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EGU 2016-9517

OSCAR/Surface

Metadata for the WMO Integrated Observing System WIGOS

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INTRODUCTION

WMO coordinates the activities of 185 countries („Members“), in most cases represented by the National Hydrometeorological Services (NHMS). International exchange of meteorological, hydrological and other environmental data and products is essential to support adequate responses to the impact of weather and climate on societies. Metadata („data on data“) are needed for discovery and retrieval as well as for adequate use of information.

The WIGOS Metadata Standard (WMDS) defines a set of metadata classes to support the adequate use of observations and measurements. The WMDS has been approved by WMO Congress (Cg-17). The logical model of the WMDS is based on the OGC/ISO 19156 Observations & Measurements standard.

The WMDS is implemented in a web-based application (“OSCAR/Surface”). OSCAR/Surface will provide an API to support up-/download of compliant XML files and to link to external archives.

OSCAR informs various stakeholders including NMHSs, academia and the general public about capabilities of observing systems and adequate use of observations. Statements of Guidance (SoG) based on information derived from OSCAR will allow rational evolution of observing systems and improved services for society.

WIGOS METADATA STANDARD (WMDS)

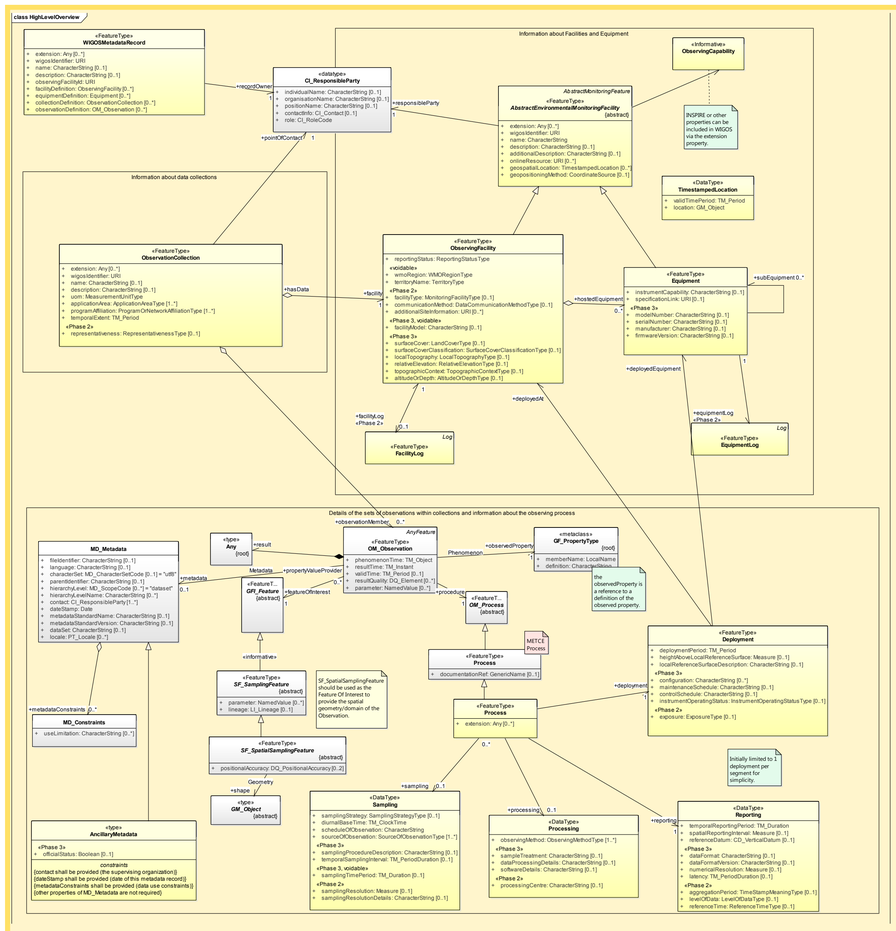
- Descriptive, not formal standard
- Supporting WIGOS, a WMO key priority
  - forward-looking and respecting legacy
- Enable
  - adequate use of observations
  - documentation of historical observations
- Designed to be acceptable and applicable
  - to all types of observations
  - to all disciplines
  - to all Members
- Approved by WMO Congress (Cg-17)
- Mandatory for internationally exchanged data

Obligations of Members
- collect metadata following the WMDS
- archive metadata locally and/or use OSCAR as primary archive
- maintain WIGOS metadata for all internationally exchanged observations in OSCAR

Benefits for Members
- WMDS
  - enables comprehensive, structured documentation of observations
- OSCAR/Surface
  - can serve as national metadata repository
  - informs about observing systems
  - supports rational evolution of observing systems

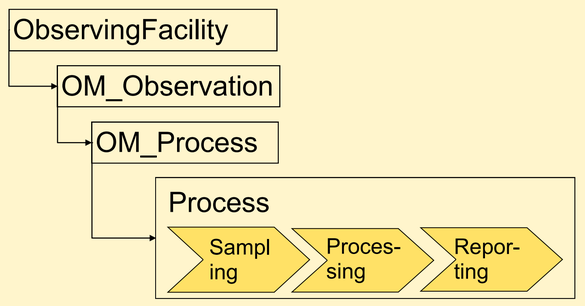
WMDS Categories	Logical Model
Observed variable	ObservationalCollection
Purpose of observation	
Station/Platform	ObservingFacility
Environment	
Instruments and methods	Equipment
Sampling	Sampling
Data processing and reporting	Processing / Reporting
Data quality	OM_Observation/ resultQuality
Ownership and data policy	MD_Constraints
Contact	CI_ResponsibleParty

Three levels of metadata
- *Mandatory* - Required for all WIGOS observing systems/platforms
- *Conditional* - Required if applicable (e.g. instrument calibration makes little sense for a human observer)
- *Optional* - Desirable/useful, but non-compulsory



LOGICAL MODEL

- Scope
  - Formal specification of WMDS
  - Enable machine-to-machine exchange of WIGOS metadata with OSCAR/Surface
  - Based on OGC/ISO 19156 O&M concept model

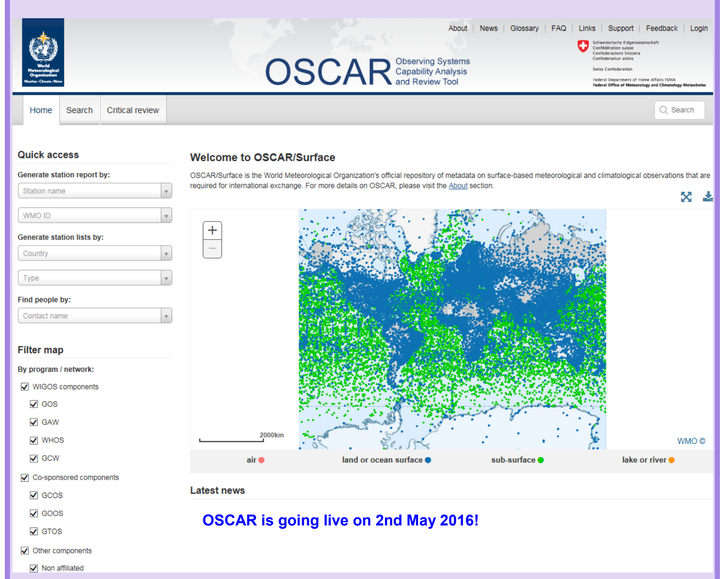


- Status
  - Currently in „beta“
- Challenges
  - INSPIRE alignment
  - Transactional aspects
    - incremental updates
    - historical information
    - corrections

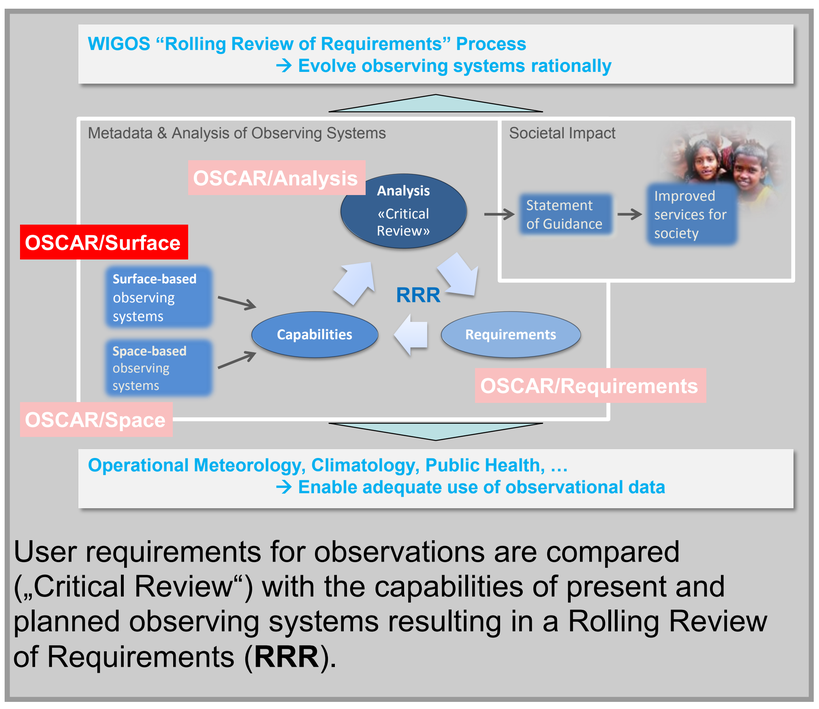
OSCAR

Observing **S**ystems **C**apability **A**nalysis and **R**eview Tool

- Authoritative repository of WIGOS metadata
- Implementation of WMDS
- Web-based platform
- Safe, secure and user-friendly interface
- Easy access to metadata (GUI and API)
- Links to external metadata sources
- API enables management and harvesting



Screenshot of the OSCAR/Surface application oscar.wmo.int/surface



User requirements for observations are compared („Critical Review“) with the capabilities of present and planned observing systems resulting in a Rolling Review of Requirements (**RRR**).

CONCLUSIONS

- Descriptive WIGOS Metadata Standard (WMDS) supports adequate use of observations.
- WMDS has been approved by WMO Congress (Cg-17).
- Logical model allows formal specification (XML Schema).
- Web-based metadata platform with management console („OSCAR/Surface“) exists.
- API for machine-to-machine exchange is under development.

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