Local GRIB tables used at EUMETSAT

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Document Change Record

Issue / Revision	*Date*	*DCN. No*	*Changed Pages / Paragraphs*
V1	25/06/2013		First draft release for comment.
V1A	15/07/2013		Document published.
V1B	23/07/2013		Inserted page break before Document Change Record.
V1C	15/11/2016		Changed the numbers in GRIB-2 table 4.2-3-1 and updated the table. Removed the Abbrev column in GRIB-2 table 4.2-3-1. Renamed the parameters named Cloud Optical Thickness to Cloud Optical Depth in GRIB-2 table 4.2-3-1. Removed number 113 and updated the table for the GRIB-2 code table 4.218. Added the comment that the multi-layered cloud scene type already exists in code table 4.218.
V1D			Make document public. Rename to “Local GRIB descriptors used at EUMETSAT”. Update signature table. Add introduction. Restructure Section 2.

1 INTRODUCTION

1.1 Purpose

EUMETSAT has made use of local descriptors in order to encode several products in GRIB for many years. This practice requires users to modify configuration items in order to process them. Optimally, operationally disseminated products should use WMO descriptors, as regulated by WMO in [AD-1]. This document describes the products for which this applies, the changes necessary to systems that process products using the local descriptors, as well as the steps necessary in order to migrate from local descriptors to use WMO descriptors.

1.2 Scope

This document is intended for users of Optimal Cloud Analysis (OCA) and Active Fire Monitoring (FIR) GRIB products, as well as software developers and maintainers who are responsible for ensuring that their systems can be used to interpret these products as they are migrated to use the new descriptors. It is of especial interest to climate users, who want to ensure continuity of data series that encompass both the old and new ways of encoding these products.

1.3 Applicable Documents

Table 1: List of applicable documents

AD-1	Manual on Codes	WMO-No. 306
AD-2	Latest tables extracted from the Manual on Codes, Volume I.2	Link

1.4 Reference Documents

None.

1.5 Document Structure

Section 1 General information (this section)

Section 2 Overview of the affected products, the local descriptors they use and the migration steps in order to use WMO descriptors.

Chapter 3 Specific migration guides from each local descriptor to a WMO descriptor

1.6 Acronyms

Table 2: List of acronyms

Acronym	Description
EUMETSAT	European Organisation For the Exploitation of Meteorological Satellites
GRIB	General Regularly-distributed Information in Binary form
WMO	World Meteorological Organization

2 USE OF LOCAL DESCRIPTORS IN EUMETSAT GRIB DATA PRODUCTS

2.1 Affected products

The products listed in Table 3 have been disseminated using local descriptors.

Table 3: Products affected by the migration. Product names are linked to their reference in the EUMETSAT Product Navigator.

Product name	*Example filename*	
Optimal Cloud Analysis - MSG - 0 degree	L-000-MSG3__-MPEF_____-OCAE_____-000005___-201705222330-__	Section 2.2
Optimal Cloud Analysis - MSG - Indian Ocean 41.5 degrees E	L-000-MSG1__-MPEF_IODC___-OCAE_____-PRO_____-201705222100-__	Section 2.2
Active Fire Monitoring (GRIB) - MSG - 0 degree	L-000-MSG3__-MPEF_____-FIRG_____-PRO_____-201705221945-__	Section 2.3
Rapid Scan Active Fire Monitoring (GRIB) – MSG	L-000-MSG1__-MPEF_RSS____-FIRG_____-000001___-200909140000-__	Section 2.3
Active Fire Monitoring (GRIB) - MSG - Indian Ocean 41.5 degrees E	L-000-MSG1__-MPEF_IODC___-FIRG_____-PRO_____-201705222345-__	Section 2.3

It is possible to recognise if products have been migrated or not by the GRIB Master tables version number indicated in the GRIB product's Identification section (Section 1). Further guidance on locating metadata within products encoded in GRIB can be found in [AD-1].

2.2 Modified tables for Optimal Cloud Analysis products

Before migrating to use GRIB Master table version 22, EUMETSAT OCA GRIB products were encoded using additional entries to two tables, as described in Table 4 and Table 5. Users need to modify the corresponding versions of their GRIB tables in order to include the parameters recorded in those tables.

As of GRIB Master table version 22, these parameters have been adopted into [AD-1]. Thus, no modifications to the tables received from WMO are necessary in order to read EUMETSAT OCA products encoded using these master table versions.

Table 4: Entries added to table 4.2 –Parameter number by product discipline and parameter category, Product discipline 3 – Space products, parameter category 1 – quantitative products in OCA products encoded using GRIB Master tables version 1-21.

Number	**Parameter Name**	**Units**
30	Measurement Cost	-
31	Upper Layer Cloud Optical Depth	-
32	Upper Layer Cloud Top Pressure	Pa
33	Upper Layer Cloud Effective Radius	m
34	Error in Upper Layer Cloud Optical Depth	-
35	Error in Upper Layer Cloud Top Pressure	Pa
36	Error in Upper Layer Cloud Effective Radius	m
37	Lower Layer Cloud Optical Depth	-
38	Lower Layer Cloud Top Pressure	Pa
39	Error in Lower Layer Cloud Optical Depth	-
40	Error in Lower Layer Cloud Top Pressure	Pa

Table 5: Entries added to table 4.218 – Pixel scene type in OCA products encoded using GRIB Master tables version 1-21.

Number	Parameter Name
111	Single Layer Water Cloud
112	Single Layer Ice Cloud
113 - 191	Reserved

2.3 Local tables for Active Fire Monitoring products

EUMETSAT Active Fire Monitoring (FIR) GRIB products are currently encoded using a local entry to Table 6. This entry is part of the EUMETSAT GRIB local tables version 1. Users need to incorporate the EUMETSAT local GRIB tables into their processing chain in order to decode this parameter.

At a future time, it is intended to pursue the adoption of this parameter in [AD-1]. At that time guidance will be provided on how to migrate decoding software to use the new parameter.

Table 6: Local entry of table 4.2 –Parameter number by product discipline and parameter category, Product discipline 3 – Space products, parameter category 1 – quantitative products in Active Fire Monitoring products encoded using EUMETSAT GRIB local tables version 1.

Number	Parameter Name	Units
192	Fire probability	%