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GRUAN Interactions with WMO Observing Systems or WIGOS Update for ICM-8

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WDQMS – Contents

- WIGOS Introduction
- Plans for next 4 (3!) years
- Regulatory Material
- OSCAR
- Final Thought



What is WIGOS?

- WMO
- Integrated
- Global
- Observing
- System



WIGOS Framework

- At its simplest, the WIGOS framework is about:
 - **Documenting and implementing** standard and recommended practices and procedures for making and sharing observations,
 - **Coordination and collaboration** for efficiency and effectiveness,
 - **Integration and interoperability** in all senses,
 - **Timely delivery of observations** that meet user needs in a way they can use them,
 - **Empowering** and extending the reach of NMHSs, reinforcing their leadership and building partnerships with contributors & users of observations,
 - **Delivering value** through network design and through sharing, management and use of observations



WIGOS: An observing framework for WMO



WIGOS Framework: Key activity areas

Management of WIGOS
Implementation / operation

Collaboration with co-
sponsors and partners

Data discovery,
delivery &
archival

Observing
system
operation &
maintenance

Communications and
outreach

To ensure supply of and access to WIGOS
observations

To oversee, guide and coordinate WIGOS



To plan, implement and evolve WIGOS
component systems

Design,
planning and
optimised
evolution

Quality
Management

To facilitate and support the operation of WIGOS

Operational
Information
Resource

Standardization,
interoperability &
compatibility

Capacity
Development



WIGOS stakeholder – beneficiaries (just some)



Disaster Risk Reduction

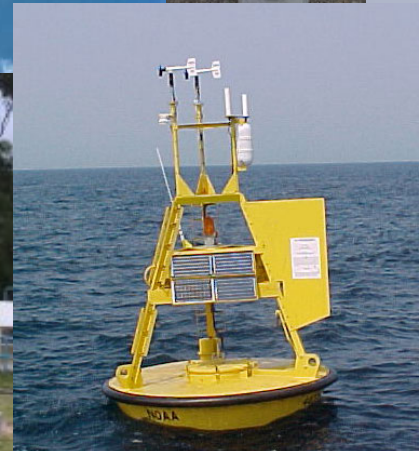
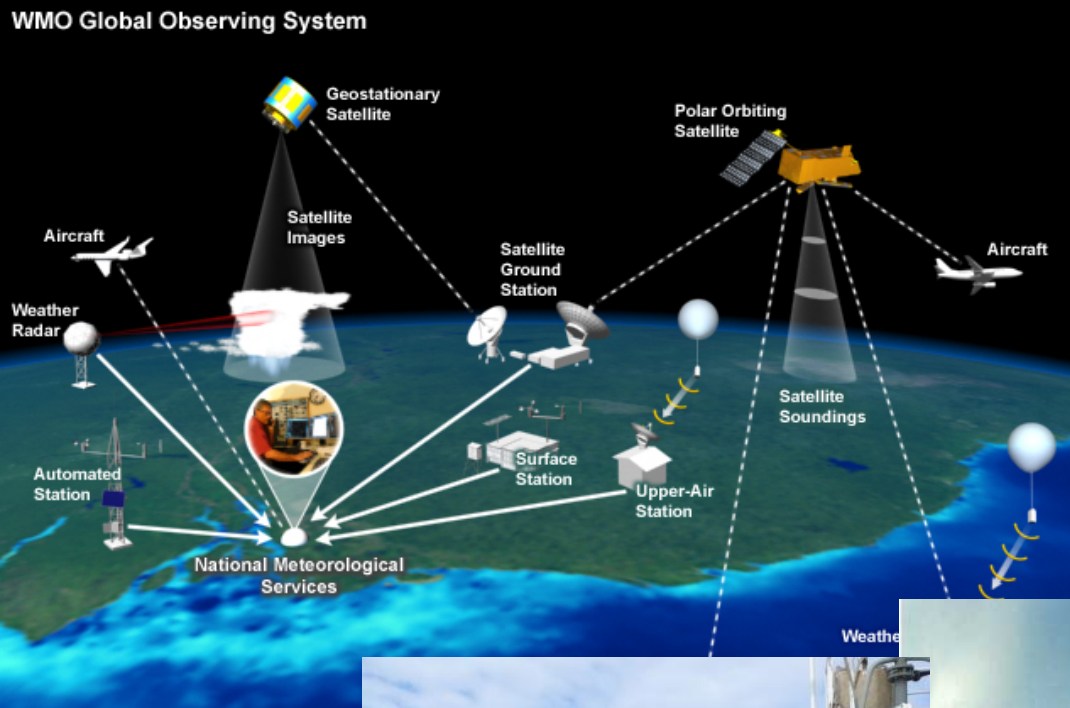
Capacity Development



THE GLOBAL EARTH OBSERVATION
SYSTEM OF SYSTEMS



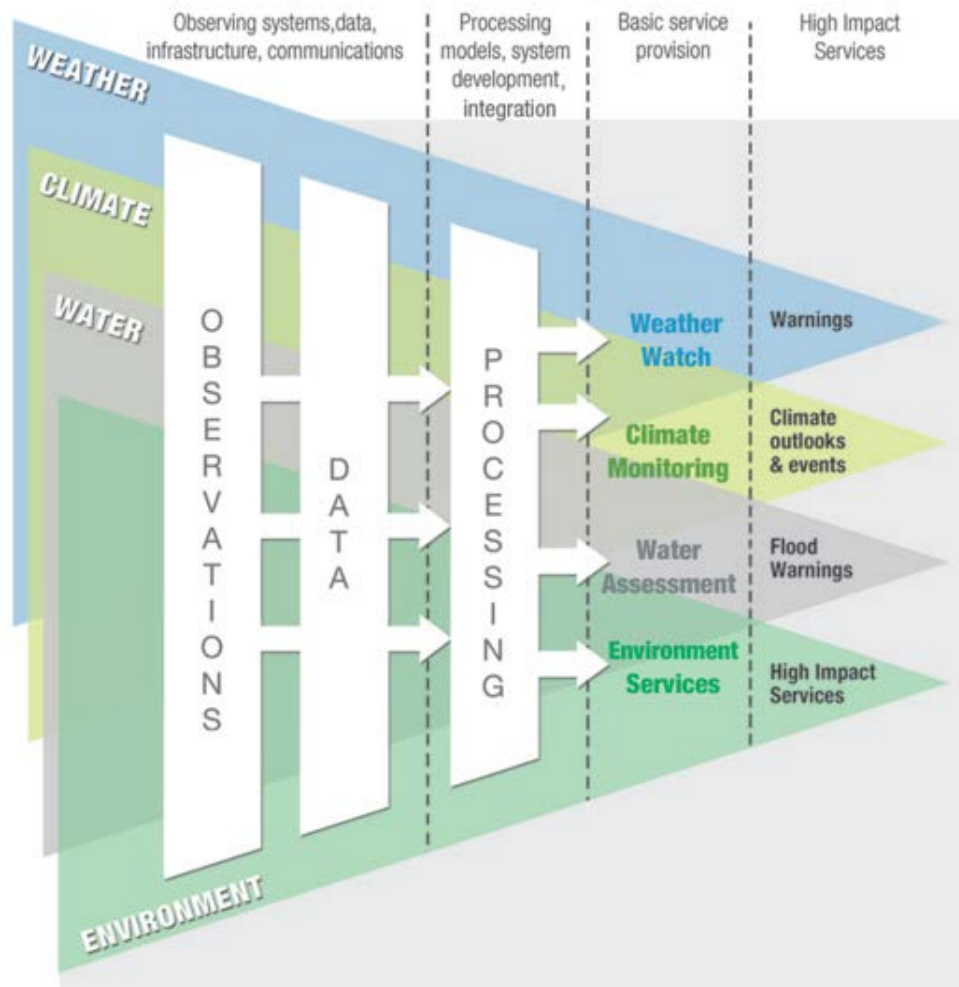
WMO Global Observing System



What do we mean by integration?

Integrated service model

Composite/integrated observations underpinning service outcomes



- Composite systems
- 'Network of networks'
- Integration through:
 - Supporting diverse user needs
 - Systems designed for efficiency & effectiveness
 - NWP data assimilation
 - Partnership & collaboration
 - End-to-end service model
 - Data policy, access and exchange
 - Coordinated network operation & maintenance
 - Practices and procedures
- NOT one-size-fits-all





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Plans for the next 4 years

WIGOS Timeline

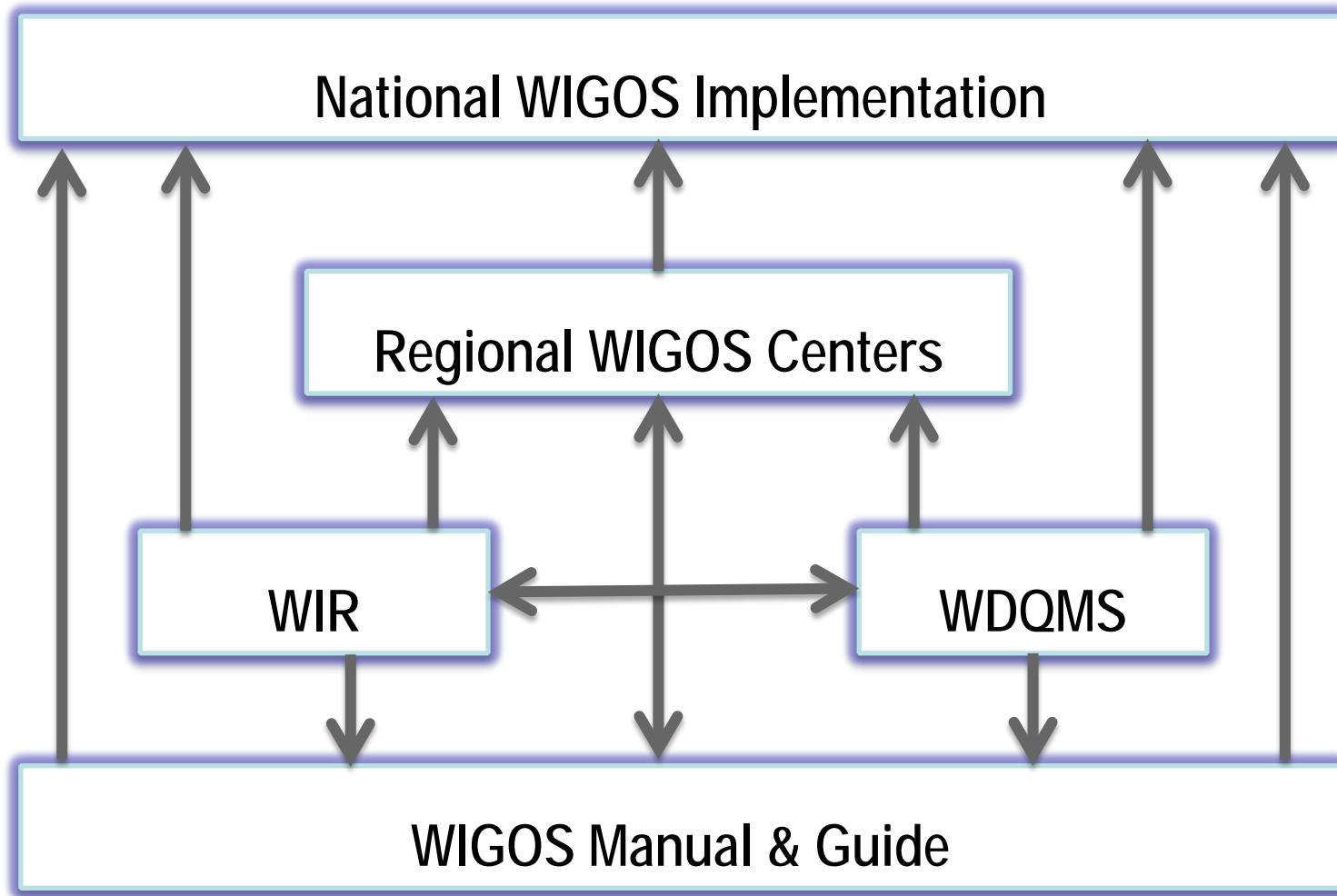


Plans for 2016 to 2019

- Congress identified 5 priority areas for WIGOS during the Pre-operational Phase
 - National WIGOS Implementation
 - Regional WIGOS Centres
 - WIGOS Data Quality Monitoring System
 - WIGOS Information Resource
 - WIGOS Regulatory and Guidance Material



WIGOS Priorities – inter-dependency





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Technical Regulations

WMO Technical Regulations (WMO-No. 49)

Regulations

*"Shall"
and "Should"
have specific
meaning*

TRs
(Vol. I – IV)

- Basic Provisions
- Mostly requirements-driven
- Relatively Conservative

Manuals
(Annex 1 – 9)

- More detailed Provisions
- Mostly technology-driven
- Relatively Dynamic

Guides

Other reference docs
(e.g. WMO-No.8, 100, 134, 168, ...,
Guidelines, etc.)

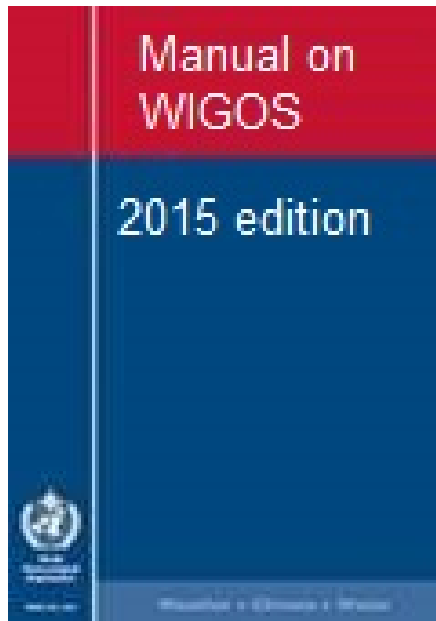
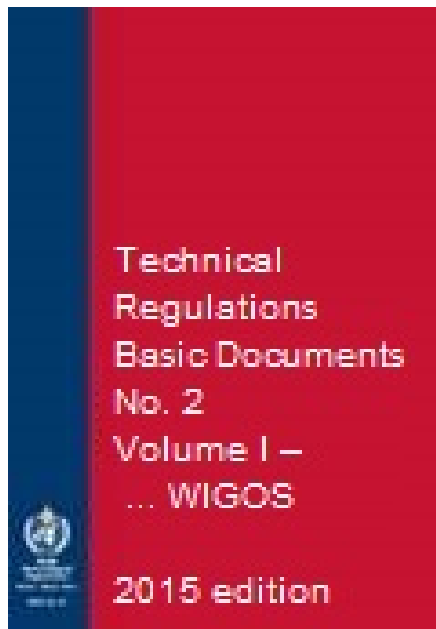
- Best procedures and practices, implementation guidance, explanations, examples on how to implement and operate observing systems

*"Should"
has
ordinary
meaning*

Non-
Regulations



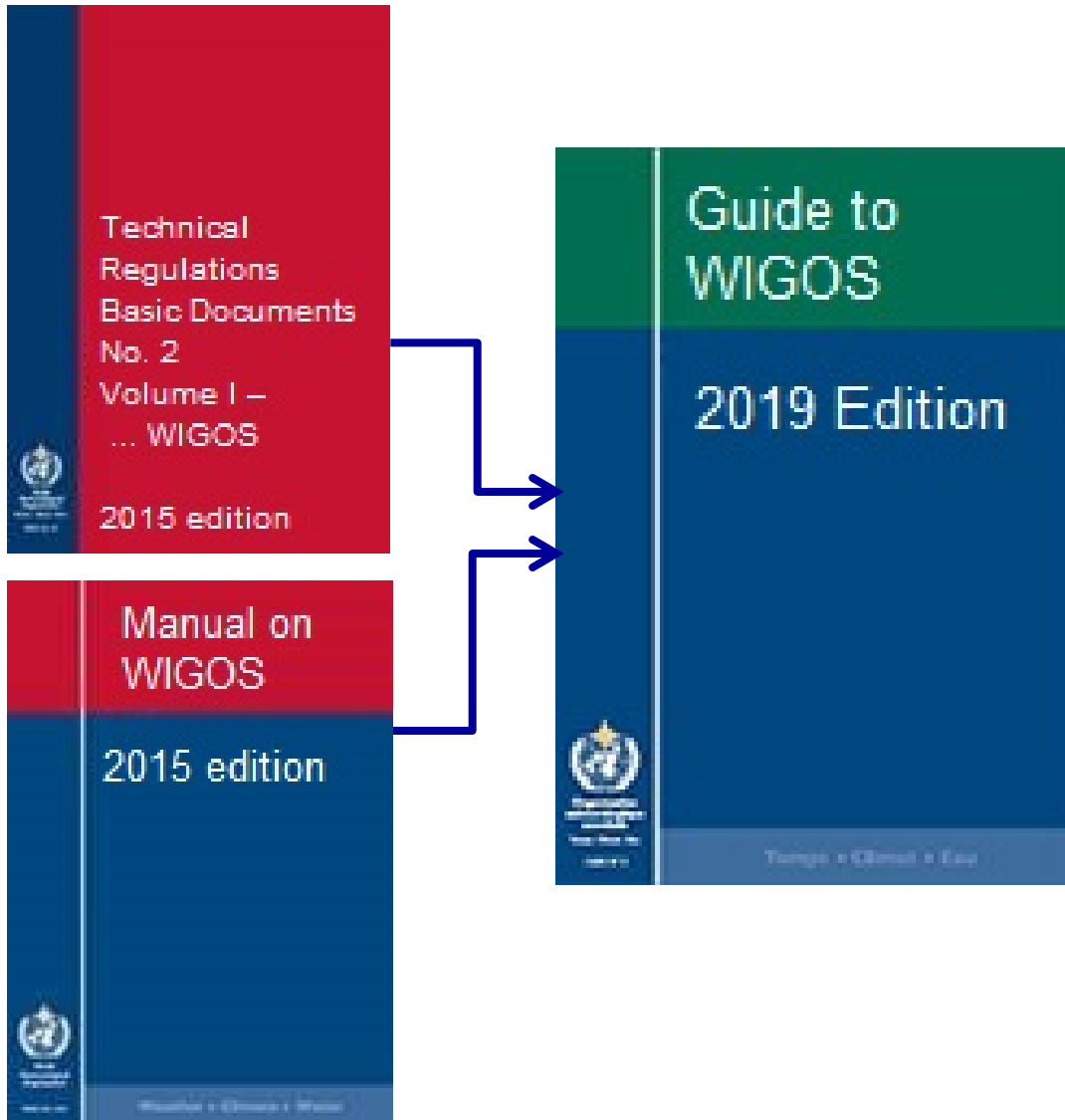
New WIGOS Regulatory Material



- ❖ Members **shall** implement and manage their national observing systems in accordance with the provisions of the *Technical Regulations*, Volume I, Part I, and the *Manual on WIGOS*
- ❖ Members **shall** continuously monitor the performance of their observing systems.
- ❖ Members **shall** implement quality control for all observations for which they are responsible.
- ❖ Members **shall** record, retain and make available internationally the observational metadata as specified in the *Manual on WIGOS*, section 2.5.



New WIGOS *Guidance* Material



More detailed information, best practices and procedures, explanation and examples on how to implement national observing systems ...





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OSCAR

OSCAR

- OSCAR is the Observing Systems Capability Analysis and Review Tool

<<http://www.wmo-sat.info/oscar/>>

- It consists of 3 main parts:
 - OSCAR/Requirements
 - OSCAR/SPACE
 - OSCAR/SURFACE



OSCAR Requirements – Help needed

List of all Requirements

This table shows all requirements. It can be sorted by clicking on the column headers. The filter on the right allows to display only specific requirements. [Filter instructions](#)

Note: In reading the values, goal is marked **blue**, breakthrough **green** and threshold **orange**

<div> <div></div> <div>Active Filter: Themes: <i>all</i> Application area(s): <i>Global NWP</i> Coverage(s): <i>all</i> Layer(s): <i>all</i></div> </div>											
Id	Variable	Layers	App Area	Theme (s)	Uncertainty	Stability / decade	Hor Res	Ver Res	Obs Cyc	Timeliness	
					1 hPa		500 km		12 h	6 h	
251	Air pressure (at surface)	Near Surface	Global NWP		0.5 hPa 1 hPa 1 hPa		15 km 100 km 500 km		60 min 6 h 12 h	6 min 30 min 6 h	
252	Air specific humidity (at surface)	Near Surface	Global NWP		2 % 5 % 10 %		15 km 50 km 250 km		60 min 3 h 12 h	6 min 30 min 6 h	
253	Air temperature (at surface)	Near Surface	Global NWP		0.5 K 1 K 2 K		15 km 50 km 250 km		60 min 6 h 12 h	6 min 30 min 6 h	
254	Atmospheric temperature	HS&M	Global NWP		0.5 K 3 K 5 K		50 km 100 km 500 km	0.3 km 1 km 3 km	60 min 6 h 24 h	6 min 30 min 6 h	
255	Atmospheric temperature	HT	Global NWP		0.5 K 1 K 3 K		15 km 100 km 500 km	0.3 km 1 km 3 km	60 min 6 h 24 h	6 min 30 min 6 h	
256	Atmospheric temperature	LS	Global NWP		0.5 K 1 K 3 K		15 km 100 km 500 km	0.3 km 1 km 3 km	60 min 6 h 24 h	6 min 30 min 6 h	
257	Atmospheric temperature	LT	Global NWP		0.5 K 1 K 3 K		15 km 100 km 500 km	0.3 km 1 km 3 km	60 min 6 h 24 h	6 min 30 min 6 h	

OSCAR / SURFACE

- A rich metadata source
- Metadata Standard agreed by Congress
 - Evolution / Improvement of the standard expected
- OSCAR Surface goes live next month
- Staged approach to its population

<<https://oscar.wmo.int/OSCAR/index.html#/>



We are in this together

If you want go fast, go alone

If you want go far, go together





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Thank you for your attention

www.wmo.int/wigos