WMO Use Case: WHOS

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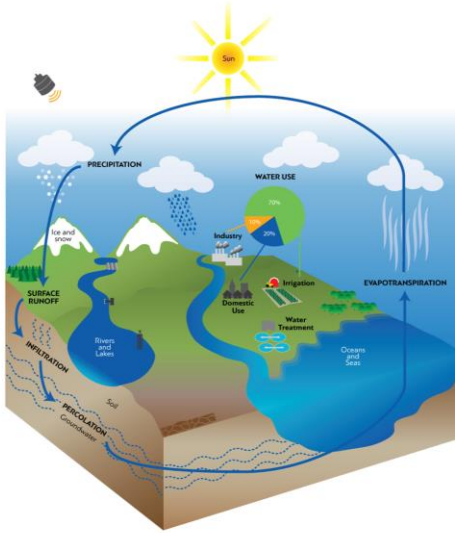
WORLD METEOROLOGICAL ORGANIZATION

Institute of Atmospheric Pollution Research
National Research Council of Italy

WMO Hydrological Observing System (WHOS)

Essential data sharing and interoperability for supporting hydrological needs at different scales: local, regional and global

WORLD METEOROLOGICAL ORGANIZATION

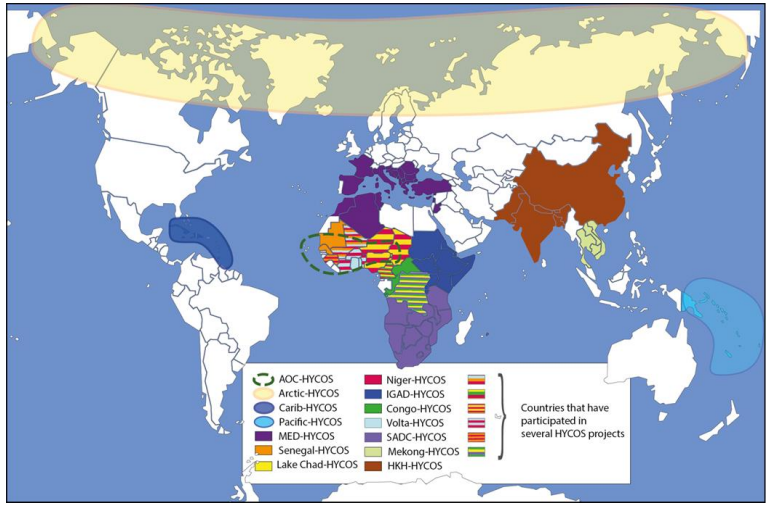


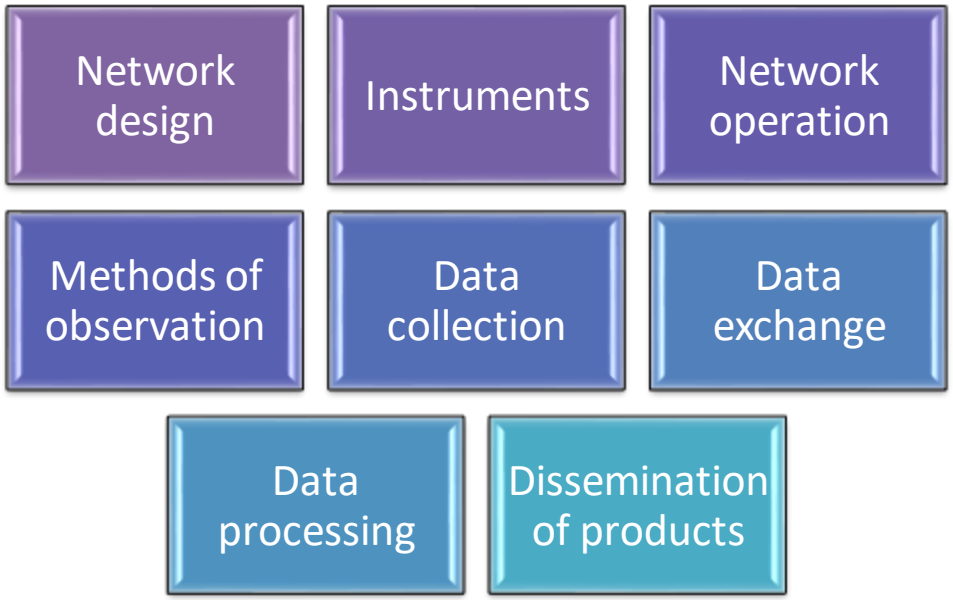
Early Warnings for All

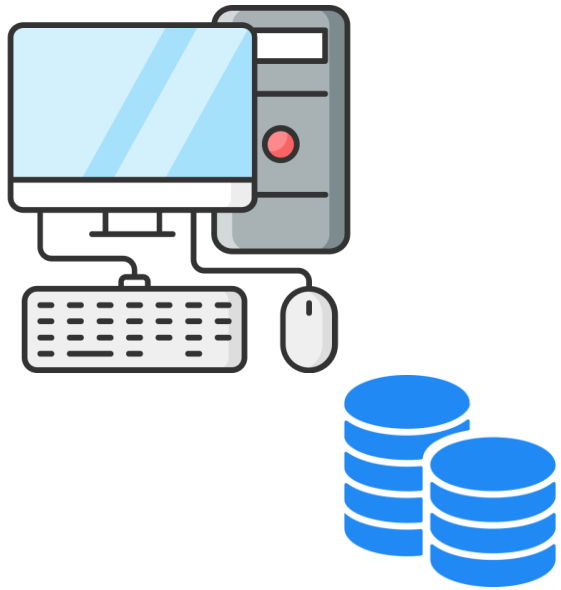
SUSTAINABLE DEVELOPMENT GOALS

WHYCOS World Hydrological Cycle Observing System

- WMO framework programme aimed at building and **reinforcing the technical and human capabilities** of NHSs to perform their basic role in **hydrological monitoring**



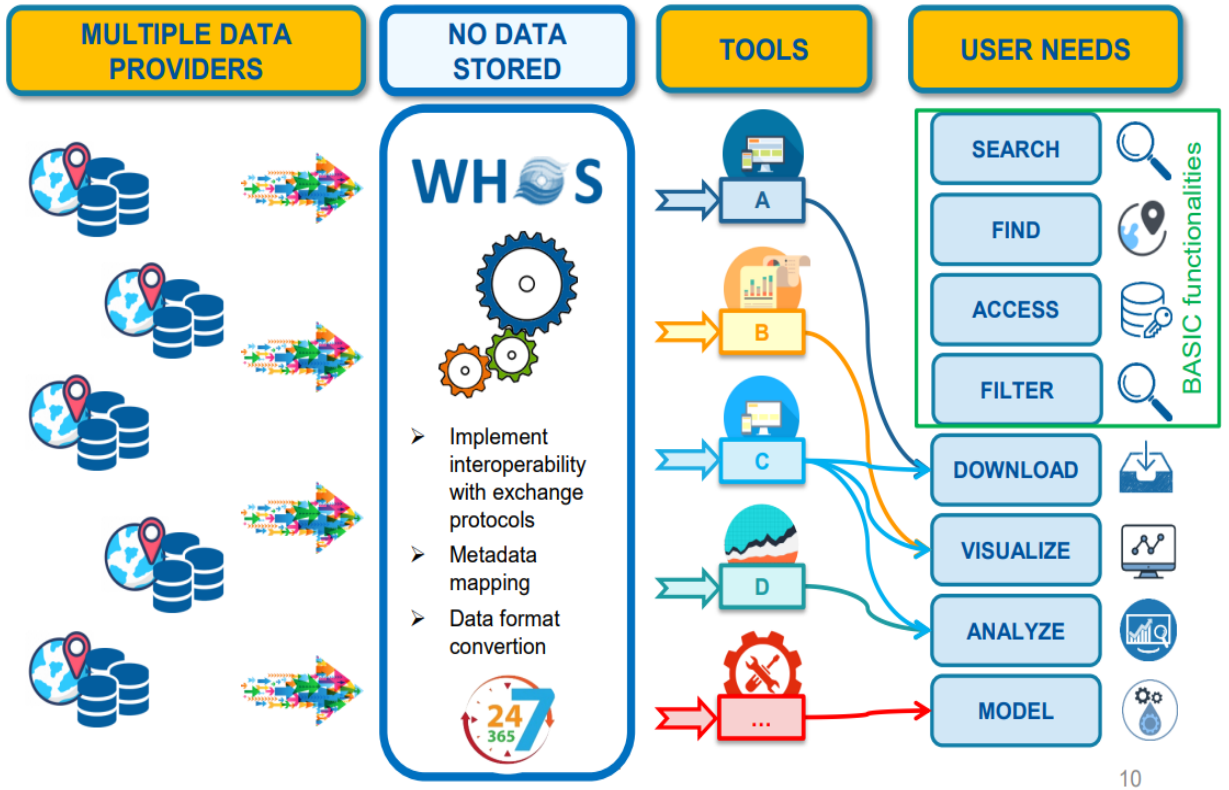




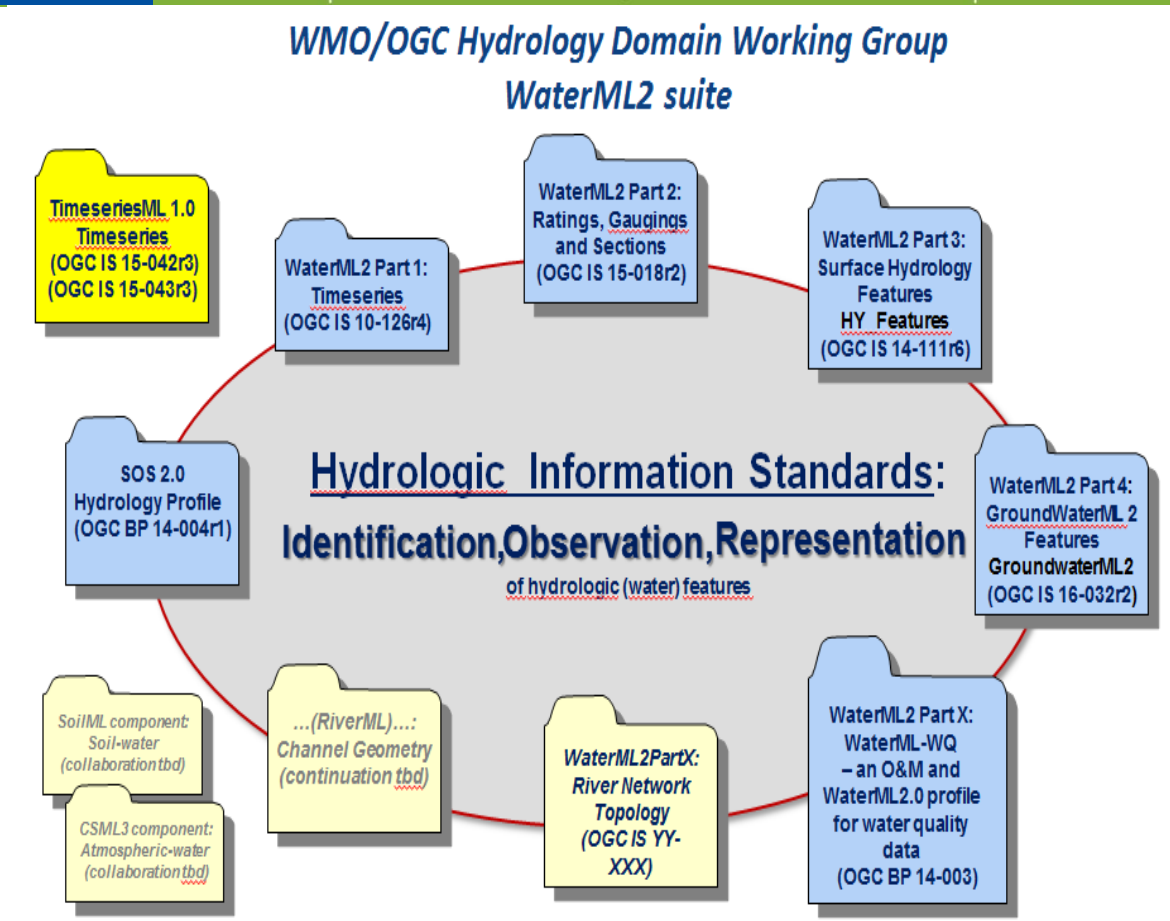
WHOS

A system of systems, for hydrological data discovery and access leveraging existing data publication systems, open standards and free tools, such as the DAB broker. Supports and contributes to:

- ❑ WIS 2.0 (as its hydrological component)
- ❑ PROHMSAT-Plata (hydrometeorological forecast and Early Warning System on La Plata River Basin)
- ❑ WMO Unified Data Policy (Res 1, (Cg-Ext(2021)), International Exchange of Earth System Data
- ❑ HydroSOS and other data systems
- ❑ Early Warnings For All; pillar 2 and key action area 4
- ❑ WMO Plan of Action for Hydrology 2022 – 2030
- ❑ Ongoing discussion with GEO secretariat



WHOS pillars: use of standards



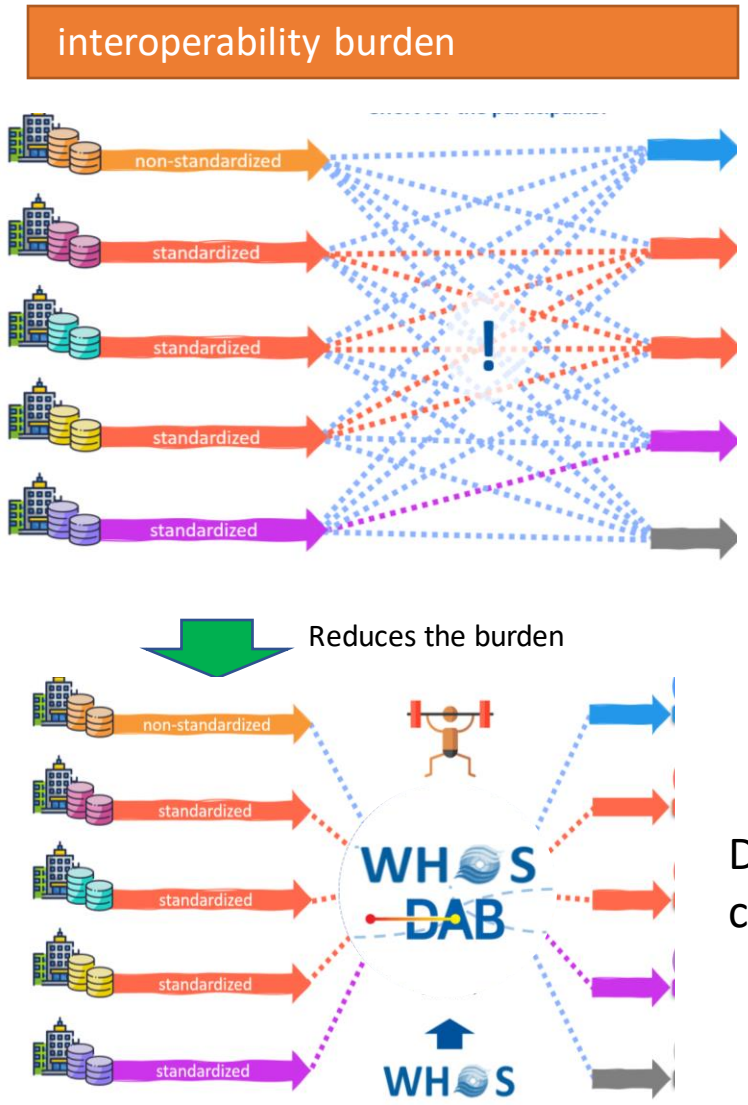
ISO International Organization for Standardization

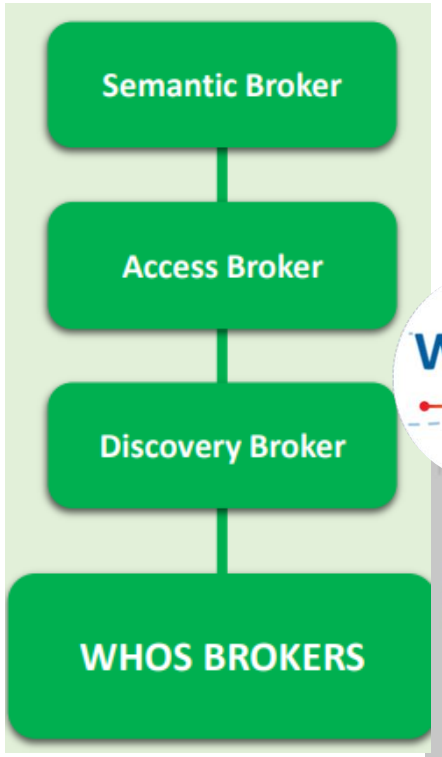
Open Geospatial Consortium

WMO

WIGOS Metadata Standard

WHOS pillars: brokering approach





WHOS-DAB: brokering framework for hydrological data interoperability

WHOS DAB

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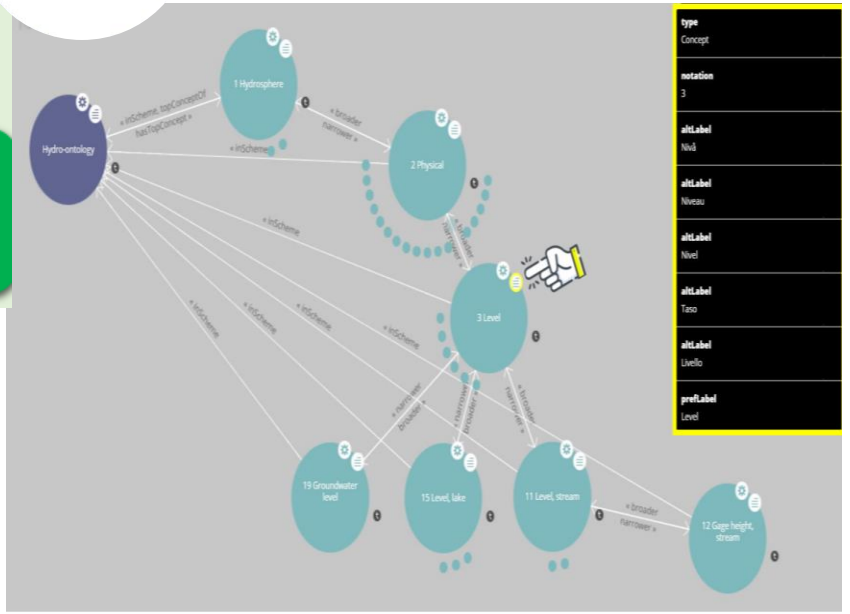

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WHOS use cases and usage

WHOS-Arctic
(Canada, Finland, Denmark (for Greenland), Iceland, Norway, Russia and the USA

WHOS-SAVA
(Slovenia, Croatia, Bosna and Herzegovina, Serbia, Montenegro and Albania)

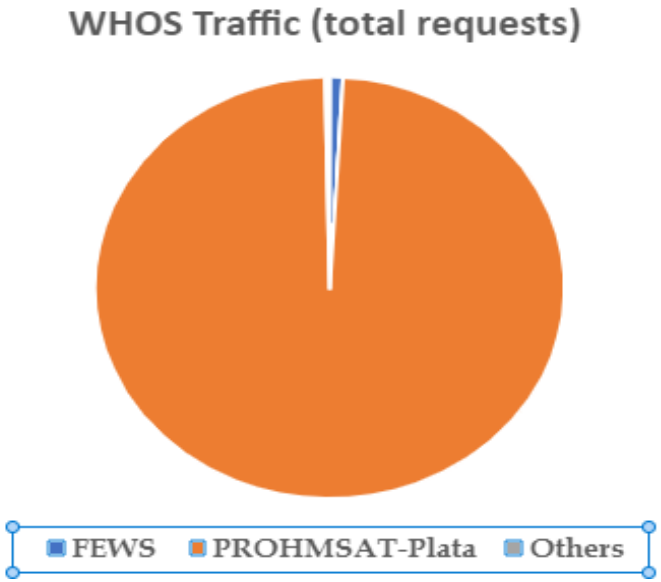
WHOS-La Plata
(Argentina, Bolivia, Brazil, Paraguay and Uruguay)

Italy (ISPRA)

UK (NRFA)

New Zealand
(NIWA)

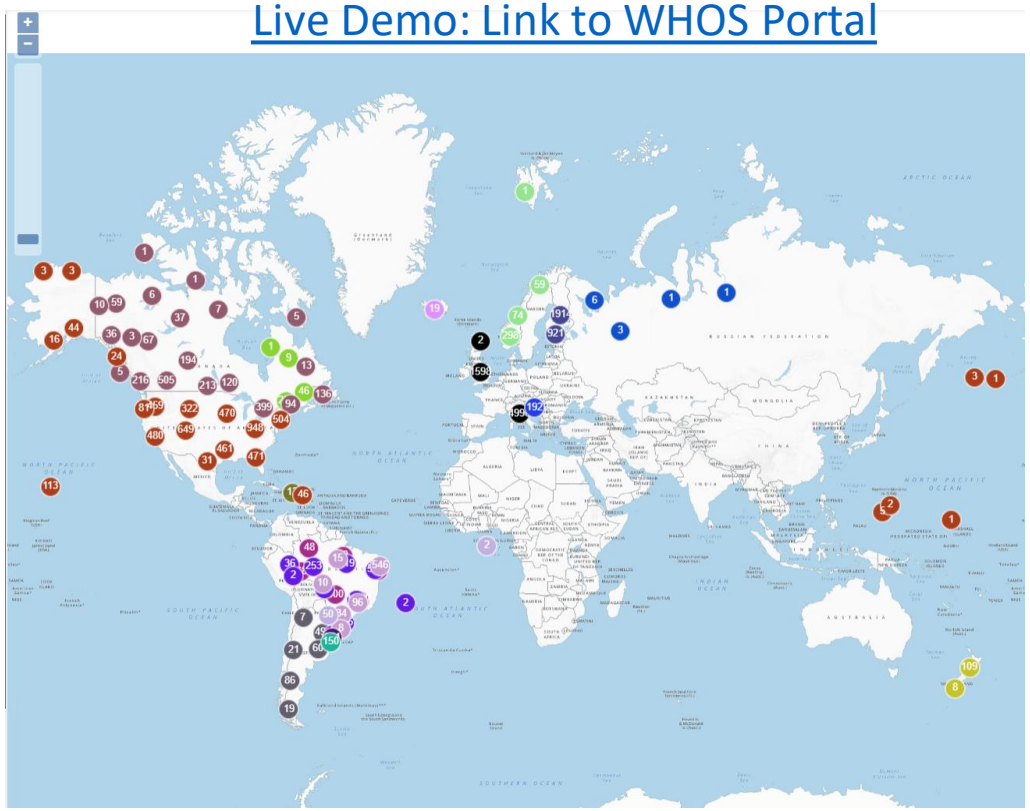
Current Impl.
(Cambodia and Lao, Togo, South Africa), IGRAC



Current Number of timeseries: 196,809

Current Number of providers: 19

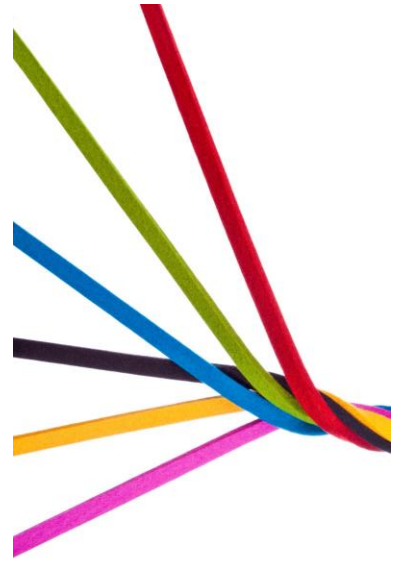
Live Demo: Link to WHOS Portal



WDE serves as the technology for the WHOS global portal. WDE connects to the WHOS DAB. As a result, station's data can be discovered, visualized and downloaded by users.

Questions and challenges: How to…

- ❑ Reach different communities to support interdisciplinary applications
- ❑ Improve visibility of data providers, creators, communities, consumers
- ❑ Improve performance. E.g. WHOS data cache.
- ❑ Manage updates of the community driven WHOS hydro ontology
- ❑ Address user needs and assuring data quality to act as a one stop for hydrological data
- ❑ Harmonize data provider policies with WMO unified data policy



Contact: whos@wmo.int

For more information visit: https://community.wmo.int/en/activity-areas/wmo-hydrological-observing-system-whos