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Monitoring IWXXM Exchange

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Webinar on the implementation of the ICAO Meteorological Information Exchange

Model (IWXXM), 27 to 29 October 2020



Introduction

- Relation to ICAO MET/IE term of reference and work plan :-
 - Activity 2: Improving OPMET timeliness, compliance and regularity at RODBs, SADIS and WIFS





Monitoring IWXXM Exchange

- Following the Guidelines for the Implementation of OPMET Data Exchange using IWXXM (Third Edition – May 2019)
 - Section 8 Data Validation and Statistics





Purpose

Purpose of Monitoring

- As a measure of the state of IWXXM implementation

Purpose of Guidelines – Data validation and statistics

- Providing and proposing a globally consistent way of defining such statistics as a way to measure IWXXM implementation progression





By whom?

- ROCs, IROGs and/or RODBs should provide Statistics





What type of data?

- Regular Data
 - METAR/TAF
- Non-regular Data
 - SIGMET/AIRMET
 - Volcanic Ash Advisory and Tropical Cyclone Advisory
 - Space Weather (when implemented)





Statistics Presentation

- Per ICAO Region
- Per State
- Per Location (FIR and Advisory center)
- On a daily basis
- On a monthly basis





Proposed Statistics

- Availability
- Timeliness
- Specific statistics about IWXXM model or version
 - IWXXM Validation
 - Version
 - Operational/Non-operational data





Proposed Statistics

- Specific statistics about IWXXM model or version
 - Incomplete(Partial) Translations
 - Data volume
 - Additional groups (Extensions)
 - Optional Statistics



Proposed Statistics

Statistics Indicator	TAC	IWXXM
Availability	✓	✓
Timeliness	✓	✓
IWXXM Validation	✗	✓
Version	✗	✓
Operational/Non-operational	✗	✓
Incomplete/Partial Translations	✗	✓
Data Volume	✗	✓
Extensions	✗	✓



Statistical Indicators in detail

- In terms of:
 - Definition
 - How to calculate/implement





Availability Index

Definition

- To measure the current coverage of the OPMET distribution against the ROBEX exchange requirements

How to calculate/implement

- Perform on a daily basis
- At least one non-NIL report during a day is considered available





Compliance Index

Definition

- To assess the level of compliance to the ROBEX scheme

How to calculate/implement

- Determine the number of reports received (including retards but excluding correction and amendment) compare to the number of reports required



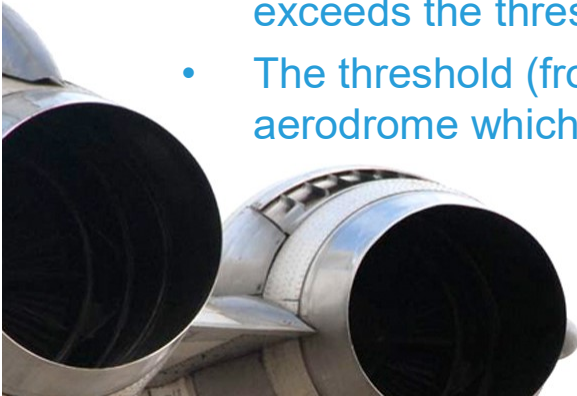
Regularity Index

Definition

- To measure the consistency in the number of reports provided by an aerodrome

How to calculate/implement

- “Regular” means the number of reports provided by an aerodrome meets or exceeds the threshold
- The threshold (from statistics calculation) is the number of reports provided by an aerodrome which is considered “regular”





IWXXM Validation

Definition

- Validation IWXXM data against schema and schematron (by IWXXM version)

How to calculate/implement

- Compare successfully validated IWXXM data with total received IWXXM data as success rate (by IWXXM version)





Version

Definition

- If ROCs/IROGs/RODBs plan to receive different version of IWXXM, statistics of all received version should be provided.

How to calculate/implement

- The statistics should provide per station and per version, therefore the version of IWXXM data used for dissemination should be recorded per message.





Operational/Non-operational data

Definition

- Operational or non-operational data is the purpose of IWXXM data as the basis for operational decision making.
- This shall be set in the IWXXM element name 'permissibleUsage'. If IWXXM message issued as non-operational, the 'permissibleUsageReason' shall be set either 'TEST' or 'EXERCISE'

How to calculate/implement

- The statistics shall be the percentage of non-operational reports received by locations (FIRs, advisory centers)



Incomplete(Partial) Translations

Definition

- If ROCs/IROGs/RODBs plans to be the data translation center for any states, the translation centre should monitor incoming TAC messages and keep statistics on the data received and IWXXM generated.
- When TAC to IWXXM translation is incomplete(partial), “Translation-failed” IWXXM message containing original TAC should be disseminated to users for manual interpretation.

How to calculate/implement

- As translation center role, the statistics of “Translation-Failed” IWXXM message from agreed locations (FIRs, advisory centers) should then be provided.



Data volume

Definition

- The daily average and total daily data volume of IWXXM data reception from locations (FIRs, advisory centers) should be gathered.
- This will then help to monitor the traffic and determine the bandwidth usage between states, it may also decide how much IWXXM data can be maintain in the system and/or upgrade plan for data storage.

How to calculate/implement

- The statistics of daily accumulated file size of IWXXM messages delivered from locations (FIRs, advisory centers) should be provided.



Additional groups (Extensions)

Definition

- The IWXXM schema may be extended for states purposes. Where extensions to the schema are proposed to be disseminated internationally, these should follow the WMO extension mechanism for extending the schema and the extensions should be standardised where possible with other states.

How to calculate/implement

- The statistics of IWXXM messages with extensions compared with total IWXXM message delivered from locations (FIRs, advisory centers) should be provided.



Monitoring Survey Result

- Bangkok, Tokyo, Singapore RODBs
 - Plans to develop monitoring function and expect to be ready to monitor from March 2021
 - Statistical indicators to be developed are as follows



Monitoring Survey Result

Statistics Indicator	To be implemented (Y/N)
Availability	Y
Timeliness	Y
IWXXM Validation	Y
Version	Y
Operational/Non-operational	Y
Incomplete/Partial Translations	Y
Data Volume	Y
Extensions	Y

Issues To be considered

- Can timeliness indicators in the guidelines be represent as compliances index and regularity index the same as TAC Performance Indices?
- Should all other IWXXM statistical indicators based only on operational data except for operational/non-operational indicators?
- Any other optional indicators you(state) suggest to provide?





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