

CGMS-54-WGI-WP-05
31 March 2026

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. status on current and proposed/planned activities) |
| In response to CGMS action/recommendation | - |
| HLPP reference | 2.3.1: Ensure the ease of use of satellite-derived data and products. |
| Executive Summary | <p>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.</p> <p>This paper reviews the status of the Task Group and looks forward to its forthcoming activities, including the creation of draft standards for Earth observation data, including formats like Zarr, to ensure compatibility with AI and ML.</p> |
| 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 Group 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 Group and looks forward to its upcoming activities.

2 CURRENT STATUS

2.1 Membership

The current membership of the TGSDC is listed below:

| | |
|---------------|---|
| CMA | Xu Zhe |
| JMA | Kazutaka Yamada |
| JMA | Kazuki Shimoji |
| CGMS | Mikael Rattenborg |
| WMO | Heikki Pohjola |
| NOAA | Maurice McHugh |
| EUMETSAT | Daniel Lee |
| KMA | Junho Kim |
| KMA | Jae-dong Jang |
| WMO | Enrico Fucile |
| EUMETSAT | Simon Elliott - chairman and liaison with WMO |
| SRC Planeta | Nikita Ekimov |
| UK Met Office | Anna Booton |
| NOAA | Atem Samson |
| NOAA | Kenneth Watts |
| SSEC | Graeme Martin |

As noted at previous CGMS meetings, 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 Satellite identifiers

During the period since CGMS-53, the following entries have been defined in Common Code Table C-5 for satellite identifiers:

| Satellite | Code table entry | WIGOS station identifier |
|-----------|------------------|--------------------------|
| MicroCarb | 978 | 0-20009-0-978 |
| WSF-M1 | 760 | 0-20009-0-760 |

2.2.1.2 Instrument identifiers

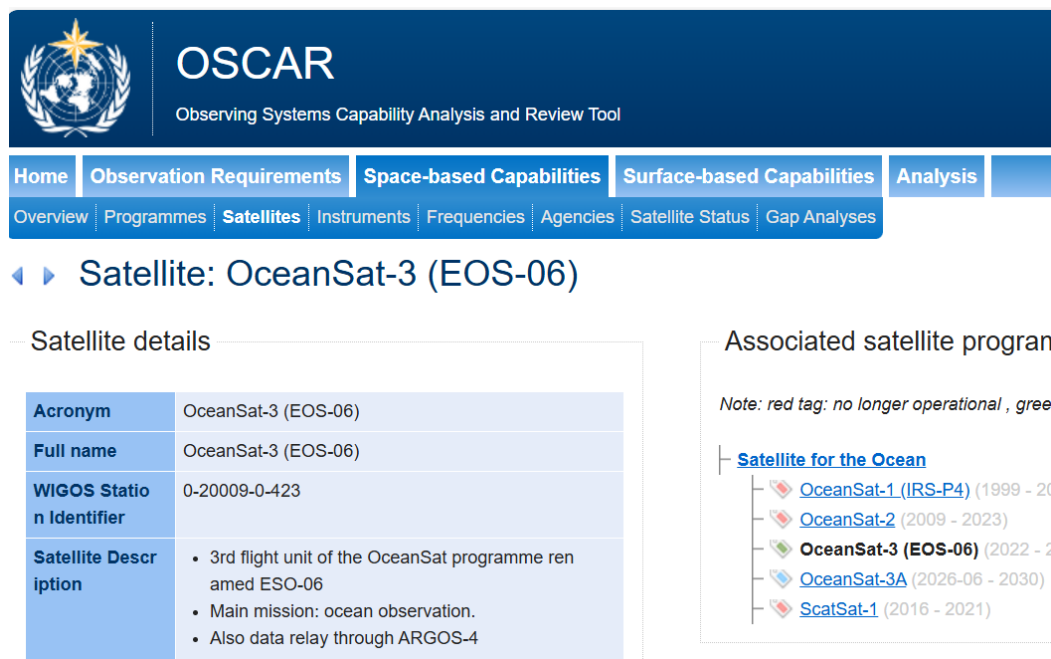
During the period since CGMS-52, the following entries have been defined in Common Code Table C-8 for instrument identifiers:

| Instrument | Agency | Type | Code table entry |
|---|--------|------------------------------|------------------|
| Tianmu Global Navigation Satellite System Occultation Sounder (TGNOS-M) | Tianmu | GNSS occultation sounder | 989 |
| MicroCarb (MicroCarb) | CNES | Spectrometer | 978 |
| MicroWave Imager on WSF-M (MWI) | DoD | Passive microwave radiometer | 911 |

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

The Group welcomed WMO's efforts to ensure that OSCAR/Space includes references to the Common Code Table entries used for satellite identifiers (table C-5). This has been included as the last field of the WIGOS Station Identifier, now shown in OSCAR/Space for many satellites.

Figure 1 shows an excerpt of the page for OceanSat-3 (EOS-6). The WIGOS Station Identifier is given as 0-20009-0-423, where 423 is the satellite identifier from Common Code Table C-5.



OSCAR
Observing Systems Capability Analysis and Review Tool

Home | Observation Requirements | **Space-based Capabilities** | Surface-based Capabilities | Analysis

Overview | Programmes | **Satellites** | Instruments | Frequencies | Agencies | Satellite Status | Gap Analyses

◀ ▶ **Satellite: OceanSat-3 (EOS-06)**

Satellite details

| | |
|---------------------------------|---|
| Acronym | OceanSat-3 (EOS-06) |
| Full name | OceanSat-3 (EOS-06) |
| WIGOS Station Identifier | 0-20009-0-423 |
| Satellite Description | <ul style="list-style-type: none"> • 3rd flight unit of the OceanSat programme renamed ESO-06 • Main mission: ocean observation. • Also data relay through ARGOS-4 |

Associated satellite program

Note: red tag: no longer operational, green tag: operational

- ◀ [Satellite for the Ocean](#)
 - ◀ OceanSat-1 (IRS-P4) (1999 - 2014)
 - ◀ OceanSat-2 (2009 - 2023)
 - ▶ OceanSat-3 (EOS-06) (2022 - 2025)
 - ▶ OceanSat-3A (2026-06 - 2030)
 - ◀ ScatSat-1 (2016 - 2021)

Figure 1 – Excerpt from OSCAR/Space showing WIGOS Station Identifier

The Group will continue to encourage the inclusion of instrument identifiers from C-8.

2.2.3 WIS 2.0 status

There is a variety of satellite data being made available in NRT via WIS 2.0. EUMETSAT is providing all satellite data currently distributed on the GTS via its WIS 2.0 node. Other data available includes INSAT-3DR and -3DS winds from IMD, FY-3E GNOS data from CMA, DBNet data from NOAA/CIMSS, DBNet data from Météo-France, DBNet data from HKO, GEO-KOMPSAT-2A L2 products from KMA.

3 FORMAT STANDARDS FOR COMPATIBILITY WITH AI AND ML

At the last CGMS Plenary discussions, the potential response of CGMS to the AI challenges was discussed, which resulted in the endorsement of four key AI/ML areas to enhance meteorological and space weather data utilisation. The first of these was:

1. Data curation standards

the purpose of this initiative is to standardise Earth observation data, including formats like Zarr and metadata per CF conventions, to ensure compatibility with AI and ML. As part of the deliverables, the CGMS Secretariat will lead a survey of agencies within the CGMS. Additionally, Working Groups II and IV will collaboratively draft standards that will be reviewed at CGMS-54.

As part of this CGMS WGI (and so this Task Group) was implicitly tasked with creating draft standards for Earth observation data, including formats like Zarr, to ensure compatibility with AI and ML. These should be reviewed at CGMS 54.

Efforts to secure expert input on this topic failed to solicit the requisite level of response. The Task Group will again be invited to address this important topic prior to the plenary session; due attention will be given to the presentation given by the co-chairs of WMO's Study Group on Future Data Infrastructure (SG-FIT) under agenda item 4.3.1 at the recent INFCOM Management Group meeting.

4 UPCOMING ACTIVITIES

Between CGMS 54 and CGMS 55, the Task Group will continue work on coordinating format standardisation for satellite data, following the implementation of WIGOS station identifiers for satellite instruments, and providing subject matter expertise to WMO Expert Teams.

An important task for this period will be creating draft standards for Earth observation data, including formats like Zarr, to ensure compatibility with AI and ML.

Two intersessional meetings are planned: late September 2026 and early January 2027.

5 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.

6 CONCLUSION

The Task Group on Satellite Data and Codes continues to play a useful role. During the forthcoming intersessional period, the group will continue to support the global migration from GTS to WIS 2.0.