International Civil Aviation Organization

Twelfth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/12)

Video Teleconference, 13 – 16 September 2022

Agenda Item 4: Review of Current CDM/ATFM Operations and Problem Areas

PROGRESS FOR ATFM AND A-CDM INTEGRATION IN JAPAN

(Presented by JAPAN)

SUMMARY

This paper presents the efforts of establishment of ATFM and A-CDM, and the current situation of integration ATFM and A-CDM in Japan and the future plan.

1. INTRODUCTION

1.1 Japan has introduced A-CDM into New Chitose, Narita and Haneda Airport in order to encourage overall optimization for operation, including ground traffic, by collaborating with relevant stakeholders such as airport operator, airline operator, ground handing service provider, ANSP including ATFM unit and so on, by utilizing the each resource.

1.2 The framework of the information sharing, one of common elements of A-CDM, has been developed by constructing the information exchange platform through the working group with stakeholders under the leadership of airport operators.

1.3 Also TSAT, one of common elements of A-CDM, has been calculated by ATC system using TOBT provided by the aircraft operators and CTOT calculated by the ATFM system.

1.4 On the other hand, ATMC as an ATFM unit has provided GDP for domestic flights inbound to Haneda and Narita airport that are major airport of Japan as well as APAC region.

2. DISCUSSION

Realization of ATC systems and ATFM systems integration

2.1 ATFM and A-CDM services have been provided separately in Japan. However, we understand the importance and benefits of ATFM and A-CDM as advocated in ASBU ACDM B/02 and Doc 9971.

2.2 Previously, in Japan, the ATC system was linked to the A-CDM information exchange platform and exchanged some information with A-CDM, including TOBT provided by the aircraft operators and ELDT calculated by the ATC system. Additionally, A-CDM and CTOT calculated by the ATFM system were communicated with using the ATC system.

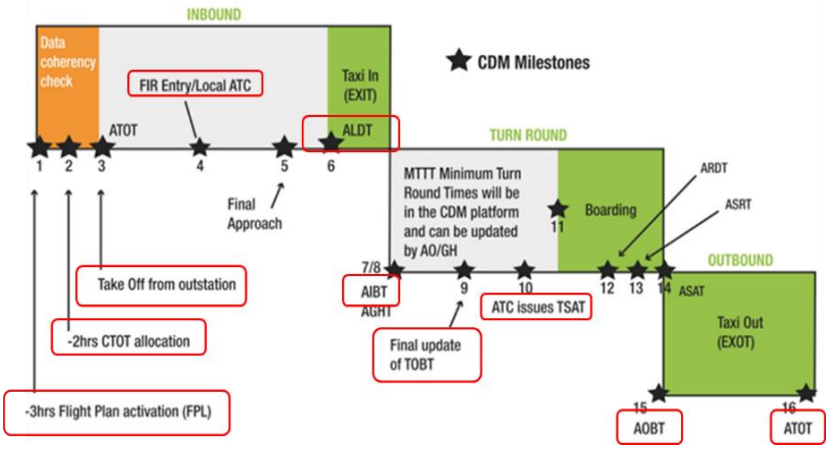
2.3 Recently all ATC systems for the airports, en-route and the oceanic airspace, including ATFM system were overall renewed in Japan and replaced with the architecture that updates and references on the same database. This renewal greatly improved integration of ATC systems and ATFM system.

2.4 By enabling each system update real-time in-flight information, whether around the airport, en-route, or the oceanic area, the database will obtain those information in the overall Fukuoka FIR, which may therefore be utilized by all relevant systems.

Future of ATFM and A-CDM integration

2.5 In this renewal, the ATFM system was linked to the A-CDM information exchange platform instead of using the ATC system. Furthermore, the information updated by A-CDM such as TOBT is now effectively referred to by all systems, not just one.

2.6 Also the integrated database have become to be updated not only by A-CDM but also by the input to the other systems or the automatically detection by the sensor data. The milestone marked with red in Figure 1 indicated the item that can currently be updated in the database.



2.7 In the future, ATFM and A-CDM will be linked by sharing ELDT, CTOT, and so on, which will improve accuracy by adding new items at each A-CDM milestone. The integration of AMAN and DMAN, and the linkage of ATFM and AMAN will be the challenges, but ATC and ATFM integration would be great benefit for considering these challenges.

2.8 On the other hand, the States/Administrations of APAC region have been working on implementation of cross-border ATFM. And Japan has considered CTO and CTOT operations with neighborhood FIRs.

2.9 Furthermore, the scope for ATFM and A-CDM integration will be expanded to the APAC region by the sharing CTOT exchanged with the neighborhood FIRs, including those calculated using CTO to domestic A-CDM. Additionally, there is a possibility to improve the accuracy of the information at each milestone for the long range flights exchanging the information with neighborhood FIRs earlier, such as “FIR Entry”.

2.10 Implementing ATFM and A-CDM integration will reduce congestion not only in flight but also on the ground, and since the APAC sub region group has established cross-border ATFM as mentioned earlier, the implementation of domestic ATFM and A-CDM integration by each States/Administrations will lead to region-wide ATFM and A-CDM integration, which would also contribute CO2 emission.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) note that ATFM and A-CDM integration enable to optimize traffic flow in APAC region as well as each FIR.

c) discuss any relevant matters as appropriate.

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