WMO Integrated Global Observing System

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Vision:
WIGOS will establish an integrated, comprehensive and coordinated observing system to satisfy in a cost-effective and sustained manner the evolving observing requirements of WMO Members and will enhance coordination of WMO observing systems with those of partner organizations for the benefit of society.
The WMO Integrated Global Observing System (WIGOS) is an integrated, comprehensive, and coordinated system primarily comprising the surface-based and space-based observing components of the GOS, GAW, WHYCOS, and GCW, plus all WMO contributions to GCOS, GOOS and GTOS, to satisfy requirements of WMO and WMO co-sponsored Programmes. WIGOS will provide a framework for improved governance, management, integration and optimization of these observing systems.
A challenge: The evolving observing systems

The continuing changing observing system

Surface stations (temperature, pressure, wind, radiation, turbidity)
Marine observations (sea surface temperature, etc.)

1880  1900  1920  1940  1960  1980  2000

Cloud observations
Kites
Pilot balloons
Aircraft
Total ozone / remote sensing
In-situ air chemistry
Ozone sonde
Radiosonde
Rockets
Satellites
Global Observing Systems (WWW/GOS)
- RBSN, RBCN (>10,000 stations, 1,000 upper-air)
- AMDAR (39754/day)
- Ship & Marine obs (30417/day)
- Surface-based remote sensing
- Meso-scale networks

WMO Space Programme

Global Atmospheric Watch (GAW)

World Hydrological Cycle Observing System (WHYCOS)

WMO Co-sponsored Observing Systems
- GCOS, GOOS, GTOS
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Key activity areas of WIGOS:

• Collaboration with WMO and co-sponsored observing systems
  - Cooperation between research and operational observing communities
  - WMO CIMO Testbeds and Lead Centres play a role in testing and standardization of new observation technology

• Design, planning and optimized Evolution
  - RRR process for improved design and planning
  - Optimizing the integrated network approach
  - Optimized network design to meet user requirements

• Integrated Observing System operation and maintenance
  - Sharing of operational expertise, pooling resources
  - Improvements to data quality through combining calibration efforts at national, regional and global level
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• Integrated Quality Management
  - Apply WMO QMF to the WIGOS observing components
  - Compliance of all WIGOS components with international standards, such as ISO 9001/9004 and ISO 17025 where appropriate
  - Ensuring, where possible, traceability to the International Systems of units (SI)

• Standardization, System Interoperability and Data compatibility
  - Areas of standardization:
    • Instruments and methods of observation and their Metadata,
    • WIS Information exchange
    • Data Management (data processing, Quality Control, monitoring and archival)
  - Practices and procedures to be documented in the WMO Technical Regulations
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- The WIGOS Information Resource (WIR)
  - Provide single access point for WIGOS stakeholders (*Network decision makers, Implementers, Data users etc.*)
  - Shall contain all relevant information on the status and evolution of WIGOS and its components
  - To be fully operational from 2016
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Observing System Capabilities Analysis and Review Tool OSCAR

- In support of the “Rolling Requirement Review” for the design and planning of observing systems:
  → Record and maintenance of user requirements
  → Comparison with actual or planned capabilities

- In support of the use of global observing systems
  → One-stop access to satellite, instrument, and ground-based network metadata for all users
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- Live demonstration of OSCAR

www.wmo.int/oscar
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The WIGOS Framework Implementation Plan (WIP)

Kea activity areas
- Management of WIGOS implementation;
- Collaboration with WMO and co-sponsored observing systems;
- Design, planning and optimized evolution;
- Integrated Observing System operation and maintenance;
- Integrated Quality Management;
- Standardization, system interoperability and data compatibility;
- The WIGOS Operational Information Resource;
- Data and metadata management, delivery and archival;
- Capacity development;
- Communication and outreach.
Thank you
Merci
Gracias
شكرا
Terima kasih
謝謝
Спасибо