IWXXM Brief

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Briefing Topics

- IWXXM Status
- IWXXM Guidance and Online Materials
- IWXXM Production & Validation
- IWXXM Supplemental Information
- Time for questions

IWXXM Status

- Annex 3 Amendment 78 in effect
  - IWXXM implementation will not be delayed due to COVID-19 Pandemic
  - Prior to 5 November 2020, member states *should* disseminate IWXXM messages
  - On 5 November 2020 and thereafter, member states **shall** disseminate IWXXM messages
- Member states are encouraged to use the latest schema version for all IWXXM XML products: v3.0
- IWXXM products include METARs, SPECIs, TAFs and for the specialized centers, AIRMETs, SIGMETs, Volcanic Ash Advisories, Tropical Cyclone Advisories, and Space Weather Advisories.

IWXXM Schema Production

- The WMO formed a team to create IWXXM schemas
  - Task Team on Aviation XML, aka 'TT-AvXML'
- See the WMO TT-AvXML team working . . . .
  - https://github.com/wmo-im/iwxxm
  - Issues being tracked
  - Release schedules
  - Wiki pages on various topics, planning documents, etc.

IWXXM Schema Status

- IWXXM v3.0 officially released and posted to the WMO web site in November 2019
- Since then, a few "bugs" have been found
  - Will be fixed with version 3.0.1 release before November 2020
  - IWXXM XML producers should always refer to, and use, a "major.minor" release of IWXXM, e.g. "3.0" not "3.0.1"
- IWXXM v3.1 in the works
  - Introduces a new product, "Significant Weather" graphic issued by WAFCs London & Washington
  - Additional minor number increments as additional products are 'IWXXM'-ized
  - Existing IWXXM products will evolve as requirements dictate
  - Major version '3' of IWXXM for foreseeable future

IWXXM Guidance And Materials

- IWXXM schemas are posted on the WMO web site, https://schemas.wmo.int/iwxxm
  - Guidance to generate equivalent IWXXM messages based on the TAC forms
    - https://schemas.wmo.int/iwxxm/3.0/examples/TAC-to-XML-Guidance.txt
  - More examples of TAC and IWXXM equivalents here
    - https://github.com/wmo-im/iwxxm-translation/tree/master/Amd78-2018
- WMO provided a forum where anyone can ask questions or raise issues about IWXXM
  - https://groups.google.com/a/wmo.int/forum/#!forum/cbs-tt-avxml
  - At this time, do not submit IWXXM questions as 'issues' on TT-AvXML GitHub site. They kindly request that ask your question/issue on the WMO TT-AvXML Google forum first.

IWXXM Product Generation

- Creating XML documents can be challenging
  - IWXXM XML production should be done as far 'upstream' as possible, preferably at the originating site/office
  - Strict formatting/layout of the data which is described by the schemas
  - 'Business Rules' checks can be applied to the IWXXM document
    - For IWXXM, most rules are from Annex 3
- Short-term solution to IWXXM XML production
  - Transform the Traditional Alphanumeric Code forms into IWXXM
  - To help to effect this, MDL has posted software to assist, https://github.com/NOAA-MDL/GIFTs
  - Other individuals/entities are also writing IWXXM TAC-to-XML software
  - Search using keyword 'iwxxm' on GitHub to find them

IWXXM Product Validation

- Validation is important
  - Ensures that the IWXXM XML documents and the meteorological data is in correct form so it can be processed by your 'downstream' data consumers
  - If your IWXXM XML documents don't validate, they may not be accepted by your customers
  - Three steps in IWXXM XML validation
    1. Document must be "well-formed"
    2. Document must follow the IWXXM schema for the product
    3. Document must undergo and successfully pass IWXXM 'business' rule checks
  - The MDL GitHub site also provides a IWXXM XML validation tool
    - Based on NCAR's CRUX utility (Java)

Supplementary Information in IWXXM

- By regional air navigation agreements and filed differences with ICAO
  - IWXXM schemas allow for these data to be incorporated into the XML documents
  - XML implementation of the supplementary information is left entirely to the data producer
  - Your schema describing the implementation must be available/accessible via Internet
    - If not available, the IWXXM XML document will fail validation.
  - See https://nws.weather.gov/schemas/iwxxm-us for examples of how the United States accounts for FAA's filed differences with ICAO on several Annex 3 products

Supplementary Information

- Examples
  - `METAR MHPL 151600Z 05006KT 9999 SCT015 SCT028CB OVC080 27/24 Q1014 CB ALL`
  - `METAR MMTC 151540Z 03004KT 10SM SKC 26/09 A3020 RMK HZY`
  - `METAR MMTM 151545Z 26004KT 8SM FEW020 28/22 A3007 RMK 8/100`
- First two examples could be considered ‘free form’ text
  - Simple to implement in IWXXM
  - Good location to provide this information is near the end of the XML document.
- Third example is remarks on the character of the sky?
  - Cryptic because it’s concise. Does not need to be in IWXXM! You can describe it more fully.
  - Placement could be at end of the <CloudLayer> or <MeteorologicalAerodromeObservation> elements

Supplementary Information in IWXXM

- If you choose to add supplementary information to IWXXM
  - An XML Editor is recommended as a guide for this kind of work
    - Particularly those with 'autocomplete feature using schema' – very helpful
  - See https://en.wikipedia.org/wiki/Comparison_of_XML_editors
  - Tutorial on writing IWXXM extensions
    - Watch Wiki pages on MDL GitHub site

Questions?