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| **World Meteorological Organization****Commission for Instruments and Methods of Observation** **Joint Session of the Expert Team on Operational In Situ Technologies (ET-OIST) and the Expert Team on Developments in In Situ Technologies (ET-DIST)**Geneva, Switzerland, 21-23 June 2017 | **CIMO/ET-A1-A2/Doc. 3**  |
| Submitted by:Secretariat15.06.2017 |

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# relevant decisions of the cimo management group, the WMO executive council and relevant updates on the wigos development

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| **Summary and purpose of document**This document provides information on relevant outcomes and decisions of the 14th session of the CIMO Management Group, of the 69th session of the WMO Executive Council and includes the updates on the WIGOS development. |

**Action proposed**

The Meeting is invited to consider provision of its support to the implementation of these outcomes and decisions.

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**Appendices:** None

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***CIMO MG-14***

1. The fourteenth session of the CIMO Management Group (CIMO MG-14) was held from 5 to 8 April 2016, in Offenbach, Germany.
2. CIMO MG noted a limited personal resources within the Expert Team on Operational In Situ Technologies (ET-OIST) and supported ET’s plan to collaborate with other expert teams.
3. With respect to the tasks assigned to the ET-OIST, the sustained performance classification was identified as a key activity for CIMO vision, that should enable assessment of suitability of different measurement types for different applications.
4. ET-OIST was encouraged to review experiences with implementation of siting classification, and to extend the classification to other areas (such as higher latitudes), to other types of classification (e.g. representativeness for a wide area) and to determine uncertainties for each classes quantify relevant uncertainties.
5. Classification of instruments for rainfall intensity was recognized as a potential for strengthening collaboration with Commission for Hydrology, and as an opportunity for another joint WMO-ISO standard.
6. CIMO MG-14 expressed appreciation for the work of Peter Lejbjuk, within the Expert Team on Developments in In Situ Technologies (ET-DIST). Mr Lejbjuk had resigned, but Environment Canada proposed Mr Craig Smith as his replacement.
7. The meeting expressed some concerns due to discrepancy between the good progress mentioned in the ET-DIST Chairperson’s report and the low percentages in the accomplishment of the tasks in the ET-DIST workplan, and invited that this discrepancy is minimized.
8. The meeting recalled the current strong interest of the WMO Members for alternative cheaper technologies (for example, the use of cheap disdrometers in replacement of rain gauges, optical present weather systems, etc.) and stressed the need to avoid any delay in the delivery of relevant ET-DIST tasks.

***EC-69 AND UPDATE ON THE WIGOS DEVELOPMENT***

1. The sixty-ninth session of the WMO Executive Council (EC-69) was held from 10 to 17 May 2017, in Geneva, Switzerland. A short summary of the adopted decisions and resolutions, relevant to the Instruments and Methods of Observation Programme and to the WMO Integrated Global Observing System, is provided in the following text.
2. Decisions relevant to the Instruments and Methods of Observation Programme:
3. Decision 5.1(3)/1 – Translation of the International Cloud Atlas

The new edition of the *International Cloud Atlas – Manual on the observation of clouds and other meteors* (WMO-No-407) was released in the form of a website ([www.wmocloudatlas.org](http://www.wmocloudatlas.org)) on the occasion of the World Meteorological Day 2017. The Secretary-General is requested to arrange for translation of the Atlas into official WMO languages.

1. Decision 5.1(3)/2 – Update of the Guide to Meteorological Instruments and Methods of Observation

WMO and ISO have developed second common WMO/ISO standard: Ground-based remote sensing of wind by heterodyne pulsed Doppler lidar. The Secretary-General is requested to publish the CIMO Guide, updated with this standard, in all official WMO languages.

1. Decision 5.1(3)/3 – Discontinuation of the concept of Regional Standard Barometer Cloud Atlas

The traceability of atmospheric pressure measurements to the International System of Units (SI) should be ensured through accredited RICs, or other laboratories that are either accredited or designated by National Metrology Institutes. WMO Members hosting Regional Standard Barometers supported the above-mentioned concept of traceability assurance and agreed that maintaining the RSB concept, in addition to the RIC concept, creates a duplication of work and is uneconomical and inappropriate. They also supported the discontinuation of the RSB concept. EC-69 agreed to discontinue the concept of Regional Standard Barometer and requested CIMO to update the CIMO Guide and other relevant WMO guidance and regulatory documents, ensuring their consistency.

1. With respect to the WMO Integrated Global Observing System (WIGOS) following decisions were adopted by EC-69:
2. Decision 5.1(1)/1 — *Regional Basic Observing Network;*

The Regional Basic Observing Network (RBON) concept was endorsed by EC-69 and Members are requested to actively participate in the further development of this concept. Members are invited to propose inclusion of additional surface-based observing stations, such as weather radars, wind profiler systems, lightning detection systems, data buoys, voluntary observing ships and aircraft, in the Pilot RBON established by the regional association.

1. Decision 5.1(1)/2 — *Vision for the WMO Integrated Global Observing System in 2040;*

The Vision for WIGOS in 2040 should address the following elements: Themes, needs, environment scan; Drivers, directions, dependencies; Trends and possibilities; Aspirations; Integration and complementarity of surface and space; Common elements; Specific space and surface elements. EC-69 decided that the Inter-commission Coordination Group on the WIGOS (ICG-WIGOS) takes ownership of the further development of the Vision, with a view to have it approved by the Eighteenth World Meteorological Congress in 2019.

(c) Decision 5.1(1)/3 — *Standardization of observing systems installed on ships;*

Members are invited to collaborate in the European and others efforts, to facilitate standardization of AWS systems and their observations installed on ships as well as the maintenance of such systems by port meteorological officers (PMOs).

(d) Decision 5.1(1)/4 — *NWP Impact assessment for observing system design and evolution;*

Commission for Basic Systems was requested to organize the Seventh WMO Workshop on the Impact of Various Observing Systems on NWP in the 2020 time frame. Members should continue the development and research of adjoint- and ensemble-based observation impact assessment tools, as a complement to traditional Observing System Experiments (OSEs). They are requested to develop OSEs for the optimization of regional composite networks.

(e) Decision 5.1(1)/5 — *Study to be undertaken to analyse options for optimization of the Upper-air Observations Programme of the GOS;*

EC-69 endorsedthe plan for the project aimed at assessing evidence of the impact of a potential change to the radiosonde network configuration, based on complementary optimization with the AMDAR observing system (Radiosonde Optimization Study Plan). WMO Members are invited to support the execution of the plan.

(f) Decision 5.1(1)/6 — *Responsibility for oversight of information about space weather and weather radar observing capabilities held in OSCAR;*

The Inter-Programme Expert Team on Operational Weather Radars (IPET-OWR) should oversee the development and review of the Observing Systems Capability Analysis and Review tool (OSCAR) by integrating and improving the Weather Radar Database (WRD) so that it meets the needs of WIGOS for information on operational weather radar observing system capabilities.

The Inter-Programme Team on Space Weather Information, Systems and Services (IPT-SWeISS) should oversee the development and review of OSCAR so that it meets the needs of the WMO Integrated Global Observing System (WIGOS) for information concerning user space weather observing system capabilities.

Members are urged to register their weather radar information (metadata) in the WRD which will be made interoperable with OSCAR through machine to machine interface.

(g) Decision 5.1(1)/7 — *Developing the WIGOS “Standardization of Observations” Reference Tool (SORT);*

Standardization of Observations Reference Tool (SORT) is being a tool to electronically navigate complex regulatory and guidance material with multiple cross references. As it would address an overall need for the Organization, the Secretary-General is requested to make the development of SORT an Organization-wide activity rather than something unique to WIGOS;

(h) Decision 5.1(1)/8 — *Tropical Pacific Observing System (TPOS) 2020;*

The Tropical Pacific Observing System 2020 project (TPOS 2020) is an international, limited-term effort to enhance and redesign the Observing System in the Tropical Pacific Ocean. It involves individual institutions and agencies who are providers and users of ocean information in the Pacific Ocean region, as well as relevant intergovernmental bodies such as the Global Ocean Observing System (GOOS), the Global Climate Observing System (GCOS), and the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM). TPOS is motivated by challenges sustaining the Tropical Moored Buoy Arras (TMA). It addresses observing system requirements as a whole and presents the optimum multiplatform mix to meet both, satellite and in situ requirements. Having that, EC-69 decided that TPOS 2020 is now recognized as a WIGOS Pre Operational Regional Pilot, and that its implementation and transition back into the global sustained observing system is coordinated by the TPOS 2020/JCOMM Transition and Implementation Task Team.

1. Decision 5.1(1)/9 — *Education and outreach strategy for buoy vandalism;*

The draft Outreach Strategy to Reduce Damage to Ocean Data Buoys from Vandalism or Interference was developed by the Data Buoy Cooperation Panel (DBCP) and is under review by the IOC of UNESCO Working Group on Tsunami and Other Hazards Related to Sea-level Warning and Mitigation Systems, the Food and Agriculture Organization of the United Nations (FAO), and other relevant organizations with the goal to be finalized and endorsed at the fifth session of JCOMM in 2017.

EC-69 requested JCOMM, through the DBCP, to continue to seek input from relevant international organizations and work to finalize the strategy by October 2017 for submission to EC‑70 for final approval. Members are requested to actively engage, support and collaborate in the efforts of the DBCP and its Working Group on Data Buoy Vandalism to collect existing education and outreach materials related to national or regional mitigation of data buoy vandalism efforts. Members are urged to take action to prevent and mitigate the effects of vandalism for other types of observing platforms such as AWS.

(j) Decision 5.1(1)/10 — *Guidance on establishing Regional WIGOS Centres (RWCs) in Pilot Phase;*

EC-69endorsed the Guidance on establishing a WMO Regional WIGOS Centre in pilot phase (RWC guidance) as technical guidance to regional associations for establishing such a RWC and its implementation arrangements. Regional associationsare requestedto support the establishment of RWC(s) in their Region, while the presidents of regional associations are authorized to approve the pilot RWC(s). EC-69 urged Members to familiarize themselves with the RWC guidance and to actively participate, together with regional partner organizations, in the implementation of RWC. The Secretary-General is requested to provide the necessary assistance and Secretariat support for the establishment of RWCs in the WMO Regions.

(k) Decision 5.1(1)/11 — *Indicators for monitoring the progress in the WIGOS national implementation;*

Addressing the need for a regular assessment of the progress achieved in the national implementation of the WIGOS by Members, ICG-WIGOS has developed: Guidance on the National WIGOS Implementation and Guidance on WIGOS Data Partnerships. The material should assist Members with the implementation of the WIGOS technical regulations. EC-69 endorsed the indicators of monitoring the progress of the WIGOS national implementation as an initial version of the Key Readiness Indicators to assist Members with a regular assessment of the progress achieved in the national WIGOS implementation. ICG-WIGOS is requested to further develop this monitoring tool to be used by Members. The Secretary-General is requested to assist Members with a regular assessment of the progress achieved in the national implementation of the WIGOS, while Members are urged to collaborate with the Secretary-General in this assessment.

(l) Decision 5.1(1)/12 — *Way forward for transitioning WIGOS from the current project structure into the WMO programmatic structure;*

WIGOS, as an operational system which supports all WMO Programmes and activities, will assist in improving the integrated operations of Members and in building productive partnerships to sustain and improve their ability to provide weather, climate, water and other relevant environmental services. The unique nature of WIGOS as a cross-cutting infrastructure will require well-developed collaboration and coordination mechanism between regional and technical working structures. EC-69 recognized the need to start planning for the future of WIGOS after the current project phase, which is scheduled to end in 2019, and requested ICG-WIGOS to develop a proposal for WIGOS in the WMO programmatic structure. The Secretary-General is requested to coordinate collaboration with partners responsible for co-sponsored and non-WMO observing systems in the development of the proposal, in order to address their requirements.

(m) Decision 5.1(1)/13 — *Radio frequencies for meteorological and related environmental activities.*

EC-69 decided to publish a 2017 update to the handbook on “Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction” and requested the Secretary-General to coordinate with ITU in publishing the updated handbook.

1. EC-69 adopted following WIGOS-related resolutions:
2. Resolution 5.1(2)/1 *—* *Manual on the WMO Integrated Global Observing System (WMO-No. 1160), Section 2 And Section 8;*

EC-69 adopted the updated Appendix 2.4 and its attachment, and the updated Section 8 of the [*Manual on the WMO Integrated Global Observing System* (WMO-No. 1160)](http://library.wmo.int/pmb_ged/wmo_1160_en.pdf) with effect from 1 January 2018. Furthermore, it was decided that the attachment to Appendix 2.4 will be extracted from the Manual and be processed separately as a stand-alone attachment in order to facilitate frequent updating of its technical content. The code tables from the current annex to the attachment to Appendix 2.4 will be removed and included in the [*Manual on Codes* (WMO-No. 306);](https://library.wmo.int/opac/doc_num.php?explnum_id=3361)

1. Resolution 5.1(2)/2 *— Initial Version of the Guide to the WMO Integrated Global Observing System;*

EC-69 adopted the initial version of the [*Guide to the WMO Integrated Global Observing System*](http://www.wmo.int/pages/prog/www/wigos/WGM.html) with effect from 1 July 2018. ICG-WIGOS is requested to finalize the initial version of the Guide with additional guidance material. The Secretary-General is requested: to publish the Guide in all WMO official languages, to ensure the editorial consistency of the relevant documents, to publish the specification of the Binary Universal Form for the Representation (BUFR) of meteorological data code table entries that support WIGOS station identifiers on the WMO website in advance of their formal approval through the fast track procedure, to maintain *Weather Reporting* (WMO-No. 9) and the associated 5-digit WMO station identifiers until the Eighteenth World Meteorological Congress, when Members receive training and have sufficient time to transition to the WIGOS station identifiers.

Members are requested to inform the Secretary-General of the intended date to transition to the WIGOS identifiers with sufficient lead time to enable operational changes by other Members to manage the impact of the change to identifier.

1. Resolution 5.1(2)/3 *— Revised Manual on the Global Observing System (WMO-No. 544) and Guide to the Global Observing System (WMO-No. 488);*

EC-69 decided to amend *Manual on the Global Observing System (WMO-No. 544) and Guide to the Global Observing System (WMO-No. 488)* as proposed by CBS-16.

1. Resolution 5.1(2)/4 *— Satellite Skills and Knowledge for Operational Meteorologists;*

EC-69 adopted the proposed guidance document “Satellite Skills and Knowledge for Operational Meteorologists”, as provided by CBS-16, as part of the *Guide on Competency,* under development by the WMO Education and Training Programme.

1. Resolution 5.1(2)/5 *— Guide to Aircraft-Based Observations;*

EC-69 adopted the *Guide to Aircraft-Based Observations* as formal guidance on regulations for Members in replacement of the AMDAR Reference Manual: Aircraft Meteorological Data Relay (WMO-No. 958).

(f) Resolution 5.1(2)/6 *— Establishment and Designation of the WMO Global Data Centre for Aircraft-Based Observations.*

EC-69 decided to designate the Meteorological Assimilation Data Ingest System (MADIS) of the National Centers for Environmental Protection (NCEP) of the National Oceanic and Atmospheric Administration (NOAA) (the United States of America) as the WMO Aircraft-Based Observations Global Data Centre.

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