

WIS 2.0 demonstration projects workshop (September 2021) Overview

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WIS 2.0 demonstration projects workshop

- Date: 13,14, 20,21 September 2021. (online)
- Workshop web site: <https://wmo-teams.atlassian.net/wiki/spaces/WIS2/pages/167313674/WIS+2.0+Demonstration+Projects+Workshop>
- Participants: (More than 120 participants)
 - Jeremy Tandy (UK)(Workshop Chair, SC-IMT vice-chair)
 - Remy Giraud (FR) (SC-IMT Chair)
 - Chairs/ vice chairs of relevant Expert Teams
 - Representatives of Demonstration projects
 - WMO secretariat

Objectives

- Document the status of the projects and their plan
- Clarify the implementation of the WIS 2.0 Principles in the project
- Gather architecture, technical specifications, and specifications of the project with the aim to compare them with WIS 2.0 technical specifications and identify gaps and improvements
- Provide guidance resulting from the development and implementation of the project in the following areas:

Real-time data exchange, Data discovery, catalogue, and metadata standards

Demonstration Projects –day1

Discovery metadata exchange, harvesting and search : Tom Kralidis (Canada)

aims to experiment with implementing WMO discovery metadata using the OGC API -Records draft standard

Exploring the use of message queuing protocols for GTS data exchange : Peter Silva (Canada)

aims to experiment with the international exchange of GTS data using publication/subscription (pub/sub) protocols such as Advanced Message Queuing Protocol (AMQP) and Message Queuing Telemetry Transport (MQTT) protocols. (provides technical details of pub/sub solutions)

Demonstration Projects –day1-2

Open-GTS (Open access to the GTS): Kevin O'Brien (US)

Open-GTS was initially developed under GOOS. It is the main source of Saildrone data that is exchanged on the GTS, and is ready to integrate seamlessly into the WIS 2.0 infrastructure. Recommended the use of CF-NetCDF as a meteorological and oceanographic near real-time data exchange format.

Global Cryosphere Watch: Oystein Godoy (Norway)

GCW is currently relying on OGC WMS and OPeNDAP for exchange of information. WMO formats has little traction outside the NMHS. WIS2.0 needs to be pragmatic and support other standards. (NetCDF)

Demonstration Projects –day2

Experimental WIS 2.0 data exchange for data in WMO CF-NetCDF profiles: Kai-Thorsten Wirt (Germany)

the project aims to experiment real-time exchange of CF-NetCDF data using pub/sub protocols. (details in another Item)

EUMETNET Supplementary Observations Data-Hub: Stuart Matthews (UK)

the objective of this project is to deliver the first component of a Federated European Meteorological Data Infrastructure, to provide access to higher spatial and temporal resolution observation data. (Cloud first principle)

Demonstration Projects –day3

GISC Tokyo cloud project: Kanno, Ozeki (Japan)

the project aims to experiment Pub/Sub messaging prototype system and to develop tools to interact with cloud storages. (details in another Item)

GISC Beijing Web services catalogue projects: Xiang LI, Peng WANG (China)

the project aims to design metadata for WEB services and APIs and implement a Catalogue of services as a portal website. Users can discover their interested services, either via the Catalogue portal or by commercial search engines. Proposed WIS2.0 to use JSON format for metadata, and OpenAPIv3 tools for development.

Demonstration Projects –day3-4

Interconnection of GISC Casablanca to the National Meteorological Centres within its area of responsibility: Rabia Merrouchi (Morocco)

Demonstrate that a Cloud based web application dedicated to data collection from NCs will enable each member to share and access in real time and in secure manner the data collected from the national synoptic stations.

Malawi Surface Observations: Enrico Fucile (WMO secretariat)

The project aims to Continuous and reliable provision of hourly real-time data from 44 weather stations to Global NWP Centers in BUFR format through GTS and WIS 2.0. Development of a turn-key solution to be delivered to other Countries.

Demonstration Projects –day3-4

WMO Hydrology Observing System WHOS : Silvano Pecora (Italy)

Supports NMHSs in publication of hydrological data on the Internet via web services. The WHOS system is based on code provided free of charge for education, research and non-commercial usage. The code will be released as open-source with a CC-BY-NC kind of license to support local deployment and personalization

Highlights

- WIS2.0 simplifies the processes used to exchange data, improves discoverability and accessibility, and fosters greater exchange and use of data and products.
- message switching, and routing technologies need to be replaced with publish-subscribe protocols
- WMO should adopt and contribute to existing open standards
- The adoption of cloud native or cloud ready solutions was a constant theme.
- ready-made software and turn-key solutions (named “WIS2.0 in the box”) is to be considered

Thank you

Earth System domains

- Global Cryosphere Watch
- Open Access to the GTS (Open-GTS)
- WMO Hydrological Observing System (WHOS)

LDCs and SIDSs

- Interconnection of GISC Casablanca to the National Meteorological Centres within its area of responsibility
- WIS 2.0 Malawi Automatic Weather Stations data exchange

Data Exchange

- GISC Tokyo cloud project
- EUMETNET Supplementary Observations Data-Hub (E-SOH)
- Exploring the use of message queuing protocols for GTS data exchange
- Experimental WIS 2.0 data exchange for data in WMO CF-NetCDF profiles

Data Discovery

- GISC Beijing Web services catalogue projects
- Discovery Metadata exchange and harvesting