

UPDATE ON WIGOS

(Submitted by the WMO Secretariat)

Summary and Purpose of Document

The document provides a brief update on the recent progress in development of the concept and implementation of the WMO Integrated Global Observing System (WIGOS).

ACTION PROPOSED

The Expert Team is invited to note the progress on WIGOS, and comment accordingly.

REFERENCES:

1. ECLXII, Abridged Final Report with Resolutions (WMO No.1059);
2. Final Report of the third session of the EC Working Group on WIGOS and WIS, Geneva, 24-26 March 2010; <http://www.wmo.int/pages/prog/www/WIGOSWIS/reports.html>;
3. Final Report of the third (reduced) session of the EC Working Group on WIGOS and WIS, Subgroup on WIGOS, Geneva, 12-14 October 2010; <http://www.wmo.int/pages/prog/www/WIGOSWIS/reports.html>

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Background

The current WMO observing systems have been developed and administered separately to meet diverse sets of requirements. Such multiplicity of observing systems operated for different WMO Programmes have, therefore, resulted in incompatibilities, inefficiencies, duplication of effort and higher overall costs for WMO Members. In contrast to this, there is an increasing demand to provide a wide range of high-quality data, products and services to satisfy the multifaceted requirements of end users.

In the last few decades, meteorology has made tremendous progress as a result of advances in research, numerical modelling, observing capabilities (insitu and satellite), and communication technologies, which have led to a substantial increase in both the quality and diversity of services. Further progress, however, will depend on adopting a new, integrated approach to upgrading the components of the WMO observing system. This development and integration effort is known as the WMO Integrated Global Observing System (WIGOS).

Vision

The WIGOS Vision [see Ref. 3] calls for an integrated, coordinated and comprehensive observing system to satisfy, in a cost effective and sustained manner, the evolving observing requirements of WMO Members in delivering their weather, climate, water and related environmental services. WIGOS will enhance the coordination of WMO observing systems with those of partner organizations.

WIGOS will provide a framework for enabling the integration and optimized evolution of WMO observing systems, and WMO's contribution to cosponsored systems. Together WIGOS and WIS will allow continuous and reliable access to an expanded set of environmental data and products and associated metadata, resulting in increased knowledge and enhanced services across all WMO activities.

The WIGOS vision provides a roadmap to guide the orderly evolution of the WMO observing systems operated by Members into an integrated system. Establishing the effective and sustained organizational, programmatic, governance and procedural structures is needed for a common standardization process facilitating interoperability of WIGOS observing components, and for implementation of quality management procedures. It will enable user requirements for various application areas to be met at national, regional and global levels.

Concept development

The development and documentation of the WIGOS Concept have progressed well. In particular, the WIGOS Concept of Operations (CONOPS) [see Ref. 3] which specifies WIGOS basic characteristics, and the WIGOS Development and Implementation Strategy (WDIS) [see Ref. 3] which defines steps that WMO will follow, have been completed. These documents provide guidance on how to improve governance, management, and integration of WMO observing systems and their contributions to cosponsored systems, in order to satisfy evolving observing requirements of WMO Members and partner organizations in a coordinated, cost effective and sustained manner.

Progress in the implementation of the WIGOS Pilot and Demonstration Projects has been noted. Some Projects have not yet been completed and some were designed for a longer period while additional guidance, standards and resources are required for the completion of others. In all cases, however, a significant number of lessons have been learned and experiences gained.

1) In this document “partner organizations” means intergovernmental, nongovernmental and international organizations and groupings that operate, or cosponsor with WMO, observing systems that contribute to WIGOS. The main partner organizations are UNESCO and its IOC, UNEP, FAO and ICSU and the main cosponsored observing systems are GCOS, GOOS and GTOS; partner organizations also include GEO.

WIGOS Implementation

In accordance with the WIGOS Development and Implementation Strategy (WDIS) endorsed by the Council [see Ref. 1], it is foreseen that WIGOS implementation be undertaken between 2012 and 2015 and will focus on developing and implementing a framework for improved governance, management, integration and optimization of the multiple observing systems coordinated by WMO. The implementation will provide the groundwork for the operational WIGOS from 2016 onward.

The implementation of WIGOS will build upon and add value to the existing WMO observing systems with emphasis on integration of surface and space-based observations in an evolutionary process to satisfy requirements of WMO and WMO cosponsored Programmes.

The Council underscored that in implementing WIGOS, it was imperative that the current management, governance and support activities be reviewed and aligned with WMO priorities. This alignment would promote cooperation and coordination at the technical, operational and administrative levels.

The Council agreed that centralized coordination through the WMO Secretariat was important for successful WIGOS implementation. In addition, the long-term commitment and effort of WMO Members, greater international cooperation, and sustained technological capacity building and financial support for developing and least developed countries is essential.

The Council requested regional associations and technical commissions to incorporate WIGOS implementation activities into their operating plans and work programmes. Further, the Council encouraged regional associations to develop their regional WIGOS implementation plans and coordinate WIGOS implementation activities, as well as to establish WIGOS related Task Teams and to initiate regionally focused WIGOS/WIS activities.

The Council agreed that, following the approval of Congress, the WIGOS Implementation Plan (WIP) would be developed in line with WDIS.

Guidance for the future development and implementation of WIGOS

The Council reaffirmed that meeting the quality requirements and expectations of users will be critical to the success of WIGOS. This would require an in-depth examination of current practices used by WMO observing programmes, specific mission related requirements that were already in place, and available technological opportunities. The WIGOS implementation strategy would specify all processes of the Quality Management System (QMS) for WIGOS observing components including guidance on effective management of such a component.

Taking into account the ongoing rapid progress in technology that will continue to provide a basis for further improvements in the capability, reliability, quality and cost effectiveness of observations, WIGOS must utilize international standards and best practices set by WMO and partner organizations.

The Council noted the significance of active cooperation and enhanced coordination among the technical commissions, regional associations, and WMO partner organizations. It underlined that integration activities be included in the work programmes and implementation plans of these entities. The Council decided that an InterCommission Coordination Group on WIGOS (ICGWIGOS) be established for this purpose immediately after Cg-XVI with representative of the regional associations and international partner organizations (Resolution 3.4/3 (ECLXII)).

The Council underlined that improving coordination within the WIGOS framework should be a high priority activity at the policy, technical, and Secretariat levels. This would need to be supported by the development of a high-level mechanism for coordination with the cosponsored observing systems, such as through the various Memoranda of Understanding among partner organizations, in order to resolve possible problems in data policy, product delivery, and other governance issues. The existing Interagency Coordination and Planning Committee for Earth Observations (ICPC) could be strengthened and used as a high-level coordination mechanism.

The Council stressed the importance of close alignment of WIGOS and WIS planning and implementation with the development and implementation of the other observing components of the future Global Framework for Climate Services (GFCS) to ensure consistency, effectiveness and to avoid any duplication.

The Council also underlined that WIGOS should ensure a coordinated WMO contribution to the cosponsored GOOS and GTOS and would be key to the successful implementation of GCOS in support of UNFCCC. Through WIGOS and WIS, and their support for GOOS, GTOS and GCOS, WMO would make a fundamental contribution to the success of the Global Earth Observation System of Systems (GEOSS).

The Council underlined the importance of the development of the WIGOS operational and standardization databases specified in CONOPS [see Ref. 3] as the critical WIGOS framework support tools and establishment and management of a WIGOS portal [see Ref. 3] that would provide relevant information to stakeholders on WIGOS and to ensure free access to its databases.

The Council agreed that the implementation of WIGOS must be reflected in the revised WMO Technical Regulations, documenting the WIGOS concept of operations and contributions of all observing components. The Council agreed that upon the approval by CgXVI, the WIGOS Implementation Plan should include the development of a Manual on WIGOS as a priority activity. The Council endorsed the inclusion of the Manual on WIGOS in the list of mandatory publications for consideration by Sixteenth Congress.

The Council agreed that the timely completion of the WIGOS Implementation phase in the sixteenth financial period 2012-2015 directly depended on the available resources. The investment for fully implementing WIGOS should be also a significant component of WIGOS development and implementation plans of individual NMHSs.

The Council adopted Resolution 3.4/3 (ECLXII) Implementation of WIGOS.

Collaboration

Implementing WIGOS, close collaboration and cooperation among Members and their partner organizations at national and international levels will be needed to advance scientific knowledge and technical infrastructure to meet the WIGOS requirements. Within the Regions, it would be desirable to strengthen cooperation and partnership through regionwide organizations or subregional groupings overseeing the WIGOS observing components. It specifically refers to enhanced cooperation among meteorological, hydrological and marine/oceanographic institutions/services where they are separated at the national level.
