

EC-73 (*Virtual Session*), 14-24 June 2021

EC-73/Doc 3.4(1)

WMO Unified Policy for the International Exchange of Earth System Data

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WMO OMM

World Meteorological Organization

Organisation météorologique mondiale

WMO Unified Data Policy

Background and timeline

- **Congress-18**, June 2019, Res. 55, **56**; launch of data policy review;
- **SG-DIP-1**; Feb 2020; Review; proposal to draft new resolution;
- **EC-72**; Sep 2020; Authority to proceed w/ draft Congress resolution;
- **WMO Data Conference** and preparatory events; Sep-Nov 2020; Broad consultations on WMO data policy;
- *{Sessions of RAs, TCC, PAC, ...} – throughout 2020 and Q1, Q2 2021;*
- **INFCOM-1(III)**; Apr 2020; Intergovernmental recommendation;
- **[EC-73; June 2021 \(go/no go decision for Cg-Ext\)](#)**
- **Cg- Ext(21)**; Oct 2021



Structure of draft data policy resolution

(Annex to draft Recommendation 3.1(4)/1)

I. Preamble

- *(Noting ..., Considering ..., Acknowledging ...)*

II. Action section ("*Congress decides to ...,*")

- **Policy statement;**
- **Practice to be adopted;**
- Requests to Technical Commissions, Regional Associations, Secretary General, ...

III. Annexes

1. Discipline and Domain-specific Practice for *Core* and *Recommended* Data (weather, climate, hydrology, ocean, atmospheric composition, cryosphere, space weather);
2. Guidelines to Members on Application of WMO Data Policy
3. Guidelines on the Application of Data Policy in Public-Private Engagement
4. Terms and Definitions



Key changes from Resolution 40

Resolution 40 (1995)

1. Covers weather data only;
2. Two main categories of data:
 - Essential (*shall* be exchanged);
 - Additional (*should* be exchanged);
3. Specific “*essential*” datasets listed directly in Annex I to the resolution (with some reference also to RBSN);
4. “*Free and unrestricted*” exchange (term not defined in the Resolution);
5. Covers exchange of data between NMHSs



Draft recommendation 3.1(4)/1

1. Covers all WMO Earth system data: weather, climate, hydrology, ...
2. Two main categories of data:
 - Core (*shall* be exchanged);
 - Recommended; (*should* be exchanged);
3. Specifics on *core* and *recommended* data referred to Technical Regulations, primarily Manuals on WIGOS, GDPFS;
4. “*Free and unrestricted*” exchange (term defined directly in the Resolution, literal interpretation);
5. Addressed to Members, but covers exchange of data between all partners, including private sector, academia, etc.



“Free and unrestricted exchange”

- **What does it mean?**
 - Per Annex 4: *“Free and unrestricted means available for use, re-use and sharing without charge and with no conditions on use¹”*;
- **Background**
 - Programs and systems such as WIGOS, WIS, GCW, GAW, S-GDPFS, which include both users and data providers outside the NMHSs, cannot be implemented via a “closed” data exchange;
 - Socioeconomic benefits of open data exchange fully demonstrated in many studies; only way to ensure maximum benefit to all Members, including protection of life and property;
 - Emergence of global NWP as core underpinning capability has demonstrated the critical need for fully global exchange of both observations and model output;
 - Research and operational communities are inextricably linked; two-way data exchange is essential;
 - Private sector now major data user and data provider; clear rules needed in order for both public and private sectors to thrive and benefit mutually;

¹Requests for attribution not considered a condition; attribution recommended



Expected benefits of new WMO Unified Data Policy

- Vastly improved weather, climate and related Earth system monitoring and prediction data products due to strengthened observational data exchange;
- Significantly improved access to high quality modelling and prediction data for all WMO Members, in particular developing countries;
- Broad scope of data exchange enables private sector added value activities, while protecting key public interests;
- Streamlining WMO data policy by including all relevant Earth system domains and disciplines; aligned with WMO strategic drive toward Earth system monitoring and predictions
- Future-proofing via clear distinction between respective roles of data policy and regulatory material; updating expected to take place primarily in the latter;

Implications for Members of WMO Unified Data Policy

- **The WMO Unified Data Policy will not in and of itself lead to any immediate new obligations to exchange large volumes of data; this will happen as Technical Regulations are amended and updated, subject to approval by future Congress sessions;**
 - However, the groups of users with whom data are exchanged will be broadened significantly;
- Safeguard for Members (“Acknowledging” in draft Congress resolution):
 - 7) *The right of governments, having done their utmost to implement the decisions of Congress, to, based on their national laws and policies, choose the manner by, and the extent to which, they make data available domestically or for international exchange, while still understanding that without reciprocity, international data exchange cannot be sustained,*

Per INFCOM-1(III), draft recommendation 5.1.5/1

Prior to the deliberation of new Data Policy at Extraordinary Congress, Members will be fully informed about its immediate impact on data exchange (list of “core data”)

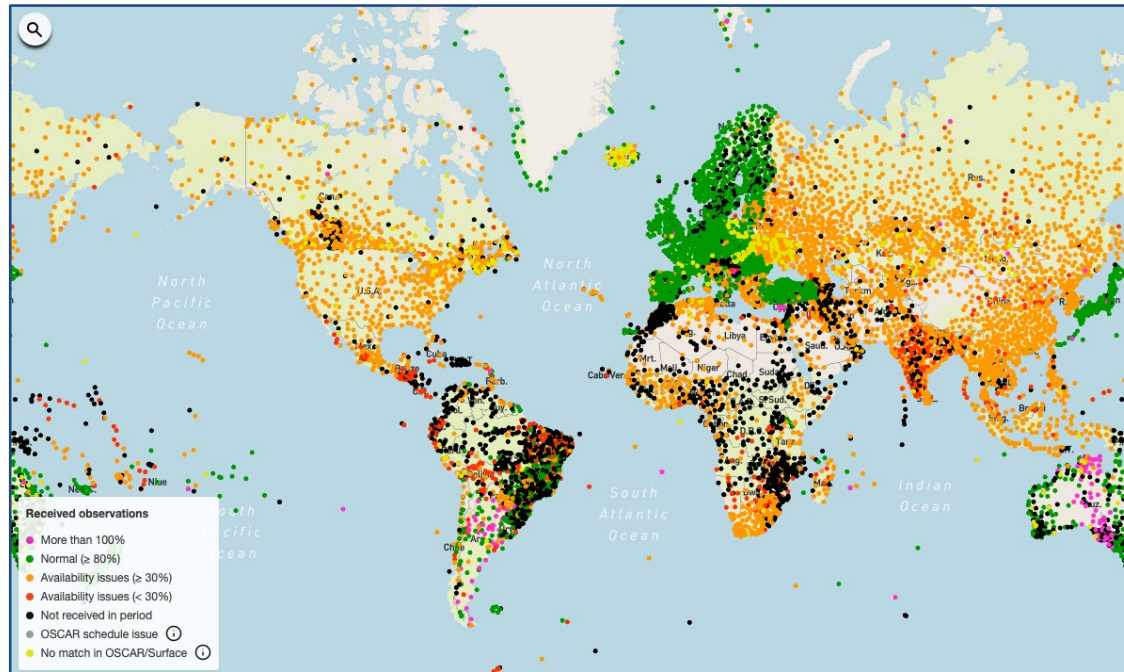
{... the Commission}

- Decides to develop an initial list of Earth system data to be exchanged as core data under the new policy, and to provide this list to WMO Congress along with the draft WMO Unified Data Policy,*
 - Decides further to, in consultation with SERCOM and other relevant WMO bodies, develop a process to maintain and update the list of Earth system data to be exchanged as core data under the data policy, according to the further development of WMO regulatory material,*
- A list of data to be exchanged as “core data” is now in development and will be made available to Members soon after EC-73*



Resolution 34 (Cg-18)-GBON

In response to the gaps in observational data coverage shown by the WIGOS Data Quality Monitoring System, Congress-18 adopted the GBON Concept as provided in the annex to the resolution;



Surface pressure observations received by global NWP Centers on Apr 27 2021, 12Z)

(source: [WIGOS Data Quality Monitoring System](#))

In addition, Congress requested INFCOM to draft relevant provisions of the Manual on the WMO Integrated Global Observing System (WMO-No. 1160) regarding the implementation of the GBON, which will clarify international requirements for the exchange of observations and respective obligations of the Members in this regard, and to submit these to EC-72 (deferred to EC-73 due to COVID) for approval;

The Systematic Observations Financing Facility (SOFF)

Why is it needed?

WMO Convention and Paris Agreement implicitly assume that observations is solely a national responsibility

Surface Reporting Horizontal Resolution by Country

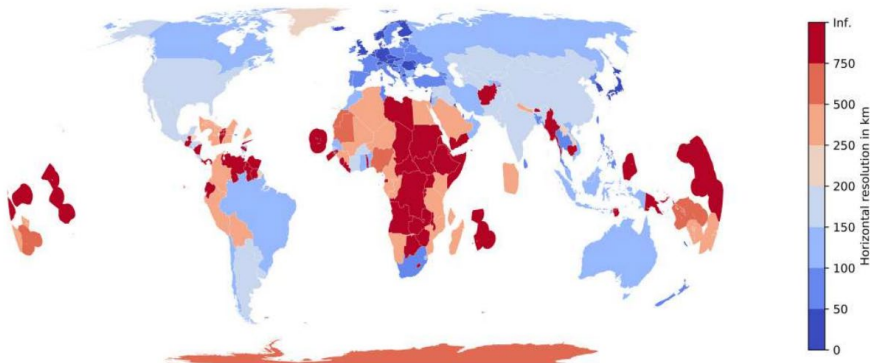
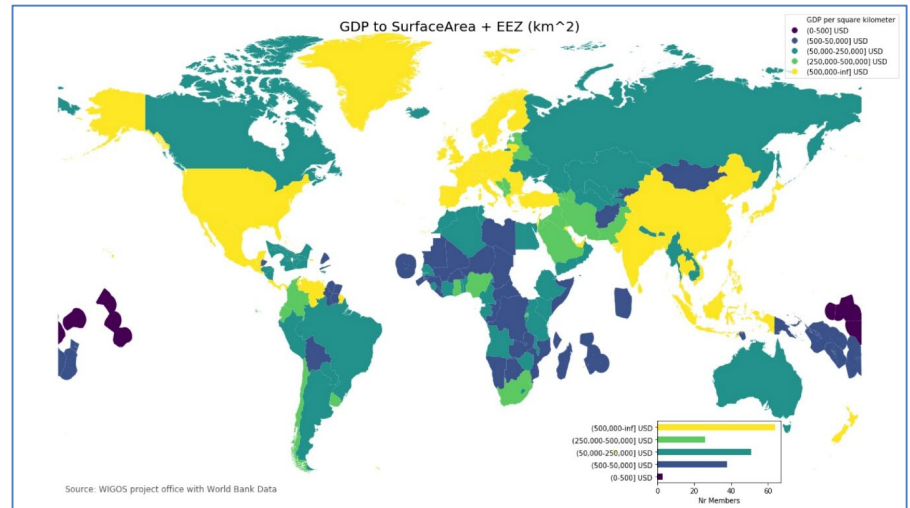


Figure 2 This map shows the horizontal resolution of surface observations in different countries based on stations actively reporting in January 2020. Source: WMO Secretariat.

GDP to SurfaceArea + EEZ (km²)



- **Ability to observe (left panel):** Observing systems in countries depicted in red fail to meet minimum observations requirements for weather and climate analysis and prediction
- **Ability to pay (right panel):** Affordability of observing responsibility (GDP/km² of surface area) of countries in yellow up to ten million times higher than for countries in dark blue

Links to other key WMO activities

(GBON and SOFF in Doc 4.2(2); to be discussed Friday):

WMO Unified Data Policy

- Increased international exchange of observations by all Members (**GBON**)
- Return of high-quality model output to all Members

Other capacity development (e.g. CREWS)

- Using model data to help improve service delivery
- Final links in value chain (“Last mile”)

Global Basic Observing Network

- Example of regulatory implementation of data policy
- Increased exchange of observations by all Members, **facilitated by both Data Policy and SOFF**

Systematic Observations Financing Facility

- Technical and financial support for **GBON** implementation where needed
- Enabled by **GBON regulations**

EC-73, Draft Recommendation 3.1(4)/1

{The Executive Council ...}

Having examined the INFCOM draft recommendation of a new “WMO Unified Policy for the International Exchange of Earth System Data”,

{...}

Requests the Secretary-General to disseminate the “WMO Unified Policy for the International Exchange of Earth System Data” to Members and to WMO partners and stakeholders for their comments and suggestions;

Recommends to the Congress the consideration of the **WMO Unified Policy for the International Exchange of Earth System Data** through the draft resolution provided in the [annex](#) to this Recommendation.

[WMO Unified Data Policy webpage](#)



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