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IWXXM Implementation & Assimilation

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Overview

- IWXXM Status
- Global Efforts
- Regional Efforts
 - ✦ Implementation
 - ✦ Education & Outreach
- Assimilation & Adoption
- User Needs
- Other Issues
 - ✦ IWXXM vs WXXM
 - ✦ Linkages



IWXXM Status

- IWXXM
 - Version 2.1 implemented April 2017
 - Version 3.0 beginning work for effective date of amendment 78 Nov. 2018
 - Version 3.1 beginning work March, 2019
- ICAO Annex 3
 - November 2016
 - Allows the exchange of IWXXM products as ‘recommended’ practice
 - November 2020
 - Will make the [International] exchange of IWXXM products a ***‘mandatory’*** practice



Global Efforts

- ICAO Meteorology Panel
 - ✦ Working Group – Meteorological Information Exchange (WG-MIE)
- WMO TT-AvXML
 - ✦ Developing the schema
- ICAO Information Management Panel
- IM Panel sub-groups coordinating with METP experts
 - ✦ WG-MIE identified two members to participate in IM Panel meetings
 - ✦ IM Panel identified two members to participate in WG-MIE meetings



IWXXM Issues Being Addressed

- Guidance 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
 - Where and who 'translates'
 - Partially translated messages
 - ✦ Validation of IWXXM messages
 - ✦ Change (& version) management
 - ✦ Roles of Regional OPMET Databanks and Centers



Regional ICAO Efforts

- EUR/NAT
 - ✦ IWXXM Implementation Workshop
 - 17 to 18 May 2017
 - Developed a list of outstanding IWXXM implementation issues
 - Developed a roadmap of various supporting documents
 - Agreed to recirculate the 2015 IWXXM implementation survey results
 - Agreed to provide a summary of the above to the *Inter-regional APAC/EUR/MID Seminar*
 - Agreed to conduct another IWXXM implementation workshop at the end of 2018
 - ✦ Belgium implemented TAF and METAR, in IWXXM for airports of Belgium and Luxemburg
 - RODB request/reply procedure was implemented



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Regional ICAO Efforts

- Workshop on Implementing ICAO MET Provisions in the Maghreb States
 - ✦ Marrakech, Morocco, 11 to 12 April 2017
 - Morocco to exchange OPMET data in IWXXM June 2017
 - IWXXM implementation plans to be developed by Algeria and Tunisia
- MID
 - ✦ IWXXM Implementation Workshop being held in Cairo, Egypt, November 12 – 13, 2017
- CAR/SAM
 - ✦ Workshop on OPMET Exchange – ICAO Meteorological Information Exchange Model IWXXM
 - 5-7 Dec, 2017



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5-7 Dec, 2017

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Regional ICAO Efforts

- APAC
 - ✦ APAC Met Information Exchange WG
 - Several States updating status of IWXXM Implementation
 - Joint test on IWXXM exchange over extended AMHS
 - ✦ conducted among Hong Kong, Thailand, and Singapore
 - ✦ plans on further tests to be carried out in future
 - ✦ Workshop on IWXXM
 - Hong Kong, October 10-12, 2017



Regional ICAO Efforts

- NAM
 - ✦ United States developing U.S. Transition plan
 - ✦ Status
 - Implemented IWXXM for METAR/SPECI, TAF, & SIGMET IWXXM 1.1
 - ✦ Upgrading to IWXXM 2.0 by October 2017
 - Implemented METAR/SPECI, TAF, & volcanic ash advisory IWXXM 2.0



Assimilation & Adoption

- Yes, Many States will not be able to transition to IWXXM by November 2020.
- Two lanes:
- In the foreseeable future, some users will remain with TAC
- Other, high-end users will be in the fast lane
- How do we encourage adoption & transition?



Assimilation & Adoption

- Many of our current regulations and ‘business rules’ are based on the limitations of TAC messages
- IWXXM can free us from those limitations
 - ✦ Means revisiting current regulations and rules
- Example:
 - ✦ Annex 3 requires cloud ceilings in METAR reported in 100 foot increments
 - ✦ Ceilometers can actually measure in 10 foot increments (or even single foot)
 - ✦ IWXXM enables that higher resolution observation
 - Which might be necessary for TBO



Assimilation & Adoption

- Another example:
 - ✦ Aeronautical Meteorologists know much more about the future state of the weather around an airport than they can possibly convey in a coded teletype era TAF
 - IWXXM can enable more, better, and easier to understand and integrate forecasts
 - ✦ Can include probabilistic information
 - ✦ Can provide increased detail
 - ✦ Can be integrated into decision support tools

User Needs

- Airlines will not invest in transition to IWXXM if they are only going to continue receiving the same resolution or value of information
- We need to view legacy TAC messages in the Annex 3 as the “minimum safe operating conditions” to operate in the global airspace
- IWXXM will enable increased efficiency and capacity
 - ✦ Trajectory Based Operations
 - ✦ Reduced separation
 - ✦ Reduced impacts from Weather



Freezing TAC



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IWXXM vs. WXXM

- “What’s the deal with ‘I’-WXXM?”
 - ✦ “There’s no “I-AIXM” or “I-FIXM”!
 - ✦ WXXM was developed for all MET info
 - ✦ ICAO caught up much later & separate schema was deemed necessary for aviation MET information
 - ✦ This was before concepts of global SWIM were fleshed out
- We need to start talking about the need or practicality of different schemas

IWXXM Linkages

- SWIM
 - ✦ IWXXM is a key enabler of SWIM concepts
 - ✦ Improved Met information in IWXXM/SWIM
 - ✦ 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

Mitigating Impacts to Small States

- Guidelines for the Implementation of OPMET Data Exchange using IWXXM
 - ✦ October, 2016
 - ✦ Recommends:
 - Bilateral agreements to convert TAC to IWXXM
 - Establishing Regional IWXXM Translation Centers
 - ✦ Could translate/agragate TAC to IWXXM for entire region
 - ✦ Could translate TAC to IWXXM for states which need assistance
 - Developing Regional IWXXM Transition Plans

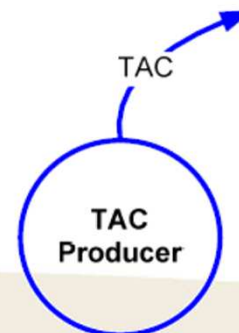
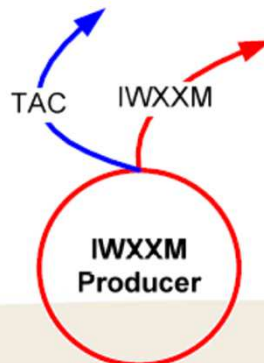


Questions?

- Thank you for your time

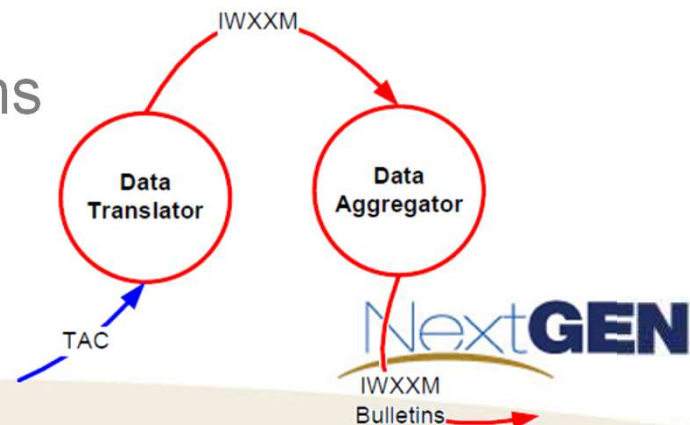
Information Producer/Originator

- TAC Producer
 - ✦ This producer provides TAC data only
 - ✦ Translation to IWXXM by producer or other entity under agreement
- IWXXM Producer
 - ✦ Produces both TAC and IWXXM natively (no translation)
- Both TAC and IWXXM will be produced



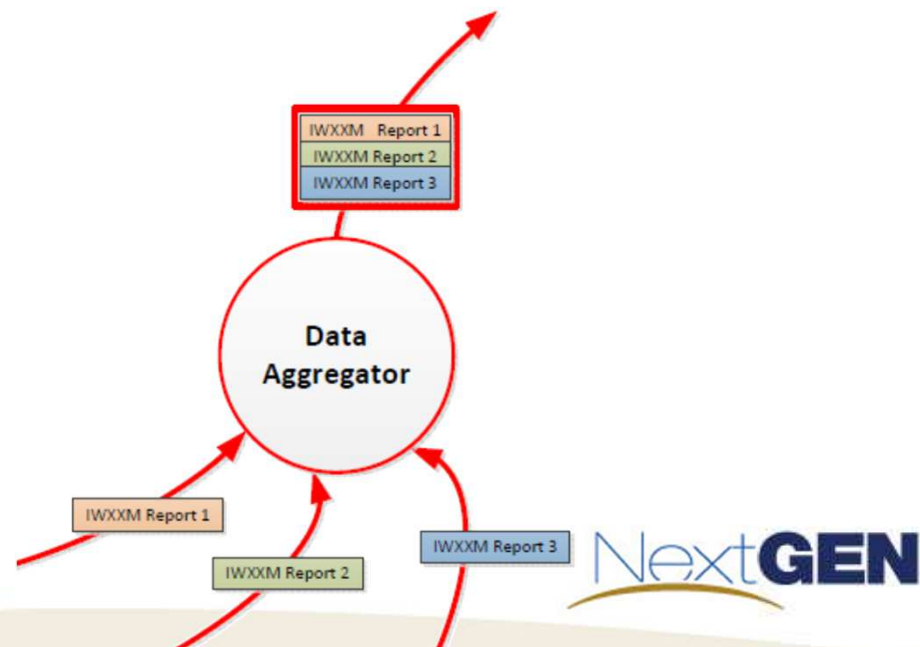
Data Translation Center

- Translates TAC data into IWXXM on behalf of their State and/or another State
 - ✦ Information producer is unable to produce/translate into IWXXM
 - ✦ Under bilateral or regional agreement
 - ✦ Metadata indicates who/when translation occurred
 - ✦ Some TAC will not be translatable because of non-conformance with TAC
 - ✦ Creates role for ROC/RODB
 - ✦ Performs Aggregator functions



Data Aggregator

- Supports 'Slow Lane'
 - ✦ Takes individual IWXXM messages & aggregates them into AFTN-like "bulletins" which consist of one or more reports of the same type
- Most Information Producers will also be the aggregator



Other Regional Guidance

- Institutional and Technical Issues
 - ✦ Establish Communication plan
 - ✦ Procedures to deal with errors in IWXXM messages,
 - Including translation errors and native TAC errors
 - Reporting errors to originating State
- Validation (against the XML schema)
 - ✦ Monitoring and gathering of statistics on schema conformance (rather than meteorological data quality)

