

Status of the implementation of the IWXXM in the AFI RODBs/IROGs and corresponding BCCs

ROC and RODB Pretoria

Maluta Tshifaro

25 September 2021



Introduction

- ICAO Global Air Traffic Management Operational Concept (ATMOC Doc 9854)
- ICAO Global Air Navigation Plan (GANP) (Doc 9750) and its Aviation System Block Upgrades (ABSU) methodology
- Amendment 77 to ICAO Annex 3 – *Meteorological Service for International Civil Air Navigation* introduced the requirements for reporting and dissemination of meteorological data in digital format.
- APIRG/20,21,& 22 which adopted, the transition plan (AFI Transition Plan) for handling OPMET data in digital format. The plan called for the AFI States to progressively implement XML/GML based exchange format for OPMET information.

AMD76
Nov 2013

“... states in a position to do so ...” may exchange (Bi-Lateral) METAR, SPECI, TAF and SIGMET in XML

AMD77
Nov 2016

“... recommendation to issue ...” METAR, SPECI, TAF, SIGMET, AIRMET, VAA & TCA in XML/GML

AMD78
Nov 2019

“... recommendation to issue ...” Space Weather Advisories (SWXA) in IWXXM

AMD78 & 79
Nov 2020

“... standard to issue ...” METAR, SPECI, TAF, SIGMET, AIRMET, VAA, TCA & SWA in IWXXM GML
....Data produced in both TAC & IWXXM formats...

2024

TAC downgrade to recommendation

2026

TAC – The END??

In Scope

- National OPMET Centre (NOC) functionalities:
 - Enable issuance of TAF/METAR/SIGMET/AIRMET in IWXXM format
 - by TAC to IWXXM translation in message switch
 - Enable the MET Message Switch to process IWXXM
 - reception, validation, routing, “bulletin” creation (WMO guidance), visualisation,...
 - Enable the Pretoria ATS Message Handling System to support exchange of XML-messages [XML bulletin Compression (gzip)]
- Regional OPMET Databank (RODB) functionalities
 - receive and store OPMET data in IWXXM format
 - handle request/reply for data in IWXXM format (RQX interface and database Structure)

Out of Scope

- Generation of IWXXM at source (observing & forecasting systems)
- Processing of IWXXM by other ATM or MET systems
- Web/SWIM services built on the (I)WXXM data model
- these can (or should) be part of follow-up projects

IWXXM Status

In Operation since September 2016

- P3 AMHS connection with extended services between MET & COM Centre
- Implementation of IWXXM v1.1 functionalities in MET switch

• TAF/METAR/SIGMET

- IWXXM translation
- Compilation of collections
- IWXXM message transmission & reception via FTBP AMHS

• Implementation of IWXXM functionalities in COM workstations

- Visualisation of IWXXM messages
- RODB request/reply procedure from COM workstation

• Decommission AFTN and activate AMHS operationally between RODB and COMs Centre

Upgrade of IWXXM functionalities in MET Switch

April 2017

IWXXM version 2.1

Upgrade of IWXXM functionalities in MET Switch

January 2017

Upgrade from IWXXM 1.1 to IWXXM 2.0

To accommodate Extra message types: AIRMET, VAA, TCA

Upgrade of IWXXM functionalities in MET Switch

September 2020

Upgrade from IWXXM 2.1 to IWXXM 3.0

IWXXM-AMHS Testing

Test between Pretoria RODB and ATNS COMs Centre

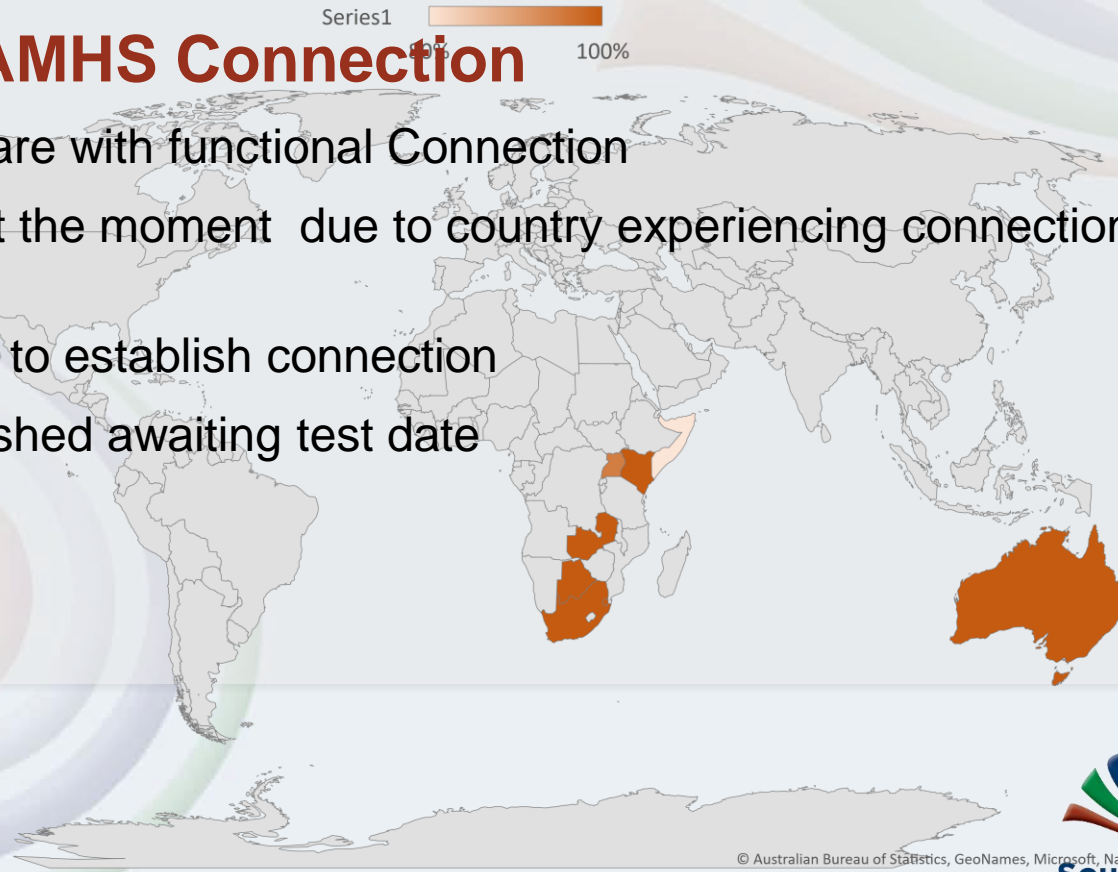
- Uncompressed, individual IWXXM XML files in a single attachment;
- GZIP-compressed individual IWXXM XML files in a single attachment;
- A compressed 2MB, 4MB, and 6MB IWXXM XML files in a single attachment, and;
- Uncompressed, multiple IWXXM XML files in a single AMHS message, each file in a separate attachment.

Potential IWXXM-AMHS Testing

Direct AMHS Connection (FAOR Comms Centre)

Current Direct AMHS Connection

- Most of the states are with functional Connection
- Link is not in use at the moment due to country experiencing connection problems
- Awaiting MODEMs to establish connection
- Connection established awaiting test date

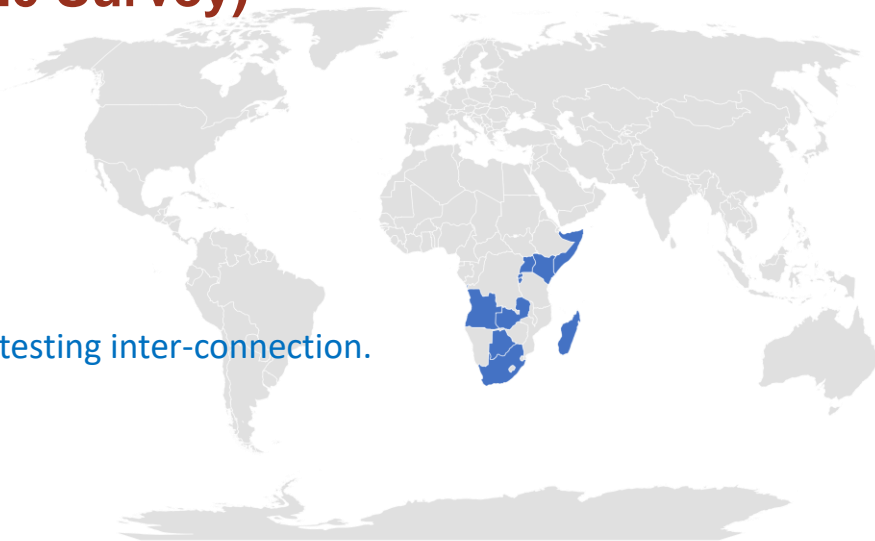




Participation Map

IWXXM Implementation (2020 Survey)

- Participation was not satisfactory
- 14 States responded to the Survey
- Participation rate of 25.92 %
- 50% Infrastructure capability
- 14% bi-lateral/multi-lateral agreement for testing inter-connection.
- Average Implementation rate of 30%





Implementation of IWXXM

- **Survey outcome[2020]**
 - Infrastructure capability (50%)
 - Adjusted AMHS terminal (36%)
 - AMHS Interconnection (43%)
 - Exchange Trials in IWXXM (7%)
 - Bi-Lateral/Multi-Lateral Agreement (14%)

Recommendations

- The need to develop capabilities for exchange of OPMET data in digital format (urgent)
- Encourage States to enter into bilateral/multilateral agreements for testing the interoperability of AMHS system.
- Consider entering into TAC to IWXXM Translation Agreement (with states that have already developed the capability)
- Identify a group responsible for transition within the region (BCCs, NOCs, RODBs, COMMs Centres, Relevant IMSG Project Teams, etc)
- Strengthen working relationship(linkage) with IMSG Com Project II (Inter-operability requirements within AFI Region)

Thank you