Key recommendations to CGMS space agencies following CM-15 and INFCOM-3, and for the OCP

Presented to CGMS-52 plenary session

Natalia Donoho, Head, WMO Space Programme

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Consultative Meetings on High-Level Policy on Satellite Matters (CM-15)

- The 15th Session of the Consultative Meetings on High-level Policy on Satellite Matters (CM-15) was held at WMO 6-7 Feb 2024
- Approximately 70 participants from space agencies and the WMO Secretariat (both in person and online)
- The role of the Consultative Meetings on High-level Policy on Satellite Matters is to facilitate a formal and substantive communication between leadership of space agencies and representatives of the World Meteorological Organization (WMO)
    - Presidents of the Commission for Observation
    - Infrastructure and Information Systems (INFCOM)
    - The Commission for Weather, Climate, Hydrological, Marine and Related Environmental Services and Applications (SERCOM)
    - Secretary-General and Directors.

CM-15: Outcomes

Six key topics were raised during the roundtable discussion, focusing on:

1. **Increasing benefits of satellite data for Developing Countries**

Work together to support the regional needs of Members considering the UN Early Warnings for All initiative, by expediting expression of those needs and required approaches and by supporting training activities in cooperation with the Regional Associations;

2. **High Data Volumes**

Facilitate a dialogue with space agencies for WIS 2.0 implementation;

3. **Coordinated Involvement of the Private Sector.**

Support a three-way dialogue, with space agencies and the private sector, on commercial sector engagement related to space-based observing systems using the Open Consultative Platform;

4. **Coordination for Greenhouse Gas Monitoring**

5. **WIGOS Vision**

Lead engagement with space agencies in updating the WIGOS 2040 Vision.

6. **AI Technology for Improved Satellite Data Exploitation**

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Fifth High-Level Session of the Open Consultative Platform (OCP-HL-5)

- OCP high-level sessions are held every year in conjunction with EC or Congress sessions, which provide a dialogue mechanism between WMO and the private sector and academy. The dialogues focus on key challenges with long-lasting impacts on WMO and its Members, which can only be addressed by engaging all stakeholders, including the public, private and academic sectors.
- The issues concerning coordination and collaboration with commercial satellite owners keep bubbling up in the discussions of CGMS, CEOS, CM and other events attended by space agencies and satellite operators.
- Date and time: 12:00-13:40 CEST (10:00-11:40 UTC), Thursday, 13 June 2024 (during EC-78) - link
- Purpose: To invite the public sector (space agencies, WMC and NMHSs) and commercial satellite companies to share their strategy and policy on engagement as well as collaboration models;
- To come up with recommendations, from satellite data users perspective, on a strategy of engagement to ensure a) complementary roles of observations from different players; b) quality and continuity of satellite data essential for forecast and severe weather warnings for the world; c) WMO's communication with both private companies and other platforms of public-private consultation (CGMS, CEOS, CM, etc.).

Other updates of relevance to CGMS and space agencies – INFCOM-3

- 8.1(1) Amendments to WIGOS Manual (WMO-No. 1160)
  - Observing system for Space Weather & integration into WIGOS
  - Radio frequency (RF) matters & concept of National FP
  - Space observations & Issuers of WSIs, WMO core and recommended satellite data

- 8.1(2) Update of WIGOS Guide (WMO No. 1165)
  - Observing system for Space Weather & integration into WIGOS Radio frequency (RF) matters – new section and Terms of Reference on National Focal Points for RF matters

- 8.1(3) Plan for update of the WIGOS Vision 2040 (WMO-No. 1243) and the High-level Guidance on the Evolution of GOSs during 2023–2027 (WMO-No. 1334)

- 8.1(5) Update of the Guidelines on Best Practices for Achieving User Readiness for new meteorological Satellites (WMO-NO. 1187)

EW4All Infrastructure Challenge

Typically, countries that are unable to provide Early Warnings have significant shortages in their meteorological/hydrological infrastructure:

- Don't have satisfactory monitoring of the evolving threats – lack of real-time data from their territory and their surroundings of elements like ocean waves, precipitation, thunderstorms, river flow/floods etc. and/or proper access to satellite products;
- Don't have satisfactory tools for the forecaster to identify and properly forecast the evolving threats – vertical profiles of the atmosphere, high resolution modelling (atmospheric, oceanic, hydrologic), ensembles, nowcasting products;
- Don't have proper IT infrastructure needed either to support domestic and international data collection and coding/de-coding, or the needed IT to provide the needed visualizations/tools for the forecasters

INFCOM-3 decision: Draft Recommendation on the Priority activities and action plan for the Early Warnings for All initiative (covering the use of satellite data for Early Warning Systems)

8.3(2) Transition From WIS/GTS To WIS 2.0, Including Capacity Development

THE EXECUTIVE COUNCIL,

…

Encourages Members to contribute to the further development of the "WIS2 in a box" project with technical contributions to the open-source software and financial contributions to the WIS trust fund.

…

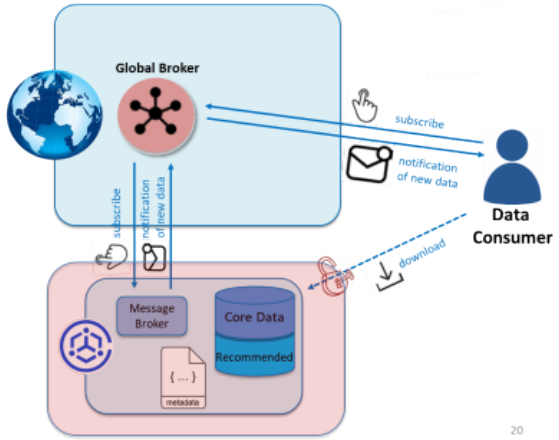
Requests Secretary-General

…

(3) to support the development of the "WIS2 in a box" software and to assist in mobilizing financial resources for the relevant expert work and for the development of WIS2 in a box,

(4) to engage with the HMEI to ensure that the private sector is prepared for supporting Members in the migration to WIS 2.0, including the WIS2 in a box software implementation and technical support

(5) to support the WIS 2.0 capacity development program at regional level considering the need for training in different languages.



- **WIS2 in a box is a reference implementation of a WIS2 Node**
  - **MQTT**
  - **HTTP**
- **Software** (not hardware)
- **Publishing facility/capability** compliant to WIS 2.0 Architecture
  - Provides basic data transformation
  - Can **integrate** with existing data management systems

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INFCOM-3 decisions

- Doc 6.2/2 Work Programme for the next intersessional period
  - Composition of the Management Group of the Commission
    - Representative of the CGMS, as ex-officio member

- Doc 9.1: Relation with the United Nations and other organizations
  - Draft Decision 9.1/2 - Satellite partner organizations

  Work together to support the regional needs of Members in light of the UN Early Warnings for All initiative, by expediting expression of those needs and required approaches and by supporting training activities in cooperation with the Regional Associations;

  Facilitate a dialogue with space agencies for WIS 2.0 implementation;

  Support a three-way dialogue, with space agencies and the private sector, on commercial sector engagement related to space-based observing systems using the Open Consultative Platform;

EC-78 documents

- AGENDA ITEM 5.2: Cooperation with satellite communities
  - Draft Decision 5.2/1 (EC-78)

The WMO community has longstanding collaboration with satellite operators, and this has been instrumental in promoting data sharing, setting common standards, and building capacity, especially in countries with limited resources.

In recent years, WMO has seen a strengthening of the space-based component of the global observing system, with the launch of new generation satellites on many different orbits.