



Agenda Item 4: Report of activities and deliverables of the GT – INTEROP Subgroups

**ACTIVITIES BY BRAZIL FOR THE REGIONAL
 OPMET DATABASE (RODB) - IWXXM**

(Presented by Brazil)

SUMMARY	
This information paper presents the activities made by Brazil for the new characteristics of RODB IWXXM.	
References	
<ul style="list-style-type: none"> - Amd 77 to the Annex 3 of the ICAO; - Amd 78 to the Annex 3 of the ICAO; - Amd 79 to the Annex 3 of the ICAO 	
Goals Strategic of the ICAO:	<i>A - Security operational</i> <i>B- Ability and Efficiency of the Navigation Air</i> <i>ASBU: AMET-B0/4 (IWXXM) AND COMI-B0/7 (AMHS)</i>

1. INTRODUCTION

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1.1 The function major of OPMET is to receive, select, store, and automatically send weather information to predetermined recipients, to ensure flight plans safer.

1.2 The system has an architecture based on an integrated platform, which includes an infrastructure of *hardware* of high availability and an application of *software* dedicated, which allows Providers of Air Navigation Services (PSNA) to have meteorological information of quality and high availability.

3. DISCUSSION

3.1 The fact is that the IWXXM protocol has been evolving and therefore new versions are made available by ICAO, as shown in the table below:

IWXXM	METAR/SPECI	TAF	SIGMET	AIRMET	TCA	GOING TO	S.W.A.	SIGWX	Requirement Annex 3
1.1	1.1.0	1.1.0	1.1.0	-	-	-	-	-	AMD 76
2.1	2.1.1	2.1.1	2.1.1	2.1.1	2.1.1	2.1.1	-	-	AMD 77
3.0	3.0.0	3.0.0	3.0.0	3.0.0	3.0.0	3.0.0	3.0.0	-	AMD 78

Table 1 Versions of IWXXM already implemented in the OPMET Bank.

3.2 Considering the ICAO IWXXM protocols, it is possible to verify great benefits generated by the IWXXM format, such as reducing the size of files transported on the network and making easy the understanding by users.

3.3 In 2020, listening to these demands, the Department of Airspace Control (DECEA) of Brazil modernized the System, in compliance with amendments 77 and 78 of ICAO A 3, on the exchange of OPMET meteorological information using a format of standardized digital exchange (XML), called IWXXM-ICAO (Meteorological Information Exchange Model).

3.4 In this modernization, versions 1.1 and 2.1 of the IWXXM, which were approved at that time, were implemented and further in 2021 the version 3.0 was also implemented.

3.5 The OPMET Regional Data Bank of Brasilia (RODB) version 3.0 exchanges meteorological messages via AMHS and has a service interface via INTERNET, as shown in Figure 1.

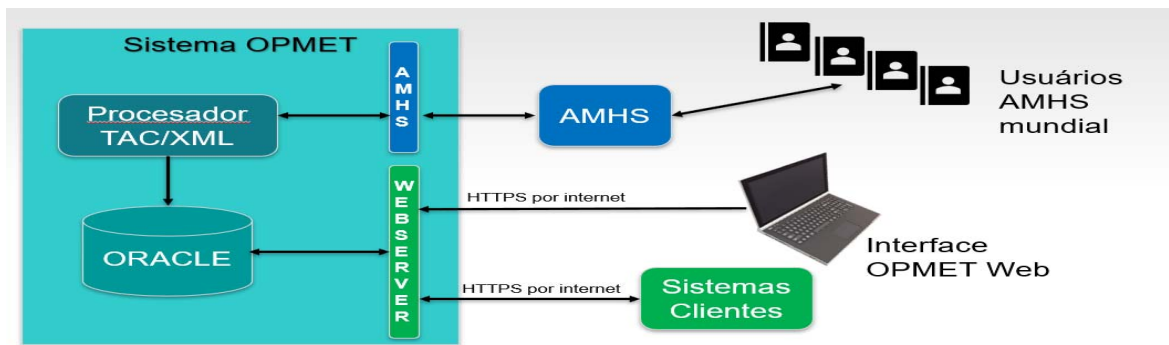


Figure 1-Architecture

3.6 This system allows to share meteorological information with simplicity and security, in digital format, XML, according to the new SWIM (*System Wide Information Management*), concept proposed by ICAO, which aims to provide a global environment of data interoperability and flight-related information, thus contributing to more efficient and cheaper framework, without affecting the operational safety.

3.7 The solution also offers a set of functions and reports advanced, which can be accessed remotely via web services, ensuring quick gather of meteorological information for all the involved in the air operations.

3.8 The evolution caused by new OPMET is associated with the Internet use, which allows exchanging of meteorological messages. It should be noticed that even with the use of the Internet, the system still maintains regular message processing through the ATS Message Handling System (AMHS), allowing access to weather messages via more than one channel.

3.9 The most recent version of the IWXXM protocol, approved by ICAO, is the version 2021-2, which includes amendments 79 and 80 to ICAO Annex 3, of which the following stands out:

- a) inclusion of two new message types (WAFS SIGWX and Meteorological Features);
- b) adaptations of the existing basic types in version IWXXM 3.0 (METAR, SPECI, TAF, SIGMET, AIRMET, SWX, VAA and TCA).

3.10 Thus, the OPMET database must be suitable so that it can receive, process, validate and store new messages (WAFSSigwx and Meteorological Feature), in addition to reevaluating the validations of the basic types (METAR, SPECI, TAF, SIGMET, AIRMET, SWX, VAA and TCA).

3.11 In 2024, DECEA began the process of updating the new versions of the IWXXM protocol, 2021-2 and 2023-1, in compliance with the provisions of amendments 79 and 80, which this update is expected to be in operation in the second half of 2025.

IWXXM	METAR /SPECI	TAF	SIGMET	AIRMET	TCA	VAA	SWA	SIGWX	Requisito Anexo 3
2021-2	3.1.0	3.0.1	4.0.0	3.1.0	3.1.0	3.1.0	3.0.1	1.0.0	Amd 79 + Amd 80
2023-1	3.1.0	3.0.1	4.0.1	3.1.1	3.1.0	3.1.0	3.0.1	1.1.0	Amd 79 + Amd 80

Table 2 - Versions of IWXXM that will be implemented in the third OPMET update.

3.12 Therefore, updating OPMET, aiming for compatibility with the latest version of ICAO's IWXXM protocol, will guarantee the system's compliance with established international standards, ensuring that OPMET maintains its performance and efficiency.

3.13 Finally, Brazil remains available to carry out tests for the exchange of messages in IWXXM format via AMHS, as well as tests via webservice.

4. ACTION SUGGESTED

4.1 The Meeting is invited to:

- a) take note of the activities made in Brazil; and
- b) analyze other considerations that the Meeting estimate relevant.

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