

Introduction to WIGOS

The WMO Integrated Global Observing System

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World Meteorological Organization

Organisation météorologique mondiale

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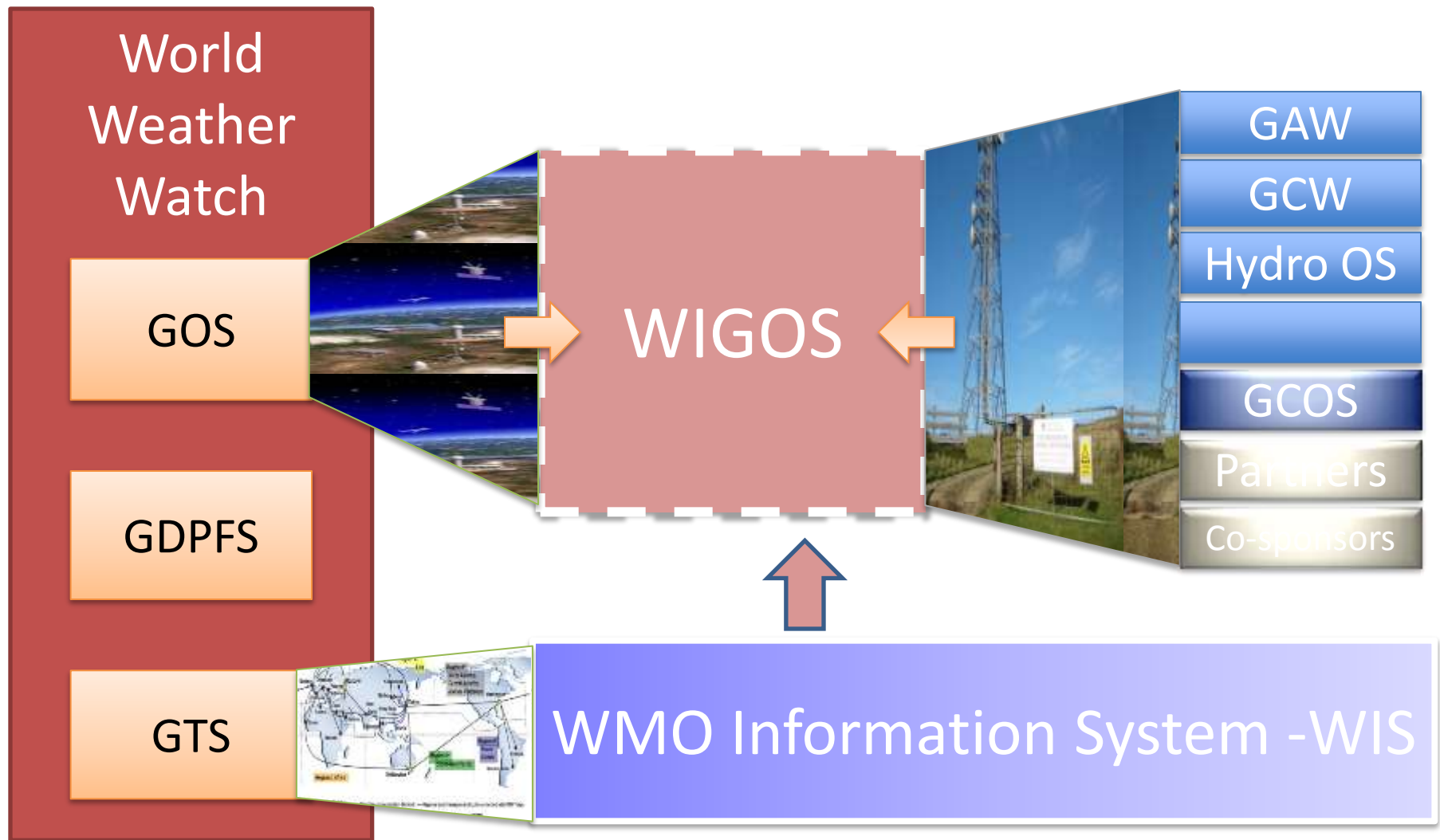
III. Summary

What is WIGOS?

- WMO **foundational activity addressing the observing needs** of the weather, climate, water and environmental services of its Members
- A **framework for integrating** all WMO observing systems and WMO contributions to co-sponsored observing systems under a **common regulatory and management framework**
- WIGOS is not:
 - Replacing or taking over existing observing systems, which will continue to be owned and operated by a diverse array of organizations and programmes, national as well as international.

– [WIGOS homepage](#)

What is WIGOS?



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Observing Components of WIGOS

- Global Observing System (WWW/**GOS**)
- Observing component of Global Atmospheric Watch (**GAW**)
- WMO Hydrological Observations (including **WHYCOS**)
- Observing component of Global Cryosphere Watch (**GCW**)
- Global Climate Observing System (**GCOS**)



WIGOS responds to ...

I. NMHS mandate typically broader now than when the World Weather Watch and the GOS were created, including e.g.

- Climate monitoring/climate change/mitigation, Air quality, atmospheric composition, Oceans, Cryosphere, Water resources

II. Technical and scientific advances:

- Observing technology, Telecommunications, Numerical modeling and data assimilation, Increased user demand to access and use observations in decision making

III. Economic realities

- Budgetary pressure on many NMHS, in spite of expanding mandates and increasing demand for services
- NMHSs need to collaborate to fulfill their mandate

How to implement WIGOS?

- Integration & increased interoperability of systems
- Sharing internationally (more) data and metadata
- Partnerships & cooperation
 - at national and regional levels
- Leadership
 - of NMHSs
- Planning
 - National Observing Strategy and WIGOS Implementation Plans
- Culture of compliance
(with regards to the WMO Technical Regulations)

What do we mean by Integration

I. Integrated network design:

- Across national borders

II. Integration across disciplines:

- Multi-purpose networks

III. Integration across organizational boundaries:

- With organizations outside NMHS that operated observing systems

IV. Integration across technological boundaries:

- Space- and surface-based observing system as one

V. Integration across different levels of performance:

- Concept of tiered networks to include Reference/traceable networks, Standard/operational networks and massive/unknown quality of data

There are more capabilities than the NMHS can provide, in fact several institutions are active, but they don't necessarily collaborate. As a result, scarce resources may be wasted, and synergies are not exploited.

A vision for a better future ...



- All observations are documented publicly (metadata)
- Instruments are calibrated and maintained
- Observations are exchanged and compared
- Obsolete instrumentation may be de-commissioned
- User requirements can be met better at less cost

The WIGOS Systems and Tools

- I. The Observing Systems Capabilities analysis and Review tool (**OSCAR**) - Consists in three databases:
 - OSCAR/Requirements – repository of user requirements for observations
 - OSCAR/Surface – repository of surface observations metadata
 - OSCAR/Space – repository of space-based observations metadata
- II. **WIGOS Data Quality Monitoring System (WDQMS)**
 - A near real time system for monitoring the availability, quality and timeliness of observations
- III. **Regional WIGOS Centers**
 - Regional structures to run the Evaluation (of the monitoring outputs) and the Incident Management Functions of the WDQMS, as well as to assist with the management of WIGOS metadata
- IV. **Global Basic Observing Network (GBON):**
 - A set of proposed minimum reporting requirements for modern global NWP and reanalysis centres with:
 - a spatial separation of 500km and hourly reporting for surface stations and 12-hourly for upper air observations

Summary

- WIGOS is a global framework for integrating all WMO and co-sponsored observing systems under a common regulatory and management umbrella
 - It is now in place and is expected to become operational from 2020 onwards
- Purpose is to help WMO Members provide and gain access to more and better observational data at reduced cost by taking an integrated approach
- Regulatory material (e.g. Manual and Guide to WIGOS) and technical systems (OSCAR/Surface, WDAQMS) to facilitate, have been implemented by WMO and are still undergoing further development
- Regional WIGOS Centers will provide critical support functions for Members to help translate the global WIGOS concepts into regional and national action plans
- Strong involvement from Members, e.g. to implement WIGOS at national level, is necessary and is already happening

Thank you

For further information

<https://community.wmo.int/activity-areas/wigos>



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