

**CGMS WORKING GROUP I (WGI) TERMS OF REFERENCE
SATELLITE DATA AND PRODUCTS**

Endorsed by CGMS-52 Plenary on 6 June 2024

1. INTRODUCTION

CGMS Working Group I (WGI) is one of five CGMS Working Groups. WGI focuses on “Satellite Systems & Operations” and was originally set up in 1989 under the name “Global issues on satellite systems and telecommunication coordination”, together with the Working Group on Meteorological products (now CGMS WGII on “Satellite Data and Products”), as part of the decisions taken in the CGMS-18 plenary meeting in Geneva in 1989.

The main focus of WGI has always been to keep CGMS in line with the latest technological solutions that will operationally support the meteorological user community. In doing so, WGI has in the past provided a forum of discussion for the definition and consolidation of the digital transmission formats already in use by the meteorological community (LRIT and HRIT both global and mission specific details). WGI has also provided and continues to provide a discussion forum for the different World Meteorological Organization (WMO) programmes using the Geostationary Data Collection Services (DCS), operated by the CGMS members, supporting remote environmental data collection, such as Tsunami Early Warning Systems. In relation to DCS, WGI has also encouraged direct discussions between different CGMS members on the newer generation of Data Collection Platform (DCP) transmitters and receivers. Finally, it has allowed a coordinated effort in the utilisation and sharing, by the different CGMS members, of the frequency bands allocated to the Meteorological-Satellite Service and, where relevant, to the Earth Exploration-Satellite Service.

In recent years, the scope of Working Group I has gradually evolved to cover additional important systems operations topics, such as Low Latency Data Access, Space Environment Sustainability, Radio-Frequency Interference (RFI) detection, monitoring and mapping. Additionally, the coordination of satellite data formats within the CGMS community was transferred from CGMS WGIV on “Data access and end user support” to WGI.

Considering the evolution of WGI activities and structure, WGI/A51.01 tasked the Working Group to revise its Terms of Reference. The proposed updated WGI Terms of Reference are presented in the following section 2.

2. TERMS OF REFERENCE

SCOPE OF WGI

CGMS WGI will provide a regular forum for CGMS agencies to address topics of interest in the area of satellite systems and operations, allowing agencies to share experiences, lessons learnt and to develop best practices and detailed technical standards, where appropriate, related to global/common aspects. The working group will address these issues for existing operational systems and will aim at supporting CGMS in preparing for the future generation of meteorological satellite systems and to contribute, in the related areas, to the consolidation and updates of interoperability and standardisation that the evolution of technology imposes.

OBJECTIVES AND ACTIVITIES

WGI has the following objectives:

1. Provide a regular forum for CGMS agencies to address topics of interest in areas related to global coordination of satellite systems and telecommunication;
2. Allow agencies to share experiences, lessons learnt and to develop best practices and detailed technical standards where appropriate related to global/common aspects of satellite systems and operations;
3. Support to CGMS in preparing for the future generation of meteorological satellite systems;
4. Contribute to consolidation and updates of interoperability and standardisation imposed by technological evolution.

The objectives will be achieved via the following activities:

1. **Frequency Management and RFI:**

- a. Address areas of mutual interest on topics related to frequency coordination and management, and when/where relevant, feeding in its topics, including its positions for World Radiocommunication Conferences (WRCs) agenda items, into the Space Frequency Coordination Group (SFCG), via an SFCG Representative, and into the WMO Expert Team on Radio Frequency Coordination (ET-RFC);
- b. Assess possible approaches for the detection, monitoring and mapping of RFI, evaluating their feasibility and deriving Best Practices for the benefit of CGMS agencies and of the user community.

2. **Satellite Data and Codes:**

- a. Coordinate work on satellite product format issues within the CGMS community and provide support to the work of WMO's Expert Teams.

3. **Low Latency Data Access (LLDA):**

- a. Address improving the latency of data access for LEO satellite systems from both a global and regional perspective, harnessing common emerging technologies and taking account of the evolution of the commercial and agency space systems;
- b. Address technical and operational aspects of direct broadcast and associated regional retransmission services (present and future) of mutual or global interest for the CGMS agencies;
- c. Promote interoperability and relevant standards / operational procedures to the CGMS agencies, deriving associated Best Practices for the benefit of CGMS agencies and of the user community of their direct broadcast and associated regional retransmission services;
- d. Suggest improvements to Low Latency Data Access based on the output of regular Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis;
- e. Explore the impact of space-based data relay systems.

4. **Data Collection Services (DCS):**

- a. Address, between the relevant CGMS agencies, technical and operational aspects of the Data Collection Services (DCS);
- b. Promote standards, interoperability and operational procedures within the CGMS agencies, deriving associated Best Practices for the benefit of CGMS agencies and of the DCS user community;
- c. Suggest improvements to DCS based on the output of regular SWOT analysis;
- d. Develop new international Enhanced DCP standards;
- e. Maintain a DCS Handbook;
- f. Develop and maintain an RFI DCS register.

5. Space Environment Sustainability (SES):

- a. Address technical and operational aspects related to Space Environment Sustainability, such as space debris environment/mitigation, space traffic coordination/management, collision avoidance, debris removal, lifetime extension, spacecraft design for sustainability, use of space weather event forecast information, space situational awareness analysis.
- b. Identify and review status, current events and foreseen evolutions of the space environment, together with related regulations, guidelines, approaches, tools and services.
- c. Develop and promote international cooperation on Space Environment Sustainability Best Practices. Create general awareness of space environment sustainability issues within CGMS agencies;
- d. Perform a gap analysis between the needs and the available/used Space Traffic Coordination (STC) services;
- e. Suggest improvements to SES based on the output of regular SWOT analysis;
- f. Liaise with other international bodies and identify opportunities for collaboration, iterate on approaches, identify lessons learned, etc. Engage with UN-COPUOS to achieve a global standardised approach for Space Traffic Coordination based on CGMS proposals;

6. Address relevant aspects on the implementation of the global contingency plan when agreed by Plenary (as proposed by WGIII);

7. Address topics from the CGMS High Level Priority Plan within the scope of WGI.

3. WORKING ARRANGEMENTS

The working group will be of permanent nature and will be co-chaired by two Chairpersons who will be supported by at least one Rapporteur, all appointed by the CGMS Plenary. The objectives and related activities of WGI will be achieved via several Task Groups coordinated by WGI. Each WGI Task Group will be led by a Task Group Chair appointed by the WGI Co-Chairs.

The current WGI Task Groups are:

1. Task Group on RFI detection, monitoring and mapping
2. Task Group on Satellite Data and Codes
3. Task Group on Low Latency Data Access
4. Task Group on Space Environment Sustainability
5. Task Group on Data Collection Services

Additionally, Frequency Management issues will be followed via an SFCG Representative reporting to WGI.

All agencies of CGMS participate in WGI. Nomination of WGI and relevant Task Group members is under the responsibility of each agency, but shall promote continuity and foster active contribution. WGI Co-chairs, WGI Co-rapporteurs, WGI Task Group Chairs and CGMS Secretariat shall be informed by agencies of names of representatives and changes before the CGMS Plenary.

Each WGI Task Group Chair, with the support of the CGMS Secretariat, will maintain an up-to-date mailing list of Task Group members. The CGMS Secretariat will maintain a mailing list of WGI representatives, which shall include all Task Group Chairs and may include Task Group members as required. The CGMS Secretariat will maintain, on a corresponding CGMS WGI webpage, the WGI Terms of Reference, including a list of the current WGI Co-Chairs/Co-Rapporteurs/Task Groups/Task Group Chairs.

The Working Group will meet ahead of CGMS Plenary with an agenda covering the objectives of WGI and shall also assess the status of implementation of the CGMS High Level Priority Plan and update it as necessary. To achieve this, each WGI Task Group will present a report containing its latest Terms of Reference, status on current and proposed/planned activities, as well as latest best practices and the status of their implementation for each agency. The WG will use, when possible, the support of established international working groups and Task Teams (e.g. SFCG, WMO ET-RFC). Space weather operational issues of relevance to WGI, such as usage of space weather products/services in support to satellite operations, would be covered in a joint SWCG-WGI-WGIV Working Group meeting ahead of CGMS Plenary.

The WGI Co-Chairs, with the support of the Co-Rapporteurs, shall compile a report on the outcome of the WGI meeting, including proposals for relevant CGMS actions and recommendations. This will be reported to CGMS Plenary and will highlight aspects of relevance and/or identify topics needing high-level approval or guidance at the plenary. As necessary, the Working Group will also convene intersessional meetings for addressing topics of interest or to complete actions and tasks identified at WG meetings and plenary.