

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



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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



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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



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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



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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)



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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



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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)



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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.



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IWXXM Linkages

- SWIM
 - Supports proactive decision-making
 - Increased common situational awareness
 - More decision makers having access 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



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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



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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?



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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



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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



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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



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