

Introduction and demonstration of the GTS-to-WIS2 gateway and WIS2-to-GTS gateways

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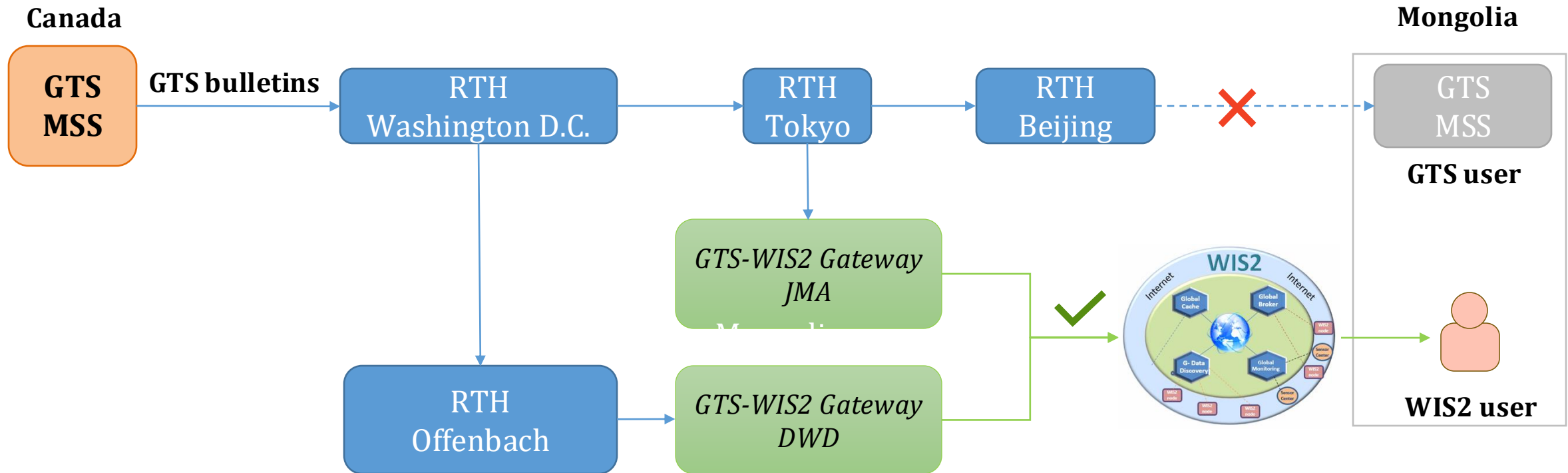
China Meteorological Administration (CMA)

September 17th, 2025

Overview

- Introduction to GTS-WIS2 gateway
- Demonstration of GTS-WIS2 gateway
- Introduction to WIS2-GTS gateway
- Demonstration of WIS2-GTS gateway

GTS-WIS2 gateway - scenario



[origin/a/wis2/de-dwd-gts-to-wis2/data/\[core|recommended\]/T1/T2/A1/A2/ii/CCCC](origin/a/wis2/de-dwd-gts-to-wis2/data/[core|recommended]/T1/T2/A1/A2/ii/CCCC)

The purpose of the GTS to WIS2 gateway is to enable Members who have migrated to WIS2, and stopped their GTS systems, to continue receiving GTS data from WIS2. This gateway also enables users who are not connected to GTS to access GTS data from WIS2, during the transition phase.

GTS-WIS2 gateway – core data

MQTT Explorer

Application Edit View

Search...

DISCONNECT

gb.wis.cma.cn

- cache
 - a
 - wis2 (381 topics, 9243 messages)
- origin
 - a
 - wis2
 - de-dwd-gts-to-wis2
 - data
 - recommended (291 topics, 652 messages)
 - core
 - I
 - S
 - M
 - I (1 topic, 2 messages)
 - N
 - 53
 - DAMM = {"id": "7a76f18c-8aeb-11f0-9a65-0242ac1cff29", "conformsTo": ["http://wis.wmo.int/spec/wnm/1/conf/core"], "type": "application/json", "length": 4683}
 - 35
 - BABJ = {"id": "7aba1a98-8aeb-11f0-9312-0242ac1cff29", "conformsTo": ["http://wis.wmo.int/spec/wnm/1/conf/core"], "type": "application/json", "length": 4683}
 - 37 (1 topic, 1 message)
 - 01 (1 topic, 1 message)
 - D (1 topic, 1 message)
 - A (9 topics, 11 messages)
 - I (1 topic, 2 messages)
 - G (9 topics, 9 messages)
 - Z (1 topic, 7 messages)
 - U (28 topics, 46 messages)
- S
 - M (9 topics, 9 messages)
 - Z (5 topics, 5 messages)
 - U (2 topics, 2 messages)
 - P (1 topic, 1 message)
- ru-aviamettelecom (1 topic, 1 message)
- ca-eccc-msc (3 topics, 1995 messages)
- jp-jma-gts-to-wis2 (108 topics, 368 messages)
- cn-cma (1 topic, 39 messages)
- hk-hko-swic (1 topic, 5 messages)
- za-weathera (1 topic, 107 messages)
- de-dwd (1 topic, 1 message)
- kr-kma (2 topics, 2 messages)
- us-noaa-nws (2 topics, 9 messages)
- ir-irimo (1 topic, 1 message)
- th-tmd (1 topic, 1 message)
- us-noaa-synoptic (1 topic, 21 messages)

Topic

origin / a / wis2 / de-dwd-gts-to-wis2 / data / core / I / S / M / N / 35 / BABJ

Value

QoS: 0

2025/09/06 14:34:03

```
{
  "value": "S45Qermh+Y5Vh9FVaZdHxN+oBPx9q2571Io0XhgAhaWJcw8DayP4vdSxa17+gbU931siMUvELwZJ09QeNazkZg==",
  "datetime": "2025-09-06T06:00:00Z",
  "links": [
    {
      "href": "https://wis2.dwd.de/gts/babj/A_ISMN358ABJ060600_C_EDZW_20250906063402_73898409",
      "rel": "canonical",
      "type": "application/octet-stream",
      "length": 4683
    }
  ]
}
```

History 1

Publish

Topic

origin/a/wis2/de-dwd-gts-to-wis2/data/core/I/S/M/N/35/BABJ

raw xml json

PUBLISH

GTS-WIS2 gateway – recommended data

The screenshot displays the MQTT Explorer application interface. On the left, a tree view shows the hierarchy of topics under the root `gb.wis.cma.cn`. The selected topic is `origin/a/wis2/jp-jma-gts-to-wis2/data/recommended/I/U/A/X/02/KARP`. The right pane shows the message details for this topic, including the topic name, value, and a history list. The message value is a JSON object with a description field highlighted in red.

MQTT Explorer Search... DISCONNECT

Topic

origin / a / wis2 / jp-jma-gts-to-wis2 / data / recommended / I / U / A / X / 02 / KARP

Value

QoS: 0
2025/09/06 14:34:30

```
{
  "type": "application/octet-stream",
  "length": 13118,
  "security": {
    "default": {
      "type": "http",
      "scheme": "basic",
      "description": "Please contact JMA Team for WIS2 Global Cache via wis-jma@met.kishou.go.jp for accessing this secured resource."
    }
  }
}
```

History 4

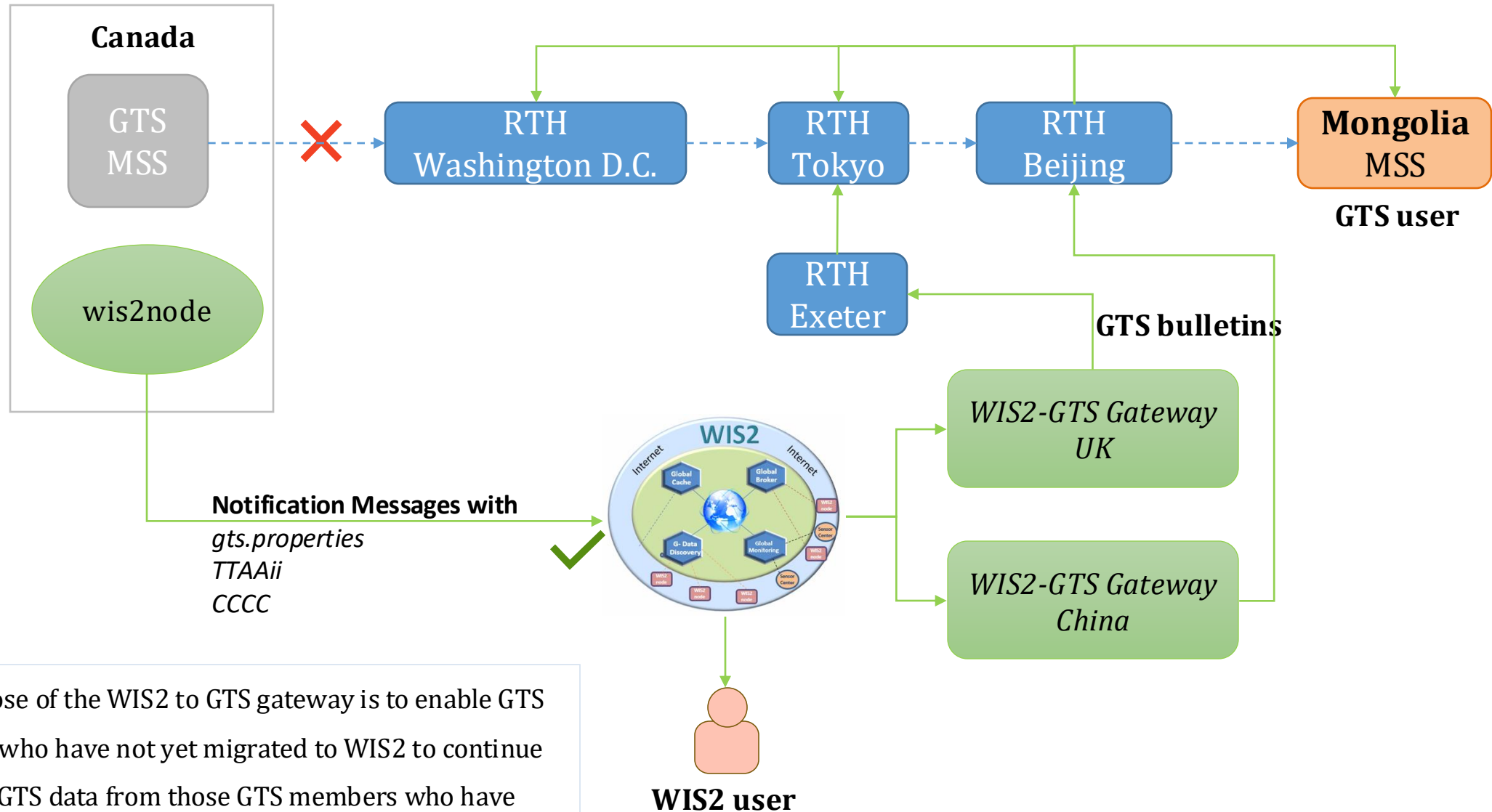
Publish

Topic
origin/a/wis2/jp-jma-gts-to-wis2/data/recommended/I/U/A/X/02/KARP

raw xml json

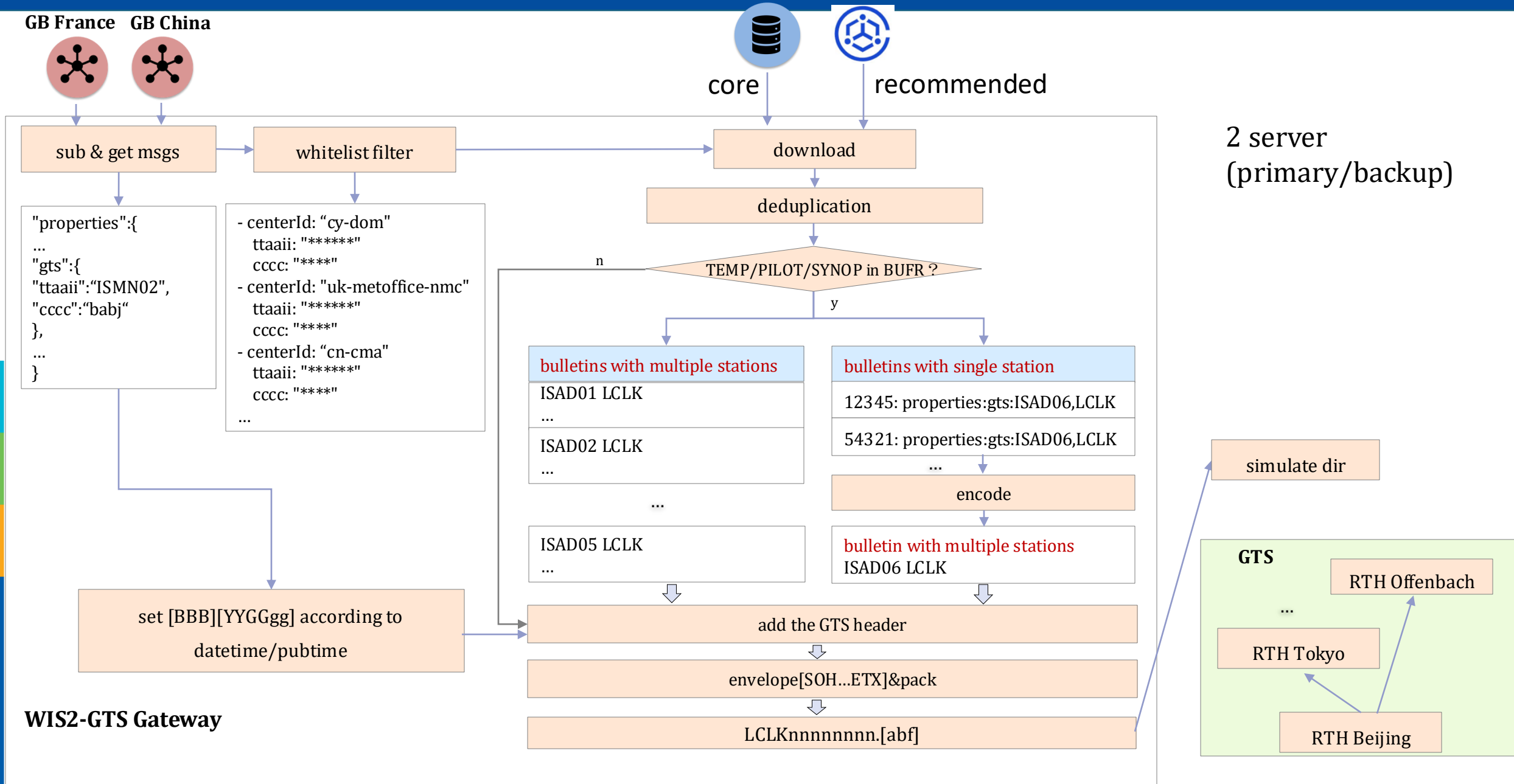
PUBLISH

WIS2-GTS gateway - scenario

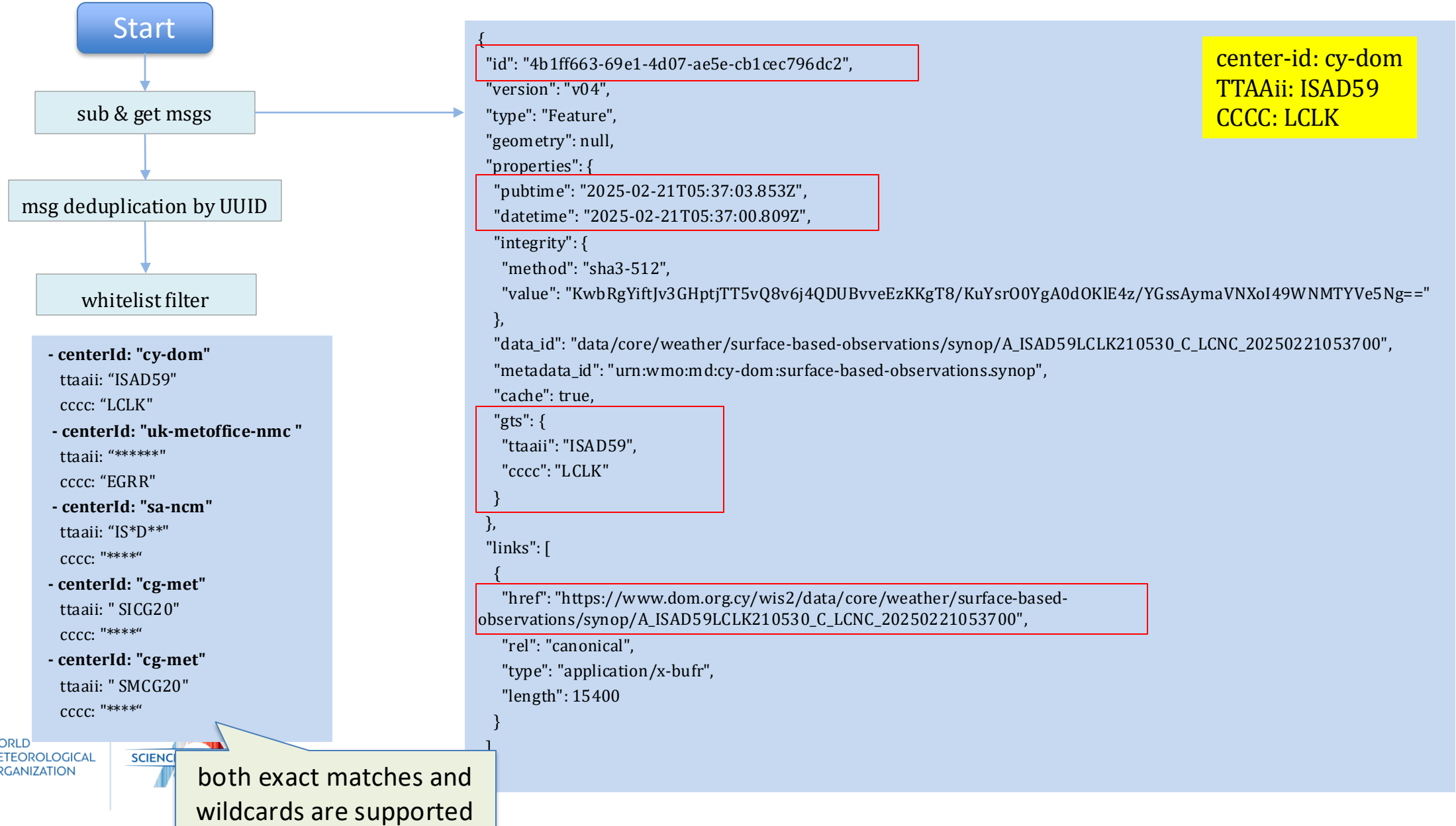


The purpose of the WIS2 to GTS gateway is to enable GTS members who have not yet migrated to WIS2 to continue receiving GTS data from those GTS members who have migrated to WIS2 and ceased their GTS operations.

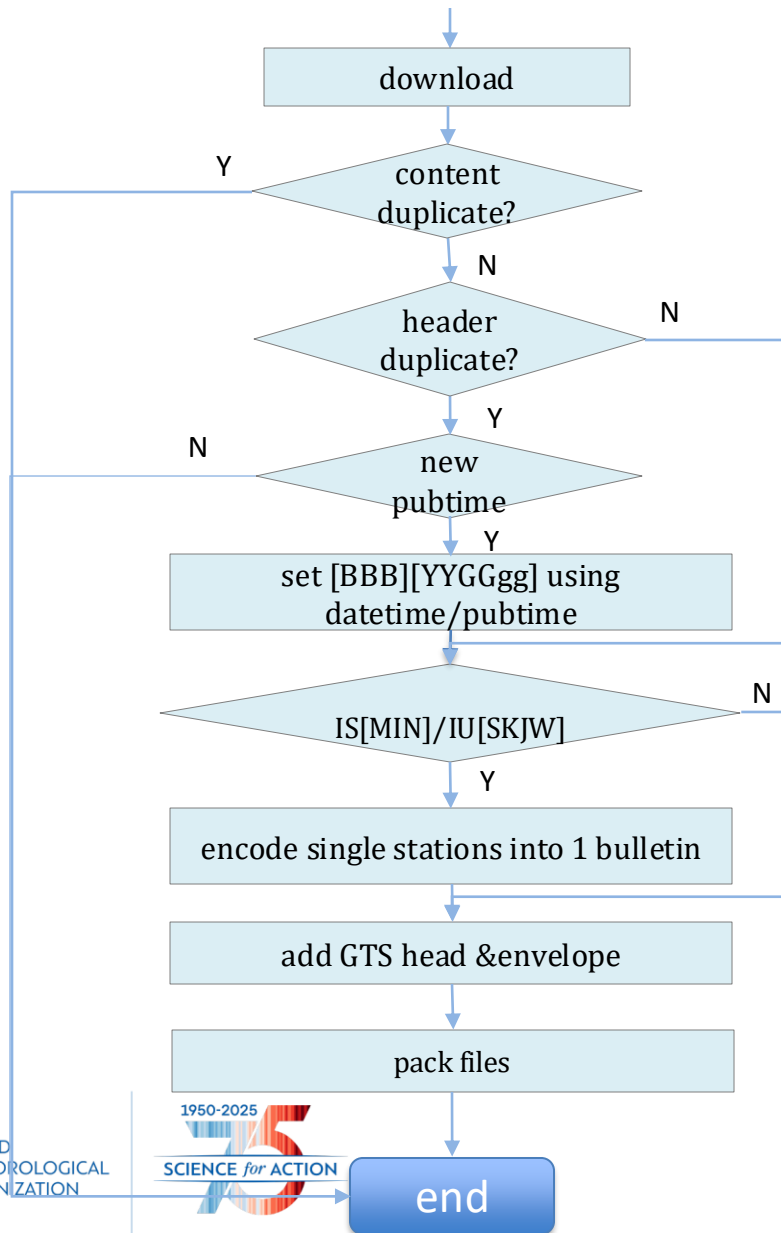
Dataflow of China WIS2-GTS Gateway



Dataflow of China WIS2-GTS Gateway



Dataflow of China WIS2-GTS Gateway



BUFR file: ISAD59 LCLK 210530 (no GTS header and envelop)

A_ISAD59LCLK210530_C_LCNC_20250221053700

```

00000000h: 42 55 46 52 00 3C 28 04 00 00 16 00 00 E6 00 00 ; BUFR.<{.....?.
00000010h: 00 00 00 07 FF 1F 00 07 E9 02 15 05 1E 00 00 00 ; .... ..?......
00000020h: 09 00 00 34 80 C7 5C 00 3B FD 00 00 0C 40 00 03 ; ...4€药.;?...0..
00000030h: 03 13 43 63 62 02 02 02 02 02 02 02 02 02 0F ; ..Ccb.....
00000040h: FF FA 32 0A 92 6A 0A 5A 0A 99 01 01 01 01 01 ; ?.药.Z.?......
    
```

pack bulletins into LCLK00519263.b(add GTS header and envelop)

LCLK00519263.b

```

00000000h: 30 30 30 31 35 34 33 37 30 30 01 0D 0D 0A 37 34 ; 0001543700...74
00000010h: 36 36 38 0D 0D 0A 49 53 41 44 35 39 20 4C 43 4C ; 668...ISAD59 LCL
00000020h: 4B 20 32 31 30 35 33 37 0D 0D 0A 42 55 46 52 00 ; K 210537...BUFR.
00000030h: 3C 28 04 00 00 16 00 00 E6 00 00 00 00 00 07 FF ; <{.....?.....
00000040h: 1F 00 07 E9 02 15 05 1E 00 00 00 09 00 00 34 80 ; ...?.....4€
    
```

Packing rules:

- ✓ Max file size : 1M
- ✓ Max bulletin number in a file : 100
- ✓ Packing frequency: 60 seconds

Demonstration

1. Notification message

/data_gateway/wis2gts/log/debug_20250916.txt

2. Encode data

grep WIGOS_0-20000-0-85406_20250916T000000.bufr4 msgretrieve_20250916.log

Bulletins:

data_gateway/wis2gts/bufrtmp/ISMI16_SCSC_160000_20250916000000/**2dca3229-5d78-4a2d-adb8-7fba2fe118eb**

Bulletins:

grep WIGOS_0-20000-0-85418_20250916T000000.bufr4 msgretrieve_20250916.log

/data_gateway/wis2gts/bufrtmp/ISMI16_SCSC_160000_20250916000000/**9343c0a5-c739-4cb7-8fc8-fa1d69253a21**

3. Merge bulletins into files:

/data_gateway/wis2gts/tmp/pack_b/BABJ/b56ee2a8-77bc-448f-94f9-3fde11a1be2e.b

grep b56ee2a8-77bc-448f-94f9-3fde11a1be2e.b packfile_20250916.log

/data_gateway/wis2gts/tests/wis2-to-gts-gateway/BABJ01886572.b



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ORGANIZATION





WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

Thank you
Merci
Gracias
شكرا
谢谢
Спасибо