



ICAO

International Civil Aviation Organization

Fifteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/15)

Bangkok, Thailand, 28 April – 02 May 2025

Agenda Item 6: Regional ATFM Framework, A-CDM Plan and related Guidance Material

Update On FIXM V4.3 Extension Development for Asia/Pacific Region

(Presented by Hong Kong China, Singapore, and Thailand)

SUMMARY

This paper presents the update on FIXM version 4.3 Extension development to support cross-border ATFM operation, A-CDM, ATFM/A-CDM integration, and traffic synchronization in the Asia/Pacific region. This effort aims to ensure the readiness of FIXM Extension in alignment with *Conclusion APANPIRG/35/4* which agreed on the adoption of FIXM version 4.3 as the standard format for the region.

1. INTRODUCTION

1.1 It was specified in the Asia/Pacific Regional Framework for Collaborative Air Traffic Flow Management (ATFM), version 4 (October 2022), developed by the Asia/Pacific ATFM Steering Group (ATFM SG) that FIXM (Flight Information Exchange Model) version 4.2 (or later), extended where necessary to accommodate additional requirements, was the agreed ATFM information exchange model for exchanging ATFM data between ATFM systems in the Asia/Pacific region from 2025 and onwards.

1.2 Under its Terms of Reference (TOR), the Asia/Pacific SWIM Task Force (SWIM TF) is required to support APANPIRG Working Groups and Task Forces regarding information exchange models and examine if any extension to the existing information exchange models, i.e. AIXM (Aeronautical Information Exchange Model), FIXM, and IWXXM (ICAO Meteorological Information Exchange Model), and/or the new information exchange model(s) are required for the Asia/Pacific regional operational requirements.

1.3 To support cross-border ATFM operation and ATFM/A-CDM integration, the Asia/Pacific FIXM version 4.1 Extension was developed through collaboration between ATFM SG and SWIM TF. In November 2019, APANPIRG/30 adopted this Extension through *Conclusion APANPIRG/30/12* for use by States/Administrations in the region. Following the release of FIXM version 4.2 in February 2021, the Asia/Pacific Extension was updated accordingly. This update not only retained the original data attributes but also incorporated additional elements required to support A-CDM and traffic synchronization. APANPIRG/34 through *Conclusion APANPIRG/34/9* reaffirmed the adoption of FIXM version 4.2 Extension as the regional standard in December 2023.

1.4 With the advent of Flight and Flow Information for a Collaborative Environment (FF-ICE) Release 1 (FF-ICE/R1), and following the recommendation by the ICAO ATM Requirements and Performance Panel (ATMRPP) on the use of FIXM version 4.3, APANPIRG/35 agreed on *Conclusion APANPIRG/35/4* to adopt FIXM version 4.3 as the standard format for FF-ICE/R1 services implementation and cross-border ATFM operation in the Asia/Pacific region from Q3/2026.

2. DISCUSSION

2.1 In line with *Conclusion APANPIRG/35/4* and to ensure the readiness of FIXM Extension, the Technical Sub-Group (TSG) of the Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), in collaboration with members of SWIM TF, examined the feasibility of using FIXM version 4.3 Core to support cross-border ATFM operation, A-CDM, ATFM/A-CDM integration, and traffic synchronization. It was found that FIXM version 4.3 Core can support the exchange of certain data attributes originally included in the Asia/Pacific FIXM version 4.1 Extension. Specifically, it was considered that FIXM version 4.3 Core can be used for exchange of Calculated Take-Off Time (CTOT), Calculated Time Over (CTO), and Calculated Landing Time (CLDT).

2.2 Insights from the surveillance data sharing over SWIM technical trial conducted in May 2024 revealed that alternative data formats, e.g. JSON, would be more efficient in terms of the network bandwidth for exchanging such bandwidth-intensive information over SWIM. As a result, it was decided that trajectory and aircraft track data attributes previously included in the Asia/Pacific FIXM version 4.2 Extension would be removed from the subsequent version of the Extension.

2.3 Meanwhile, to facilitate a smooth transition from the use of ADEXP Slot Allocation Message (SAM), Slot Revision Message (SRM), and Slot Cancellation Message (SLC) over AFTN/AMHS to ATFM information exchange over SWIM, mandatory data fields and some optional fields currently in use in SAM/SRM/SLC were identified for inclusion in the FIXM version 4.3 Extension. The list of data attributes to be included in the regional FIXM version 4.3 Extension is provided in Appendix A.

2.4 Technical validation of FIXM version 4.3 Extension is planned to be conducted among TSG members by April 2025. Upon successful validation, the Extension will be proposed for adoption by SWIM TF at its 10th meeting in May 2025.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review a set of data attributes included in the FIXM version 4.3 Extension as shown in **Appendix A**; and
- c) discuss any relevant matters as appropriate.

Appendix A

FIXM version 4.3 Extension Data Attributes

Data Attribute	FIXM version 4.3
EOBT (Estimated Off-Block Time)	Core
ETO (Estimated Time Over)	Core
ELDT (Estimated Landing Time)	Core
EIBT (Estimated In-Block Time)	Core
CTOT (Calculated Take-Off Time)	Core
CTO (Calculated Time Over)	Core
CLDT (Calculated Landing Time)	Core
TOBT (Target Off-Block Time)	Extension
TSAT (Target Start-up Approval Time)	Extension
TTOT (Target Take-Off Time)	Extension
TTO (Target Time Over)	Extension
TIBT (Target In-Block Time)	Extension
AOBT (Actual Off-Block Time)	Extension
ATO (Actual Time Over)	Extension
AIBT (Actual In-Block Time)	Extension
Taxi time*	Extension
REGUL* (designation of the ATFM measure affecting the flight)	Extension
REGCAUSE* (reason for the ATFM measure)	Extension
REASON* (reason to explain an action by ATFM personnel, e.g. rejection, cancellation)	Extension
COMMENT* (additional information for ATFM purpose)	Extension

**For more information, refer to Asia/Pacific Regional AFTN/AMHS-based Interface Control Documents for Air Traffic Flow Management, latest version*