

Cloud Analysis Image: Product Guide

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Document Change Record

<i>Issue / Revision</i>	<i>Date</i>	<i>DCN. No</i>	<i>Summary of Changes</i>
1	06/10/2010		Initial issue of document
1B	08/09/2014		Conversion of document to Product Guide format. Addition of General Description, algorithm basics, and product illustration sections
1C	19/02/2015		Review by Subject Matter Expert/Scientist. Added product graphics and Index number/scene type table.

1 PRODUCT DESCRIPTION

The Cloud Analysis Image (CLAI) product is derived together with the Cloud Analysis (CLA) product. The product has dimensions of 1237×1237 segments, with each segment formed by 3×3 image pixels. The product identifies the scene type for each of these segments. For cloud-free areas, the scene type returned is some type of landform—forest, savannah, grassland. For cloudy segments the scene type returned is the cloud type—low-level, mid level, high-level. Figure 1 shows an example of the CLAI product for 11:45 UTC on 30 April 2014. Table 1 lists the index numbers for the different scene types.

Note: Cloudy scene types start with 100.

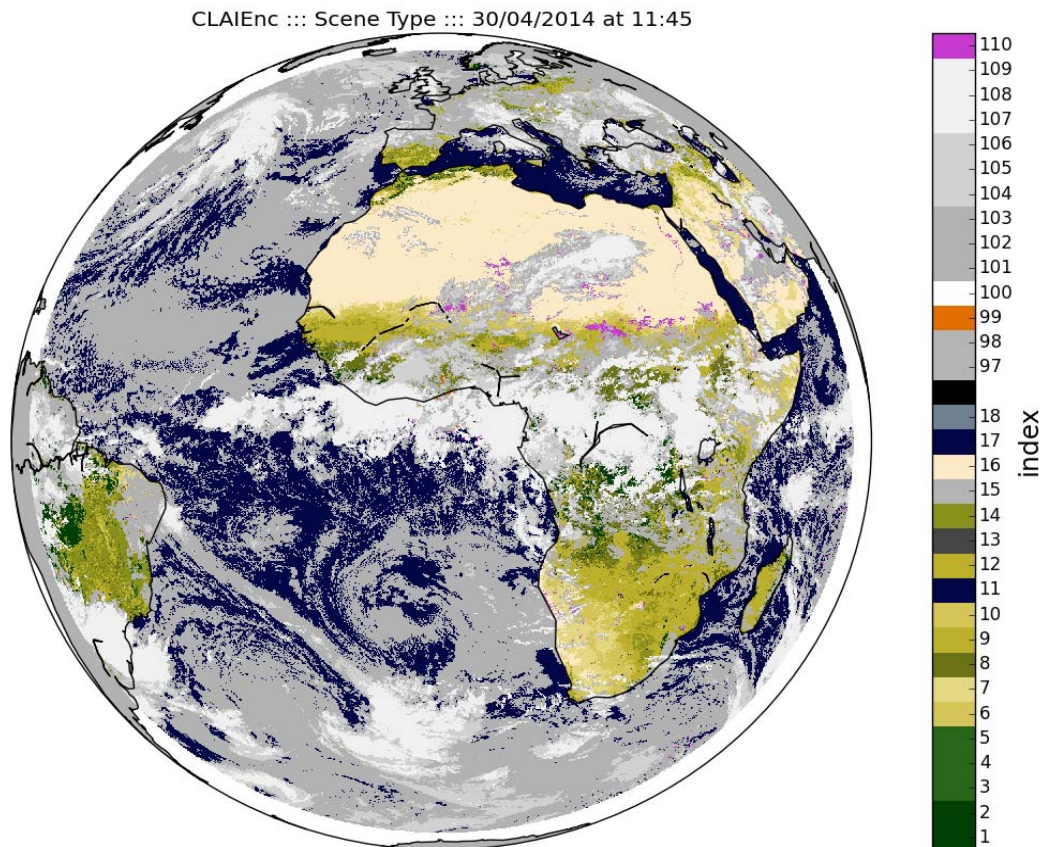


Figure 1: The Cloud Analysis Image Product for 11:45 UTC on 30 April 2014 on MSG-3.

<i>Index</i>	<i>Scene Type</i>
0	No scenes identified, missing input data
1	Evergreen needle leaf forest
2	Evergreen broadleaf forest
3	Deciduous needle leaf forest
4	Deciduous broadleaf forest
5	Mixed forest
6	Closed scrublands
7	Open shrub lands
8	Woody savannahs
9	Savannahs
10	Grasslands
11	Permanent wetlands
12	Croplands
13	Urban and built-up
14	Cropland mosaics
15	Permanent snow/ice
16	Bare soil and rocks
17	Water bodies
18	Tundra
19	Mixed land/water
20 to 49	(Not used currently, reserved for future use)
50	Unknown scene
51 to 96	(Not used currently, reserved for future use)
97	Snow/ice over land
98	Snow/ice over water (ocean)
99	Clear sun glint
100	Cloudy
101	Low level cloud; Fog or Stratus
102	Low level cloud; Cumulus or Stratocumulus
103	Low level cloud; Unknown type
104	Mid level cloud; Nimbostratus
105	Mid level cloud; Altocumulus or Altostratus
106	Mid level cloud; Unknown type
107	High level cloud; Cumulonimbus
108	High level cloud; Cirrus
109	High level cloud; Unknown type
110	Unknown cloud type

Table 1: Index numbers for each scene type.

1.1 Product history and gaps in coverage:

Initial development and baseline:	26 Nov 1996 – 15 Jan 1999
Operational start	2000
Substantial Revision	25 July 2005
Substantial gaps in coverage	None

2 PRODUCT SPECIFICATIONS

<i>Category</i>	<i>Specification</i>
Product users	Weather forecasting, numerical weather prediction, climate research and monitoring.
Input satellite data	The pixel-based intermediate Cloud Analysis product
Product Distribution	<ul style="list-style-type: none"> • EUMETCast • Direct • EUMETSAT Data Centre
Product Area	FES
Product Resolution	3 × 3 pixels
Product Distribution	<ul style="list-style-type: none"> • EUMETCast: every three hours for the 02:45, 05:45, 08:45, ...23:45 UTC products • EUMETSAT Data Centre: every three hours for the 02:45, 05:45, 08:45, ...23:45 UTC products • Direct: every three hours for the 02:45, 05:45, 08:45, ...23:45 UTC products
Product Names	<ul style="list-style-type: none"> • EUMETCast: L-000-MSG2__-MPEF_____-CLAI_____-000001_____-200611130545-__ • Direct Dissemination: L-101-MSG2__-MPEF_____-CLAI_____-000001_____-200611130045-__
Product Format	GRIB2 format
Product Size	1.23 MB (fixed)

2.1 Known Operational Limitations

No known operational limitations for this product.

3 PRODUCT ILLUSTRATION

An example of the CLAI product is shown in Figure 1. Figure 2 shows the CLAI product together with the Intermediate CLA product in order to illustrate the difference in product resolution. The repeat cycle here is the same as in Figure 1.

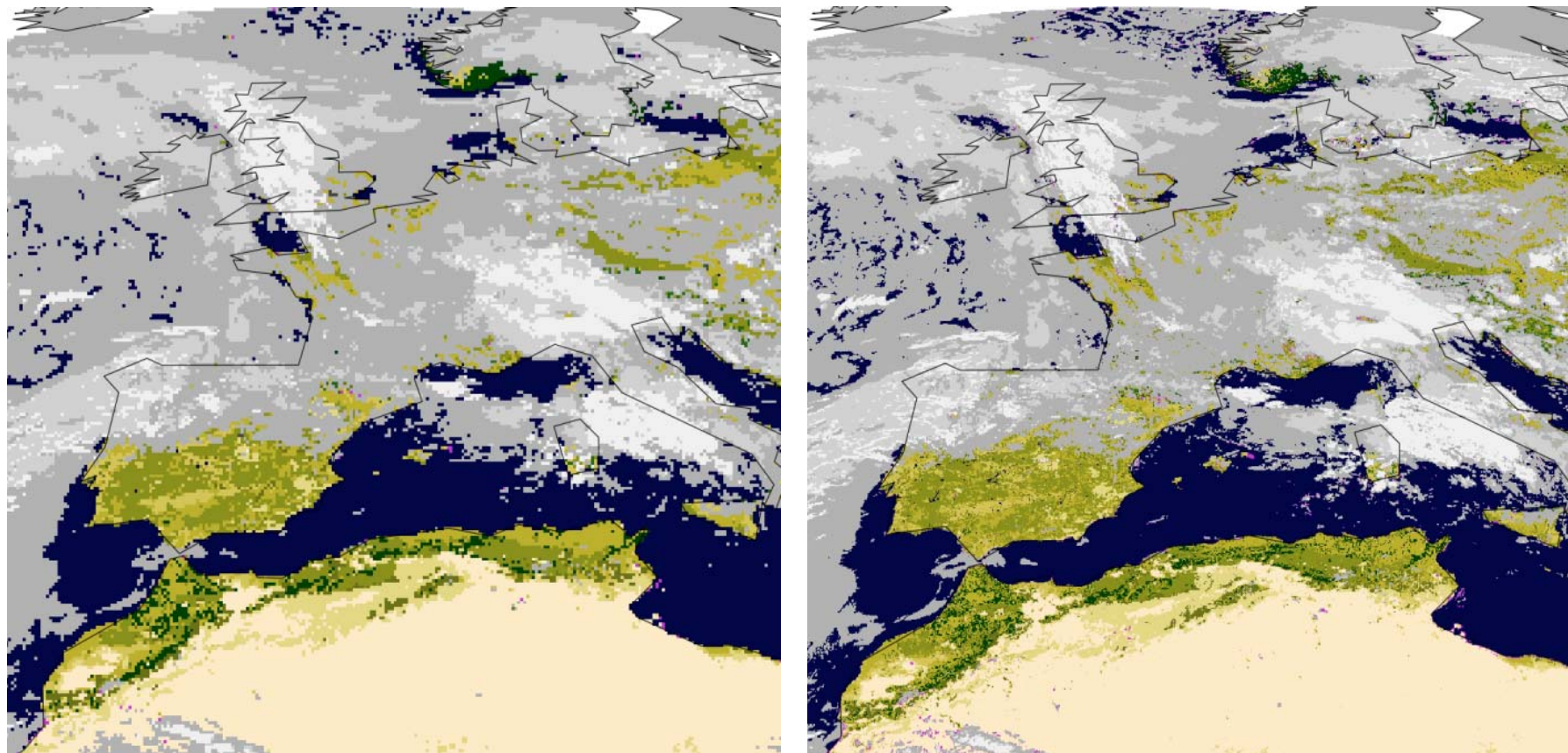


Figure 2: CLAI product (left panel) together with Intermediate CLA product (right panel) for 11:45 UTC on 30 April 2014.

4 PROCESS FLOWCHART OF THE CLA/CLAI ALGORITHM

The schematic in Figure 3 outlines the CLA product processing. The CLAI product is provided in the form of a GRIB Edition 2-encoded product for the required extraction times.

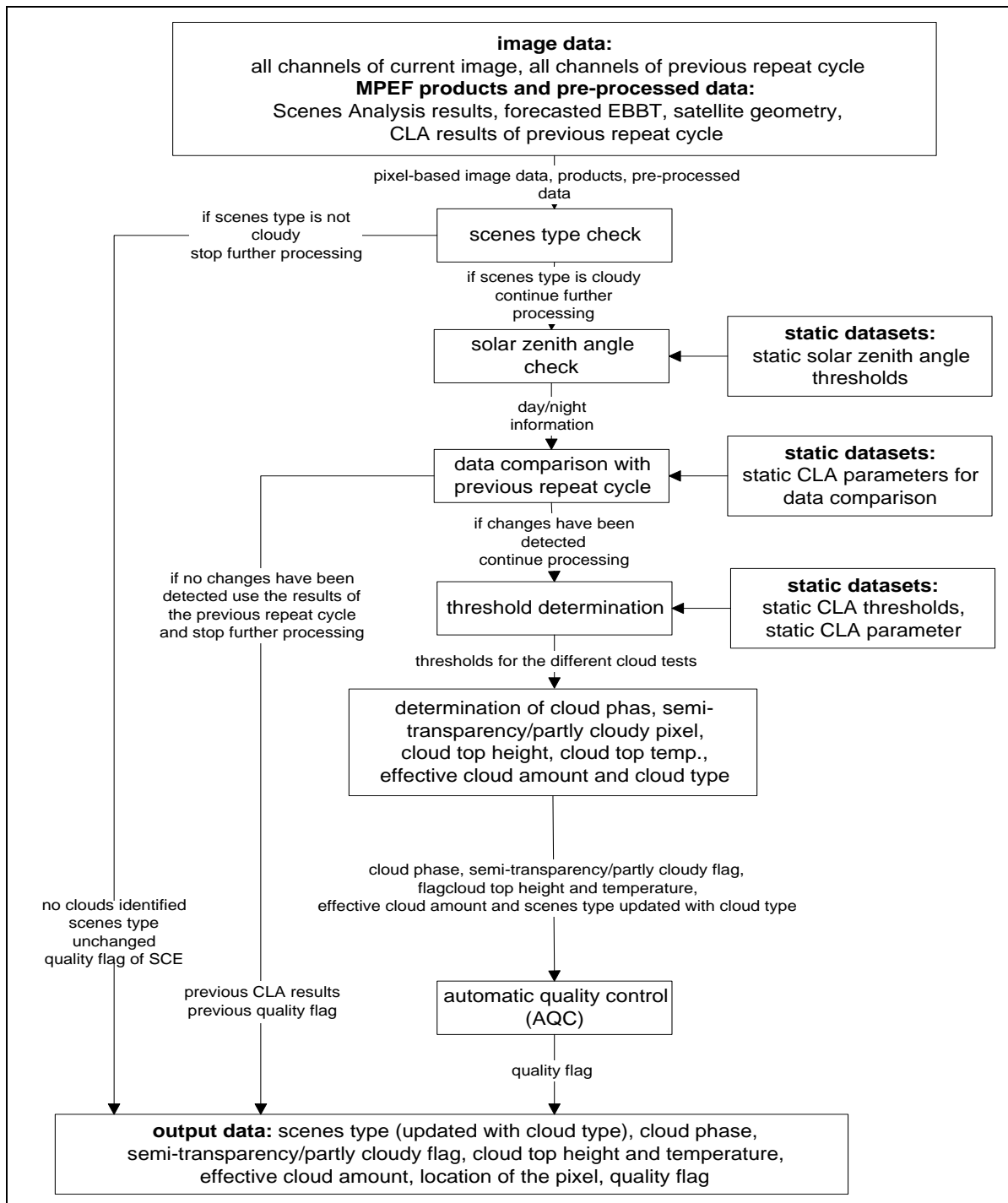


Figure 3: CLA product algorithm processing schematic.

REFERENCES AND LINKS

Reference Documents

<i>Type</i>	<i>Document Name</i>	<i>Reference</i>
Validation	MSG-3 System Commissioning Product Validation Test Report	EUM/MSG/REP/12/0190
Detailed Algorithm	MSG Meteorological Products Extraction Facility Algorithm Specification Document	EUM/MSG/SPE/022

Online Resources and Assistance

All of the reference documents listed above are in the EUMETSAT Technical Documents page.

www.eumetsat.int > Satellites > Technical Documents > Meteosat Services
> 0° Meteosat Meteorological Products

To register for data delivery from this product, go to the Data Registration page on the EUMETSAT web page:

www.eumetsat.int > Data > Data Delivery > Data Registration

GRIB (GRIdded Binary) is WMO's standard binary format for exchanging gridded data. GRIB Edition 2 is an extension of GRIB, with a much higher degree of flexibility and expandability. For complete details on the format, see the WMO web page:

<http://www.wmo.int/pages/prog/www/WMOCodes.html>

Information about the service status of EUMETSAT satellites and the data they deliver is this EUMETSAT web page:

www.eumetsat.int > Data > Service Status

To get answers to any questions about data delivery, registration or documentation, contact the EUMETSAT User Service Help Desk:

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