



ICAO BANGKOK UNITING AVIATION

# Latest development regarding WMO WIS2 and ICAO SWIM Interoperability

ICAO APAC MET IE WG 22  
18 to 21 March 2024





## Background

- During WMO INFCOM-2 (Oct 2022), the following proposal regarding new projects to be established for the WIS 2.0 pilot phase starting from the last quarter of 2022 was raised and accepted:

*“Development of interoperability approaches with ICAO System Wide Information Management (SWIM)”*

- A WMO Task Team TT-WIS2-SWIM was established in Oct 2023 to determine the interoperability methodology between the two systems with the aim to avoid issues in the transition from the current data exchange systems to the new technologies



## Members of TT-WIS2-SWIM

1. **Mr Jeremy TANDY, Co-chair**, United Kingdom of Great Britain and Northern Ireland
2. **Ms Rebecca E KOTTEN, Co-chair**, United States of America
3. Mr Anders EKNER, Member, Sweden
4. Mr BL CHOY, Member, Hong Kong, China
5. Mr Dirk ZINKHAN, Member, Germany
6. Mr Humphrey ELTON, Member, New Zealand
7. Mr Mikko RAUHULA, Member, Finland
8. Ms Raquel SALAZAR, Member, Costa Rica
9. Mr Rodrigo Daniel CORTÉS, Member, Argentina
10. Mr Yoritsugi ohno YUGE, Member, Japan
11. Mr Jun RYUZAKI, ICAO
12. Ms Anna Milan, WMO



## Issues to be resolved

- **Similarities between WIS2 and SWIM:**
  - Adoption of open standards and best practices of information technology including exchange patterns (e.g. publish-subscribe and request-reply), protocols (e.g. AMQP, MQTT, WFS, WMS) and payload (e.g. IWXXM, BUFR, GRIB, etc.)
- **Differences between WIS2 and SWIM:**
  - WIS2: Resource Oriented Architecture (ROA); SWIM: Service Oriented Architecture (SOA)
  - WIS2 has a well defined arrangement to publish and forward data sets to recipients (i.e. use of MQTT for publication notification and actual payload is stored separately); SWIM allows an information provider to define its own service through the SWIM Service Overview
  - WIS2 core data can be freely shared under the WMO Unified Data Policy; SWIM data has more restrictive licensing constraints partly related to cost-recovery

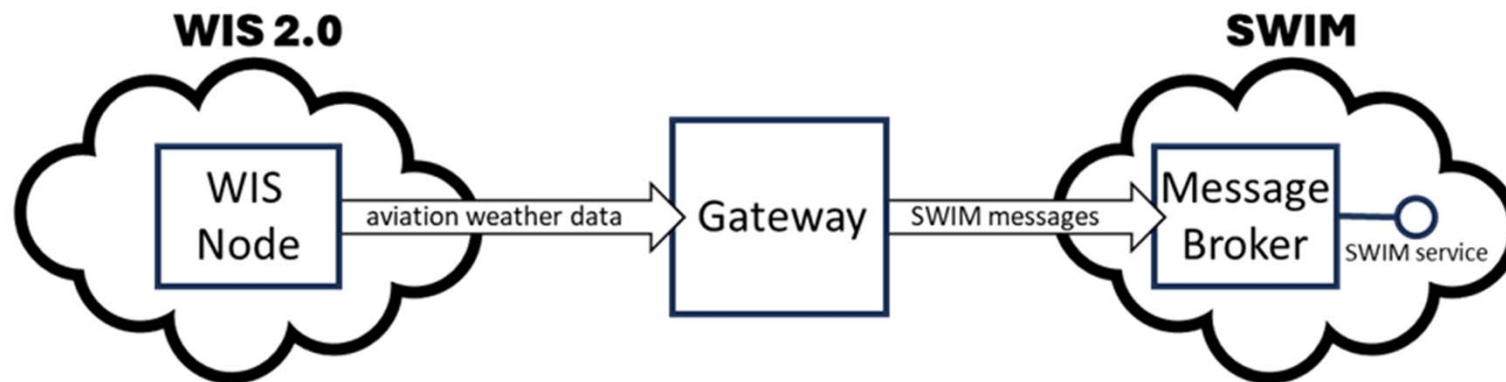


## Outcome of team activities

- A new section “2.5.1 Publishing aviation weather data from WIS 2.0 into ICAO SWIM” of a new chapter “2.5 Interoperability with external systems” of the “Guide to the WMO Information System” (WMO-No.1061) has been prepared for consideration in INFCOM-3 (Apr 2024)

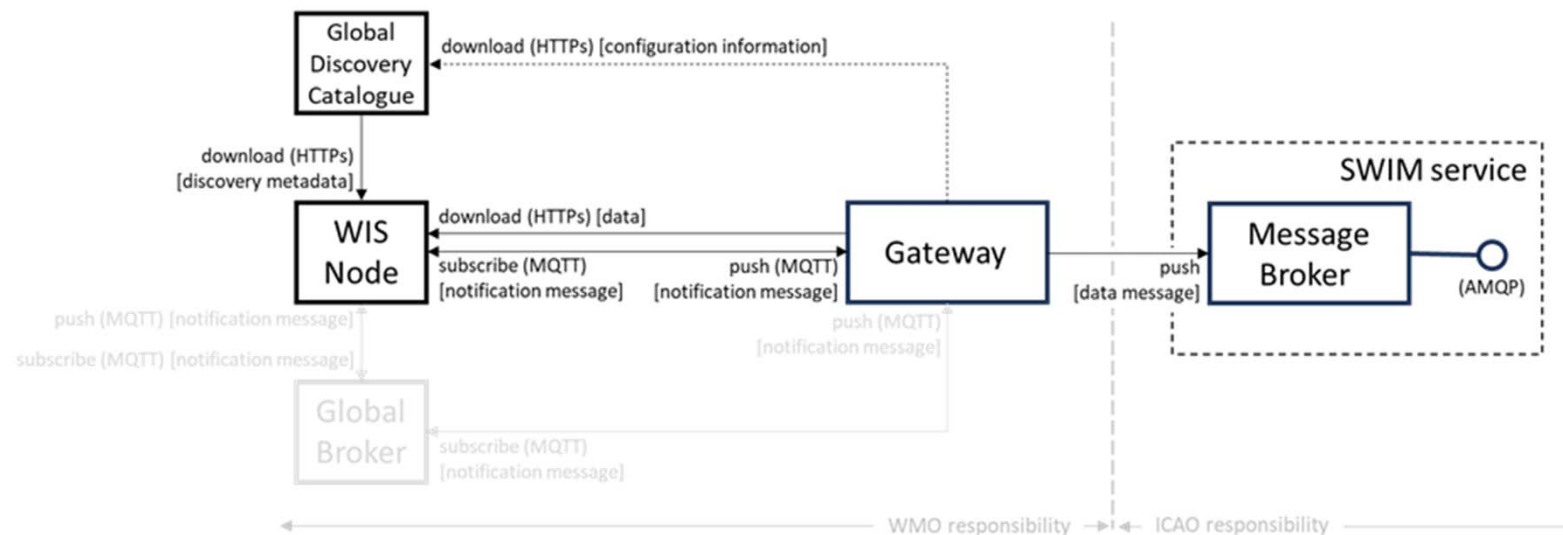


## Schematic of interoperability approach





## Interactions between the Gateway and components of WIS 2.0 and SWIM





## Points to note

- Publishing of aviation information is one way (i.e. WIS2 to SWIM)
- Who to take up the responsibility to be the WIS2 node, Gateway and SWIM message broker has yet to be identified
- Authorized access may be required for the collection of published aviation information on the WIS2 node, depending on the mutual agreement among the operators of the WIS2 node, Gateway and SWIM message broker





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