WIS2 overview for SOFF peer advisors

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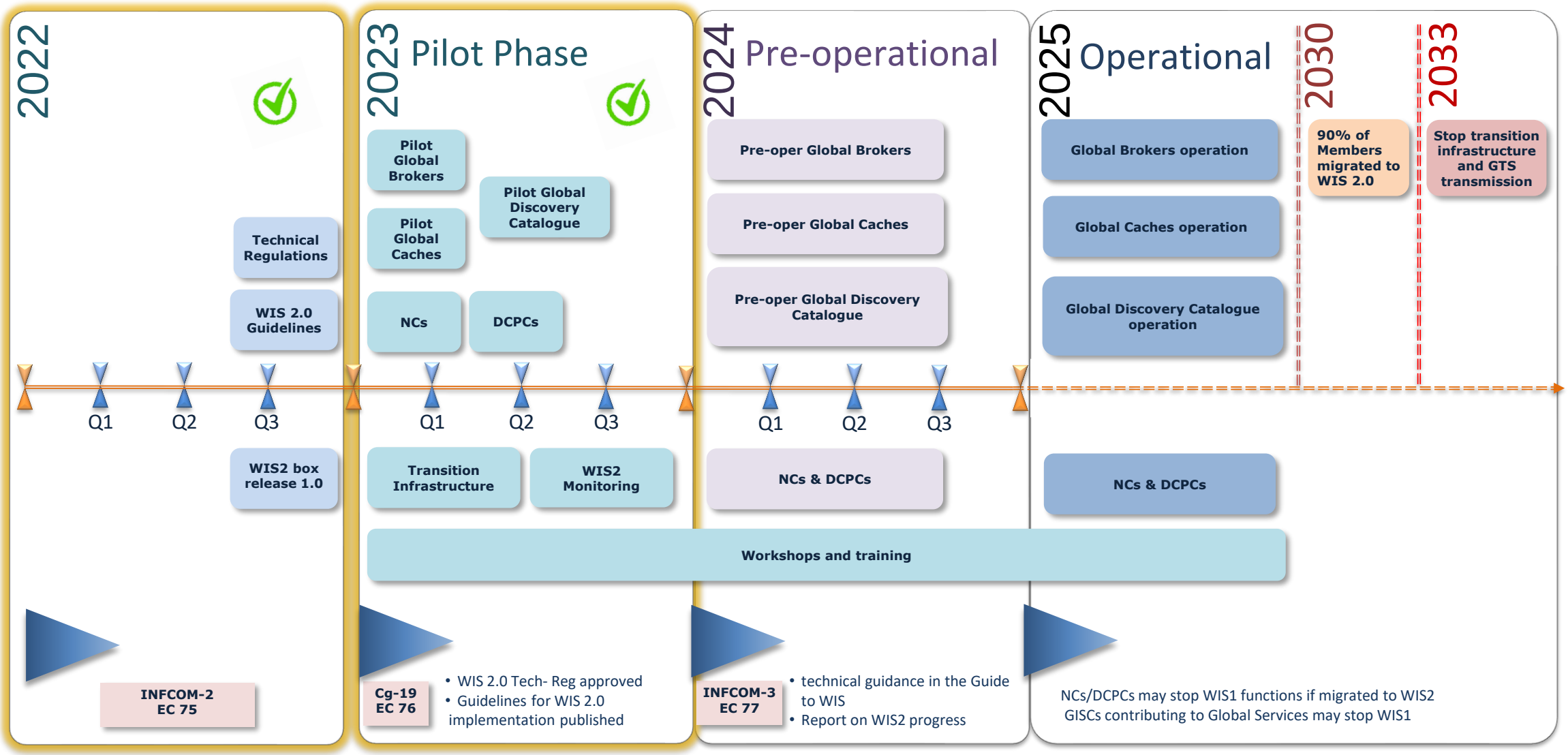
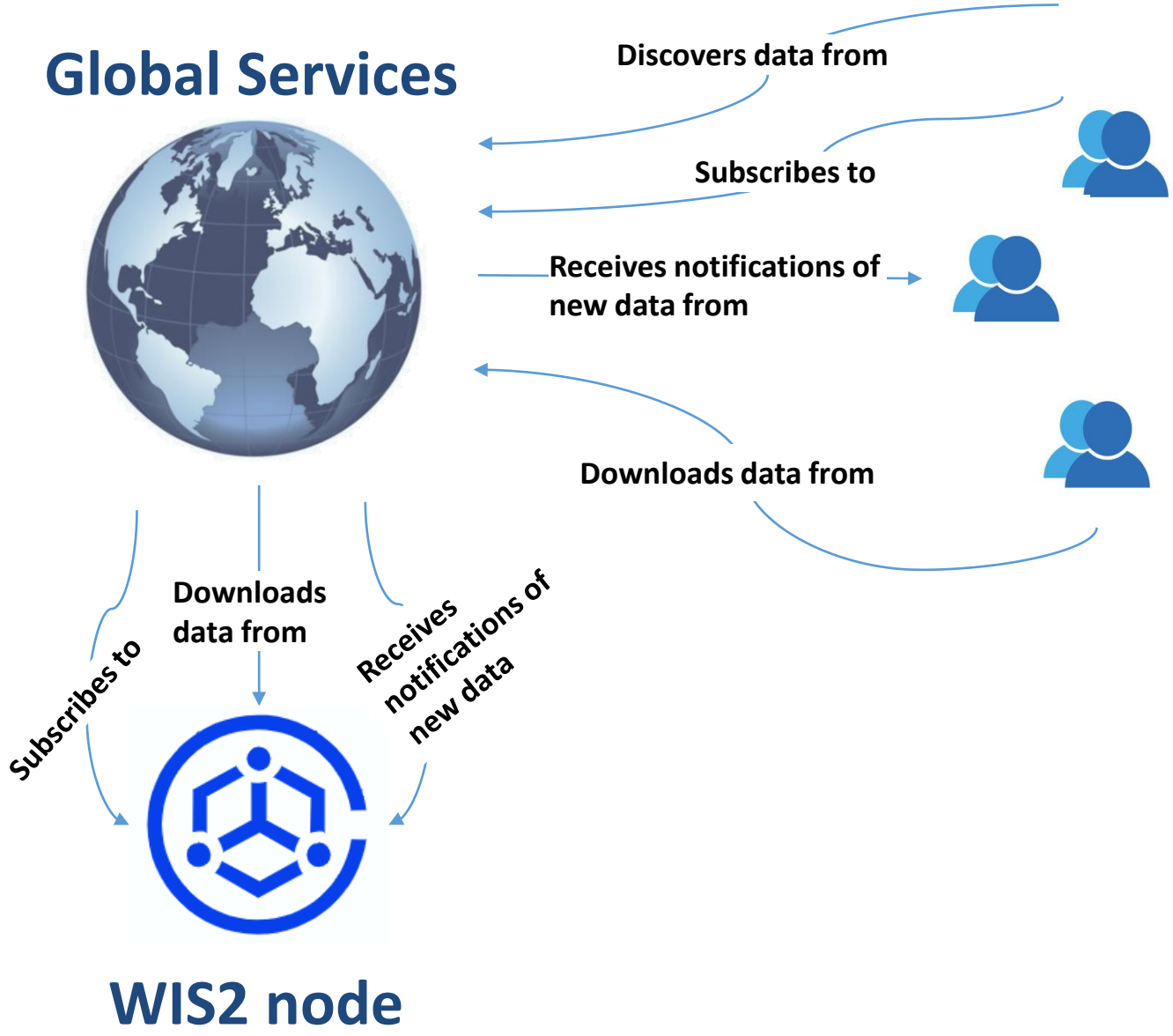
WIS2 progress: Pilot Phase complete



WMO OMM

- Each WMO Member shall implement at least one WIS2 node to share data in WIS2
- A WIS2 node replaces the GTS Message Switching System
- Data and metadata are shared through a WIS2 node
- A WIS2 Node shares data via an HTTPS service and sends notifications to MQTT subscribers
- A WIS2 node shares data only with Global Services



WMO OMM

WIS2 node implementation

Infrastructure

- On-premise 31
- Public cloud (AWS, Azure, Google,...) 17
- Private cloud (EWC/GISC-Casablanca) 6

Software

- Open source (wis2box) 45
- Commercial (IBL ...) 2
- Custom 7

Operation

- NMHS 38
- Regional, sub-regional 15
- Private company (Synoptic ...) 1

Support

- Level 0 = No support 13
- Level 1 = Generic answers 16
- Level 2 = Bespoke suggestions 18
- Level 3 = Technical intervention 7

WMO OMM

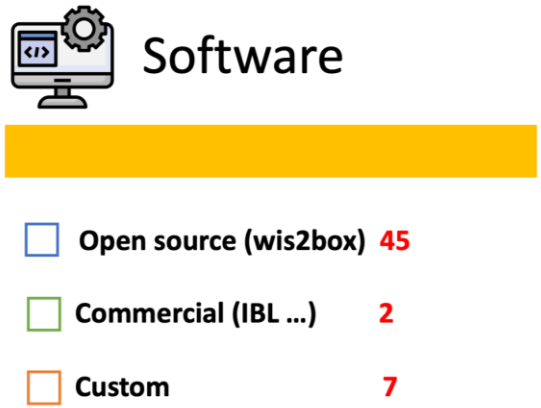
WIS2 node implementation

Cloud deployment is the recommended solution when continuity of service is a problem due to infrastructure or other issues.

Cloud main characteristics:

- **provides resiliency**
- requires specific technical skills to be setup and maintained
- requires continous funding to be sustained
- can be very cheap if optimised

WIS2 node implementation



A minimal WIS2 node is composed by an HTTP server and an MQTT broker, with a glue software making the system compliant with the specifications of the Manual on WIS Volume 2

Two options available on the market currently:

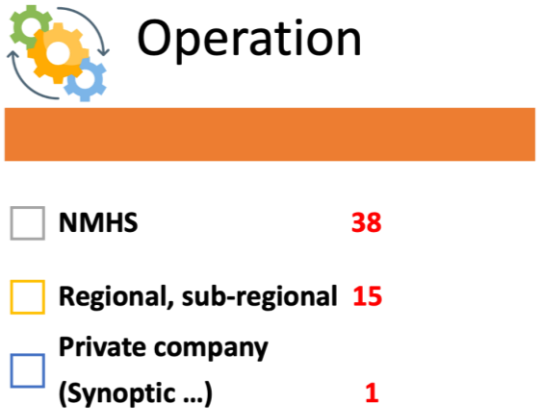
WIS2 in a box (Open-source)

- WMO Secretariat is maintaining the software and providing training
- The software is under Apache 2.0 license.
  - Software is free and open
  - WMO is not liabile for any damage caused using the software
  - WMO is not responsible for installation, configuration and daily operations. Private companies provide these services.

IBL Moving Weather

https://www.iblsoft.com/products/movingweather/

WIS2 node implementation



Continuous and resilient service requires good operations, which need to have adequate staff and tools. Changes to the system software and configuration need to be managed appropriately.

A WIS2 node receives data from observing stations directly or their collection systems. Having collection systems on premises constitues a risk to the continuous operations and should be avoided.

A WIS2 node needs to be registered on WIS2 to become operational. The registration process is coordinated by the Secretariat and involves GISCs and Global Services.

A WIS2 node can be considered functional when its data can be discovered and accessed from the Global Services, in particular:

- **datasets shared by the WIS2 node must be discoverable from the Global Catalogues**
- **WIS2 notification messages must be received in real time by a user subscribing on a Global Broker to the WIS2 topics declared by the WIS2 node.**
- **WIS2 notification message must comply with the standard in the Manual on WIS Volume 2**
- **Data shared on “core” topic must be downloadable from at least one Global Cache**

WIS2 Node (National Centres)

- Algeria
- Antigua and Barbuda
- Argentina
- Australia
- Barbados
- Burkina Faso
- Belize
- Brazil
- Cameroon
- Canada
- Cayman Islands
- China
- Chile
- Cuba
- Curaçao and Sint Maarten
- Denmark
- Dominica
- Eswatini
- France
- Germany
- Grenada
- Guinea
- Guyana
- Hong Kong, China
- India
- Indonesia
- Iran
- Italy
- Jamaica
- Japan
- Kazakhstan
- Kenya
- Libya
- Malawi
- Malaysia
- Morocco
- Namibia
- New Zealand
- Nigeria
- Poland
- Republic of Congo
- Republic of Korea
- Russian Federation
- Singapore
- South Africa
- St. Kitts and Nevis
- St. Vincent and the Grenadines
- Sweden
- Trinidad and Tobago
- Turks and Caicos
- United Kingdom
- USA
- Uruguay
- Zambia
- Zimbabwe

WIS2 Node (DCPC)

- EUMETSAT
- ECMWF
- ASMC, Singapore

WIS2 Node (Other)

- SCRIPPS, USA (Buoys)
- CAP SWIC, Hong Kong, China
- Uncrewed Aircraft Systems (UAS)

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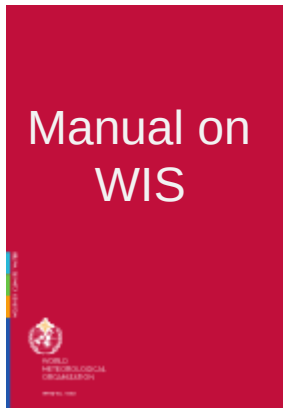
April 2024

WIS2 regulatory material

June 2023 Cg-19



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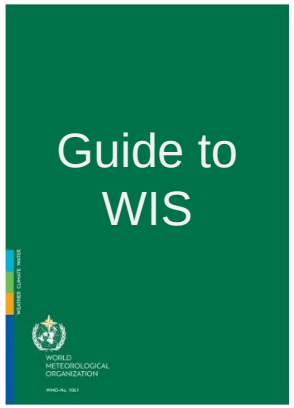
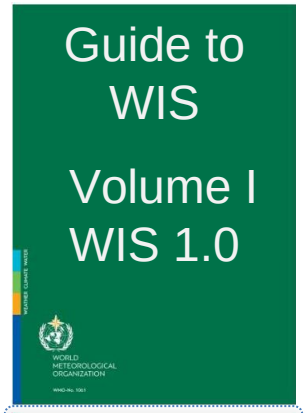
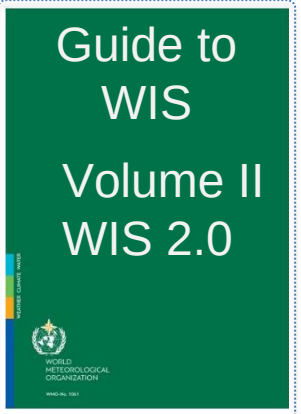
AMENDMENTS TO THE MANUAL ON THE WMO INFORMATION SYSTEM

[Manual on WIS Volume II
WMO Information System 2.0]

April 2024 INFCOM-3







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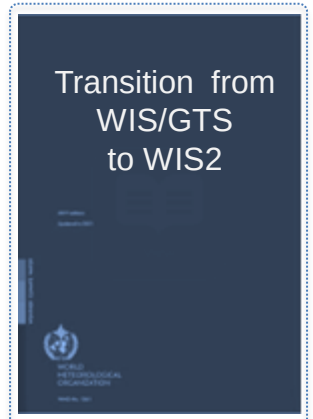
UPDATE OF THE GUIDE TO THE WMO INFORMATION SYSTEM



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TRANSITION FROM WIS 1.0 AND GTS TO WIS 2.0, INCLUDING CAPACITY DEVELOPMENT

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WIS2 support

Questions on WIS2 and WIS2 in a box to be addressed to wis2-support@wmo.int

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Thank you.

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wmo.int

WIS2 Components: Global Services

Global Services

Global Monitoring

Global Discovery Catalogue

Provides an API to discover datasets and services

Global Broker

Sends notifications of new data to be downloaded from Global Caches or WIS2 nodes

Global Cache

Provides users HTTP download of core data cached from WIS2 nodes

Discovers datasets

Subscribes to topics

Downloads core data

Data users

Downloads recommended data

Downloads recommended data

Downloads recommended data

WIS2 node

WIS2 node

WIS2 node

Scale to highly-available, global data sharing

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