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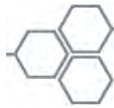


# WMO-OGC Memorandum of Understanding

OGC Technical Committee  
Toulouse, France

Jeremy Tandy (*Chair WMO IPET-MDI*)  
September 2010

# Introducing WMO



## World Meteorological Organization Specialized agency of UN (1951)

*“UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources”*

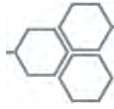
188 Member States and Territories

‘Resolution 40’ data-products

‘Resolution 28’ data-products

WMO facilitates the **free and unrestricted exchange of data and information**, products and services in real- or near-real time relating to **safety and security of society, economic welfare** and the **protection of the environment**

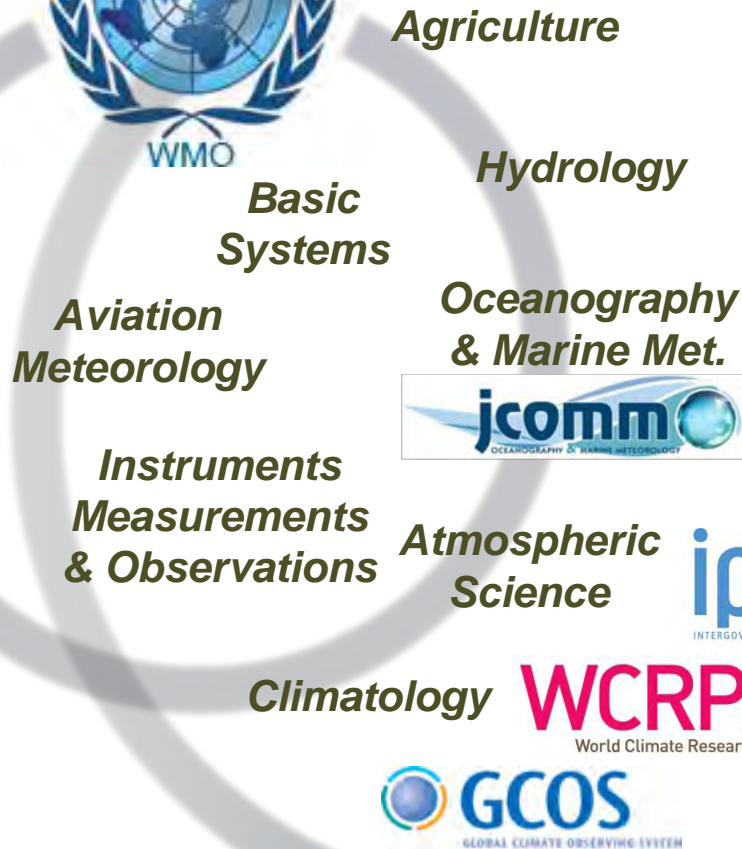
# WMO & science communities



Focus on operational information exchange insufficient ...

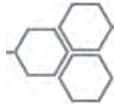
WMO has additional Commissions which engage in the broad community of Earth Systems Science

... often through partner programmes



Earth Systems Science community

# WMO Information System (WIS)



**WIS** provides an integrated approach suitable for all WMO Programmes to meet the requirements for routine collection and automated dissemination of observed data and products, as well as data discovery, access and retrieval services for all weather, climate, water and related data



WMO

*Basic Systems*

*Aviation Meteorology*

*Instruments Measurements & Observations*

*Climatology*



*Agriculture*

*Hydrology*

*Oceanography & Marine Met.*



*Atmospheric Science*



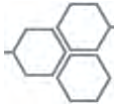
WIS builds on the **ISO Geographic Information / Geomatics** suite of standards. WMO established a **Class A Liaison** with **ISO TC/211**



**Earth Systems Science community**



# Earth System Science standards



**Standards for data representation and exchange within the Earth Systems Science community often have no explicit governance authority – community adoption is driven by the utility of the standards and richness of associated tooling: e.g.**

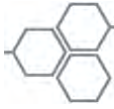


**NASA-Ames**  
format for data exchange

The governance of these formats is outside the control of WMO, which has led to divergence and lack of interoperability between formats maintained by WMO (with a focus on operational exchange) and those developed by the community (with a focus on utility for research)

The **Climate Science Modelling Language (CSML)** from UK Natural Environment Research Council **seeks to reconcile** these standards with the **ISO Geographic Information / Geomatics** frameworks

# Standards incubation



**Open Geospatial Consortium (OGC)** is a non-profit voluntary consensus standards organisation with a membership comprising commerce, government and academia. OGC leads the development of geospatial and location based standards – often acting as an *incubator* for ISO geographic information standards



## WMO-OGC Memorandum of Understanding in place (Nov 2009)

WMO-OGC MoU is instrumental in providing the mechanism for the **co-ordination** between activities carried out by the **OGC Met Oceans DWG** and **Hydrology DWG**, and the activities carried out by the expert teams of **WMO CBS OPAG-ISS** with a view to developing the use of **ISO/OGC standards for the WIS**

# The *understanding* as agreed



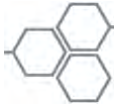
## Key WMO roles identified by WMO

- WMO Secretariat Information Systems Branch
- Experts representing the following Technical Commissions to liaise with OGC Met-Ocean DWG and Hydrology DWG
  - Commission for Basic Systems (CBS)
  - Commission for Aeronautical Meteorology (CAeM)
  - Commission for Instruments and Methods of Observation (CI MO)
  - Commission for Climatology (CCI)
  - Commission for Hydrology (CHy)
  - Joint WMO-IOC Commission for Oceanography and Marine Meteorology (JCOMM)
  - One CBS expert to liaise with above mentioned experts

## Coordination of WMO and DWG activities

- Establishment of a WMO-OGC coordination team consisting of WMO and OGC nominated experts and co-chairs of DWG – including the development of use cases, pilot projects and best practices through IE opportunities

# The *understanding* (continued...)



## Designated tasks for cooperation

- Develop proposals related to conceptual models suitable for WIS
- Develop proposals for best practice or *profile* for Catalogue infrastructure within WIS
- Consider use of Web Map Service, Web Map Tiling Standard, Web Feature Service, Web Coverage Service and related standards for the development / implementation of WIS
- Develop awareness of Observations & Measurements, Sensor Web Enablement and related standards within WMO WIGOS community
- Ensure that the requirements expressed by WMO Programmes are appropriately acknowledged within DWG activities

## Reporting structures

- Reporting between OGC and WMO through OGC-WMO coordination team
- WMO lead Technical Commission should be CBS
- WMO internal reporting through nominated coordinator and experts



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**Thank you**