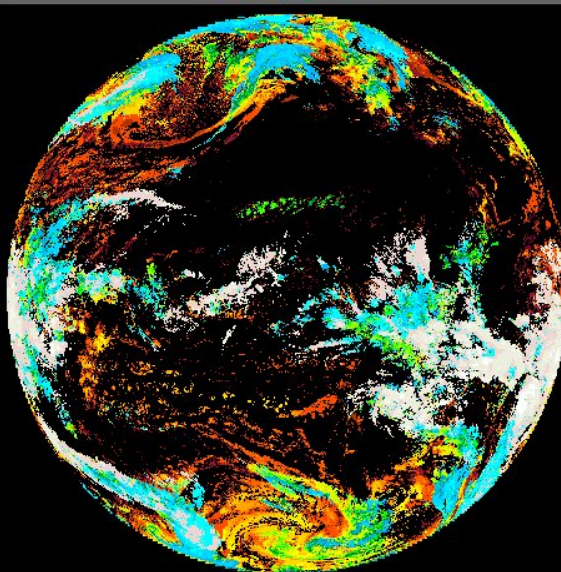
- The **Cloud Mask (CMa)** product, shows the location of clouds at two levels of certainty in a compact format. The product also includes flags for dust and volcanic ash. The EUMETCast acronym is GNWCCMa.
- The **Cloud Type (CT)** product allocates a meteorological cloud type to the identified clouds, gives an indication of the cloud phase and specifies the surface as land or sea. The EUMETCast acronym is GNWCCT.
- The **Cloud Top Temperature and Height (CTTH)** product makes a height, pressure, and temperature assignment for the cloud tops. The EUMETCast acronym is GNWCCTH.



Cloud Mask for 6 Feb, 2014, 12:00 UTC.



Cloud Type for 6 Feb, 2014, 12:00 UTC.



Cloud Top Temperature and Height pressure parameter for 6 Feb, 2014, 12:00 UTC.

In each of these graphics, data is displayed using the colour maps which are part of the product file in the HDF-5 data format.

2 RETRIEVAL ALGORITHMS

The retrieval algorithms for the three cloud products are based on multi-channel threshold and optimal estimation methods. A detailed description of the algorithms can be found in the Algorithm Theoretical Basis Documents (ATBD) of the NWC SAF MSG Software package [RD 1]. See the list of references below. All products have quality indicators (QI). The definition of the QIs can also be found in the ATBD.

The data are provided in the HDF-5 data format (<http://www.hdfgroup.org/HDF5/>). The files include generic colour tables which can be used to display the parameters of the products. Exact specifications of the data content can be found in the Data Output Format document [RD 3].

3 PRODUCT GENERATION

The product generation of the three geostationary nowcasting cloud products takes place at EUMETSAT Headquarter, using the standard user setup of the NWC SAF GEO processing package. Therefore all standard specifications of the Product User Manual (PUM) of this software packages are applicable. The following local configurations are applied for the processing:

- Products are derived for the full disk of the operational 0° geostationary MSG-satellite.
- Original MSG pixel resolution is used for all cloud products.
- Products are available for each repeat-cycle—every 15 minutes.
- In the case of a swap of the operational satellite (e.g. Meteosat-10 to Meteosat-11), the product generation is automatically switched as well to the new operational satellite.
- One file per product and repeat cycle is generated.
- As additional input to the processing, forecast data from the ECMWF operational model are used. The 12-hour, 18-hour, and 24-hour forecasts from the midday and midnight forecasts are made available for the processing.
- Production is based on Version 2012 of the NWC SAF GEO processing package.

3.1 Limited List of References Documents

All documents are on the EUMETSAT Technical Documents Page:

<http://www.eumetsat.int/website/home/Data/TechnicalDocuments/index.html>

Note: Documentation on the NWC SAF webpage could be referring to a newer version of the NWC SAF software package than the one which was used to generate the Global Nowcasting Cloud Products. Always use the applicable versions of the documentation on the EUMETSAT Technical Documents Page, as specified in the table below.

RD 1	Cloud Products Algorithm Theoretical Basis Document for "Cloud Products" (ATBD)	SAF/NWC/CDOP2/MFL/SCI/ATBD/01	Version 3.2.1
RD 2	Cloud Products User Manual (PUM) CMA-PGE01 v3.2, CT-PGE02 v2.2 CTTH-PGE03 v2.2)	SAF/NWC/CDOP2/MFL/SCI/PUM/01	Version 3.2.1
RD 3	Data Output Format for the NWC/GEO (DOF)	NWC/CDOP2/GEO/AEM ET/SW/DOF	Version 1.0

4 PRODUCT SPECIFICATIONS

<i>What data is available?</i>	EUMETSAT has generated Geostationary Nowcasting Cloud Products since December 2013. Data are not archived but products are stored for 14 days after generation and can be made available offline on request.
<i>Allocation and Sub Products:</i>	<p>Near-real time full disk products are available 10-25 minutes after sensing time finishes.</p> <p>CMa includes: cloud flag, cloud possible flag, ash flag, volcanic ash flag, quality indicator, and colour tables.</p> <p>CT includes: cloud or surface type, cloud, phase, quality indicator, and colour tables.</p> <p>CTTH includes: cloud top height, cloud top temperature, cloud top pressure, quality indicators, and colour tables.</p>
<i>Product available:</i>	Geostationary Nowcasting Cloud Products in HDF-5 can be received in near-real time—10-15 minutes after the end of the image acquisition by the MSG satellite—via the EUMETSAT EUMETCast system. For details on <i>data provision, filenaming, and file sizes</i> , please access the Product Navigator page and search for Geostationary Nowcasting.
<i>Product Support:</i>	The EUMETSAT help desk (ops@eumetsat.int) will answer any of your questions about the Geostationary Nowcasting Cloud Products.
<i>Future Developments</i>	The next version upgrade is currently being planned for spring, 2015 (Version 2015 of the NWC SAF GEO.)