WIS2 Node : Deployment options

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WIS2 ROLES: NC, DCPC AND GISC

WIS2 Architecture

**Global
Services**

**WIS2
node**

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WIS2 node

WIS2 node is the platform for data

NCs / DCPCs are going to implement a WIS2 Node to exchange data in WIS2

The WIS2 Node shares data from an HTTPS service and sends notifications to MQTT subscribers

No need to provide access to all the users in the world, only to some WIS2 Global Services

Global Services

Downloads data

Subscribes to

Receives notifications of new data

WIS2 node

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GISC (Global Information System Centres) : Duties

From the Manual on WIS :

a) Coordination of data sharing within its Area of Responsibility (AoR);

b) Provision of training, support, other capacity building activities to WIS Centres within its AoR;

c) Supporting continual improvement in quality of discovery metadata published by WIS Centres within its AoR;

d) Provision of any global services included in the service offer;

e) Monitoring system performance and data availability in its AoR;

f) Coordinating the global operational performance of WIS;

g) Incident management.

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Who are the GISCs ?

Region	Country	Global Information System Centres (GISCs)
I	Morocco	Casablanca
I	South Africa	Pretoria
II	China	Beijing
II	India	New Delhi
II	Iran	Tehran
II	Japan	Tokyo
II	Republic of Korea	Seoul
II	Saudi Arabia	Jeddah
III	Brazil	Brasilia
IV	United States of America	Washington
V	Australia	Melbourne
VI	France	Toulouse
VI	Germany	Offenbach
VI	Russian Federation	Moscow
VI	United Kingdom of Great Britain and Northern Ireland	Exeter

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GISC (Global Information System Centres) in WIS 2.0

- On WIS2.0, the management duties – see previous slide - are separate from technical ones that are now done by the Global Services.

- In a recent meeting, all GISC were reminded of their duties in WIS2.0 context

- At a minimum, GISC must be involved in the deployement process as described in the transition guide on WIS2.0.

- Two examples:

  - GISC Offenbach is providing a "WIS2 Node as a service" to Israël

  - GISC Morocco is running WIS2 in a box in their Data Centre for a few countries in Africa. They helped installing WIS2 in a box in Burkina Faso.

Peer Advisors should liaise with the WIS Focal Point of the GISC to agree on the level of their contribution.

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WIS2 NODES: MANY CHOICES…

Choices, choices, choices…

- For providing data on WIS2, a WIS Centre must "operate" a WIS2 Node

- Many choices :
  - Which type of software : Open-source / Commercial software / Local implementation
  - Acquisition model for commercial software: CAPEX and OPEX / OPEX
  - Operating model : Self-Managed / Outsourced (commercial) / Outsource (community)
  - Running location : Locally / Partner organisation / Cloud

This is not a one-size-fits-all situation.

The context of the Centre, the willingness of the GISC or other partners to support the countries are to be taken into consideration.

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Which, How, Where, Who…

Which ?	How ?
Where ?	Who ?

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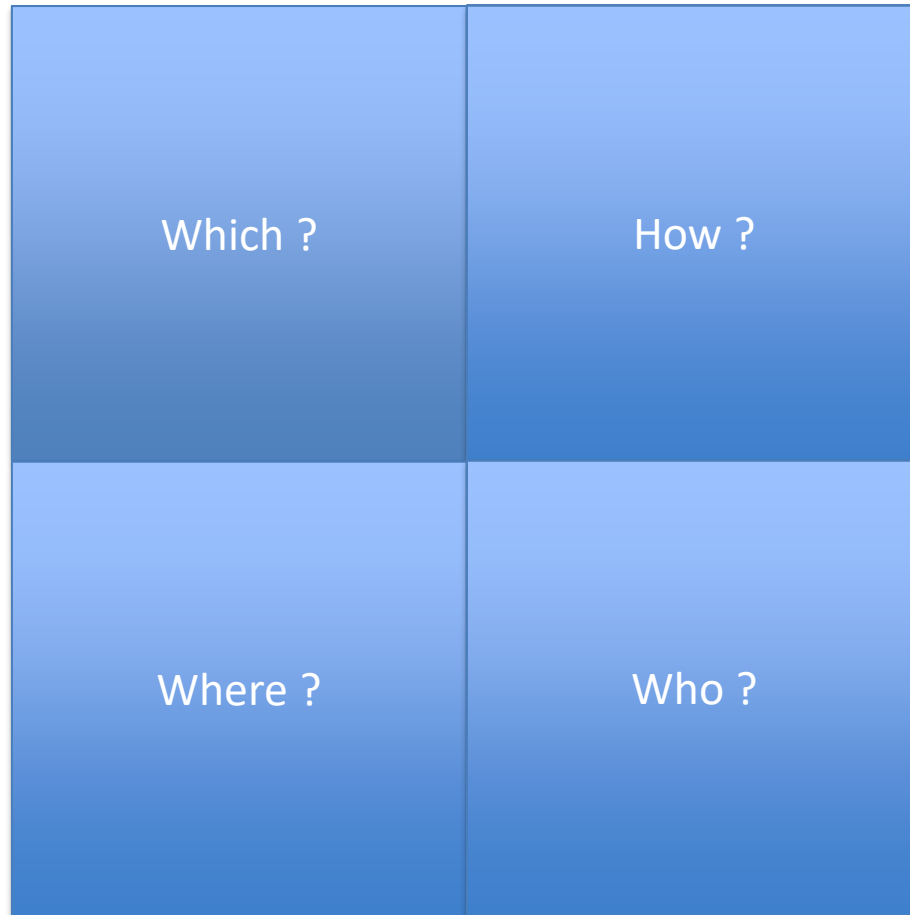
Step 1 : Assessing the context of the Centre

- Competencies: deploying and running a WIS2 Node require IT competencies : Linux, Network, Security,...

- IT Resources: Is there a reliable data centre ? A reliable Internet access ? Server resources available ?

- External support: What level of support the GISC or another country in the region can provide ?

- Based on those findings, determine what offers the most likely successful outcome on the mid-/long-term

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Step 2 : Which software ?

- WIS2 in box:

  - No upfront cost for buying the software

- Commercial software:

  - CAPEX cost
  - OPEX cost – licencing, support, upgrade

- Usable solution at GISC (eg. DWD) or other partner centre
  - (Probably) no upfront cost

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Step 3 : How to install ?

- WIS2 in box:

  - Do it yourself – If required competencies are available
  - Contract with a commercial entity
    - Training

- Commercial software:

  - Installation contract with the supplier ?
    - Training

- Usable solution at GISC (eg. DWD) or other partner centre
  - Typically by the hosting Centre

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Step 4 : Where to install ?

- Locally :
    - CAPEX cost – Server infrastructure
    - OPEX cost – Server maintenance, Internet bandwidth
    - IT environment: Reliability ? Ready for 24/7 ? Internet access ?
    - IT skills : Linux (in most cases), Docker (WIS2 in a box), Security…

- Cloud based
    - OPEX cost
    - *Note: High SLA but not 100%*

- Community cloud / partner data centre
    - GISC may offer to run the software in its data Centre
    - Partner may have a solution – eg. Private cloud

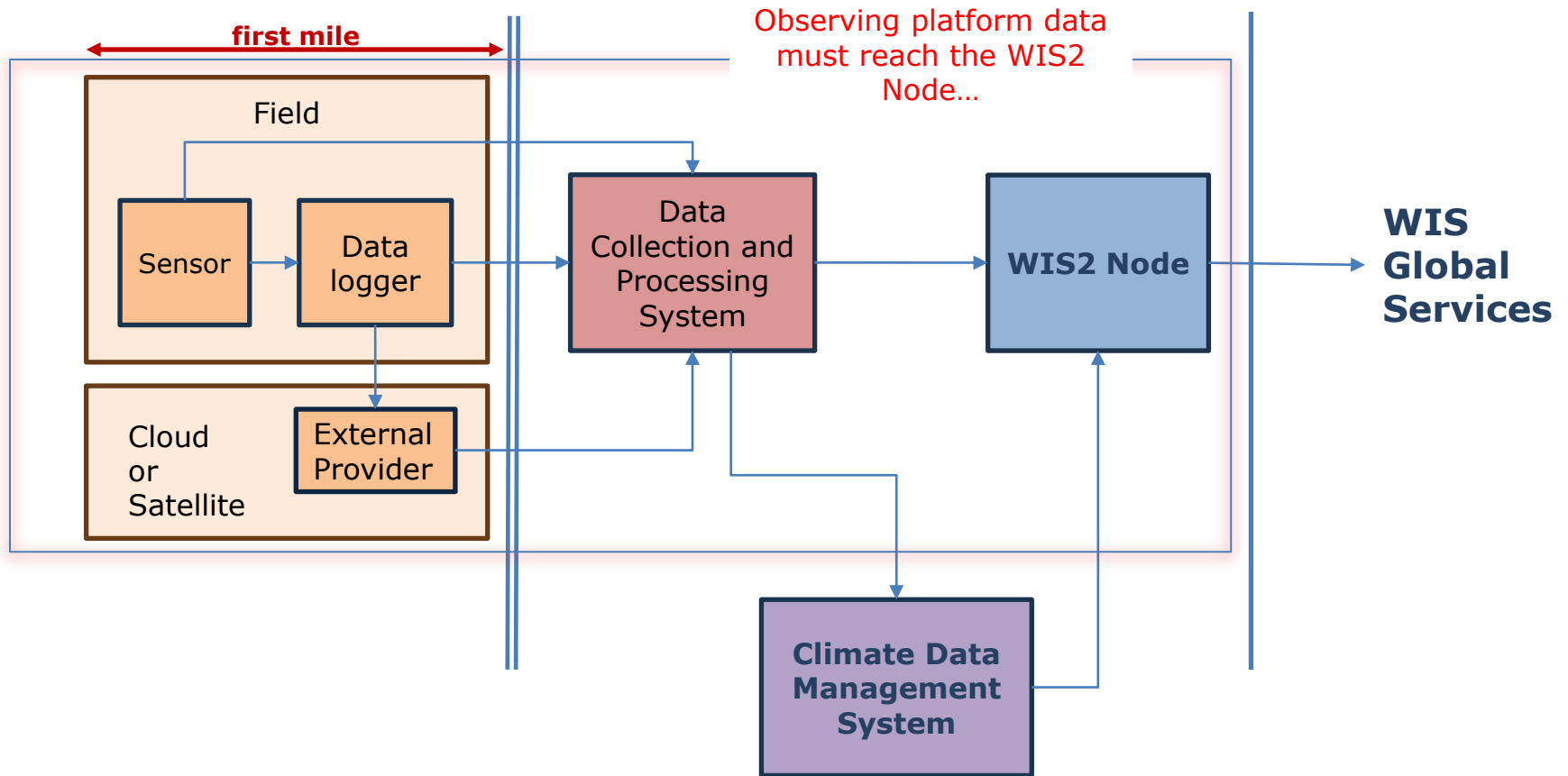**WMO OMM**

Step 5 : Who to run ?

- WIS2 in box / Commercial software:
    - Do it yourself
        - If required competencies are available
        - Operations are 24/7 – resources ?
    - Contract with a commercial entity
        - SaaS – Software as a Service

- If hosted in the cloud or partner data Centre, the GISC or the hosting partner are likely to provide 24/7 support

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It is not only about the WIS2 Node

National segment

International segment

first mile

Field

Sensor → Data logger

Cloud or Satellite

External Provider

Observing platform data must reach the WIS2 Node…

Data Collection and Processing System

WIS2 Node

WIS Global Services

Climate Data Management System

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Conclusion

- It might be tempting for Centres to run the software locally.

- Depending on the capabilities (people and IT infrastructure) this may prove to be an unreliable option

- In the context of SOFF, with continuous funding, externally hosted solutions, or externally supported environment are more likely to ensure a mid-, long-term compliance with GBON.

- The entire communication chain (station -> WIS2 Node) must be considered

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Thank you
Merci

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