International Civil Aviation Organization

Thirteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/13)

Bangkok, Thailand, 03 – 07 April 2023

Agenda Item 5: A-CDM Operations and A-CDM/ATFM Integration

A-CDM OPERATION 2ND PHASE PLAN IN RKSI

(Presented by the Republic of Korea)

SUMMARY

This paper presents the operation and advancement plan of A-CDM in Incheon International Airport, regarding interoperation development of the Departure Manager (DMAN)

1. INTRODUCTION

1.1 Airport Collaborative Decision Making (A-CDM) is a set of processes that developed from the general philosophy of Collaborative Decision Making(CDM) in Air Traffic Flow Management (ATFM) based on ICAO Aviation System Block Upgrade (ASBU).

1.2 The Operations of Incheon A-CDM are planned to be divided into 3 phases. In December 2017, Incheon International Airport started the first phase of A-CDM to optimize airport operations and make decisions in a collaborative environment by sharing information with all stakeholders.

1.3 Incheon International Airport plans to start the 2nd A-CDM operation phase according to the Departure Manager (DMAN) development plan. The main goal of the second phase is to share TTOT/TSAT 30 minutes prior to TOBT, including de-icing and anti-icing aircraft.

2. DISCUSSION

A-CDM Operation Plan in RKSI

2.1 The Operations of Incheon A-CDM are planned to be divided into three phases as follows:

a) Phase 1 Operations (Dec.2017 – May.2023): Share basic milestones with stakeholders via A-CDM and implement system stabilization.

- TOBT is automatically generated by the system and airlines can update it manually.
- Tower manually provides TSAT for regulated flights.

b) Phase 2 Operation (May.2023 – 2025): Improve TTOT/TSAT by upgrading the Departure Manager (DMAN) and expand the scope of TTOT/TSAT to cover de-icing/anti-icing aircraft.

- Airlines should manually update (or confirm) TOBT 40 minutes prior to EOBT to retain TTOT/TSAT accuracy.

- The Departure Manager (DMAN) will automatically calculate TTOT/TSAT utilizing manually updated TOBT and share those milestones 30 minutes prior to TOBT.

- In the winter season, the Departure Manager (DMAN) calculates TTOT/TSAT considering Estimated Pad In/Out Time (EPIT/EPOT).

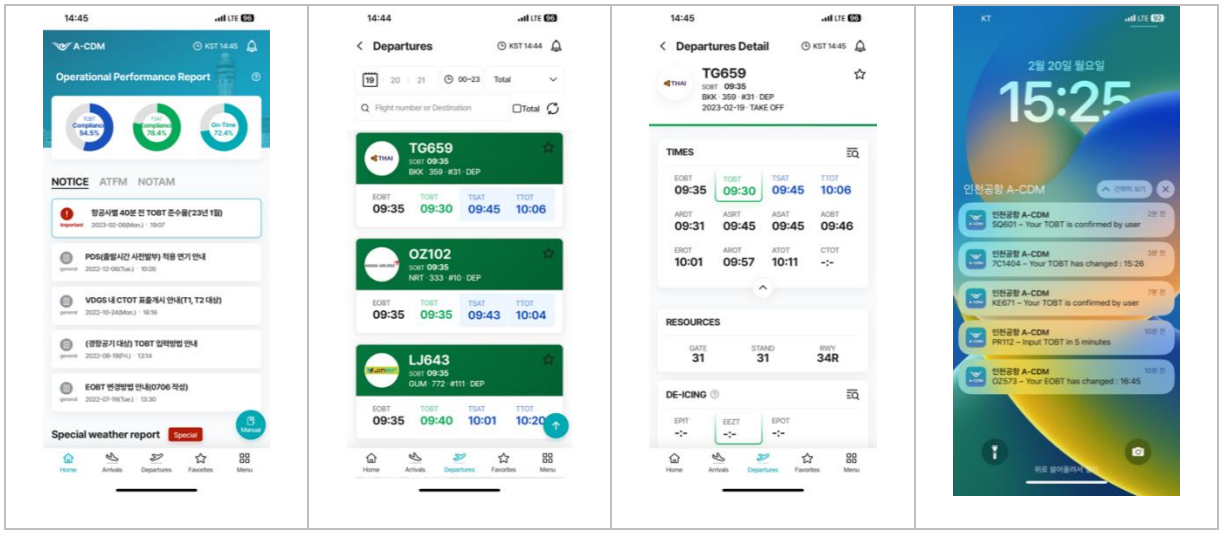
c) Phase 3 Operation (2025): Automate A-CDM by using cutting-edge technologies, such as artificial intelligence (AI), and enhance the quality of information mutually shared with the ATFM Center.

2.2 Incheon International Airport started the initial operation of A-CDM in 2017. The A-CDM enables airport operation optimization and collaborative decision-making by sharing information between all stakeholders. Furthermore, it enables us to respond to the increasing traffic growth, efficiently utilize limited resources and reduce arrival and departure delays. According to the result of A-CDM operations from 2018 to 2019 (before the Covid-19 pandemic), the average TOBT compliance rate rose from 68.1% to 76.2%, and the TSAT compliance rate increased from 64.8% to 81.1%.

2.3 As the pandemic is coming to an end, Incheon International Airport is now preparing for the 2nd phase of A-CDM operation in accordance with the Departure Manager (DMAN) development schedule. The main goal is to share Target Take Off Time (TTOT) and Target Start-up Approval Time (TSAT) that are automatically calculated via DMAN 30 minutes before TOBT based on TOBT entered by AO. During the first phase, TOBT input was made as needed, but from the second phase of operation, all departure flights from RKSI have to input (or confirm) TOBT to ensure Target Take Off Time (TTOT) accuracy.

2.4 In addition, during the first phase, the winter-season operation of A-CDM was restricted due to the failure to get an estimated time of de-icing. From the second phase, however, since the Estimated Pad In Time (EPIT) is managed via A-CDM, TSAT can be issued considering de-icing and anti-icing. Target Take Off Time (TTOT) will be shared with partners taking Estimated Pad Out Time (EPOT) into account.

2.5 Prior to the second phase, in June 2022, the mobile service provided in 2019 was converted to an A-CDM mobile application. Users are notified of milestone changes through push notifications, enabling immediate response, and daily flight performance, such as TOBT compliance rate and punctuality of each airline, is shared as well.



[Mobile A-CDM Application in RKSI]

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the information contained in this paper; and

b) Discuss any relevant matters as appropriate.

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