Report on the outcome of WGIV activities since last plenary

Presented to CGMS-51 Plenary

Executive Summary

CGMS-51 WGIV meeting took place on 25 April 2023.

All Task Groups presented the progress of their activities since CGMS-50.

Highlights:

- The 4th Joint Meeting of RA II and RA V satellite users was held on 18 November 2022 with two informative reports from other regions, RA I and RA III/IV. The need to communicate more between regional and global groups was highlighted.
- WMO introduced its WIS 2.0 system for global data exchange and discussed its pilot phase and subsequent transition from the GTS to WIS 2.0. EUMETSAT also described their preparations for the migration from GTS to WIS 2.0.
- The CGMS Cloud Services Expert Group invited members from WGs I, II, and IV to their meetings and workshops in April 2023 to discuss Cloud best practices, lessons learned, and cloud interoperability
- The proposal from the CGMS 2022+ for work to be led by WGIV were welcomed, many of which fitted into existing activities within the various Task Groups.

Introduction

Working Group IV – DATA ACCESS & END USER SUPPORT

- Co-chair: Kotaro Bessho (JMA), Prof. Asmus (Roshydromet)
- Rapporteurs: Simon Elliott (EUMETSAT) and Natalia Donoho (NOAA)

Objectives of WGIV

- To support the user-provider dialogue on regional/global scales;
- To support the implementation and evolution of sustained and coordinated communication satellite broadcast systems (e.g. GEONETCAST related);
- To address global or inter-regional data circulation and access (e.g. WIS/GTS/RMDCN, academic networks, other terrestrial networks, etc.) in coordination with WMO dedicated expert teams;
- To promote the widening of data access, to new missions/providers as well as for other user communities;
- To promote data formats and standards, including the use of open standards (currently handled by the CGMS Task Teams on data formats);
- To support the coordination of metadata for satellites and instruments (currently handled by the CGMS Task Force on meta data);
- To address the user readiness for new satellite systems, with support from SATURN point of contacts;
- To address the notification of changes (and alerts) in satellite data and/or products impacting users, with the aim of defining best practices;
- To address topics related to cybersecurity towards end users;
- To address long term data preservation;
- To discuss relevant aspects on the implementation of the global contingency plan (as proposed by WGIII) from Plenary; and
- To address topics from the CGMS High Level Priority Plan within the scope of WG IV.

WGIV Task Groups:

- Expert Group on Cloud Services
- Task Group on Cyber Security
- Task Group on Data Access/Exchange
- Task Group on Metadata
- Task Group on User Readiness

Coordination Group for Meteorological Satellites

EUMETSAT CGMS

WGIV main outcomes and future work(1)

User-provider dialogue on regional/global scales

WGIV took note of the WMO Regional Association (RA) II WIGOS Project to Develop Support for National Meteorological and Hydrological Services (NMHSs) in Satellite Data, Products, and Training. The 4th Joint Meeting of RA II WIGOS Project and RA V TT-SU for RA II and RA V NMHSs was held in Tokyo, Japan, and also online on 18 November 2022. The meeting was hosted by the Japan Meteorological Agency (JMA). In the Joint Meeting, they had useful reports for regional community such as WMO's report for the global survey from ET-SSU, training activity reports from the BOM, CMA, KMA, and the BMKG, and two informative reports from other regions, RA I and RA III/IV. The need to communicate more between regional and global groups was highlighted.

Recommendation: AOMSUC-13 will be held in Busan, Korea in 2023 hosted by KMA together with VLab training, and a RA II/V joint coordination meeting. RA II/V Joint Coordination Group asked for CGMS's support and encouragement to attend, and WGIV endorsed this recommendation

WGIV main outcomes and future work(2)

Coordinated communication satellite broadcast systems

CMA gave an overview of CMACast and described its current status. The broadcast transponder of CMACast was changed in 2022 and has brought an increase in area of coverage to include the middle East region and most of Africa. Most users have successfully switched to the new satellite and upgraded software. Some FY-3E and FY-4B data have also been distributed via CMACast.

CMA also described the status of the FENGYUN satellite data and application services and described the various means used to make data and products available to the user communities.

JMA presented an overview of Himawari-8/9 data dissemination and distribution in JMA, and reported on their recent updates. JMA provides Himawari-8/9 data via its HimawariCast and HimawariCloud systems. A seamless switch from Himawari-8 to -9 took place on 13 December 2022.

WGIV main outcomes and future work(3)

Global or inter-regional data circulation and access, WIS

Roshydromet presented an overview of their satellite data exchange. Roshydromet is sharing satellite data with international community in accordance with WMO Unified Data Policy. Electro-L N4 was launched on 05/02/2023 and is undergoing commissioning at 165.8 East. Meteor-M N2-3 is scheduled for launch on 27/06/2023

NOAA gave a status report on GEONETCast Americas, a worldwide, near real time, network of satellite-based data dissemination systems designed to distribute weather products to diverse communities. NOAA introduced their program, gave some latest some news, and an introduction to new GNC-A Program Manager

WMO introduced its WIS 2.0 system for global data exchange and discussed its pilot phase and subsequent transition from the GTS to WIS 2.0. EUMETSAT described their preparations for the migration from GTS to WIS 2.0 and explained some of the opportunities this will bring.

Recommendation: Given that GTS operational availability is not guaranteed beyond 2030, CGMS Members are recommended to develop plans for the adoption of the WMO Information System WIS 2.0 in support of international data exchange.

WGIV main outcomes and future work(4)

Disaster support

JMA gave an update on the status of its international "HimawariRequest" service, which was launched in 2018 in collaboration with BoM. The service allows users to request coverage over a targeted 1000 x 1000 km area. Of 202 international requests received for the service 182 have been approved. JMA will continue to operate the HimawariRequest service to support disaster risk reduction activities in the Asia Oceania region, and is currently considering a web-based interface to visualise the observation in a map form.

Support to the Ocean user community

NOAA explained to the group its CoastWatch/PolarWatch Support to the Ocean User Community. CGMS WGIV acknowledged the importance of the need for the following, especially for the ocean user community:

- Consistently-processed, long term time series which link to NRT (similar to but different and separate from conventional Climate Data Records)
- Consistently-processed multi-mission data (e.g., "super-collated", fused, etc.)
- Multiple geophysical parameter satellite data combined with other observation types to produce relevant 4-dimensional ocean knowledge in applications that enable decision-making

WGIV main outcomes and future work(5)

Support for Arctic observations

NOAA presented its sea ice innovation plan and Arctic observation priorities. The background for the plan was explained and five recurrent gaps were identified:

- Sea ice dynamics
- Sea ice long-term records
- Information product enhancements
- Product tailoring
- Novel sea ice information products.

Support for Hyperspectral infrared instruments

EUMETSAT and CMA presented their respective systems for the provision of data from hyperspectral infrared sounders in geostationary orbit: IRS on EUMETSAT's MTG-S satellites and GIIRS on CMA's FY-4 satellites.

Coordination of Metadata

The task group on metadata has a number of nominated members, but continues to attempt to agree on a chairperson and to consolidate its terms of reference

WGIV main outcomes and future work(6)

User readiness for new satellite systems

The VLab Strategy (2024–2027) was updated by the VLab Management Group (VLMG) and adopted by the WMO EC in Feb/March 2023. CGMS WGIV recommend the updated VLab Strategy, as provided in the Annex of the working paper, to CGMS Plenary for endorsement.

VLMG has met regularly and had a hybrid meeting at EUMETSAT HQ in September 2022. VLab members continue to offer training opportunities on current and new satellites and to foster regional capacity building

Recommendation: CGMS WG-IV recommends to plenary to endorse the updated Strategy for the Virtual Laboratory for Education and Training in Satellite Meteorology (2024–2027)

WGIV main outcomes and future work(7)

User readiness for new satellite systems

WMO presented an update to the Best Practices for Achieving User Readiness for New Satellite Systems. This was based upon an update of the BPs endorsed by CGMS-44 plenary in 2016.

The updates reflect lessons learned from the satellite systems over the last 5-10 years (eg Himawari-8/9, GOES-R, GEO-Kompsat-2, FY-4, FY-3 and JPSS), the increasing role of commercial data providers, as well as evolutions in the user needs

Recommendation: CGMS WG-IV recommends to plenary to endorse CGMS/WMO Best Practices for Achieving User Readiness for New Satellite Systems

WGIV main outcomes and future work(8)

Cloud Services interoperability

The CGMS Cloud Services Expert Group was established in July 2020 and is comprised of members from NOAA, EUMETSAT, KMA, CMA, JMA, ISRO, and WMO. The group hosts an annual CGMS Cloud Workshop and develops best practices and lessons learned based on the information exchange in the workshops. Over the past year (2022-2023), the group has focused on planning the 2023 annual Cloud workshop (which was help directly before the Working Group meeting) and finalizing the best practices document for CGMS publication

The Group invited members from WGs I, II, and IV to their meetings and workshops to discuss Cloud best practices, lessons learned, and cloud interoperability

WGIV main outcomes and future work

CGMS Future direction 2022+ project

- Kotaro Bessho presented the latest status and way forward for the CGMS Future direction 2022+ project. WGIV was invited to take note of the status of CGMS future direction 2022+ project. WGIV agreed to the proposals for leadership of the different strategic themes.
  - Socio-economic benefits – *proposed to be led by WGIII*
  - Research to operations – *proposed to be* led by WGIV
  - Future observing (hybrid) space infrastructure – proposed to be led by WGI (Simon Elliott)
  - Future information technologies – proposed to be led by WGI, WGIV (Cloud), WGII (AI/ML)
  - Relationship with the private sector – proposed to be led by WGIII
  - Climate and Earth system monitoring – proposed to be led by WGII
  - Space situational awareness – proposed to be led by WGI and SWCG
  - + A topic for all: supporting developing countries

Items for Plenary

- The HLPP was updated following review of WGIV related matter. The revised HLPP will be presented to plenary for endorsement.

- CGMS agencies to consider nominating additional members for all the WGIV Task Groups, especially ones where no representatives of the agencies are currently participating in the Task Group(s).

  - WGIV confirmed the continued availability of Kotaro Bessho (JMA) and as Co-Chair, and Simon Elliott (EUMETSAT) and Natalia Donoho (WMO) as WGIV Rapporteurs.

Key issues of relevance to CGMS:

- GTS operational availability is not guaranteed beyond 2030. It is needed for CGMS Members to develop plans for the adoption of the WMO Information System WIS 2.0
- The VLab Strategy (2024–2027) was updated by VLMG. CGMS WGIV recommend the updated VLab Strategy to CGMS Plenary for endorsement.
- WMO presented an update to the Best Practices for Achieving User Readiness for New Satellite Systems. CGMS WG-IV recommends to plenary to endorse this update.
- The proposals from the CGMS 2022+ for work to be led by WGIV were welcomed, many of which fitted into existing activities within the various Task Groups.

To be considered by CGMS:

- CGMS is invited to note the outcome of WGIV activities since last plenary

- For actioning:
  - CGMS agencies to consider nominating additional members for all the WGIV Task Groups, in particular those where no representatives of the agencies are currently participating in the Task Group(s).