

CGMS-48 Working Groups

25-29 May 2020

Key outcomes

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1. WORKING GROUP I

1. WGI SESSION

1. WGI noted the status of discussion on frequency matters and decisions from WRC-19 including the initial preparations for the WRC-23. SFCG and WMO are on a yearly basis defining and refining their positions for WRC-23 and provide CGMS with the latest status. WGI reviews and provides its feedback on issues of mutual interest/concern, as appropriate, and will include relevant WRC-23 issues in the HLPP.
2. WGI reviewed the proposed Best Practice 10 for Direct Broadcast (BP) detailing transmission signal monitoring and customer notifications. WGI proposed modifications to Best Practices 4 (CGMS agency best practices in support to local and regional processing of LEO direct broadcast data) and 9 (Satellite direct broadcast and reception station performance requirements). The modifications and new best practices will be circulated to WGI members for confirmation prior to plenary. Discussions started on how to address the direct broadcast high data rates from future satellites to be addressed in the HLPP.
3. The DCS subgroup reported outstanding progress on previous action items. The DCS handbook has now been published. The Best Practices for DCS data access were presented for endorsement. Work on the new Enhanced DCP standard is progressing.
4. WGI received an in-depth analysis by EUMETSAT on possible benefits of orbit geometry coordination to maximise the number of satellites that individual ground stations can support.
5. The HLPP was updated following review of WGI related matters. The revised HLPP will be presented to plenary for endorsement.

1.2 WGI-WGIV JOINT SESSION

1. As part of a joint session between WGI and WGIV, papers were presented on EUMETSAT new big data services and the NOAA experience with implementation of new architecture along with papers covering global coordination on handling future large data volumes and associated data circulation, global or inter-regional data circulation and access, and cloud services interoperability. Sufficient nominations were received for an expert group on cloud services to start its work in intersessional meetings. WGIV will lead this activity.

2. WORKING GROUP II

1. WGII reviewed the work of the CGMS International Science Working Groups (ISWGs), GSICS, SCOPE-CM, ISCCP-NG, and CEOS-OSVW.
2. WGII also took note of the activities of the CEOS-CGMS Joint Working Group on Climate (WGClimate) and the WMO Integrated Global Greenhouse Gas Information System (IG3IS). In particular it was noted that CEOS-CGMS GHG monitoring activities are embedded within WGClimate and will require regular interactions with and support of the various CGMS WGs.

3. WGII had a presentation from the International Surface Working Group that addresses the needs for better characterisation of surface properties for satellite applications over land and discussed the possibility for the group to become a new CGMS ISWG, possibly to be called the International Land Surface Working Group (ILSWG). The proponents of the group were asked to report to CGMS-49 with a well-defined draft Terms of Reference of the proposed new ILSWG, which could be reviewed by WG II and, if endorsed by CGMS Members, subsequently adopted by the CGMS Plenary.
4. WGII took note of the proposed strategic implementation plan for SCOPE-CM and recommended the group to develop the plan to a full-fledged proposal for CGMS-48 Plenary.
5. WGII welcomed the initiative to develop a consistent Next Generation International Satellite Cloud Climatology Project “ISCCP NG” capitalising on CGMS coordination efforts like SCOPE-CM and GSICS, but to expand to full global coverage including the poles.
6. WGII took note of the presentation on Aeolus, particularly emphasising the strong positive impact shown by global NWP centres based on early assessment of the mission.
7. WGII considered presentations on volcanic ash products and applications, specifically noting the need for consistent products for the ICAO Volcanic Ash Advisory Centres and International Airways Volcano Watch.
8. WGII addressed the coordination of GEO products, and recommended the establishment of a harmonised baseline for the GEO imager Level-2 product suite. WGII highlighted the importance of focusing on the benefits of common products generated by all satellite agencies. WGII agreed to prepare a survey to collect the current and planned status of GEO product providers to achieve a detailed understanding of the current characteristics, commonalities, differences, access and formats.
9. In response to a WMO request, WGII reviewed agriculture, drought, coastal inundation and bathymetry applications of satellite data. WGII noted that a close partnership is required across agencies and researchers and capitalising on existing initiatives to respond to user requirements based on new data and technologies.
10. WGII reviewed its Terms of Reference and recommended an updated version to plenary.
11. The HLPP was updated following review of WGII related matters. The revised HLPP will be presented to plenary for endorsement.

3. WORKING GROUP III

3.1 WGIII SESSION

1. WGIII reviewed input from EUMETSAT on Indian Ocean coverage and data dissemination methods and concluded that the area was covered with low risk of a gap.

2. WGIII reviewed the output from the Risk Assessment Workshop held in Darmstadt in February 2020. The WGIII agreed on an updated Risk Assessment and specific focus areas that required attention from CGMS members. Specifically, action was required for assuring: i) long term continuity in the early morning orbit to support a number of application areas; ii) continuity in terms of the number and geographic distribution of radio occultations; iii) observations from precipitation radar sensors and scatterometers; and iv) continuity in space weather observations and in-situ measurements.
3. WGIII reviewed and recommended to Plenary an updated CGMS Baseline document, which modified how some of the sensors were characterised, updating the application areas they support as well as adding new observational areas (e.g. CO2). There are still a number of areas that require input from WGII and the CGMS International Science Working Groups that will be incorporated into future revisions of the CGMS Baseline document.
4. WGIII noted from WMO presentations and discussion the value of OSCAR the challenges associated with collecting satellite status information (especially from non-CGMS operators) to support OSCAR/Space. The working group also noted the status of WMO's efforts to update OSCAR/Space, which is expected to be completed by Q3 2020). The working group also noted the gap analysis performed by WMO and identification of several critical areas.
5. WGIII noted the efforts undertaken by WMO on the coordination of OSCAR/Space with CEOS MIM.
6. WGIII noted the progress on the WMO gap analysis. WMO however clarified that the gap analysis process is awaiting a more permanent home following the WMO restructuring. Today it is primarily a WMO Secretariat-led effort, and it needs to be integrated fully in the WIGOS Rolling Review of Requirements led by the WMO Infrastructure Commission.
7. WGIII received updates on operational and research missions supporting global Earth observation and space weather applications.
8. The HLPP was updated following review of WG III related matters. The revised HLPP will be presented to plenary for endorsement.

3.2 WGII-WGIII JOINT SESSION

1. WGII-WGIII held a dedicated session looking at a way forward for some of the items highlighted by the CGMS Baseline Risk Assessment. A specific focus was given on the hyperspectral infrared instruments and the potential impact of the so-called spectral gap. The current spectral coverage seems adequate for most applications and the effects of spectral gaps can partially be mitigated, however space agencies are encouraged to strive towards no spectral gaps to ensure all applications areas are supported, especially intercalibration, and required temporal resolution is provided. The issue should be further substantiated by the relevant ISWGs and other international initiatives.
2. The groups also noted that the need for geostationary radiation budget mission in the future is weak. In the future it seems that a single LEO instrument is sufficient for the baseline, but will need to be confirmed.

3. WGII-WGIII agreed to hold a dedicated inter-sessional meeting to address the CGMS baseline.

4. WORKING GROUP IV

1. Results from joint meeting and user survey in RA II and RA V are useful for policy makers of satellite product development, data dissemination and user training.
2. The IODC dissemination plan is (mostly) implemented. Status reports from Indian Ocean Data Coverage partners are expected for CGMS-49.
3. On demand rapid scanning or mesoscale domain request services are being offered by several satellite operators (CMA, JMA, KMA and NOAA). The services are increasingly being used through request portals for operational and research purposes. The discussions highlighted possible areas for improvement for the users as well as for satellite operators. Upgrading the cooperation between request portal websites will optimise the efficiency in the case of multiple requests, in particular if the regions of interest are covered by multiple satellites.
4. Creating and bringing metadata records up to date is important, in particular for new space weather data. There is more work to be done in this area.
5. The work of the VLab is considered very important for existing satellites and even more for the new generation of GEO and LEO satellites. WGIV fully supports the continuation and the necessity for budget provision for the VLab.
6. There was a good response on the topic of cyber security. The minimum number of nominations for an expert group has now been reached for the work to start.
7. The HLPP was updated following review of WG IV related matters. The revised HLPP will be presented to plenary for endorsement.

5. SWCG – SPACE WEATHER COORDINATION GROUP

5.1 SWCG SESSION

1. It was agreed to remove LEO Magnetometer data provision from the CGMS baseline, and to add these as aspirational data to the HLPP.
2. Space weather measurements from lunar orbits are also to be added as aspirational data to the HLPP.
3. NOAA are making good progress on the SWFO L1 mission, with launch planned for late 2024. Due to the current reliance on ageing spacecraft at L1, SWCG will investigate available contingency measures in coordination with space weather prediction centres to mitigate a potential gap. ISRO are making progress on the Aditya L1 mission, but are reviewing the impact of COVID-19 on all their programmes in June, so a launch date is not currently available.
4. The ESA Lagrange L5 mission is making good progress following a cost cutting exercise, with launch planned for 2027.

5. Good progress is being made in establishing the framework for the inter-calibration of energetic particle sensors in GEO following GSICS principles. It is recommended that this activity will include additional energetic particle sensors in GEO operated by CGMS members.
6. Other members reported progress in deploying energetic particle sensors in GEO and LEO.
7. ICAO is incorporating Russian and Chinese forecast centres as a joint fourth global space weather service centre.
8. NASA and NOAA are working under a new directive to facilitate the exchange of new observations, models and applications between research and operations activities.
9. Progress is made on ensuring the correct structuring of space weather data within the WMO OSCAR database.
10. SWCG has made good progress on surveying the ISES community of operational space weather prediction centres to help establish areas for improvement in data provision. This engagement is planned to continue.
11. The HLPP was updated following review of SWCG related matters. The revised HLPP will be presented to plenary for endorsement.

5.2 SWCG JOINT SESSION WITH WGI AND WGIV

1. The joint SWCG/WGI/WGIV session reviewed the status of user and operator surveys being conducted by the SWCG. The joint session also discussed the need to reach out to the commercial sector to encourage their participation in operational anomaly collection.
2. Progress is being made on ionospheric monitoring through radio occultation with the sensors now available from COSMIC-2 satellites arrayed in various low-latitude orbital planes and efforts are underway to reduce the median data latency of this data to at or below 30 minutes.
3. EUMETSAT is exploring adding ionospheric radio occultation on its Metop A, B, C satellites and is planning to retrieve ionospheric occultations from its upcoming EPS-SG series.

5.3 SWCG JOINT SESSION WITH WGII

1. In a joint SWCG/WGII session, the status and activities of inter-calibration of energetic particle sensors in GEO were reported. Following discussions on the future direction of this activity, CGMS members will be asked to provide sustained resources to perform energetic particle sensor inter-calibrations both retrospectively on existing instruments and to include it in their plans for future instruments.
2. The session also reviewed the current status of the White Paper on space weather instrument intercalibration approach, which now seems to be progressing well, but is still required to be finalised and reviewed by GSICS.