Issues and Updates to the Global Transition to IWXXM

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Overview

- IWXXM Status
- Who is ‘Working’ IWXXM issues?
- SWIM & AIXM/FIXM Linkages
- Global Implementation
- ICAO NAM/CAR Implementation/Planning
  - Workshop 2017
- US Implementation
  - OFCM Planning
IWXXM Status

• IWXXM version 2.0 implemented March 2016
• ICAO Annex 3
  • November 2016, Amendment 77
    ✤ Allows the exchange of IWXXM products as ‘recommended’ practice
    ✤ Products include:
      ✤ TAF
      ✤ METAR & SPECI
      ✤ SIGMET
      ✤ AIRMET
      ✤ Volcanic Ash Advisory
      ✤ Tropical Cyclone Advisory
IWXXM Status

• ICAO Annex 3
  • November 2018* Amendment 78
    ✦ Will make the [International] exchange of IWXXM products a ‘mandatory’ practice
    ✦ * A proposal will be presented to the ICAO Meteorology Panel October 2016 to push this date back to Amendment 79 of the Annex 3, i.e. 2020
Who is ‘Working’ IWXXM Issues?

• ICAO Meteorology Panel
  – Working Group – Meteorological Information Exchange (WG-MIE)
  – Job Card #4

• ICAO Information Management Panel
  – WG-MIE identified two members to participate in IM Panel meetings
  – IM Panel identified two members to participate in WG-MIE meetings
  – IM Panel sub-groups coordinating with METP experts

• Coordination with ICAO Communications Panel
IWXXM Issues Being Addressed

- General IWXXM Policy, Governance, Content, & Security Issues
- Use & standards for the inclusion of ‘extensions’
  - Enabling ‘State’ Extensions
  - Including frequently used ‘additional data elements’ into the IWXXM standard
    • Commonly used by multiple states
  - Users have stated IWXXM must provide added value over Traditional Alphanumeric Characters (TAC)
IWXXM Issues Being Addressed

• Guidance to ICAO Regions on transitioning to IWXXM
  – When and where translation from TAC to IWXXM occurs
    • Only translate once
    • How to deal with both TAC and IWXXM messages in the global communications system
  – Validation of IWXXM messages
  – Roles of Regional OPMET Databanks and Centers
  – Developing Regional transition plans and training workshops
IWXXM Issues Being Addressed

• Information Resolution Improvements
  – IWXXM has potential for more detail than TAC messages
  – Example:
    • METAR uses rounded values
      – Measured overcast cloud height of 990 feet reported as OVC009
      – IWXXM can report both the METAR rounded value, as well as the actual measured value for better precision in support of Trajectory Based Operations (TBO)
IWXXM Linkages

• Aeronautical Information Exchange Model (AIXM)
  – The AIXM XML Schemas are an encoding format for aeronautical data

• Flight Information Exchange Model (FIXM)
  – The FIXM XML Schemas are an encoding format for flight data

• Together, IWXXM, FIXM, and AIXM will compromise the digital exchange formats of System Wide Information Management (SWIM)
IWXXM Linkages

- **SWIM**
  - Facilitates greater sharing of ATM system information over the global airspace domain
  - Flexible and secure information management architecture for sharing
  - will use commercial off-the-shelf hardware and software to support a Service Oriented Architecture (SOA)
  - Consistent information to different users
    - Pilots
    - Controllers
    - Dispatchers.
IWXXM Linkages

- **SWIM**
  - Supports proactive decision-making
  - Increased common situational awareness
    - More decision makers having access to the same information
  - SWIM core services will enable systems
    - Request and receive information when needed
    - Subscriptions for automatic receipt
    - Publishing information and services as appropriate
    - Promote sharing of information across different systems
IWWXM Linkages

• METP WG-MIE developing MET SWIM Plan
  – Will be integrated with Overall ICAO SWIM Plan
  – Defines
    • Governance
    • Security
    • Access
    • Etc
  – Given Annex 3 SARPs to operationally exchange IWXXM messages internationally by 2018/2020 the MET community needs more detailed policy, protocol, and guidance material
IWXXM Linkages

• ICAO Information Management Panel
  – Developing ‘Information Services Concept of Operations’
    • Defines ‘Meteorological Information Services’
      – Not to be confused with Web (feature, coverage, map) Services

• ICAO Aeronautical Communications Panel
  – IWXXM messages won’t transmit over the Aeronautical Fixed Telecommunications Network (AFTN)
  – IWXXM Messages will be exchanged over Aeronautical Message Handling System (AMHS)
    • Bilateral testing of exchanging IWXXM messages
Global Implementation

• International exchange of IWXXM messages expected by 2018(20)
  – Full implementation of SWIM much later than this
• ICAO guidance on transition from TAC to IWXXM going to regions
• How does the world work with both IWXXM and TAC messages?
ICAO NACC Implementation

- ICAO North American, Central American & Caribbean Regional Office (NACC)
  - Meeting to Enhance State Coordination between MET, AIM and ATM July 2016
    - Reviewed state of MET, AIM, & ATC across the NACC region
    - Identified areas of needed focus and regional coordination
  - IWXXM Workshop planned early 2017
    - Identify state of IWXXM development across the region
    - Identify strategies for transitioning to IWXXM
U.S. Implementation

- Office of Federal Coordinator for Meteorology (OFCM)
  - Multi-agency group focused on MET
    - NOAA/NWS
    - FAA
    - DOD
  - Developing U.S. Implementation Strategy and joint agency transition plan
    - Key issues/needs initially identified
    - Plan development expected over 2017-2018
Summary

• IWXXM development and maturity continues
• Several ICAO Annex 3 Met products expected to be exchanged in IWXXM soon
  – States, Regions, Providers, and Users need to prepare NOW!
• Much coordination between several ICAO Panels