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Prepared by EUMETSAT
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Report from the CGMS WGI Task Group on Satellite Data and Codes

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: None

Report from the CGMS WGI Task Group on Satellite Data and Codes

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 comprised of the existing membership, together with the participants in the ad hoc team on coordination of CF-netCDF. The members are 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	Akihiro Shimizu
JMA	Kazutaka Yamada*
KMA	Jae-dong Jang
NOAA	Maurice McHugh*
NOAA	Awdhesh (AK) Sharma
SRC Planeta	Nikolay Zemlyachev
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.

An additional member from ISRO would complement the current composition well.

2.2 Current activities

2.2.1 Importing work of the ad hoc team on CF-netCDF standards

An ad hoc team has been meeting in the framework of WG-I to discuss data format issues, particularly focussing on netCDF and the CF Conventions. The meetings of the team have been used as a mechanism for collecting requirements. A larger initiative that recently completed led to additions in CF 1.9 dealing with data compression. This activity had been ongoing for 2 years and consumed effort from multiple organisations due to the complexity of the changes themselves and that of the process for introducing the changes to the CF Conventions. This led to a new sub-chapter in the CF-netCDF standards and several other additions.

After CGMS 50 the Task Group will re-examine the topics and the associated priority list. The Group also noted the need to consider the situation with regard to HDF, noting that this is widely used for the exchange of satellite data and products.

2.2.2 Progress with the use of WIGOS Station identifiers for meteorological satellites

The WMO Secretariat has prepared some text for the guide on the WIGOS explaining the use of WIGOS Station Identifiers for satellites. The document captures the status as-is, and explains the mapping of satellite IDs from Common Code Table C-5 to the WIGOS Station Identifiers. The text extract is given in Appendix A.

This Task Group continues to assess the best use the Issue Number (currently fixed to 0) in the future. Possibilities under consideration include:

- the identification of the type of orbit (GEO, LEO, HEO);
- the hosting agency;
- the satellite series, and
- the end user's application scenario, such as "0 degree full disk product" for geostationary imagery.

2.2.3 Update on refresh of Terms of Reference

The Group has worked on updating its Draft Terms of Reference to align them with the latest structure of WMO. The Task Group talked about the level of activities given in the document and found it appropriate. The latest version of the ToRs are given in Appendix B.

3 UPCOMING ACTITIES

Between CGMS 50 and CGMS 51, 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. The group will also continue to refine its Terms of Reference.

Two intersessional meetings have been scheduled; on 13 September 2022 and 14 February 2023.

4 CONCLUSIONS

The Task Group on Satellite Data and Codes continues to play a useful role. During the forthcoming intersessional period, in addition to its routine activities, the group's focus will be on concluding upon its terms of reference and continuing to work on the use of WIGOS Station identifiers for satellite products.

APPENDIX A – EXTRACT FROM THE GUIDE ON THE WIGOS

1.1 WMO OSCAR/Space

The WMO Observing System Capability Analysis and Review tool for space-based capabilities (OSCAR/Space) is a publicly available, online resource established and maintained by the WMO Space Programme Office (WMO SP) in the context of the WMO Integrated Global Observing System (WIGOS). It is a key tool and information source to support the WMO Rolling Review of Requirements (RRR) process of the WMO Integrated Global Observing System (WIGOS). OSCAR/Space is the recommended portal where WSIs for satellites are recorded and maintained.

1.2 Assignment and allocation of WSIs to weather satellites

When satellites are not often owned and operated by WMO Members and they not always part of any national observation network, WIGOS station identifiers for satellites are assigned by WMO Space Programme together with the responsible party of the satellite (Member, space agency or other owner of the satellite). The assignment of WIGOS identifiers is then made using the following schema as described below.

As described in Chapter 2.4.1, the WMO Satellite Programme has been allocated the Issue of Identifier value of 20009 within the WSI. The Issue Number is set to 0, and the Local Identifier is set according to the three digit identifier given in Common Code Table (CCT) C-5, using leading zeroes as needed. CCT C-5 was defined to allow a consistent approach across all the code forms.

For each satellite, CCT C-5 specifies the code figure for I6I6I6 and the corresponding code figures for BUFR and GRIB. The entries in the table are grouped in the following way:

- Even deciles indicate polar orbiting satellites, for example 223 is the entry for NOAA 19 (the decile is 22).

The examples assigned WSIs as follows: NOAA 19 0-20009-0-223:

- Odd deciles indicate geostationary satellites, for example 173 is the entry for Hiawari-8 (the decile is 17).

The examples assigned WSIs as follows: Himawari-8 0-20009-0-173:

- The range from 850 to 869 is used to indicate combinations of satellites, and the decile rule does not apply to values in this range. A combination of Metop-1 to Metop-3 is allocated the value 852 and is used in the context of dual-satellite atmospheric motion vectors.

The examples assigned WSIs as follows: Combination of Metop-1 to Metop-3 0-20009-0-852.

This approach ensures a very simple mapping between CCT-C5 and the WSI. It does not, however, address the embedding of implicit metadata such as the use of the decile value to describe the type of orbit within the CCT-C5 value assignment. There is scope to use the Issue Number in order to make this information explicit.

APPENDIX B - TERMS OF REFERENCE

The CGMS Task Group on Satellite Data Codes (TGSDC) proposed updates to the membership and organization of the group:

PROPOSED REVISION TO THE MEMBERSHIP AND ORGANIZATION

Background

The CGMS Task Group on Satellite Data Codes (TGSDC) (originally CGMS Task Force on Satellite Data Codes (TFSDC)) is established in response to CGMS Actions 34-27 and 34-28 agreed by the Coordination Group for Meteorological Satellites (CGMS) at its thirty-fourth session.

Purpose

The TGSDC is established in order to advise CGMS and WMO on issues related to satellite data representation, identification and handling within the WMO Information System.

Membership and organization

The TGSDC is comprised of experts nominated by CGMS satellite operators, assisted by WMO Secretariat and, as appropriate, by external experts representing user communities.

It will nominate among its Members a Rapporteur and a Chairman.

The Task Group will meet at least once a year, and more if necessary. It will pursue its work by correspondence between its meetings.

The Task Group will interact as appropriate with:

- The Expert Team on Space Systems and Utilization (ET-SSU) and the Expert Team on WIGOS Tools (ET-WT) under the WMO/SC-ON (Standing Committee on Earth Observing Systems and Monitoring Networks);
- The Expert Team on Metadata (ET-Metadata) and the Expert Team on Data (ET-Data) under the WMO/SC-IMT (Standing Committee on Information Management and Technology);
- The CF Conventions Committee;
- The CF Standard Names Committee, and
- The CF Governance Panel,

with cross-representation at relevant meetings.

The TGSDC will report annually to the CGMS plenary which will decide whether to continue the activity in the same way or hand it over to a different structure.