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| **World Meteorological Organization**  **Commission for Instruments and Methods of Observation**  **CIMO Management Group**  **Fifteenth Session** Geneva, Switzerland, 26 – 29 March 2018 | **CIMO/MG-15/Doc. 2.1** |
| Submitted by: Bertrand Calpini  19.03.2018 |

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# REPORT OF the PRESIDENT

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| **Summary and purpose of document**  This document provides information on the activities of the president of CIMO since the last session of the CIMO Management Group and on his consideration related to the strategic planning of CIMO that he invites the Management Group to address during the course of the meeting. |

**Action proposed**

The Meeting is invited to note this information and to take it into account in its further deliberations.

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**Appendices:** None.

**REPORT OF THE PRESIDENT**

1. In 2016 my report was underlining these “times of changes” for our Technical Commissions in WMO, and for CIMO with regards to the requirements of our users, the rapid evolution of technologies and new data sources, as well as the future organization of WMO. The round table discussion at the end of TECO-2016 in Madrid was an open debate about the future challenges related to measurements. Over the last 2-3 years the management committee finalized its vision and the pathways towards our future Roles, Mission and Vision: TECO in Amsterdam will move this strategic (but paper) discussion into real life. The TECO-2018 central topic is “Towards fit-for-purpose environmental measurement” thus giving to our CIMO experts the opportunity to demonstrate our current ability to already face these challenges of the future: the fit-for-purpose standards will allow the users to find the most suitable measurements technology fit for their requirements (and at optimized costs); the environmental measurements will enable the measurement community (atmosphere, land, ocean; in support of weather, water, climate) applying the same metrology principles whatever the measurements domain considered. Dr Bruce Forgan our CIMO vice president and TECO Conference Chair has been a key driver of this vision and should deserve great recognition for his continuous engagement. Thanks to this work and as per CIMO-17 in fall 2018 in the Netherlands I can proudly say that CIMO is now fit-for-changes: our mandate is well defined for the future and will ideally support the WIGOS 2040 vision and the new WMO technical commissions structures.
2. This Management Group Meeting is also the last one (after ca. 8 years) that I will lead as CIMO president (prior to CIMO-17). My contribution has always been twofold: a direct and real-time leadership in support of the CIMO experts and the secretariat, and a more direct involvement together with my MeteoSwiss colleagues for specific CIMO field of activities. This involvement has covered over the last years in particular the following activities:
3. The CIMO Testbed MeteoSwiss Payerne: Since 2012 the WMO CIMO MeteoSwiss Testbed of Payerne performed and hosted many operational and project-based measurements on-site. During the last two years, scientific activities focused mainly on ground-based remote sensing (microwave radiometers, Raman lidar, radar wind profiler, and ceilometers). Intensive international collaboration (EUMETNET, COST, WMO) emphasized the role of the testbed Payerne as a leader in these measurement techniques. Payerne acting as a BSRN (Basic Surface Radiation Network) station hosted international comparison campaigns (as DNI-Cast). Moreover, in parallel with the operational duties, high-quality multi-sondes launches are operated on a regular basis and data are sent to the WMO GRUAN lead centre. All these activities were highlighted by numerous scientific publications. Despite a difficult situation in the field of human resources, Payerne Testbed will continue its efforts to maintain and even reinforce its national and international position in its domains of expertise (MCH lead: Dominique Ruffieux).
4. The ISO 28902-2 wind lidar Standard: Ground-based remote sensing measurements of the wind by Doppler lidar can provide in real-time wind shear characterization, as well as high resolution (time and space) wind profiling at low altitude, for example for safety reasons during aircraft take-off and landing. This technology is also ideally suited for assessment support in the field of wind energy renewable energy. The need for a Standard was obvious for both aviation meteorology as well as for the energy sector; in 2014, CIMO set up a team of experts both from NMHSs as well as from the private sector to develop and edit an International Standard on ground-based remote sensing measurements of wind using a heterodyne pulsed Doppler LIDAR. In July 2017 the ISO 28902-2 (WMO) “Air quality -- Environmental meteorology -- Part 2: Ground-based remote sensing of wind by heterodyne pulsed Doppler lidar” was published as International Standard (<https://www.iso.org/standard/59210.html>) and also published in the CIMO Guide. This norm ISO 28902-2 is a common WMO-ISO Standard (MCH lead: Giovanni Martucci).
5. The ISO weather radar Standard: There is no established international standard for operational weather radars so far. Although this may not be a problem for countries with long experience in using radar technology for meteorology, it is of high relevance for countries with less experience in the field of weather radar technologies.

This initiative started in 2014 (South Africa) with the setup of a Technical Committee, TC146/SC5, Working-Group (WG) 7, Meteorology. The kick-off meeting was followed by several workshops in Switzerland, Germany, China, Spain, and again Switzerland and Germany. The working group made of participants from three Japanese manufacturers, a German and Finnish one, ISO-DIN (secretariat), a private company in hydrology (chair), a research and remote sensing institute (DLR), WMO and the national weather services from China, France and Switzerland.

The WMO-ISO standard focuses on system performance and was written from a user perspective putting emphasis on long-term performance at the system level, availability, stability and practical issues related to acceptance testing and operational costs in a real-world context. This was a strategic choice in view of the underlying goal to support countries with little or no experience. In 2017 a draft was sent to the voting countries for feedback and decision obtaining 9 votes in support, 9 abstention and no disapproval. During the last and final meeting, the document has been thoroughly revised. It will be sent to the 18 voting Countries (ISO-Meteorology) in March 2018; final vote is taking place in summer 2018. All WMO Members will also be invited to approve it. (MCH lead: Marco Gabella).

1. The OSCAR web-based metadata information platform: The establishment of the Observing Systems Capability and Review (OSCAR) tool is a major achievement under the WIGOS framework. Two components, namely OSCAR/Space and OSCAR/Requirements, were spearheaded by the WMO Satellite Office. Based on the experience from the Global Atmosphere Watch Station Information System (GAWSIS), OSCAR/Surface for the documentation of surface-based observations on land, at sea, and in the air, was developed and implemented in a joint-venture between WMO and MeteoSwiss. OSCAR/Surface has integrated and supersedes WMO Pub 9 Vol A, the WMO Radar database, and the marine component under the supervision of JCOMM. OSCAR/Surface is fully history-aware. At the same time, the WIGOS metadata standard (WMDS) and a WIGOS metadata exchange format (XML-based) was developed and refined. The machine-to-machine interface of OSCAR/Surface enables WMO Members’ organizations to upload large amounts of metadata automatically. WMO is looking at HMEI to support the OSCAR/Surface instrument catalogue, one of the key resources for the documentation of observations enabling the adequate use of observations – of the past, and in the future. A future challenge, the various OSCAR components will be fully integrated to enable the development of powerful analysis capabilities in support of the WIGOS Rolling Review of Requirements process (MCH lead: Joerg Klausen).
2. The new edition of the International Cloud Atlas 2017: The previous edition of the ICA was dated ca. 4 decades ago. In the absence of on-line access to the ICA, alternative atlases began to appear on the web with a threat to the global standardization of cloud classification. The CIMO Management Group agreed in 2013 to take responsibility for the ICA and formed a Task Team to examine the requirements in detail. At its sixty-sixth session, the Executive Council agreed that the ICA should remain the world’s authoritative, primary source of cloud classification, be fully comprehensive and contain the most up-to-date information. WMO approved the text of the revised Atlas on behalf of the Council in January 2017. To enable worldwide access by professionals and enthusiasts, the ICA is currently being translated in all WMO languages. The development of teaching and training material based on the ICA remains an open point (MCH lead: Eliane Thuerig).
3. The Solid Precipitation Intercomparison Experiment (SPICE) was launched after the CIMO-15 session in 2010. Its main objective was to assess the ability of a wide range of sensors available on the market, covering different technologies and measurement principles, to measure and adequately report solid precipitation and snow on the ground. The intercomparison, led by Ms Rodica Nitu from ECCC, was designed as a multi sites project, in order to evaluate the performance of the instruments under tests under various climate conditions. More than 15 sites across the world provided infrastructure and support to host instruments under test, provided by manufacturers. The IOC defined the reference system, which had to be standardly implemented on each site. The primary local reference used the DFIR, defined during the previous intercomparison (1998) as the setup for reference measurement, with an automatic weighing gauge inside. The measurement period extended over two winter seasons (2013-14 and 2014-15). The data have been analysed, and the final report will be published in Summer 2018. It includes a summary of performance by technology, recommendations for sensors operation under various climate conditions, development of universal transfer functions to correct for wind-induced error, Instrument Performance Report for each instrument type under test. A lot of international experts, manufacturers, NMHSs, CIMO secretariat resources and local technical staff were involved with significant resources and contribution during the whole project (MCH lead: Yves-Alain Roulet).

List of meetings attended by the CIMO President since May 2016:

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| 23-27 May 2016 | EURAMET General Assembly  EMPIR committee meeting | Oslo, Norway |
| 13-14 June 2016 | NDACC meeting | Payerne |
| 15-24 June 2016 | WMO EC | Geneva |
| 25-30 September 2016 | CIMO TECO | Madrid |
| 18-20 October 2016 | WIGOS | Geneva |
| 2 November 2016 | GAW CH | Kloten |
| 9-11 January 2017 | PTC PRA | Geneva |
| 12-14 January 2017 | ICG WIGOS | Geneva |
| 26 January 2017 | GCOS CH | Zuerich |
| 10-17 May 2017 | EC WMO | Geneva |
| 18-19 May 2017 | PTC PRA | Geneva |
| 7-9 June 2017 | KNMI review panel | De Bilt |
| 16-18 October 2017 | EC SOP | Geneva |
| 15-17 January 2018 | ICG WIGOS | Geneva |
| 17-19 January 2018 | PTC PRA | Geneva |

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