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| **WORLD METEOROLOGICAL ORGANIZATION**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **COMMISSION FOR BASIC SYSTEMS**  **THE INTER-PROGRAMME EXPERT TEAM ON WIGOS FRAMEWORK IMPLEMENTATION (IPET-WIFI)**  **SUB-GROUP ON REGULATORY MATERIAL**  ***(First Session)***  Geneva, Switzerland, 14 to 15 April 2016 | CBS/IPET-WIFI/SG-RM-Doc. 4  \_\_\_\_\_\_\_\_\_  ITEM: 4  Original: ENGLISH ONLY |

**4 WIGOS Regulatory Material complemented with necessary guidance material**

*(Submitted by the Secretariat)*

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| **SUMMARY AND PURPOSE OF DOCUMENT**  The document provides information on the status of, and plan for the further development of the WIGOS regulatory and non-regulatory material during the WIGOS Pre-operational phase (2016-2019) based on decisions and guidance of Cg-17 and ICG-WIGOS-5. |

**ACTION PROPOSED**

The session is invited to note the information provided by the document.

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**Reference:**

1. [Seventeenth World Meteorological Congress (Geneva, 25 May - 12 June 2015)](http://library.wmo.int/pmb_ged/wmo_1157_en.pdf)
2. [ICG-WIGOS-5 (Geneva, Switzerland, 25-28 January 2016)](https://www.wmo.int/pages/prog/www/WIGOS-WIS/reports.html)

**4 WIGOS Regulatory Material complemented with necessary guidance material**

* + 1. Seventeenth World Meteorological Congress (Geneva, 25 May - 12 June 2015) decided that the development of WIGOS will continue during its Pre-Operational Phase in the seventeenth financial period (2016-2019) building upon and adding to those key building blocks of the WIGOS Framework that have already been implemented, while shifting the emphasis from the global level toward implementation activities at the regional and national levels. The goal is to have Members and their partners benefit from a fully operational system from 2020.
    2. The highest priorities for the WIGOS Pre-operational Phase will be: (a) National WIGOS implementation; (b) WIGOS Regulatory Material complemented with necessary guidance material to assist Members with the implementation of the WIGOS technical regulations; (c) Further development of the WIGOS Information Resource (WIR), with special emphasis on the operational deployment of the OSCAR databases; (d) Development and implementation of the WIGOS Data Quality Monitoring System; (e) Concept development and initial establishment of Regional WIGOS Centres.
    3. Congress approved Volume I, Part I – WIGOS, of the WMO *Technical Regulations* (WMO-No. 49) and its Annex - M*anual on WIGOS*, with effect from 1 July 2016. Congress recognized the urgent need for accelerating the development of corresponding WIGOS guidelines and guidance material to facilitate the implementation of WIGOS technical regulations as specified in Volume I, Part I and the *Manual on WIGOS* by Members. In order to assist Members to implement WIGOS regulations, Congress requested the Secretary-General to develop and publish a set of guidelines incorporated in an initial *Guide to WIGOS* to be provided to WMO Members by 1 July 2016, to be progressively revised and enhanced through the WIGOS Pre-operational Phase.
    4. The need to enhance existing observing networks and systems through integrated efforts of NMHSs and their partners was recognized, too. Particular attention should be given to the sustainability of observing systems at the national level, especially in less and least developed countries. Members were urged to follow the Observing Network Design principles specified in the *Manual on WIGOS* when designing and implementing their observing networks.
    5. Congress further requestedthe technical commissions:

(1) To develop technical guidelines and related guidance material incorporated in the Guide to WIGOS, to assist Members in implementing and operating their observing networks and systems in accordance with the WMO Technical Regulations (WMO-No. 49);

(2) To develop, in collaboration with partner organizations and programmes, technical standards to support WIGOS and propose as needed related updates to the WIGOS regulatory material;

(3) To provide technical expertise, assistance and advice to Members and the regional associations on WIGOS;

(4) To continue to provide the technical lead for WIGOS through the Commission for Basic Systems (CBS) and the Commission for Instruments and Methods of Observation (CIMO);

* + 1. Congress further called on technical commissions: (a) to complement their regulatory material with necessary guidance material to assist Members with the implementation of the Technical Regulations; (b) to monitor compliance through system performance/monitoring mechanisms (such as WIS monitoring and performance mechanism and WIGOS Data Quality Monitoring System, as part of the WMO Monitoring and Evaluation System); (c) to provide related technical expertise, assistance and advice to Members and the regional associations; and (d) to perform regular reviews of the compliance of specialized centres.
    2. The Fifth Session of the Inter-Commission Coordination Group on the WMO Integrated Global Observing System (ICG-WIGOS-5) (Geneva, Switzerland, from 25 to 28 January 2016) reviewed the progress towards the implementation of WIGOS achieved by the Technical Commissions (TCs) and the Regional Associations (RAs). Further, it reviewed outcomes from ICG-WIGOS Task Team meetings, and WIGOS-relevant workshops.
    3. ICG-WIGOS further discussed the progress made in the five key priority areas established by Cg-17 for the WIGOS Pre-operational Phase (2016-2019) (Item 5) and formulated its recommendations on a further elaboration of the draft Plan for the WIGOS Pre-operational Phase (PWPP) to be submitted to EC-68 for approval (Item 7).
    4. ICG-WIGOS considered how to establish the process for reviewing a draft text for updating WIGOS regulatory material and new guidance material developed by the Secretariat and/or relevant technical commission’s experts. In this regard, ICG-WIGOS decided to establish a small WIGOS Editorial Board (WEdB); Russell Stringer, chair of the TT-WRM, was suggested as Chair of this Board. Jitze van der Meulen was proposed as a core member to ensure liaison with CIMO. The third member is yet to be decided.
    5. Terms of Reference for the ICG-WIGOS/WIGOS Editorial Board (WEdB) are as follows:

1) Coordinate activities for the updating of the WMO *Technical Regulations* (WMO-No. 49), the Volume I, Part I – WIGOS, and the Manual on WIGOS (WMO-No. 1160), in close collaboration with the WMO Secretariat (WIGOS-PO), namely:

1. Identify areas to be updated, revised or completely rewritten and advise the ICG-WIGOS;
2. Provide draft updates in a form of track changes for consideration by the ICG-WIGOS;
3. Review proposals for new text developed by relevant constituent bodies (ICG-WIGOS task teams, TCs expert teams/groups) and the WMO Secretariat and submit them to ICG-WIGOS for consideration;

2) Review proposals for guidance material for an initial version of the Guide to WIGOS developed by relevant constituent bodies (ICG-WIGOS task teams, TCs expert teams/groups).

3) Coordinate with the ICG-WIGOS as needed and report annually to the ICG-WIGOS on the progress.

* + 1. The draft Plan for the WIGOS Pre-operational Phase (PWPP) has been finalized and submitted to EC-68 for approval. Extract from the draft Plan to the IPET-WIFI/SG-RM, is reproduced in the Annex to this paragraph.

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Annex to the paragraph 4.1.11

**The draft Plan for the WIGOS Pre-operational Phase (PWPP)**

(Extract from the draft Plan – sections relevant to the IPET-WIFI/SG-RM)

**2. KEY DELIVERABLES AND OUTCOMES OF WPP**

The work to be undertaken in the 2016-2019 Financial Period is defined by the goal of having WIGOS become fully operational from 2020. What a fully operational WIGOS implies can be considered from the following two perspectives:

1. ***Expected deliverables***: Which elements must be completed, and what are the necessary operational functionalities, and
2. ***Expected outcomes***: What is the expected impact of WIGOS, and in particular, what are the expected benefits to the WMO Members.

2.1 Deliverables

By the time of Congress-18 in 2019, the WIGOS framework will have been completed, encompassing:

1. WIGOS Regulatory Material: completed and complemented with necessary guidance material to assist Members with the implementation of the WIGOS technical regulations;
2. WIGOS Station Identifiers; technical issues resolved and new system adopted; policy for issuing IDs defined, adopted by Members and implemented;
3. WIGOS Information Resource fully implemented and used routinely by Members; WMO Publication No. 9, Volume A, Observing Stations and similar station inventories fully replaced by OSCAR/Surface;
4. WDQMS concept tested and consolidated. Observational data quality monitoring practices and procedures defined, incorporated in the WIGOS Regulatory Material and WIGOS Data Quality Monitoring System implemented;
5. Regional WIGOS Centres established and functional with a special focus on Regions where the need is high;
6. Enhanced regional and national coordination, and governance mechanism and methodologies/guidance for incorporating observations across all WIGOS component observing systems (WMO and partners): implemented and used by Members;
7. Regional Basic Observing Network (RBON) concept implemented and RBSN/RBCN retired;
8. Design capability to help identify gaps in global, regional and national observing systems in context of user needs, issues, etc. developed.
9. Vision for WIGOS in 2040, reflecting how new and more efficient observing solutions will be provided to Members with an appropriate balance between space-based and surface-based observing systems.

2.2 Outcomes

1. Significantly enhanced and synergistic WMO Integrated Global Observing System delivering better and better documented observational input to support all WMO Programmes and application areas in a more cost-effective way,
2. Increased visibility and strengthened role of NMHS’s at their national level,
3. Significantly improved registration of all observing stations across all WIGOS components,
4. Increased integration and open sharing of observations from WMO and non-WMO sources across national and regional boundaries,
5. Enhanced cooperation with partners at the national and regional levels,
6. Enhanced culture of compliance with WMO Technical Regulations,
7. Improved human and technical capacity of all WMO Members for planning, implementation and operation of WIGOS,
8. WIGOS incorporated in the WMO basic infrastructure as a WMO Programme or Programme element established by Cg-18 in 2019;
9. Progressively improved availability and quality of WIGOS observational data and metadata.

**3. PRIORITY AREAS**

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***3.2) WIGOS Regulatory Material complemented with necessary guidance material to assist Members with the implementation of the WIGOS technical regulations***

An update of the Manual on WIGOS (WMO-No. 1160) may be proposed either to EC-69 (2017) or EC-70 (2018). The 2019 edition of the Manual submitted to Cg-18 should include: (i) a full integration of the existing Manual on the Global Observing System (WMO-No. 544), the existing version of which will be retired at that point, and (ii) new standards and recommendations on the Regional Basic Observing Networks, remote sensing, and data quality monitoring.

Concerning the necessary guidance material, most urgently needed is in the following areas: (1) OSCAR, Metadata, and Station Identifiers; (2) Data Quality Monitoring, Regional WIGOS Centres, AWS, national partnerships; (3) National observing strategy, RBON, and integration of space-based observations. The guidance material listed under (1) is needed for the initial version of the Guide to WIGOS to be available to Members before 1 July 2016. The material for those listed under (2) and (3) above should be developed in subsequent steps. A more complete Guide to WIGOS should be developed during the remainder of the financial period with a substantial amount of new material that will have to be developed.

The following key items with milestones are proposed:

1. Updates to Manual on WIGOS by EC-69 and/or EC-70; a new edition by Cg-18;
2. Guidelines on OSCAR/Surface, WIGOS Metadata, and Station Identifiers, by July 2016;
3. Guidance on National WIGOS Development and Partnerships, by 2016;
4. Guidance on RWCs, their capabilities and performance evaluation, by 2016;
5. WIGOS guidance on Data Partnerships, Lifecycle Data Management and Data Stewardship, including integration of observations from multiple sources, progressively from 2016;
6. Standards and recommendations supported by best practices and procedures for implementation of the RBON by all regional associations; developed by 2017;
7. Standards and recommendations supported by best practices and procedures for surface-based remote sensing (mainly weather radars and wind profilers) by 2017;
8. Standards and recommendations supported by best practices and procedures for improving observational data and products quality (WIGOS Data Quality Monitoring) by 2017;
9. Guidance on the transition of existing observing systems to meet WIGOS requirements and standards, by end of 2017;
10. Guide to WIGOS developed by Cg-18.

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