Report on the outcome of WGI activities since last plenary

CGMS-50 Plenary, agenda item 4.2

Coordination Group for Meteorological Satellites

CGMS

Introduction

Working Group I – SATELLITE SYSTEMS and OPERATIONS

- Co-chair: Vanessa Griffin (NOAA), Dohyeong Kim (KMA)
- Rapporteur: Karolina Nikolova (EUMETSAT, acting)

Objectives of WGI

- Global frequency coordination
- Interoperability and standardisation in view of technological evolution
- Preparation of satellite and ground systems/operations/architecture for future satellite generations
- Specific Task Groups set-up to look at specific areas in detail, with the aim of producing best practices, standards, future architectures and systems

WGI Task Groups:

- Task Group on Direct Broadcast Systems
- Task Group on Satellite Data and Codes
- Task Group on Data Collection Services
- Task Group on Space Debris and Collision Avoidance
- Task Group on the Coordination of LEO Orbits
- Task Group on RFI detection, monitoring and mapping

Coordination Group for Meteorological Satellites

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WGI main outcomes and future work(1)

WMO and CGMS SFCG Rep

- WMO has implemented new structure of space frequency data recorded in OSCAR/Space.
- The implementation of the frequency data records is now supporting the interest of Space Frequency Coordination Group (SFCG) to use OSCAR/Space as an information source for the passive and active remote sensing bands and to identify future remote sensing spectrum needs.
- SFCG Rep and WMO to propose a process for providing accurate and timely updates on satellite frequencies recorded in OSCAR/Space database. The proposed process is to be presented by October 2022.
- By the end of 2022, the SFCG rep will circulate the updated WMO preliminary position paper on WRC-23 after being updated by ET-RFC.
- CGMS members need to ensure the updated WMO positions are known to its members national and international preparation processes for WRC-23.

WGI main outcomes and future work(2)

Task Group on RFI detection, monitoring and mapping

- WGI has taken the initial steps in forming the Task Group on RFI detection, monitoring and mapping.
- Continue forming the Task Group on RFI, establish and confirm the ToR for the Task Group, and investigate collectively mechanisms for detection and long-term monitoring of and mapping of RFI as the knowledge base for assessing the impact on the passive sensor measurements.
  (for example, but not limited to, from IMT-2020/5G into the 24 GHz passive band)

  ➢ Note: CGMS agencies were invited to nominate additional members.

WGI main outcomes and future work(3)

Task Group on Satellite Data and Code

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

Task Group on Direct Broadcast Systems

- Task Group presented a well-received SWOT analysis on Low Latency Data Access from LEO meteorological satellite.
- The Task Group will perform further study on the possible usage of the identified emerging technologies by the SWOT analysis, to complement the data rate limitation of the traditional direct broadcast for future LEO meteorological satellites programs, and present outcomes to next CGMS.

WGI main outcomes and future work(4)

Task Group on Coordination of LEO Orbits

- This Task Group presented draft Best Practices for the Coordination of Data Acquisition for LEO Satellite Systems.
- Perform a broad SWOT analysis for maximizing the return/minimizing the cost, taking into account new mission and reference mission concepts and associated technologies, highlighting the potential for inter-Agency cooperation.

WGI main outcomes and future work(5)

Collaboration (Direct Broadcast Systems and Coordination of LEO Orbits)

- WGI was agreed that the Two Task Groups will work together on reviewing the overlap and propose a way forward for both best practices and SWOT analysis.
- Two Task Groups will propose a consolidated direct broadcast and global data access SWOT analysis to CGMS-51.
- Two Task Groups will review the overlap between their Best Practices*, and propose a way forward to CGMS-51.

* Best Practices
1. Proposed BP for the Coordination of Data Acquisition LEO Satellite Systems
2. Published BP in support to local and regional processing of LEO Direct Broadcast Data

WGI main outcomes and future work(6)

Task Group on Data Collection Services

- The WGI Task Group on DCS presented a SWOT analysis on the Data Collection Service from Geostationary meteorological satellites, which was well received.
- The Task Group is working on an evolution of the existing DCP standards taking into account user feedback.
- A workshop with the manufacturers is planned to detail and implement this standard taking into account the SWOT analysis and the results of the survey commissioned by ESA.
- Build on the SWOT analysis, this Task Group has put forward five proposals for future work.
    1. Covering RFI Mitigation
    2. Joint DCS PR(Public Relations) materials
    3. DCS introduction video
    4. Manufacturer workshop
    5. Discoverable information

WGI main outcomes and future work(7)

Task Group on Space Debris and Collision Avoidance

- The preliminary Task Group activity performed between NOAA and EUMETSAT has identified the potential for establishing several Best Practices in performing collision avoidance and debris mitigation with the potential to benefit all CGMS members and the wider space-faring community.

- This Task Group will work on proposed Best Practices in performing collision avoidance and debris mitigation for recommendation for endorsement in CGMS-51.

  - Note: All CGMS members involved in spacecraft operations are strongly encouraged to nominate participants for this activity.

Items for Plenary(1)

- The HLPP was updated following review of WGI related matter. The revised HLPP will be presented to plenary for endorsement.
- Starting with CGMS-51, WGI agreed to adopt the approach of each of the Task Groups regularly presenting their latest Best Practices and status of Best Practices implementation, as well as proposals for future activities.
- Each of the WGI Task Groups will present its latest Terms of Reference to CGMS-51.
- CGMS agencies to consider nominating additional members for all the WGI Task Groups, especially ones where no representatives of the agencies are currently participating in the Task Group(s).

Items for Plenary(2)

- Vanessa Griffin from NOAA retired in May 2022. The WGI participants thanked Vanessa for her valuable contributions and leadership as WGI Co-chair.

- CGMS Agencies are invited to nominated candidates for Co-Chair of WGI. Sean Burns from EUMETSAT is proposed as an interim WGI Co-chair, supporting until a new Co-chair is nominated.

- Karolina Nikolova form EUMETSAT was nominated as the Rapporteur of WGI for Plenary endorsement. CGMS Agencies are invited to nominate candidates for Co-Rapporteur of WGI.