

WIS2 Operation Model & the role of GLSCs in WIS2

Overview

- Introduction
- Support for AoR / Transition
- WIS2 Node Assessment
- Monitoring Events
- GISC Watch
- ET-WISOP

Introduction

Three type of WIS Centres are defined: NCs, DCPCs and GISCs

NCs and DCPCs are affiliated with a Global Information System Centre (GISC)

As of the operational phase of WIS2 in 2025, the role of WIS Centres has evolved

- **NCs and DCPCs operate WIS2 Nodes to share their data**
- **Global Information System Centres (GISCs):**
 - ✓ **Support NCs and DCPCs** to establish their data sharing on WIS2
 - ✓ Perform **WIS2 Node Assessment** prior to WIS2 Node registration in Global Registry
 - ✓ **Ensure the smooth operation of data exchange in WIS2**, using the Global Monitoring tools and participating in the GISC Watch

For Designation Procedures for WIS Centres see:
[Manual on WIS, Volume I, Part II, Page 16](#)

For list of current NC/DCPC and affiliated GISC see:
<https://community.wmo.int/en/wis-centres>

Support for AoR / Transition

1. GISCs are supporting their AoR in the transition
 - **Training**
 - GISCs provide training and expertise in various areas
 - Need help?
 - Contact your GISC. GISCs are your first contact point
 - Miss something? / Data not available? / Other operational issues?
 - GISCs can provide further contact points or guidance
2. Provide services depending on GISC
 - WIS portal
 - Cloud infrastructure
 - ...
3. Help with data sharing / reception on WIS2
 - GTS data available?
 - What is the correct topic?
 - How to provide good metadata

WIS2 Node Assessment

When you register your WIS2 Node, the WIS2 compliance is assessed

The principal GISC verifies that the WIS2 Node is compliant with WIS2 requirements.

This assessment includes:

- Availability of **metadata** and **compliance with WMCPv2**;
- Verification of **compliance of the topics used by the centre** with the WTH specification;
- Verification of **compliance of the notification messages** with the WIS2 Notification Message (WNM) specification;
- Verification that the **data server** is correctly configured and **properly functioning**;
- Verification that the **Message Broker** is correctly configured and **properly functioning**.

Monitoring Events

- Each global service (and sensor centers) export **Monitoring Metrics** for the **Global Monitor**
 - Openmetrics format
- In addition to WMCP and WNM there are **alert messages** defined (WEM)
 - Can be seen as successor of NOXX
 - WIS2 Nodes and global services can inform about issues

Monitoring Events

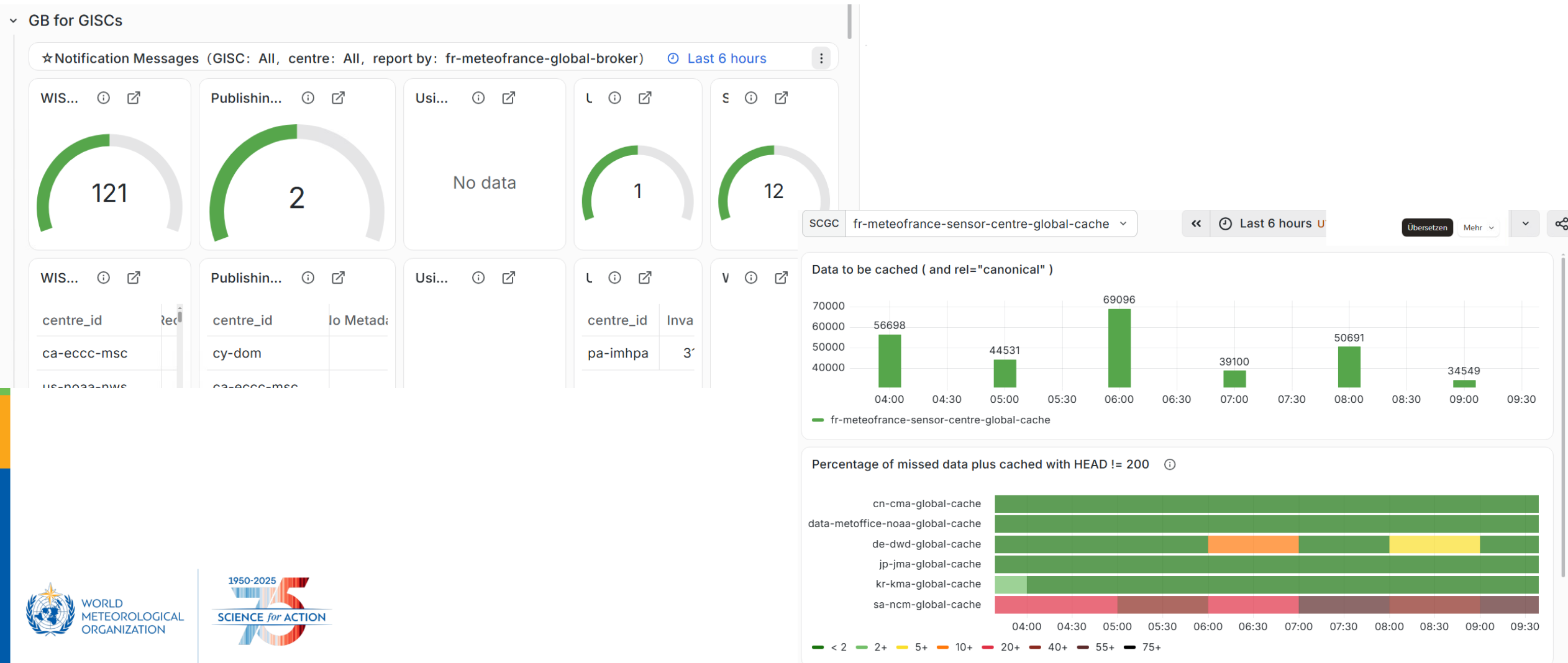
1	Organization	The root of the monitoring metrics is set fixed to [wmo]
2	Program	wmo program for which the metrics apply. WIS 2 related metrics are set to [wis2]
3	Service	Name of the service / data feed

📁 wmo/wis2/gc	Add definition for label naming
📄 gb.csv	Initial definition of the first levels of the hierarchy
📄 gc.csv	Initial definition of the first levels of the hierarchy
📄 gdc.csv	Initial definition of the first levels of the hierarchy
📄 node.csv	Initial definition of the first levels of the hierarchy
📄 organization.csv	Initial definition of the first levels of the hierarchy
📄 program.csv	Initial definition of the first levels of the hierarchy
📄 sensor.csv	Initial definition of the first levels of the hierarchy
📄 wis2.csv	Initial definition of the first levels of the hierarchy

```
# TYPE wmo_wis2_gc_dataserver_last_download_timestamp_seconds untyped
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="ammc",dataserver="www.wis2.cloud.bom.gov.au",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705390604e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="aviamettelecom",dataserver="wis2box.mecom.ru",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705387505e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="babj",dataserver="wis2node.wis.cma.cn",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705389063e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="ca-eccc-msc",dataserver="dd4.weather.gc.ca",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705390819e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="ca-eccc-msc",dataserver="dd5.weather.gc.ca",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705390816e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="casablanca_met_centre",dataserver="wis2box.ru",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705391326e+09 1705391451538
wmo_wis2_gc_dataserver_last_download_timestamp_seconds{centre_id="de-dwd",dataserver="wisdev.kishou.go.jp",instance="wis2p02.dwd.de:12000",job="globalcache_sub",report_by="dwd",monitor="wis2_dwd"} 1.705391426e+09 1705391451538
```

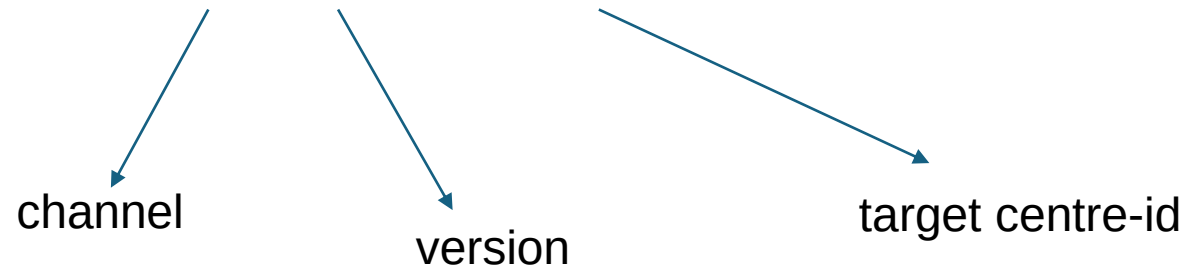
Global Monitor

Global Monitoring provides dashboards for GISCs to monitor WIS2 Operations:



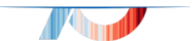
Monitoring Events

- <https://wmo-im.github.io/wis2-monitoring-events/standard/wis2-monitoring-events-DRAFT.html>
- Messages from Global Services
 - *Global Service service down*
 - *Global Service malfunctioning*
 - *WIS2 Node malfunctioning*
 - planned/expected outages
 - ...
- Example topic:
 - `monitor/a/wis2/de-dwd`



Monitoring Events

```
{
  "specversion": "1.0",
  "type": "int.wmo.wis.wme.event.report.notice",
  "source": "ar-smn",
  "subject": "ar-smn",
  "id": "6da24af0-b19f-4106-b583-73cc25a4435d",
  "time": "2025-08-02T02:43:35Z",
  "datacontenttype": "application/json",
  "dataschema": "https://schemas.wmo.int/wme/1.0.0/schemas/wis2-event-message-encoding-report.json",
  "data": {
    "type": "wmem:report",
    "title": "Data outage notice",
    "detail": "Surface synoptic observations will be missing until 22 July 2025, 09:00Z",
    "channel": "origin/a/wis2/ar-smn/data/core/weather/surface-based-observations/synop",
    "time": {
      "interval": [
        "..",
        "2025-07-25T09:00:00Z"
      ]
    },
    "wmem:severity": "info"
  }
}
```



GISC Watch

New GISC Watch monitoring procedure launched in April 2025

- replacing the WIS1 Watch, which had been active from 2017 through 2024

New version of GISC Watch Guide (under development) adapting procedures originally developed for WIS1 to WIS2

GISC Watch follows-up on issues using the WIS2 Incident Management System

« Search Save as

Project: All ▼ Type: All ▼ Open, In Progress, To Do, Escal... ▼ GISC-Offenbach WIS2-IMS-Ex... ▼ Contains text More ▼ Search Advanced

Order by ▼ ↑

- WI-400 ke-meteo : Disconnected WIS2 Node fr...
- WI-359 WIS2 node assessment: int-eumetsat-d...
- WI-327 Duplicate data released via 'eu-eumetr...
- WI-106 WIS2 node preliminary assessment: EU...

...

WIS2 IMS / WI-400

ke-meteo : Disconnected WIS2 Node from all Global Brokers

Edit Add comment Assign More ▼ To Do ▼

▼ Details

Type: Incident
Priority: Medium
Labels: automatic

▼ Description

ke-meteo : Disconnected WIS2 Node from all Global Brokers

Alert triggered at: 2026-09-08T01:30:08Z

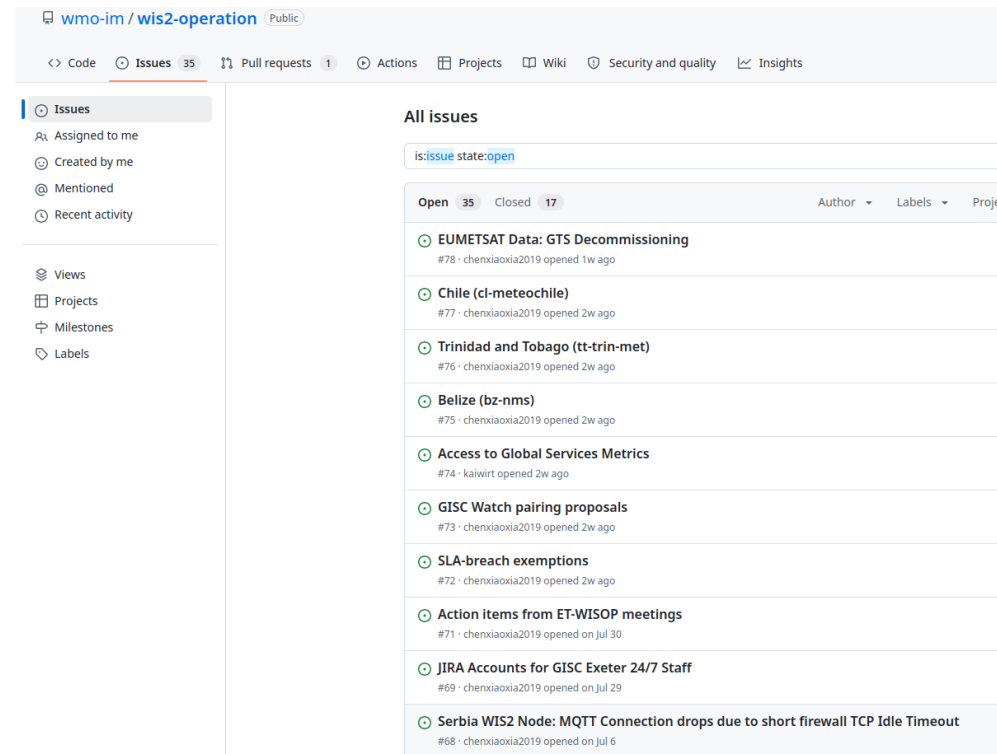
Reported By: cn-cma-global-monitor

▼ Attachments

ET-WISOP

Expert Team with Members of all GISCs and Global Services

- Oversee operations of WIS2
- Develop rules regarding monitoring, alerting and notification
- Oversee Global Services performance
- Oversee GISC Watch



The screenshot displays the GitHub repository page for `wmo-im / wis2-operation`, which is public. The navigation bar at the top includes links for Code, Issues (35), Pull requests (1), Actions, Projects, Wiki, Security and quality, and Insights. The left sidebar shows filters for Issues, including 'Assigned to me', 'Created by me', 'Mentioned', and 'Recent activity', as well as 'Views', 'Projects', 'Milestones', and 'Labels'. The main content area, titled 'All issues', shows a search bar with the query `is:issue state:open`. Below the search bar, there are tabs for 'Open' (35) and 'Closed' (17). A list of 10 open issues is displayed, each with a green circle icon, a title, a number, the author, and the time since it was opened. The issues are:

- #78 · chenxiaoxia2019 opened 1w ago: EUMETSAT Data: GTS Decommissioning
- #77 · chenxiaoxia2019 opened 2w ago: Chile (cl-meteochile)
- #76 · chenxiaoxia2019 opened 2w ago: Trinidad and Tobago (tt-trin-met)
- #75 · chenxiaoxia2019 opened 2w ago: Belize (bz-nms)
- #74 · kaiwrt opened 2w ago: Access to Global Services Metrics
- #73 · chenxiaoxia2019 opened 2w ago: GISC Watch pairing proposals
- #72 · chenxiaoxia2019 opened 2w ago: SLA-breach exemptions
- #71 · chenxiaoxia2019 opened on Jul 30: Action items from ET-WISOP meetings
- #69 · chenxiaoxia2019 opened on Jul 29: JIRA Accounts for GISC Exeter 24/7 Staff
- #68 · chenxiaoxia2019 opened on Jul 6: Serbia WIS2 Node: MQTT Connection drops due to short firewall TCP Idle Timeout

Summary

GISCs support NCs and DCPCs in their WIS2 implementation

GISCs perform WIS2 Node assessment prior to registration in the Global Registry

GISCs continuously monitor WIS2 operations using Global Monitoring dashboard and participate in GISC Watch to follow-up on issues

Expert Team “ET-WISOP” brings together all GISCs and Global Service representatives to ensure reliable operation of WIS2 and address issues



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

Thank you
Merci
Gracias
ارکشی
谢谢
Спасибо