

**WORLD METEOROLOGICAL ORGANIZATION**

---

CBS/OPAG-IOS/ET-ABO-1/4

**COMMISSION FOR BASIC SYSTEMS**  
OPEN PROGRAMME AREA GROUP  
ON INTEGRATED OBSERVING SYSTEMS

27.VIII.2013

---

**EXPERT TEAM ON AIRCRAFT-BASED OBSERVING SYSTEMS**  
**FIRST SESSION**

ITEM: 4

Original: ENGLISH

Geneva, Switzerland, 10-13 September, 2013

## **THE WIGOS IMPLEMENTATION PLAN & IMPACTS ON ET-ABO**

*(Submitted by the Secretariat)*

---

### **SUMMARY AND PURPOSE OF DOCUMENT**

To provide the session with background information on the WIGOS Framework Implementation Plan and to make recommendations on alignment of the work plan of ET-ABO with the WIP.

---

### **ACTION PROPOSED**

The Session is invited to take note of the material presented and to consider the recommendations made in relation to development of the Work Plan of the Expert Team.

#### **References:**

- 1) [WIGOS Framework Implementation Plan \(WIP\)](#)
- 2) [ET-ABO Terms of Reference](#)
- 3) [ET-ABO Work Plan](#)

## **WIGOS Framework Implementation Plan (WIP)**

1. The Council (May 2013) adopted the updated version of [the WIGOS Framework Implementation Plan \(WIP\)](#) with improved estimation of resource requirements, adjusted target dates for tasks' completion and identification of risks as requested by EC-64. Effective implementation and operation of WIGOS will depend on sufficient resources and commitments. Available resources will be targeted at ensuring the priority elements of the global WIGOS framework are implemented by Cg-17.

2. The WIGOS framework Implementation Plan (WIP) addresses the necessary activities to establish an operational WIGOS by the end of the period 2012-2015, as per the direction of WMO Congress. To migrate the existing observing systems (GOS, GAW, WMO Hydrological Observing System, incl. WHYCOS, and GCW, including surface-based and space-based components and all WMO contributions to GFCS, GCOS, GOOS, GTOS and GEOSS) into a more integrated single system that is WIGOS, focused effort is required in the following Key Activity Areas (KAAs) identified and described in the WIP:

- 1) Management of WIGOS implementation;
- 2) Collaboration with WMO and co-sponsored observing systems;
- 3) Design, planning and optimized evolution;
- 4) Integrated Observing System operation and maintenance;
- 5) Integrated Quality Management;
- 6) Standardization, system interoperability and data compatibility;
- 7) The WIGOS Operational Information Resource;
- 8) Data and metadata management, delivery and archival;
- 9) Capacity development;
- 10) Communication and outreach.

3. The WIP also addresses a number of additional activities that would substantially improve the operational capabilities of WIGOS beyond the 2012-2015.

4. The comprehensive information collected for the globe on both requirements and capabilities is quantitatively recorded in a database accessible through the Observing Systems Capability Analysis and Review tool (OSCAR) of the WIGOS Operational Information Resource (WIR)<sup>1</sup>.

### **WIGOS and Requirements With Respect to ET-ABO and Aircraft-based Observations**

5. It is critical to the success of the WIP that programs and teams for WIGOS component systems and subsystems work towards integration into the WIGOS framework through identifying and planning for relevant, related and necessary activities within the Key Activities Areas above. Following below is a discussion that identifies current activities and some new activities that may need to be addressed by the Aircraft-based Observations Program (ABOP) in relation to some of the WIGOS KAAs.

#### ***Management of WIGOS implementation***

6. Responsibility for WIGOS implementation is primarily vested in the Inter-Commission Coordination Group on WIGOS (ICG-WIGOS) appointed by EC<sup>2</sup>. ICG-WIGOS also has responsibility for 3 Task Teams that have been composed to assist in implementation of the WIP:

- Task Team on WIGOS Regulatory Material (TT-WRM)
- Task Team on WIGOS Metadata (TT-WMD)
- Task Team on WIGOS Quality Management (TT-WQM) (approved at the last session of ICG-WIGOS but not yet formally created and appointed.)

---

<sup>1</sup> For more information, reference is made to: [www.wmo.int/pages/prog/www/wigos/tools.html](http://www.wmo.int/pages/prog/www/wigos/tools.html)

<sup>2</sup> <http://www.wmo.int/pages/prog/www/wigos/icg-wigos.html>

Responsibility for WIGOS matters within CBS are the responsibility of IPET-WIFI (Inter-Programme Expert Team on WIGOS Framework Implementation)<sup>3</sup>. IPET-WIFI also has Subgroups to mirror the structure of ICG-WIGOS:

- Sub-Group on WIGOS Regulatory Material – SG-RM
- Sub-Group on WIGOS Metadata – SG-MD
- Sub-Group on Quality Management – SG-QM

The Terms of Reference and expected roles of these SubGroups are outlined in the Final Report of IPET-WIFI 1<sup>st</sup> Session<sup>4</sup>.

To fulfil the CBS requirements for ET-ABO under its ToR (a)<sup>5</sup>, it will be important that ET-ABO ensures that it is aware of the activities of all of these WIGOS work teams and seeks to structure its related activities accordingly. Given that IPET-WIFI is the team appointed by CBS to address issues related to the WIP, it is especially important that there should be coordination with IPET-WIFI and its Sub-Groups.

**Recommendation:** Chair of ET-ABO should consult with Chair of IPET-WIFI regarding appropriate WIGOS-related activities for ET-ABO to address in its updated Work Plan.

### ***Design, planning and optimized evolution***

7. One of the pillars of the WIGOS framework is the WMO Rolling Review of Requirements process, its extension through development of the Observing Systems Capability Analysis and Review Tool (OSCAR) as a component of the WIGOS Operational Information Resource (WIR)<sup>6</sup> and its application through the CBS Implementation Plan for Evolution of the Global Observing System (EGOS-IP). A second aspect but as critical as the first, is the documentation and regulation of standards and recommendations and guidance for best practice for design, planning and evolution within the WMO regulatory material.

8. **It is recommended that ET-ABO addresses the following aspects related to this KAA:**

- 1) Monitor the Implementation Plan for the Evolution of the Global Observing System (EGOS-IP) with respect to global actions for development and evolution of aircraft-based observations;
- 2) Work with IPET-WIFI and SG-RM in the process of developing guidance for Members on ABO system design by utilizing the RRR process and the WIGOS Operational Information Resource (WIR) and, in particular, assist IPET-OSDE with the implementation of OSCAR through the specification for determination of the capabilities of the aircraft-based observing system; and,
- 3) Ensure that the relevant ABO-related WMO/WIGOS regulatory material is reviewed and updated in relation to this KAA.

### ***Integrated Observing System operation and maintenance***

9. The ABOP is well advanced in planning for maintaining and improving this aspect of the ABO system. However it is **recommended** that the process and timeline for review and revision of related ABO regulatory material is coordinated and harmonized with the process being undertaken and coordinated by ICG-WIGOS/TT-WRM and IPET-WIFI and its SG-RM.

### ***Integrated Quality Management***

10. This is another aspect that is well in hand within the work plan of the ET under tasks: 5 and 6.

### ***Standardization, system interoperability and data compatibility***

11. The ABOP has recently accomplished several tasks relevant to this KAA including:

---

3 See: <http://www.wmo.int/pages/prog/www/OSY/WorkingStructure/OPAG-IO/ExpertTeams.html>

4 See: [http://www.wmo.int/pages/prog/www/CBS-Reports/documents/CBS\\_IPET\\_WIFI\\_1\\_Final\\_Report.pdf](http://www.wmo.int/pages/prog/www/CBS-Reports/documents/CBS_IPET_WIFI_1_Final_Report.pdf)

5 From Reference 2, ToR (a): Contribute to the implementation of WIGOS by undertaking those tasks assigned to it by the OPAG IOS Chair from the WIGOS Framework Implementation Plan

6 See: <http://www.wmo.int/pages/prog/www/wigos/tools.html>

- Update of the ARINC-620 Met. Report specification to version 5;
- Finalisation of the BUFR template for AMDAR;
- Development and publishing of the AOSFRS; and
- Update to the CIMO Guide, Part II, Chapter III.

***The WIGOS Operational Information Resource and Communication and outreach***

12. The ABOP is also well-advanced and well organised in terms of the development and provision of resources and material relating to program development and operation, including:

- A recent update of the WMO Aircraft-based Observations website: [http://www.wmo.int/pages/prog/www/GOS/ABO/index\\_en.html](http://www.wmo.int/pages/prog/www/GOS/ABO/index_en.html);
- Continued publishing of Newsletters;
- Provision and maintenance of the online Resources area: [http://www.wmo.int/pages/prog/www/GOS/ABO/AMDAR/resources/index\\_en.html](http://www.wmo.int/pages/prog/www/GOS/ABO/AMDAR/resources/index_en.html); and
- Other training & outreach activities in the team work plan.

13. It is **recommended** that the Team consider how it might, in the future and through its work plan, contribute more directly to the development of the WIR.

***Data and metadata management, delivery and archival***

14. In relation to data and metadata management, the ABOP is also well-advanced in developments and improvements and ET-ABO has ongoing related tasks in the current work plan (Reference 3):

- Task 3: Establishment of AMDAR Metadata; and,
- Task 4: Establish AO Data Center

15. **The following recommendations are made** in relation to these activities:

- The ET-ABO lead on AMDAR metadata development should liaise with the project team responsible for development of OSCAR to ensure that plans for the metadata management framework for ABO are harmonized and compatible.
- The ET-ABO lead on AMDAR Metadata development should develop plans to test the AMDAR metadata for compatibility with the metadata model that is being developed by ICG-WIGOS/TT-WMD.

***Capacity development***

16. Under ET-ABO ToR (d) and (e) and its related tasks in the work plan (tasks 9 through 23 and others), ET-ABO is making a strong contribution to capacity development through its efforts to expand and enhance ABO coverage and to coordinate training and outreach activities with both Members and aviation partners.

17. To become more aligned with WIGOS framework development and to take advantage of the developmental and collaborative momentum that has been generated, **it is recommended** that the regional approach to ABO development and planning that has been instigated within the strategy and plans of the ABOP should be integrated into the WIP and the R-WIPs through coordination with WMO Regional Associations and the eventual incorporation and maintenance of Regional AMDAR Implementation Plans within the R-WIPs.