

Vision for WMO Integrated Global Observing System (WIGOS) in 2040

Introduction



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

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Why a Vision for WIGOS in 2040?

- Will serve a reference for WMO Members and other observing system operators, providing context and expected boundary conditions relevant for observing system developments
- Informs the long-term planning of satellite agencies about expected evolution of user requirements
 - drives the 2040 timeline; current 2025 Vision too near-term
- Informs planning efforts of users of observations (e.g. NWP) regarding systems development and required computing and communication capabilities

A few key drivers

- External
 - Climate change; new requirements for information on all time scales
 - Demographic changes (urbanization, mass migration, ...)
 - Increasing overall demand for meteorological information, all ultimately based on observations
- Internal
 - Evolving technical capabilities (sensing, telecommunication, computing)
 - Move toward integrated earth system modeling
 - Increasing recognition of economic value of meteorological information
 - Private sector increasingly interested in all parts of the meteorological value chain, including owning and operating observing systems

Timeline

- 17th World Meteorological Congress (2015) requested ICG-WIGOS to develop a “Vision for WIGOS in 2040” with the aim of submitting it for approval at the 18th Congress in 2019
- A series of expert team meetings and user consultation workshop held in 2015-16 leading to the development of draft material
- A first draft of an integrated vision document will be discussed by ICG-WIGOS in January 2018
- **Broader user and stakeholder consultation expected to take place during first half of 2018**

Material available October 2017

- Chapter 1. Overarching Vision for WIGOS in 02040
 - Providing purpose, scope and context
 - Main drivers, e.g. climate change, demographic changes, increasing demand driven by improved capabilities
 - Still in preliminary form
- Chapter 2. Vision for Space-based Component of WIGOS
 - Somewhat mature draft, has undergone two rounds of consultation with space agencies (CGMS)
- Chapter 3. Vision for Surface-based Component of WIGOS
 - Less mature draft; will be finalized fall 2017

Why separate chapters for space-based and surface-based systems?

- Space-based observing systems
 - Finite number of space agencies
 - High degree of central long-term planning
 - Structured interfaces to WMO (CGMS, ET-SAT, CM,...)
- Surface-based observing systems
 - Mix of national (NMHS and external) and international agencies, research institutes, non-profits, private companies,...
 - Very rapid development, largely without centralized planning or coordination
 - Disruptive technologies such as IoT, commoditized sensors,...

Stakeholder involvement

- Existing material largely developed by a combination of users and observing systems experts
 - Mostly WMO-affiliated experts working within existing programs (GOS, GAW, GCW, ...)
 - Extensive involvement of the space agencies through CGMS
- Next round of consultation will include partners within the broader GEO community, GCOS, CEOS, other UN agencies (FAO, UNESCO, UNDP,...) and major contributing programs such as Copernicus

Summary and Conclusions

- Draft material for a *Vision for WIGOS in 2040* documents developed and in the process of integration
- Developed primarily by users and observing system experts within the WMO community and the CGMS space agencies
- Broader stakeholder consultation planned for first half of 2018, involving organizations with interest and expertise in related application areas
 - Opportunity for a broad range of GEO POs to engage