CGMS-51-WGI-WP-04
30 March 2023

Prepared by: EUMETSAT
Agenda Item 4.1
Discussed at WG-I

Subject	**Report from the CGMS WGI Task Group on Satellite Data and Codes (incl. latest ToR, status on current & proposed/planned activities)**
In response to CGMS action/recommendation	
HLPP reference	
Executive Summary	The CGMS Task Group on Satellite Data and Codes has been actively supporting the coordination of work on satellite product format issues within the CGMS community and providing support to the work of WMO's expert teams since its first meeting in 2008. This paper reviews the status of the Task Group and looks forward to its forthcoming activities.
Action/Recommendation proposed	Recommendation: Working Group I to support CGMS's work on satellite data and codes through the continued activities of its Task Group on Satellite Data and Codes. The Working Group is recommended to encourage active participation in the work of the Task Group from all satellite operators.

1 INTRODUCTION

CGMS established the Task Force on Satellite Data and Codes (TFSDC) in order to coordinate work on satellite product format issues within the CGMS community and to support the work of WMO's expert teams. The group had its first meeting in 2008.

As of 2022, the activities of the CGMS WGI ad hoc team on coordination of CF-netCDF standards have been assimilated into the work of this Task Group.

This paper briefly summarises the status of the Task Force and looks forward to its upcoming activities.

2 CURRENT STATUS

2.1 Membership

The current membership of the TGSDC is listed below:

CGMS	Mikael Rattenborg*
CMA	Xu Zhe
EUMETSAT	Simon Elliott - chairman and liaison with WMO
EUMETSAT	Daniel Lee* - leader of ad hoc team on coordination of CF-netCDF
JMA	Arata Okuyama*
JMA	Kazuki Shimoji
JMA	Kazutaka Yamada*
KMA	Jae-dong Jang
KMA	Junho Kim
NOAA	Maurice McHugh*
NOAA	Awdhesh (AK) Sharma
SRC Planeta	Nikita Ekimov
WMO	Enrico Fucile
WMO	Heikki Pohjola

Members who joined as a result of the assimilation of activities from the ad hoc team on coordation of CF-netCDF are marked with an asterisk.

As noted at CGMS-50, an additional member from ISRO would complement the current composition well.

2.2 Current activities

2.2.1 Introduction of new BUFR encoding sequences for satellite data

The Task Group has worked with the WMO Secretariat and the WMO Expert Team on Data Standards (ET-Data) and its Task Team on Table Driven Code Forms (TT-TDCF) on the development of a number of new BUFR encoding sequences and Common Code Table entries. In each case, the Task Group acts as a reference group of experts who are invited to consider and endorse relevant proposals going through WMO's approval process.

2.2.1.1 FY-4B GIIRS

In close collaboration with the groups mentioned above, CMA has developed a BUFR encoding sequence for the level 1 hyperspectral sounding data from the GIIRS instrument on FY-4B. This will come in to force with WMO's Fast Track 2023-I process, in May 2023, and will allow the standardised exchange of GIIRS data.

2.2.1.2 TROPICS

ECMWF has coordinated the development of a BUFR encoding sequence for level 1 data from NASA's TROPICS (Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats) Pathfinder. The same sequence can be used for the follow-on satellites in the TROPICS constellation, scheduled for launch during 2023. The encoding sequence will come in to force with WMO's Fast Track 2023-I process, in May 2023.

2.2.1.3 Metop-SG

EUMETSAT has developed BUFR encoding sequences for the following products to be generated from Metop-SG:

- ICI (Ice cloud imager) level 1b radiances;
- MWI (Microwave imager) level 1b radiances;
- MWS (Microwave sounder) level 1b radiances;
- SCA (Scatterometer) level 1b SZF (Sigma zero full resolution);
- SCA level 1b SZR (Sigma zero resampled);
- IASI-NG (Infrared Atmospheric Sounder Interferometer - New Generation) level 1c radiances, and
- IASI-NG level 1d principle component scores.

These sequences have been extensively reviewed by the various groups involved and will also come in to force with WMO's Fast Track-I process, in May 2023.

2.2.2 Update to Oscar/Space to include satellite and instrument identifiers

The Group continues to encourage WMO to ensure that OSCAR/Space includes references to the Common Code Table entries used for satellite identifiers (table C-5) and instruments (C-8). At the last OSCAR/Space workshop it was confirmed that these changes would be included in the forthcoming update to OSCAR/Space.

3 UPCOMING ACTITIES

Between CGMS 51 and CGMS 52, the Task Group will continue work on coordinating format standardisation for satellite data, implementation of WIGOS station identifiers for satellite platforms, and providing subject matter expertise to WMO Expert Teams.

A key activity will be to ensure that the BUFR encoding sequences for the remaining Metop-SG products are introduced to the WMO approval process, targeting approval with Fast Track 2023-II in November 2023. The will comprise the following products:

- IASI-NG level 2 TWV (temperature and water vapour profiles);
- IASI-NG level 2 CLD (cloud parameters);
- IASI-NG level 2 SFC (surface parameters);
- IASI-NG level 2 CO_ (carbon monoxide);
- IASI-NG level 2 GHG (greenhouse gasses);
- IASI-NG level 2 NAC (nitric acid);
- IASI-NG level 2 O3_ (ozone);
- IASI-NG level 2 SO2 (sulphur dioxide);
- VII level 2 CLD (METimage cloud detection/probability);
- VII level 2 OCA (METimage optimal cloud analysis);
- VII level 2 CTP (METimage cloud top pressure, height and optical thickness);
- VII level 2 WVW (METimage total precipitable water from water vapour observations), and
- VII level 2 WVI (METimage total precipitable water from infrared observations).

Two intersessional meetings have been scheduled; on 28 September 2023 and 11 January 2024.

4 ACTIONS AND/OR RECOMMENDATIONS FOR CONSIDERATION BY WORKING GROUP I

Recommendation: Working Group I to support CGMS's work on satellite data and codes through the continued activities of its Task Group on Satellite Data and Codes. The Working Group is recommended to encourage active participation in the work of the Task Group from all satellite operators.

5 CONCLUSION

The Task Group on Satellite Data and Codes continues to play a useful role. During the forthcoming intersessional period, the group's main activities will be concerned with the development and approval of encoding sequences for future satellite product, for example those listed for Metop-SG in Section 3.