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EXECUTIVE COUNCIL WG ON WIGOS-WIS
SUB-GROUP ON THE WMO INTEGRATED OBSERVING
SYSTEMS (SG-WIGOS)

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WIGOS INTEGRATION LEVELS

End-product quality assurance (QM/QA/QC product level)

(Submitted by the Secretariat)

Summary and Purpose of Document

This document provides basic information together with a recommendation from the third ICTT meeting that should be taken into account when discussing the third level of integration of WIGOS (End-product quality assurance).

ACTION PROPOSED

The session is invited to note the information contained in this document.

Reference: Draft final report of ICTT-QMF/3, 28-30 October 2008

End-product quality assurance (QM/QA/QC product level)

1. Background Information

The WMO Integrated Global Observing Systems (WIGOS) concept is to create an organizational, programmatic, procedural and governance structure that will significantly improve the availability of observational data and products. It will provide a single focus for the operational and management functions of all WMO observing systems as well as a mechanism for interactions with WMO co-sponsored observing systems. Integration will lead to efficiencies and cost savings that can be reinvested to overcome known deficiencies and gaps in the present structure and working arrangements.

2. Requirements for a quality management framework for WIGOS

One principal aim of WIGOS is to ensure that required standards of data quality are met and sustained for the needs of all programmes.

Ultimately, after several processes, the data is used to derive information and services for various sectors in all Member countries, and thus the quality, accuracy and reliability of the data determines the usefulness of the end products.

WIGOS is thus called upon to develop appropriate regulatory documentation including organization and recommended practices and procedures for the entire System.

WIGOS integrates data from a number of different sources which include various WMO observing systems, WMO components of co-sponsored systems (e.g. GCOS, GOOS, GTOS, etc.) and data from satellite operators, weather radar and wind-profiler networks, aircraft observations and , in situ ocean platforms from a multitude of providers and stakeholders.

If the derived knowledge and information is to be useful and trustworthy, it is important that the quality of data is kept at uniformly high standards at each and every step. Quality Control at the observation points for error checking and consistency, Quality assurance which includes calibration of the sensors, maintenance of the instruments, training of the observers, records and metadata and Quality Management as the overarching fundamental system defining the processes and procedures and providing the necessary documentation, document control and records which are the prerequisite for continued use of data and products.

3. Components of a Quality Management Framework for WIGOS:

3.1 Quality Control

The initial stage is therefore standardization at the observation points taking into consideration the issues of instrument performances and data quality, i.e. error checking in the NMHSs. A sustained, optimized, end-to-end WMO Integrated Global Observing System should encompass homogeneity, interoperability, compatibility of observations from all WIGOS constituent observing systems.

3.2 Quality Assurance

This is a set of activities intended to ensure that the data collected has the quality that satisfy user requirements in a systematic and reliable fashion. To achieve this, training on methods of observation is crucial and must include the infrastructure development from power supply to communications that fulfill criteria for sustainable operations. Siting of instruments and stations need to be considered for data representativity, calibration and maintenance to ensure consistent quality. Here WIGOS implementation will proceed in parallel with the planning and implementation of WIS.

3.3 Quality Management System

This is the management tool to ensure user satisfaction and efficiency of the processes involving the data collection and transmission, record keeping and documentation of metadata, information generation and exchange, and delivery of services. The level of standardization here should embrace a quality management framework to ensure the best possible products are delivered. This should be based on agreed-upon quality assurance and control standards after clearly identifying end-user quality requirements and needs.

Recommendation

WIGOS is expected to take the role of steering the entire system for the benefit of the NMHS of Member Countries from the Secretariat, in particular:

- To ensure integrated/coordinated data acquisition efforts among NMHS and other operators to minimize duplication;
- To reduce costs and maximize data and products availability and quality;
- To develop an integrated management system which delivers reliable and timely data streams with adequate quality control.

4. WIGOS in the wider context of WMO QMF

The third session of the Inter-Commission Task Team on Quality Management Framework (QMF) was held in Geneva, Switzerland from 28 to 30 October 2008.

The meeting reviewed the status of the WMO QMF, in particular in the different Technical Commissions, and the necessary next steps for a credible implementation of the WMO QMF throughout the Organization including the Secretariat.

After the adoption of the ISO/WMO working arrangements in accordance with Res. 31/Cg-XV it is now a natural next step to strive towards the implementation of QM throughout the Organization, from the Secretariat to the constituent bodies (Technical Commissions, EC Panels) and in NMHSs of Member countries.

The ICTT-QMF may advise on the necessary steps to be followed by different Technical Commissions and other Constituent bodies in their pursuit to address the issue of QMF. WIGOS will thus need to be part of the coordination efforts for this cross-cutting framework, and liaise with a WMO Quality Manager if and when such a position will be created at the Secretariat as recommended by the ICTT.

Considering also the potentially far-reaching consequences of adopting compulsory, common ISO/WMO Standards, the meeting therefore **recommended** that, for each proposed common Standard, the responsible body should attempt to establish and present:

1. The benefit/cost implication to Members of elevating an existing Technical Regulation/Manual/Guide to a common Standard, considering the consequences of converting recommendations to compulsory standards (from "should" to "shall");
2. Cross-cutting elements of the proposed common Standard with other WMO documents under the control of different Technical Commissions or EC Panels and WGs, requiring action from these bodies following a change of status. To this end, Presidents of Technical Commissions and EC Members are to be informed about potential impacts and invited to register an interest in the document being processed;

3. An assessment of which elements in the common Standard could create a risk if adopted, and which ones would constitute a risk if omitted or not approved as a common ISO/WMO standard. This risk assessment should be provided with due reference to the AS/NZ 4360:2004 Standard for Risk Management.
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