REQUIREMENTS FOR IWXXM

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INTRODUCTION

- ICAO Global Air Traffic Management Operational Concept (ATMOC Doc 9854)
- ICAO Global Air Navigation Plan (GANP) (Doc 9750) and its Aviation System Block Upgrades (ABSU) methodology
- Amendment 77 to ICAO Annex 3 – *Meteorological Service for International Civil Air Navigation* introduced the requirements for reporting and dissemination of meteorological data in digital format.
- APIRG/20,21,& 22 which adopted, the transition plan (AFI Transition Plan) for handling OPMET data in digital format. The plan called for the AFI States to progressively implement XML/GML based exchange format for OPMET information.

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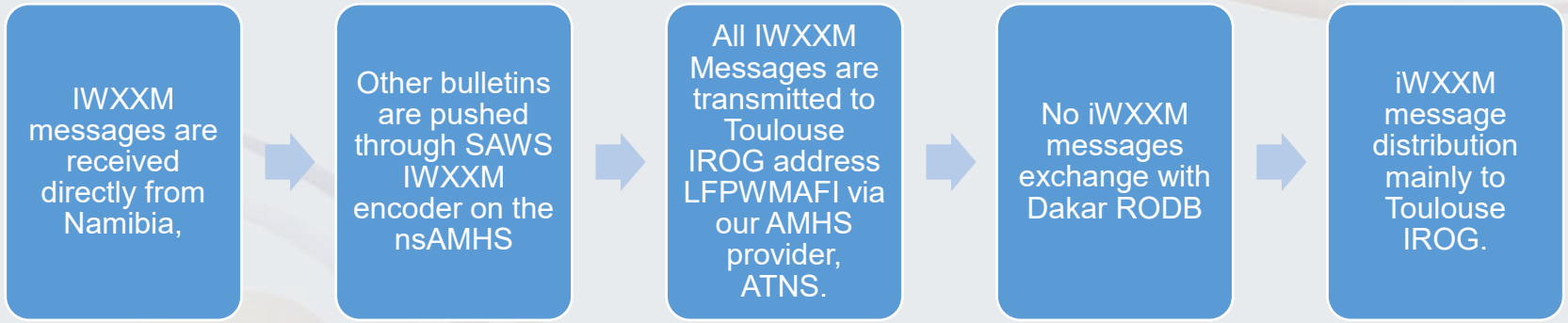
STATUS OF IMPLEMENTATION



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STATUS OF IMPLEMENTATION, cnt…

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COMMUNICATION INFRASTRUCTURE

- IWXXM messages (which are larger XML files) cannot be sent over the older **AFTN (Aeronautical Fixed Telecommunications Network)**.
- **What is Needed:** A modern messaging switch capable of handling digital exchange.
- An **AMHS (Aeronautical Message Handling System) MTA (Message Transfer Agent)**.
  - This is typically the immediate replacement for an AFTN switch and is used for more than just OPMET (e.g., NOTAMs, Flight Plans).
  - *Note:* If a State already has an AMHS MTA, this specific purchase is not necessary.
- **Future Direction:** States will eventually transition to **SWIM (System-Wide Information Management) AMQP-enabled brokers** to exchange IWXXM. This requires a **SWIM product** (a more advanced system than AMHS).

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DATA EXCHANGE INFRASTRUCTURE

- **The Preferred/Current Standard:** An **AMHS (Aeronautical Message Handling System) MTA** (Message Transfer Agent). This system serves a broader purpose capable of handling OPMET, NOTAMs and Flight Plans.
- **Future Direction:** There is a movement toward replacing AMHS (X.400) with **SWIM (System Wide Information Management) AMQP-enabled brokers.**
  - *Required Purchase (for future adoption):* A **SWIM product** to exchange IWXXM using advanced Message Queuing Protocol (AMQP). This product often includes a database for querying the IWXXM data.

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Translation and Production Tools (Software)

- **Required: Translation Software** or a **Translating Gateway**.
  - This software's primary function is to translate TAC to IWXXM for international dissemination.
- **Long-Term/Optimal Purchase: Native IWXXM Production Software**.
  - While translation works now, it's not the preferred long-term solution because future IWXXM elements may not have a TAC equivalent.
  - The long-term need is for software to produce TAF and SIGMET (and manually produced METARs) natively in IWXXM (as well as TAC initially).

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Database Integration

- **Database Integration:** Not strictly required for the initial TAC-to-IWXXM international dissemination, but it **is required for advanced SWIM functionality.**
  - SAWS **SYSTEM** includes a **database** that implements **OGC EDR** (Open Geospatial Consortium Environmental Data Retrieval) standards.
  - This allows countries to query and use the IWXXM data in a standardised way.

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Summary of requirements

AMHS MTA (or a full OPMET solution that includes it):	TAC-to-IWXXM Translation Software:	Native IWXXM Production Software:	SWIM Broker/Database (for future readiness):
• To replace AFTN and handle the IWXXM files for international exchange.	• To convert data from legacy internal systems for external exchange.[5]	• To create future-proof SIGMET and TAF reports directly in the new format.	• To enable advanced data sharing using AMQP and standardized querying.

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THANK YOU

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