REPORT OF THE 54th PLENARY SESSION OF THE COORDINATION GROUP FOR METEOROLOGICAL SATELLITES

EXTRACT
WORKING GROUP I

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CGMS MR 54

PARALLEL WORKING GROUP SESSIONS

WG I REPORT

Co-Chairs: *James Donnellon, NOAA / Sean Burns, EUMETSAT*
Rapporteur: *Karolina Nikolova, EUMETSAT*

1. WGI meeting introduction and expected outcomes

CGMS-54-WGI-WP-01 - 1.1 WGI meeting introduction by Co-Chairs/Co-Rapporteurs (incl. welcome, meeting agenda, current and future WGI scope within CGMS, latest WGI ToR, overview of Task Groups) (Co-Chairs / Rapporteur)

The WGI Co-Chairs opened the meeting with a welcome address and short introductions of new members.

A presentation re-calling the role of WGI within CGMS, the objectives of WGI, its current structure, and status of the WGI Co-Chairs, WGI Co-Rapporteurs and Task Group chairs was provided for reference.

WGI included representatives of the satellite operators from CGMS Secretariat, CMA, ESA, EUMETSAT, IMD, ISRO, JAXA, JMA, KMA, NOAA, ROSHYDROMET, and WMO (see CGMS report for full list of participants).

The WGI meeting was hybrid, with in-person participation in Darmstadt and also virtual attendance via Webex.

CGMS-52-CGMS-WP-01 - 1.2 WGI expected outcomes (Co-Chairs / Rapporteur)

A presentation of the expected outcomes from each of the agenda topics was provided for reference.

2. Frequency management

CGMS-54-CGMS-WP-02 2.1 Report on frequency management related topics (incl. SFCG, WMO, ITU, etc) (Markus Dreis)

The report provided an overview on the outcome of the following meeting/conferences on issues of interest to CGMS:

- 44th annual meeting of the Space Frequency Coordination Group (SFCG), 10 –18 June 2025;
- 7th meeting of the WMO Expert Team on Radio Frequency Coordination (ET-RFC), 4 – 6 February 2026.

SFCG and WMO updated and refined their objectives/positions for WRC-27 agenda items of interest/concern. Those objectives/positions, as outlined in CGMS-54-CGMS-WP-02, are in line with

CGMS interests, in particular but not exclusively with regard to WRC-27 agenda items 1.1, 1.3, 1.7, 1.8, 1.18 (resolves 1) and 1.19 (see HLPP section 2.2.1).

The companion presentation to CGMS-54-CGMS-WP-02 provided additional background information on the status of preparations on those WRC-27 agenda items.

Additionally, information was provided on preliminary agenda items WRC-31 of potential interest to CGMS.

Concerning the OSCAR Database updates and changes, all proposals from SFCG were implemented. Key changes include a new structure for separating responsible and cooperating agencies (in the meantime already implemented) and a refined approach to the visibility of frequency data as proposed by SFCG and agreed with WMO:

- Telemetry, Tracking, and Command information will be hidden from public view but retained for logged-in users,
- data downlink frequency information will be restricted to allocated frequency bands, with exact frequencies hidden,
- Data Collection Platform (DCP) frequency information remains publicly visible.

The integration of an RFI reporting module into OSCAR/Space, designed to provide WMO Members (National Meteorological and Hydrological Services) with the possibility to report about their cases of RFI, although the scope of what can be reported, RFI only or also other anomalies/instances leading to loss of data, is not yet fully clear and will be further defined once experience is gathered with the reports on RFI received by WMO. In this context, care must be taken in order not to overlap completely with reporting tools/databases in the framework of SFCG, ITU, and the CGMS Space Weather Coordination Group.

During discussions, the issue of RFI into ground-based passive sensors was mentioned. Unfortunately, this community is underrepresented in regulatory considerations and corresponding fora, such as the ITU and the lack of interaction with national authorities. The idea was expressed to give a presentation at the WMO Technical Conference on Instruments and Methods of Observation (TECO-2026), 5-8 October 2026.

WGI agreed the following new actions:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
SFCG Liaison	**2.1**	WGI/54.06	The SFCG Liaison to present a report on frequency management related topics to CGMS-54 Plenary,	CGMS-54 Plenary	**OPEN**

			and invite CGMS to note this report and provide feedback and information on its activities via the CGMS/SFCG Liaison Officer to SFCG-45 (June 2026) on any frequency related matter.		

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
Markus Dreis / RFI TG Chair / DCS TG Chair	**3.1**	WGI/54.07	Coordinate an RFI presentation for WMO Technical Conference (TECO)	CGMS-55 WGI	**OPEN**

CGMS-54-NOAA-WP-19 2.2 NOAA Spectrum Management Report (Beau Backus (virtually))

NOAA NESDIS is currently navigating a period of profound architectural transformation, transitioning from legacy polar systems to agile, disaggregated constellations such as NEON and GeoXO. This shift occurs within a hyper-congested radiometric environment in 2026, where the explosive growth of 5G mmWave, satellite Direct-to-Device (D2D) services, and NGSO mega-constellations—highlighted by SpaceX's million-satellite proposal—presents a critical challenge to environmental intelligence. The interference landscape has evolved from discrete sources into a persistent "aggregate noise floor" problem that risks blinding sensitive passive radiometers globally. Empirical evidence, including the 2026 Denver ATMS study, confirms that this interference corrupts the atmospheric moisture profiles essential for local precipitation forecasts and public safety.

NOAA emphasizes advanced RFI detection through the Data Management and Integration Performance Study (DMiPS) project and potential transition to cloud-based ground segments via the NESDIS Common Cloud Framework (NCCF). The strategic efforts at WRC-27 and within the CGMS are vital, as the accuracy of weather forecasts remains the primary priority for protecting millions of lives.

The key issues of relevance to CGMS are:

- **Global Baseline Harmonization and RFI Mapping:** Weather is a global phenomenon; NOAA emphasizes that spectrum management cannot be achieved in domestic isolation.

- **The Transition to Cloud-Based Ground Segments:** NOAA is moving toward the NESDIS Common Cloud Framework (NCCF) to decouple data generation from specific RF downlink locations.

- **Aggregate Interference from Mega-Constellations:** The shift from "discrete source" interference to an "aggregate noise floor" problem is a critical concern for global sensing. The scale of new proposals—such as SpaceX's million-satellite filing—threatens to globally blind sensitive radiometers through cumulative RF leakage, requiring a unified international response to update aging regulatory limits (like EPFD).

WGI agreed the following new action:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
Beau Backus/NOAA	**2.2**	WGI/54.08	Provide a report / presentation on the results of the DMiPS project study results in CGMS-55 WGI.	CGMS-55 WGI	**OPEN**

In the discussion, the challenges related to administrations faced with licensing requests for mega-constellations were noted. The administrations need guidance from the satellite operators operating passive sensors needing protection.

The challenges of regulations of ground-based systems, e.g. ground-based telescopes, were also discussed. In this case, global regulations may not be appropriate, but rather local regulations instead.

3. RFI detection, monitoring and mapping

CGMS-54-WGI-WP-07 3.1 Report from the CGMS WGI Task Group on RFI detection, monitoring and mapping (incl. latest ToR, status on current & proposed/planned activities, and use of AI)
(Beau Backus (virtually))

The Task Group on RFI Detection, Monitoring and Mapping (TGRFI) has made significant progress since its 2022 inception in harmonizing international efforts to detect and mitigate radio frequency interference (RFI). A primary milestone for this cycle is the completion of a draft set of "Best Practices for Data Collection Systems (DCS) RFI," which is recommended for endorsement by CGMS-54 to provide a standardized framework for minimizing data loss. These practices emphasize proactive design phases, informal engagement strategies for RFI resolution, and the establishment of robust communication channels between users and operators.

A critical strategic shift identified by the group is the operational necessity of integrating Artificial Intelligence (AI) and Machine Learning (ML) to counter "insidious" spectral contamination from sources like 5G, which often evades legacy statistical detectors by mimicking natural Gaussian noise. Looking ahead, the TGRFI proposes prioritizing the emerging interference challenges posed by the

rapid proliferation of Low Earth Orbit (LEO) mega-constellations and the development of rigorous data integrity standards for commercial data buys. Through continued intersessional collaboration, the group aims to ensure the long-term resilience of global meteorological satellite infrastructure in an increasingly crowded electromagnetic environment.

The key issues of relevance to CGMS are:

- **The Mega-Constellation Crunch:** The rapid deployment of large-scale LEO satellite constellations (like Starlink) presents an unprecedented risk of aggregate interference and out-of-band emissions. CGMS should develop proactive strategies to protect the vital passive sensing bands these constellations threaten.

- **Standardizing Commercial Data Buys:** As agencies move toward purchasing third-party observations, there is a critical need to ensure these commercial datasets meet the same rigorous spectral protection and RFI-flagging standards as member-owned assets. Harmonizing these protocols should maintain the integrity of the global observing system.

- **The "Invisible" AI/ML Shift:** Traditional RFI detection methods are effectively being "blinded" by modern 5G signals that mimic natural Gaussian noise. Transitioning to AI/ML is no longer a research experiment but an operational necessity to limit insidious spectral contamination from corrupting weather and other earth-centric data.

Heikki Pohjola was nominated as a new RFI Task Group member representing WMO.

Based on the discussion, WGI agreed the following new actions:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
RFI TG	**3.1**	WGI/54.09	Evaluate Mega-Constellations: Develop a report for CGMS-55 WGI on strategies to mitigate RFI risks from large-scale LEO deployments.	CGMS-55 WGI	**OPEN**

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**

RFI TG	**3.1**	WGI/54.10	Develop a report for CGMS-55 WGI on standardise Commercial Data Buys with respect to RF spectrum. As part of this, analyse RFI considerations in commercial data buys to ensure these commercial datasets meet the same rigorous spectral protection and RFI-flagging standards as member-owned assets. Harmonizing these protocols should maintain the integrity of the global observing system. Share report with WGIII.	CGMS-55 WGI	**OPEN**

CGMS-54-WGI-WP-20 3.2 Report on status of RFI best practices in the area of DCS - for review/consideration (Beau Backus (virtually))

This document outlined a comprehensive, lifecycle-based framework for managing Radio Frequency Interference (RFI) within satellite-based Data Collection Systems (DCS). It establishes that ensuring operational resilience is a strategic imperative that must be integrated from initial system design through ongoing operations, as a proactive design posture is the most effective and cost-efficient strategy for managing interference. The scope encompasses the end-to-end movement of data , organized into five key stages: planning, monitoring, characterization, mitigation, and removal. Central to these best practices are requirements for flexible hardware, such as reprogrammable transmitters and transparent transponders, alongside the utilization of AI/ML for advanced performance monitoring. Ultimately, the successful removal of RFI depends on both technical signal characterization and the cultivation of strong organizational relationships to influence change in RFI source operations.

Key issues of relevance to CGMS are:

- **Proactive Lifecycle Design and Spectrum Management:** Satellite hardware and spectrum architectures must be finalized early in the acquisition process because modifications post-launch are generally impossible.
- **Advanced Monitoring and AI Integration:** Fundamental system resilience requires the ability to distinguish between nominal and degraded performance through dedicated spectrum monitoring and the analysis of signal metadata.

- **Regulatory Engagement and Collaborative Relationships:** Technical characterization is only one part of the solution; successful RFI removal relies heavily on formal reporting to regulators and maintaining organizational relationships.

The RFI Best Practices in the area of DCS were presented in WGI. WGI noted the excellent work by the Task Group and agreed to propose this for endorsement to CGMS-54 Plenary. It was noted that some of the points in the best practice might be difficult to report against, so possible updates to resolve this are to be identified when the CGMS Agencies operating DCS start reporting against this best practice for the CGMS-55 cycle. If the best practice is endorsed at CGMS-54 Plenary, then regular reporting per agency against the best practice will be expected to start in the CGMS-55 cycle.

WGI/A53.15 is to remain open until the endorsement by CGMS-54 Plenary.

4. Satellite Data and Codes

CGMS-54-WGI-WP-05 4.1 Report from the CGMS WGI Task Group on Satellite Data and Codes (incl. latest ToR, status on current & proposed/planned activities) (Simon Elliott)

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. The current status of Task Group membership was provided and includes members from CGMS, CMA, EUMETSAT, JMA, KMA, NOAA, SRC Planeta, SSEC, UK Met Office, and WMO. An additional member from ISRO would complement the current composition well.

The paper reviewed the status of the Task Group and its forthcoming activities, including the creation of draft standards for Earth observation data, including formats like Zarr, to ensure compatibility with AI and ML.

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 (TTTDCF) 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.

During the period since CGMS-53, the entries have been defined in Common Code Table C-5 for satellite identifiers for MicroCarb and WSF-M1.

Also during the period since CGMS-53, the entries have been defined in Common Code Table C-8 for instrument identifiers for TGNOS-M, MicroCarb and the MicroWave Imager on WSF-M (MWI).

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 WMO Integrated Global Observing System (WIGOS) Station Identifier, now shown in OSCAR/Space

for many satellites. Heikki Pohjola also noted that the WIGOS station identifier is automatically assigned. The Group will continue to encourage the inclusion of instrument identifiers from C-8.

A WMO Information System 2.0 (WIS 2.0) status was provided 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. work will continue to support the integration of satellite data onto WIS 2.0 in collaboration with the community.

The topic of format standards for compatibility with AI and ML was also covered. 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 one of these topics was "*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.

CGMS-54-WGI-WP-101 4.2 Proposed update to the WMO Manual on WIGOS
(Simon Elliott)

The existing WMO regulatory framework requires that "core" satellite data must be exchanged using the WIS in a format specified by the WMO Manual on Codes.

Satellite operators commonly make use of community standard formats such as netCDF for data representation. It is proposed to work with WMO to update the Manual on the WIGOS such that "core" satellite data can be exchanged using the WIS in either the standard formats specified by the WMO Manual on Codes or in other standard formats endorsed by CGMS for satellite data.

WGI agreed to the proposed update to the Manual on the WIGOS and agreed to seek the endorsement of CGMS Plenary.

Given the endorsement of CGMS Plenary, the CGMS Secretariat and the WMO Secretariat are requested to work together to prepare a paper for INFCOM-4 addressing the proposed update of the Manual on the WIGOS.

5. Space environment sustainability

CGMS-54-WGI-WP-04 5.1 Report from CGMS WGI Task Group on Space Environment Sustainability (Andrew Monham & Juha-Pekka Luntama)

This document reported on the background, content of the Terms of Reference and progress achieved for the CGMS WGI Task Group on Space Environment Sustainability (SES), relevant to CGMS member current and planned missions.

The members of the CGMS rely on the sustainability of the space environment to ensure their satellite missions remain able to deliver meteorological and space weather data to global forecasting services. In this regard, safety on Earth is very much intertwined with safety in space. CGMS has therefore established a Task Group on Space Environment Sustainability which shall address all aspects of operations in the space environment where CGMS member coordination can help improve the safety and sustainability of space operations for all space actors. The objectives include establishing best practices covering Space traffic coordination, lifetime extensions, end-of-life disposal and space weather mitigation of risks and effects. It is foreseen that a proposal on acceptable space traffic coordination practices can be submitted for consideration by UN COPUOS.

Only minor updates to the Terms of Reference were made over the last year, including the development of practical approaches for pre-launch conjunction assessment as required by the UN Long-Term Sustainability Guidelines.

Membership of the Task Group has been sufficient to allow a meaningful exchange to take place, but would still benefit from the participation of currently unrepresented agencies (particularly in the domain of space safety and situational awareness). Identification of experts from member organisations who can support offline analyses of the Task Group is key to progressing on the objectives of the Task Group and active participation of experts from ESA, EUMETSAT and NOAA has allowed progress to be made in discussions of conjunction analyses and other space safety aspects. A broader participation of agencies remains critical to achieving the goals of this Task Group. The Task Group would benefit from members from further organisations, including CNES, IMD, ISRO, JMA, ROSCOSMOS, ROSHYDROMET.

The top priority of the Task Group is to produce best / acceptable practices for Space Traffic Coordination (collision avoidance, active on active satellite coordination practices). The second priority are the tasks/actions related to space weather observation requirements for improved STC services and space sustainability and reviewing current usage of space weather data for spacecraft operations and goals for improvement.

The progress of all actions was presented.

The Best practices preparation (WGI/A50.07) are progressing well. The Task Group has been able to gather sufficient information from a subset of CGMS members to allow meaningful comparisons and analyses towards a best practices definition. Inputs have been received from CMA, ESA, EUMETSAT,

JAXA, NASA and NOAA. Further inputs welcome. It is recommended to keep the action open until CGMS-55, noting that UN LTS Guideline mapping shall also be included in the deliverable document. A draft Best Practice document still to be presented, with mapping to UN Long-Term Sustainability Guidelines. Presenting the draft Best Practice (BP) document at CGMS-55, with mapping to UN Long-Term Sustainability Guidelines, should be achievable, but requires:

- Further offline analysis with the support of member agency experts;
- Additional CGMS member inputs to ensure the BPs are representative and feasible for the wider membership.

The discussion confirmed that assessing the commercial operators landscape is also something that will be included in the future work.

WGI agreed to close the action on defining the requirement for supplying owner/operator orbit and manoeuvre information to TraCCS and identifying steps for implementation (WGI/A53.04). NOAA has provided detailed information based upon their own experience, using publicly available TraCSS document links and example files from the NOAA GOES mission (a TraCSS pilot user). This should help other CGMS operators with example OCM and CDM formats before the service enters the production/public phase.

The action on producing a report on modelling of thermospheric density impacts (WGI/A53.05) remains open and is progressing. The Task Group is working on building a table of thermospheric density models and related studies to facilitate intercomparison. ESA first inputs provided and CCMS experts inputs are expected via NASA. Inputs from other agencies are requested.

WGI agreed to close the action on presenting the overall landscape on SES in TG intersessionals (WGI/A53.06). It has been identified that a significant review of the overall landscape of SES topics is presented in the September 2024 European Space Policy Institute report: "*A Party for Everyone? Analysing international efforts in space debris mitigation" (https://www.espi.eu/reports/a-party-for-everyone-analysing-international-efforts-in-space-debris-mitigation/).* This report offers a comparative analysis of key international instruments aimed at mitigating space debris, enhanced by detailed insights on their evolution. It is noted that "the report highlights a lack of broad international alignment on concrete implementation pathways and a fragmented landscape of a multitude of frameworks with heterogeneous involvement."

Indeed, the CGMS SES Task Group could be considered as belonging to that fragmented landscape, but is considered valuable as experienced operators with global scope have a direct forum to discuss and improve the implementation pathways to meet ever stricter debris mitigation standards and regulations. The SES TG is one of many groups focussing on space safety and traffic management. However, most are aimed at defining requirements rather than exchanging experience in implementation of those requirements and aligning implementation methods. The closest body in terms of scope and objectives would appear to be the Space Safety Coalition (SSC). An invitation has been made for the SSC to present their work at an upcoming SES TG meeting. Scope for further cooperation will be examined.

The action on developing a paper on CGMS work on SES for presentation at IAC in 5-9 October 2026 (Antalya, Turkey) remains open, but is progressing well. The Abstract: “Coordination of Space Environment Sustainability Approaches in the Coordinated Group for Meteorological Satellites (CGMS)” has been accepted for presentation at the 77th IAC in the Space Debris Symposium. Action to remain open until paper developed / presented at the IAC and feedback provided to the SES TG for reporting at CGMS-55.

The action on reviewing current usage of space weather data for spacecraft operations and goals for improvement (WGI/A53.08) remains open. Space weather information is split on two tables separating the Space Traffic Coordination needs from the "safety of space operation” related information. Only ESA inputs have been provide so far, no further inputs made since CGMS-53. ESA will provide more details to facilitate comparison with other agencies’ approaches and achieved accuracies. Inputs from other agencies are expected soon.

The action on producing a report of space weather observation requirements for improved STC services and space sustainability (WGI/A53.09) remains open. A report is to be produced following delivery and analysis of inputs from WGI/A53.08.

The proposed intersessional dates up to CGMS-55 were presented. Opportunities for face-to-face discussions as side meeting in other conferences shall also be considered.

The Metop-A/Metop-B deorbiting approaches were discussed.

A question was raised noting that there previously expectations of two best practices – one on Space Traffic Coordination and one on Space Environment Sustainability. It was clarified that Space Traffic Coordination is one of the components of SES, so there is one Best Practice on SES being prepared, which includes this in its matrix.

Mikael Rattenborg asked about the Zero Debris policies being referred to in the HLPP. This is taken into consideration in existing actions, but not driven by CGMS.

WGI agreed the following new actions:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
TG on Space Environment Sustainability	**5.1**	**WGI/54.01**	Assess overlap and scope for coordination with the Space Safety Coalition and the ESA Zero Debris Working Group. As part of this, SSC and ESA Zero Debris WG will present their work at an upcoming SES TG meeting.	CGMS-55 WGI	**OPEN**

6. Low latency data access

CGMS-54-WGI-WP-03 6.1 Report from the CGMS WGI Task Group on Low Latency Data Access (incl. latest ToR, status on current & proposed/planned activities, and global data low latency acquisition) (Antoine Jeanjean & Andrew Monham)

The Low Latency Data Access Task Group was formed from the merger of the former Direct Broadcast Task Group and the Coordination of LEO Orbits Task Group.

The LLDA Task Group provides a forum for CGMS agencies to address improving LEO satellite systems low latency data access from both a global and regional perspective, harnessing common emerging technologies and taking account of the evolution of the commercial and agency space systems. It is foreseen that historical boundaries between global and regional mission requirements and architectures may be substantially eliminated.

The Terms of Reference presented at CGMS-53 has been updated to include the document Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis of Low Latency Data Access from LEO Meteorological Satellites" [CGMS-52-EUMETSAT-WP-13] as a living document for yearly presentation. The SWOT analysis is presented separately with a proposal to close the ACTION WGI/A52.02 and raise a new action (see details in Agenda Point 6.5).

It has been concluded that it is premature to establish a low latency data access BP for the global mission (in response to the action A53.02). The Task Group shall follow the technological innovations identified in the SWOT analysis, and specific actions are recommended to further analyse potential for additional partnerships on ground segment acquisition as well as the potential for orbit coordination on future missions.

The LLDA TG Co-chairs are Andrew Monham and Antoine Jeanjean. Following CGMS-54, it is proposed that Andrew steps down and Nick Coyne will co-chair with Antoine. WGI endorsed Nick Coyne as the new TG Co-Chair.

The progress of actions was presented.

WGI agreed to close the action on identifying concrete CGMS actions based on the LLDA SWOT (WGI/A52.02). The Task Group work has concluded that no further actions required on commercial sector, data relay constellations and cloud services (refer to slide 8 of CGMS-54-EUMETSAT-WP-03). Instead, a new action is proposed to enhance the SWOT analysis for CGMS-55, including report on feasibility and applications of phased array and identification of AI applications opportunities withing the scope of the LLDA TG, in coordination with WGII.

The action on arranging a DBNet presentation in CMGS-54 WGI (WGI/A53.01) was closed by the respective gues presentation by Liam Gumley.

WGI agreed to close the action on reporting on the status of the global data low latency acquisition best practices in favour of new actions (WGI/A53.02). Whereas direct broadcast technologies and

operational partnerships are very mature and have been operational for many years, the same is not true for (very) low latency global data acquisition. Technologies such as inter-satellite data relay, phased array ground antennas, cloud data processing and dissemination services are being investigated, but not yet operational in CGMS agencies. Operational partnerships allowing coordination of phased orbits and sharing of additional ground infrastructure in support of global data acquisition is only done to a limited extent. Conclusion is that it is premature to establish a low latency data access BP for the global mission. New actions to be opened instead on assessing the value obtained from existing global data acquisition partnerships (such as between EUMETSAT and NOAA in the sharing of Svalbard and McMurdo data acquisitions) and estimate the projected value of wider cooperations (additional agencies, additional stations). As well as a new action on identify future opportunities for coordination of LEO orbits with a view to synchronised phasing (taking into account the work of the Coordination of LEO Orbits TG: CGMS-49-EUMETSAT-WP-05) and estimate potential value compared to uncoordinated systems. Furthurmore, the LLDA TG to keep abreast of technology developments and adoption by CGMS agencies, which will be achieved through the ongoing work on the SWOT analysis.

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
LLDA TG	**6.1/6.5**	**WGI/54.02**	Assess the value obtained from existing global data acquisition partnerships (such as between EUMETSAT and NOAA in the sharing of Svalbard and McMurdo data acquisitions) and estimate the projected value of wider cooperations (additional agencies, additional stations). Present a report and proposals to CGMS-55 WGI.	CGMS-55 WGI	**OPEN**

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
LLDA TG	**6.1/6.5**	**WGI/54.03**	Identify future satellite programme opportunities for coordination of LEO orbits with a view to synchronised phasing	CGMS-55 WGI	**OPEN**

			(taking into account the work of the Coordination of LEO Orbits TG: CGMS-49-EUMETSAT-WP-05) and estimate potential value compared to uncoordinated systems. Present a report and proposals to CGMS-55 WGI.		

CGMS-54-CMA-WP-01 6.2 Operational Direct Broadcast Systems Status Report & Status of Implementation of Best Practices at CMA (YANG Lei (virtually))

This paper presented the status of operational direct broadcast systems and implementation of the CGMS Agency Best Practices at CMA in support to Local and Regional Processing of LEO Direct Broadcast data (CGMS/DOC/18/1008274). NSMC/CMA (National Satellite Meteorological Center, China Meteorological Administration) has consistently supported DBnet operations. Currently, five polar orbiting meteorological satellites are in orbit: FY-3D, E, F, G, and H. Among them, D, E, F, and G are already operational, and DB (Direct Broadcast) software is available. FY-3H is scheduled to start operational service in July 2026. According to the plan, the DB software package, satellite-ground interface documents, Two-Line Element (TLE) files, hyperspectral channel selection principles, auxiliary files, and satellite-ground link calculations will be provided one month after the operational service. All those technical support can be downloaded through the official website.

CGMS-54-EUMETSAT-WP-01 6.3 Operational Direct Broadcast Systems Status Report & Status of Implementation of Best Practices at EUMETSAT (Antoine Jeanjean & Andrew Monham)

This paper presented the status of operational direct broadcast systems and implementation of the CGMS Agency Best Practices at EUMETSAT in support to Local and Regional Processing of LEO Direct Broadcast data (CGMS/DOC/18/1008274) for each of the METOP and EPS-SG LEO satellite missions. This paper also introduced available direct broadcast information about the EPS Sterna constellation. The EPS-Sterna information present in this document may evolve depending on the development of the programme.

CGMS-54-NOAA-WP-01 6.4 Operational Direct Broadcast Systems Status Report & Status of Implementation of Best Practices at NOAA (Toby Hutchings (virtually))

This paper presented the status of operational direct broadcast systems and implementation of the CGMS Agency Best Practices at NOAA in support to Local and Regional Processing of LEO Direct Broadcast data (CGMS/DOC/18/1008274) for each of the S-NPP, NOAA-20 and NOAA-21.

CGMS-54-EUMETSAT-WP-03 6.5 Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis of Low Latency Data Access from LEO meteorological satellites (incl. associated CGMS future direction themes) (Antoine Jeanjean & Andrew Monham)

The core meteorological satellite systems in LEO orbits, and other operational satellite systems where applicable, should ensure low latency data access of imagery, sounding, and other real-time data of interest to users. Application areas where low latency and availability is suitable include Severe Weather Monitoring, Nowcasting and Short and Medium-Range Numerical Weather Prediction. Other application areas could also benefit from very low latency products, e.g. ionospheric monitoring. Today, LEO meteorological satellites have two distinct services for providing low latency data to users:

- Global service: where the full orbit data is stored onboard and served at the pole(s);
- Regional or local service: real time dissemination of instruments data to a network of direct broadcasts stations.

This CGMS paper analysed the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of current LEO weather satellites systems to identify how low.

In response to WGI/A52.04, the Task Group's SWOT analysis identified 4 priorities areas which are:

1. Commercial LEO weather data: Commercial radio occultation data from LEO satellites (Spire, PlanetiQ). Plan for commercial microwave sounding by 2030.
2. Satellite data relay services: GEO and LEO relay services.
3. Ground stations services: Ground stations as a service, which may offer phased array technology.
4. Cloud services

These themes have been already covered in previous CGMS documents, which are referenced in this paper [CGMS-54-EUMETSAT-WP-03].

Based on this, WGI agreed to close WGI/52.04. No further actions required on commercial sector, data relay constellations and cloud services (refer to slide 8 of the presentation).

The WGI Co-chair asked that the Task Groups notes also the developments of commercial constellations, e.g. in China.

WGI agreed the following new action:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
LLDA TG	**6.1/6.5**	**WGI/54.04**	Enhance SWOT analysis for CGMS-55. Report on feasibility and applications of phased array. Identify AI applications opportunities within scope of	CGMS-55 WGI	**OPEN**

			LLDA task group, in coordination with WGII.		

CGMS-54-GUEST-WP-05 6.6 Direct Broadcast Network (DBNet) Presentation
(Liam Gumley (virtually))

Liam Gumley, Chair of the WMO DBNet Coordination Group, CIMSS/SSEC/UW-Madison, gave a virtual presentation on the Status of the Direct Broadcast Network (DBNet) for global real-time acquisition, processing, and delivery of satellite direct readout data, coordinated by WMO.

The DBNet concept and objectives were highlighted. DBNet ensures the global availability of near real-time LEO data received by a collection of Direct Broadcast stations distributed around the world. Global consistency is ensured by common software (i.e. AAPP, CSPP, FY3PP) consistent with global processors, standardized coding and file naming, and quality monitoring. The data are disseminated by the WMO Information System (primarily GTS/WIS 2.0). DBNet is coordinated by WMO Space Programme and supported by CGMS.

DBNet is composed of networks coordinated by regional and the DBNet Coordination Group (https://community.wmo.int/direct-broadcast-network-dbnet). Global monitoring of product consistency is performed by EUMETSAT NWP-SAF (http://nwpsaf.eu/site/monitoring/dbnet/).

The presentation gave an overview of the current DBNet services, the DBNet coverage, the DBNet processing scheme and the NWP-SAF monitoring.

The status of transition from GTS to WIS 2.0 was provided. Full channel sets of IASI and CrIS data from NOAA-20, NOAA-21, Metop-B, and Metop-C, disseminated by NOAA DBRTN, are already available today via WIS 2.0.

The high priority DBNet activities in the coming years were also presented.

WGI agreed that an important takeaway message is to encourage all satellite operators to continue to develop and maintain valuable software packages such as AAPP, CSPP, FY3PP. It was noted that a review of the CGMS website DB webpages should be carried out on a regular basis.

The following new action was agreed:

CGMS-54 ACTIONS - WGI					
Actionee	**AGN item**	**Action #**	**Description**	**Deadline**	**Status**
LLDA TG	**6.6**	**WGI/54.05**	Present CGMS direct broadcast BP in DBNet meeting	CGMS-55 WGI	**OPEN**

7. Data Collection Services

CGMS-54-WGI-WP-06 7.1 Report from the CGMS WGI Task Group on Data Collection Services (incl. latest ToR, status on current & proposed/planned activities) (Nicholas Coyne)

This paper presented the report from the WGI Task Group on Data Collection Services (DCS). The creation of the group was endorsed at CGMS-46. This report covered the group's activities since CGMS-53.

The Task Group on DCS, consisting of DCS Managers from each of the satellite operators, have met regularly as part of the virtual WGI Intersessional meetings. In addition to the regular intersessional meetings the Task Group plans to convene a DCS workshop every 2 years. The goal of this workshop is to facilitate interactions between the operators, users and manufacturers.

The Task Group has continued its work on the EDCP implementation (WGI/A52.03). To date, NOAA has incorporated the EDCP standard into ongoing communication protocol efforts. This is significant because it highlights the value of the CGMS Task Group's collaboration in that even without resources, sharing information can assist in standardizing activities that may benefit other groups. In a free and open exchange of information with all DCP manufacturers and DCP operators, NOAA has been able to incorporate feedback into current efforts for developing and testing the EDCP standard. Microcom has updated software for GOES DCS-based ground infrastructure and demonstrated its capabilities with successful in-ground tests. Additionally, EDCP transmitters have been built by Microcom to be launched in future Small Sat missions.

While initial analysis suggested a potential need to reduce rates to 350/750 bauds, the group has confirmed that the standard will move forward at 400 and 800 bps. Analysis by Microcom determined that transmitting a full data header with every transmission added 0.13 seconds of overhead. While considered "acceptable," the Task Group has opted for a rotating field approach, as proposed by Signal Engineering. Instead of transmitting all metadata in every transmission, the system will cycle through various fields across different transmissions. These fields include: GPS Coordinates (latitude/longitude), radio health, firmware version, battery voltage and power status.

EUMESAT is now investigating how they may incorporate similar updates to their system for the same purpose. This ongoing effort will be subject to the associated risk of relying on individual agency resources, but the Task Group remains optimistic that the DCP Standard represents a transformational capability to improve and expand the capabilities of DCS operations within the timeline established by the group.

The previous proposal for a multi-phase rollout (where headers were added only in late-stage Phase D) has been dismissed. The standard will now be defined in a single release:

- **Phase A (Definition):** Introduction of BPSK (400 bps) and QPSK (800 bps) modulation, Forward Error Correction (FEC) elements, and the new rotating DCP header for metadata
- **Phase B (Certification):** Formal certification as defined in Phase A
- **Phase C (Operations):** Full operational deployment of the new standard

The current revised schedule for the EDCP looks as follows:

- 2026:
  - Confirm the project funding plan – addressed with this document
  - Produce and test a prototype transmitter
  - Modify one of the receive sites to enable the reception of the EDCP
  - Microcom receivers are compliant. EUMETSAT TBC
  - Test the system and verify the performance of the prototype and ensure it covers the different modes
  - Certify the EDCP transmitters from the manufacturers
  - Modify the reception systems of all agencies
  - Test the reception for all agencies and satellites
- **2027**
  - Declare EDCP operational

The Task Group continues to follow the progress of the Smallsat project. NOAA and EUMETSAT, with JMA observing, demonstrated the operational use of the Data Collection System (DCS) by a LEO satellite, identifying its operational purpose and potential benefits. The successful launch and testing have determined that DCS can support satellites equipped with a DCS transmitter and thus provides an alternate approach for small sats to use the UHF band in a shared manner with other DCS users. Since its successful launch on 4 July 2024, TechEdSat-11 has successfully transmitted DCS messages from a LEO platform, demonstrating interoperability with various DCPRs, specifically on GOES-E, GOES-W, Meteosat-10 and Meteosat-12. The satellite completed validation testing and achieved its project goals, including reliable message transmission and coordination with GOES and Meteosat DCPRs. Testing at various power and data rates, including specific tests at 1W and 1200bps, demonstrated that lower power level than originally thought could be used with acceptable error rates. Based on that success, the project is deemed to be operationally viable. TES-11 achieved full success criteria by transmitting messages to multiple DCPRs, with performance meeting, and in some instances exceeding, mission goals. The satellite demonstrated long-duration error-free message transmission and reception, showing the ability to receive well at low power. An unusual effect of “ghosting” and “smearing” of received transmissions has been observed, likely due to Doppler differences between the spacecraft and the Earth. This effect was not observed in ground receptions and is believed to be caused by signal reflections from the Earth's atmosphere or water. Overall, Satellite use of DCS has been successfully validated both conceptually and operationally. Future missions (TES-16 and TES-23) are being planned. TES-16 is a 12U satellite expected to be launched in summer 2026 or December 2026. TES-23 will be placed into a GEO transfer orbit to further demonstrate DCS capabilities from different altitudes. Both missions will use EDCP format and carry a transmitter capable of both EDCP and legacy modes, ensuring compatibility with EUMETSAT reception even ground necessary changes are delayed. Next steps also include determining the policy and regulations for satellite use of DCS by respective organizations and the Coordination Group of Meteorological Satellites (WGI/A52.06).

The Task Group also presented an overview of the topic of scintillation and its relevance to DCS (WGI/A53.10). The interest in the space weather effect Ionospheric Scintillation remains relevant to CGMS DCS organizations. There is also academic interest in studying these phenomena. To that end,

NOAA has coordinated with researches at Boston College and Florida State University to develop an "S" measurement that samples signal strength during a DCP transmission and produces an S_{DCS} metric to accompany other DCS statistics. This S_{DCS} metric has been deployed to the development system at the NOAA GS at Wallops Island, VA. GNSS RO data is traditionally used for this purpose, so employing a DCS to investigate this phenomenon is a novel approach. Preliminary analysis of datasets containing the S_{DCS} metric are revealing interesting opportunities. For example, measurement differences between the NOAA site and a ground station operated by Microcom indicate that it may be possible to investigate Scintillation in both the DCP UHF uplink and the Geostationary Downlink by comparing data between ground stations. Furthermore, S_{DCS} measurement coincided with recent solar flare events. Previously, the focus of S_{DCS} was on Coronal Mass Ejections (CMEs) due to the longer lasting effects of the resulting geomagnetic storms. Using the S_{DCS} to analyse the shorter duration acute effects of solar flares in new from a DCS perspective. Use, validity, and final application of this metric are still in very early stages but the S_{DCS} metric offers the potential to provide data outage root cause information to DCS operators as well as supporting space weather organizations seeking free data from thousands of platforms transmitting through the ionosphere. WGI endorsed the proposal to further investigate the Ionospheric Scintillation and its potential use with DCS transmissions. WGI agreed that a more detailed presentation on scintillation should be presented at one of the SWCG TG meetings.

The Task Group has also worked extensively on the topic of RFI in relation to DCS. Existing electromagnetic radio, increased use of the spectrum, and spectrum sharing are the sources of current and potential RFI. One of the dilemmas facing DCS operators is that sources of interference may originate from various terrestrial or space-based locations and in different frequency bands. Traditionally, the burden of identifying the impact of RFI, the location of RFI, the mitigation of RFI and removal of RFI, if possible, is the responsibility of the operator. In many cases, locating RFI on a hemispheric level is extraordinarily challenging due to available resources. Furthermore, reporting RFI to a regulatory agency requires that the report specifies the location. Thus, without a location the RFI cannot be reported and may not be considered for purposes of broader RFI awareness. The Task Group on DCS has collaborated with the Task Group on RFI to discuss this issue and have determined that an RFI Register would be an appropriate method to document existing RFI issues being experienced by
CGMS DCS operators. The first current DSC RFI Register is enclosed (CGMS-54-WGI-WP-102). NOAA was able to coordinate removal of two interference sources since CGMS Workgroup 53. The Task Group on DCS has also drafted a CGMS Agency Best Practices in Planning, Monitoring, Mitigating, and Removing Radio Frequency Interference in Data Collection Systems (DCSs) for the Task Group on RFI.

With respect to the topic of WIS 2.0, discussions have taken place on the implementation on WIS 2.0 for DCS and also making and attempt to have a consolidated interagency report (WGI/A52.04). Nothing concrete has been decided yet. EUMETSAT has not migrated to WIS 2.0. This is expected in summer 2026 by entering a parallel operations phase of at least 6 months to transition data flows from GTS to WIS 2.0. It will be necessary to categorize DCP messages into one of seven Earth system disciplines and adopt an MQTT-based retrieval process where, during a transition phase, base64-encoded DCP data is embedded directly in the notification messages. NOAA has not migrated to WIS 2.0. NOAA DCS representatives have been notified that the NOAA National Weather Service (NWS)

has been tasked to migrated to WIS 2.0 by 2030. NOAA DCS will continue to collaborate with EUMETSAT and will coordinate with the NOAA NWS on their implementation plans for WIS 2.0.

WGI agreed that a DCS Workshop should be planned in accordance with WGI/A53.10.

The existing WGI DCS actions were updated accordingly.

Reference was also made to the best practices on DCP TX certification process and DCP data access (CGMS website publications).

CGMS-54-EUMETSAT-WP-04 7.2 Operational DCS status report incl. EDCP implementation plans + status of implementation of best practices (EUMETSAT), (Nicholas Coyne)

This presentation provided the status of the EUMETSAT Data Collection Services (DCS) (GMS-54-EUMETSAT-WP-03). These are currently supported Meteosat-12 (MTG) at 0° and Meteosat-9 at 45.5°E (MSG). MTGI1 took over the 0° DCS service on 25 January 2025.

The paper includes details of channel utilisation, DCP allocation, geographical distribution and DCP data dissemination mechanisms. The DCS is one of the core services operated by EUMETSAT in support of meteorology and weather prediction.

The EUMETSAT DCS currently supports both standard-rate (100bps) and high-rate (1200bps) DCPs. The prime IODC application is for the Indian Ocean Tsunami Warning Network (IOTWS). As of 15 March 2026, there are a total of 1861 DCPs allocated, with 600 actively transmitting. Out of those DCPs allocated, 800 are HRDCPs transmitting at 1200 bps (771 supported by Meteosat-10 at 0° and 29 by Meteosat-9 at 45.5°E). The remaining 1061 are Standard Rate DCPs (928 supported by Meteosat-12 (MTG) at 0° and 133 by Meteosat-9 (MSG) at 45.5°E). The EUMETSAT DCS had a reliability greater than 99% during the reporting period (from 1 January 2025 to 31 December 2025).

CGMS-54-ISRO-WP-01 7.3 Operational DCS status report incl. EDCP implementation plans + status of implementation of best practices (ISRO), (Himanshu Kumar (virtually))

ISRO has an effective meteorological data collection system based on INSAT & GSAT series of satellites and through associated ground infrastructure. Currently three satellites INSAT-3DR, INSAT-3DS, and GSAT-17 carry data relay transponders that help in collecting real-time data for meteorological, hydrological, and oceanographic applications. The Indian Meteorological Department (IMD) has established necessary ground infrastructure as well as dissemination mechanisms to provide the necessary service to the users. Various operational products are generated and disseminated using the IMD platforms.

In 2025, 15 cyclones were monitored and real-time alerts were generated including 3 land falling cyclones (Montha, Senyar and Ditwah).

CGMS-54-JMA-WP-02 7.4 Operational DCS status report incl. status of implementation of best practices (JMA), (Kazuki Yasui)

The Japan Meteorological Agency (JMA) has operated the Data Collection System (DCS) since its first Geostationary Meteorological Satellite (GMS) went into operation in 1978. The system plays important roles in collecting meteorological information as well as seismic intensity and tidal/tsunami data collaborating with the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS). Himawari-8's DCS has been operational since July 2015, and Himawari-9 took over the DCS service in 2022 and will continue in this role until 2029.

Recently, a number of DCPs have stopped using Himawari-DCS and started using commercial communication satellites instead (11 tidal DCPs in 2025).

As of March 2026, the following DCPs are supported:

- 154 for surface meteorological observation
- 44 for tidal/tsunami (UNESCO/IOC)
- 370 for seismic intensity in Japan
- 8 for mobile surface meteorological observation in Japan

JMA has decided that the planned Himawari-10 program set to replace Himawari-8/9 will assume the same DCS. Related discussions at CGMS WGI are expected to be helpful for future Himawari-DCS.

The paper included the JMA status of implementation of the CGMS Best Practices in support to DCP data access. JMA is compliant with most of the best practices.
Regarding The Best Practices in Support to DCP TX Certification Process, JMA does not require certification for DCP transmitter manufacturers.

CGMS-54-NOAA-WP-02 7.5 Operational DCS status report incl. EDCP implementation plans + status of implementation of best practices (NOAA), (William (Skip) Dronen (virtually))

The GOES DCS is an environmental data relay system that supports the collection of over one million messages per day from over 33,000 active DCPs throughout the Western Hemisphere. The GOES DCS Program has 721 user agency agreements representing 50 countries.

Use of GOES DCS continues to expand.

Collaborations with CGMS have resulted in progress exploring more robust communication protocols and an Enhanced Data Collection Platform (EDCP) Standard that may benefit all DCS operators. The EDCP Standard and other initiatives in progress at NOAA offer potential to improve system performance and mitigate external factors impacting GOES DCS such as RFI.

The GOES DCS has implemented all applicable Best Practices that can be employed on the current system. Any minor differences in Best Practices are related to the existing concept of operations for GOES DCS and NOAA's data delivery model.

CGMS-54-ROSHYDROMET-WP-01 7.6 Operational DCS status report incl. EDCP implementation plans + status of implementation of best practices (ROSHYDROMET), (TBC)

This paper addressed the current status and technical specifications of the Russian data collection system and related future plans. The DCS is established to provide collection and distribution of meteorological data from the remote areas and to support natural hazards warning systems. Roshydromet has developed and deployed the national DCS based on geostationary meteorological satellites Electro-L No.2, No.3, and No.4 (14.5W, 76E, 165.8E) with a backup option via Luch- 5 series communication satellite and highly elliptical orbit satellites Arctica-M No.1 and No.2. There are 698 DCPs currently deployed. DCPs are distributed all over the Russian territory, including 141 DCPs in hard-to-reach areas. The composition of the spacecraft constellation will be further revised with the end of geostationary Electro-L No.5 satellite testing.

8. WGI coordination Items

8.1 International cooperation

CGMS-54-ISRO-WP-11 Highlights of the outcome of the International Conference on Spacecraft Mission Operations (SMOPS-2026) (TBC - Govind (virtually))

The presentation of this topic was agreed to be covered in the Joint WGI-WGIV-SWCG instead.

8.2 Outcome of the latest CGMS Risk Assessment Workshop and any implementation aspects for WGI

CGMS-54-WGIII-WP-12wgi Status and outcome of the 8th CGMS risk assessment, (Melissa Johnson (NOAA))

CGMS conducts an annual risk assessment against the CGMS baseline to track how well CGMS is meeting its commitments.
The outcomes of the 8th CGMS Risk Assessment were presented. Highlights of this year's risk assessment:

- **Radio Occultation (Atmospheric Temperature, Humidity, and Ionospheric Electron Density)**: A high risk of not meeting the CGMS Baseline commitment in low-inclination RO observations after COSMIC-2 at the end of this decade. The SWCG made a recommendation to WGIII how to separate RO and Ionospheric Electron Density profiles in the CGMS Baseline and Risk Assessment, and the IROWG to articulate and present the risk level and potential impacts associated with a gap of low inclination RO.
- **UV Limb Spectrometer (Aerosol, Atmospheric Composition: O3):** Risk of not meeting the CGMS Baseline commitment in the mid-morning orbit in the mid-2030s. WGII is investigating other capabilities for UV limb sounding to complement JPSS.

- **SWIR Imaging Spectrometer (Atmospheric Composition: CO2, CH4):** Slight risk of not meeting CGMS Baseline commitment in the mid 2030s in the afternoon orbit. GHG TT via WGII has action to indicate if SWIR missions for CH4 and CO2 be added to the baseline.
- **Precipitation Radar (Precipitation):** Slight risk of not meeting the GGMS Baseline commitment in the early 2030s.
- **Scatterometry (Ocean Surface Winds):** Risk of not meeting the CGMS Baseline commitment in the afternoon orbit in the early 2030s.
- **Energetic Particle Sensor LEO (Magnetospheric):** Risk of not meeting the CGMS Baseline commitment in the afternoon orbit in the early 2030s.

CGMS-54-WGIII-WP-16wgi CGMS baseline document updates proposed from the 8th risk assessment workshop, For information (for discussion in WGIII)

The CGMS baseline document updates proposed from the 8th risk assessment workshop were provided for information.

8.3 Future direction 2022+ initiative

CGMS-54-CGMS-WP-3wgi Future direction: Proposal on the way forward (Antoine Berment)

The CGMS-51 Plenary endorsed the CGMS future direction 2022+ strategic themes.

Since then, the strategic themes have been integrated into the working structure of the CGMS Working Groups and progress has been made in several areas. From the perspective of the CGMS Secretariat, the initiation phase has been concluded.

This working paper provided an overview and proposed a way forward for each of the themes.

It was discussed that there will also be a presentation in WGIV and WGIII on the way forward.

Overall, themes are not being closed. They are covered in CGMS via the Task Groups.

8.4 CGMS High Level Priority Plan (incl. review, status of implementation, proposed updates)

CGMS-54-CGMS-WP-36 Status of implementation of CGMS High Level Priority Plan (2025-2029) (Mikael Rattenborg)

This working paper provided the status of implementation of CGMS High Level Priority Plan (2025-2029). It also listed proposals for changes to the HLPP targets. WGI reviewed and provided inputs to the current status of the HLPP.

CGMS-54-WGI-WP-100 Identification of top priorities for WGI, (Discussion)

The top priorities for WGI were discussed as part of the review of the HLPP and reflected in the HLPP accordingly.

8.5 WGI action items and recommendations (incl. review/updates of existing and proposed new action items and recommendations)

CGMS-54-WGI-WP-10 Status review of CGMS-53 actions and recommendations, and any CGMS-53 plenary actions relevant to WGI (Co-chairs / Rapporteur)

WGI discussed the actions and recommendations from previous CGMS plenary sessions (CGMS-53 and earlier). The status of the open actions on and recommendations for WGI were reviewed and updated.

CGMS-54-WGI-WP-11 Review of any new WGI actions resulting from CGMS-54 (Co-chairs / Rapporteur)

WGI reviewed the new actions resulting from CGMS-54 WGI's discussions and the inputs from participants were considered to update the actions as needed.

8.6 Future WGI sessions (incl. dates for future plenary and intersessional meetings, proposals for new agenda items)

CGMS-54-WGI-WP-12 Decision on dates on WGI intersessional activities in 2026-2027 (CGMS-54 to CGMS-55), (Co-chairs / Rapporteur), (for discussion)

The paper guided the discussion on planning the dates and formats of the WGI activities between CGMS-54 and up to and including CGMS-55.

WGI agreed on the WGI and Task Group intersessional meeting dates up to CGMS-55.

The proposed dates for CGMS-55 WGs and Plenary were presented.

9. Any other business

None.

10. Meeting Conclusions

CGMS-54-WGI-WP-13 Agreement on outcomes, conclusions & preparations of WGI report for plenary (Co-chairs / Rapporteurs)

The WGI Co-Chairs and Co-Rapporteur thanked the WGI meeting participants for their valuable contributions to a successful meeting.

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