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AIP
Supplement 79/25
18 SEP 2025

GEN : NIL

ENR : NIL

A D : SEOUL/Incheon INTL(RKSI)

INCHEON INTL AIRPORT A-CDM TRIAL OPERATION FOR PHASE 2

1. INTRODUCTION

- (1) A-CDM is a process that allows air traffic controllers, airport operators, aircraft operators(AO), ground handling agents(GHA), pilots and air traffic flow managers to exchange operational information and work together to efficiently manage operations at aerodrome. A-CDM involves sharing of accurate and timely information amongst airport partners through airport systems and implementing a set of operational procedures and automated processes.
- (2) During A-CDM phase 1 trial operation, flights subject to A-CDM pre-departure sequencing were limited to ATFM regulated flights due to limited pre-departure sequencer(departure manager) function.
- (3) Pre-departure sequencer(departure manager) has been upgraded to implement pre-departure sequence to all departure flights, and hence A-CDM phase 2 trial operation will be implemented based on Incheon INTL A-CDM implementation plan.
- (4) The phase 2 trial operation will be introduced in 3 progressive steps to allow all airport partners to be involved an opportunity to review and refine their workflow process and relevant hardware system, especially pre-departure sequencer, prior to actual implementation.
- (5) The purpose of this AIP supplement is to provide information on the Incheon A-CDM system and operational procedures, and to detail the timings of the planned Incheon A-CDM trial operation for phase 2 and the required actions by pilots, aircraft operators(AO) and ground handling agents(GHA).

2. A-CDM PHASE 2 TRIAL OPERATION PROGRESSIVE STEPS

- (1) STEP 1 - From 1600 UTC 29 JUN 2022 To 1600 UTC 29 JUN 2023
 - a. Aircraft operators(AO) and ground handling agents(GHA) are required to access Incheon A-CDM system and input manual TOBT based on A-CDM pre-departure procedures paragraphs 3.(1) to 3.(2) below.
- (2) STEP 2 - From 1600 UTC 29 JUN 2022 To 1700 UTC 13 NOV 2025
 - a. Aircraft operators(AO) and ground handling agents(GHA) are required to access Incheon A-CDM system and input manual TOBT based on A-CDM pre-departure procedures paragraphs 3.(1) to 3.(2) below.
 - b. Pre-departure sequencer will be installed in ATC system and Site-Acceptance-Test will be done.
 - c. ATC will validate TTOT/TSAT calculation accuracy and check ATC HMI function using actual TOBT.
 - d. ATC can issue TSAT to departure flights only in a specific time zone based on A-CDM pre-departure procedures paragraphs below.
 - e. If ATC issues TSAT to all departure flights, the specific time zone will be noticed to aircraft operator(AO) and ground handling agents(GHA) through the following channels :
 - (a) A-CDM portal system; and
 - (b) Automatic Terminal Information Service(ATIS)
 - f. AO, GHA and pilot shall comply with TSAT and A-CDM pre-departure procedures paragraphs below.

(3) STEP 3 - From 1700 UTC 13 NOV 2025 To 1600 UTC 8 JAN 2026

- a. Aircraft operators(AO) and ground handling agents(GHA) are required to access Incheon A-CDM system and input manual TOBT based on A-CDM pre-departure procedures paragraphs below.
- b. ATC will issue TSAT to all departure flights based on A-CDM pre-departure procedures paragraphs below.
- c. AO, GHA and pilot shall comply with TSAT and A-CDM pre-departure procedures paragraphs below.
- d. Airport performance indicator(TOBT accuracy, TSAT compliance and departure punctuality, etc.) will be monitored.

3. A-CDM PRE-DEPARTURE SEQUENCE PROCEDURES

(1) Flight plan discrepancy check

- a. In order to receive TSAT, flight data in Airport Operational Database(AODB) and ATC flight plan shall be identical. AO are required to manage flight data identical in those two system.

Note - Call-sign, EOBT, DOF, ADES, ADEP items are used to match TOBT message with ATC flight plan in pre-departure sequencer.

(2) Target Off-Block Time(TOBT)

- a. Incheon INTL Airport A-CDM portal system will automatically calculate system TOBT for each departure flight taking into account the Estimated In-Block Time/Actual In-Block Time(EIBT/AIBT), Minimum Turnaround Time(MTTT) and Estimated Off Block Time(EOBT). AO or GHA may refer this system generated TOBT when input TOBT.

Note - System generated TOBT is not applied to pre-departure sequencing for calculating TSAT.

- b. AO or GHA are required to confirm or update the system generated TOBT from 90 minutes to 40 minutes prior to TOBT. TOBT which is confirmed or updated will be applied to pre-departure sequencing to calculate TSAT.
- c. If the prediction of departure readiness(new TOBT) differs more than 5 minutes(plus or minus) from the previous TOBT, AO or GHA shall update TOBT.
- d. TOBT shall not deviate from EOBT by more than 15 minutes. If TOBT deviates from EOBT by more than 15 minutes, AO has to initiate an delay/change message. When EOBT is modified, TOBT is automatically modified to the value of EOBT. Even if when EOBT is modified, TOBT which is confirmed by AO or GHA will be remained.
- e. TOBT can be corrected as often as required up until the time the TSAT is issued(30 minutes prior to TOBT).
- f. The accuracy of TOBT is vital to an optimal TSAT. Thus AO or GHA are strongly encouraged to update TOBT as soon as any expected delay to the aircraft readiness for push-back is made available to avoid unnecessary hold-ups.
- g. After TSAT has been issued, TOBT may be corrected up to three times for stable TSAT operation. For the forth time update, TOBT has to be deleted and a new one has to be entered.
In this case, TSAT may be delayed as TSAT slot is lost in pre-departure sequencing list.
- h. If AO wants to delay the passenger boarding start time due to gap between TOBT and TSAT caused by CTOT, traffic congestion, etc., TOBT has to be updated with the latest time.
- i. If it is impossible to take-off due to RVR minima or adverse weather condition, unable to predict the ground handling time, etc., TOBT must be deleted or updated with delayed time. And TOBT must be re-submitted whenever aircraft ready is predictable.
- j. TOBT shall be updated through the following channels :
 - (a) A-CDM portal and mobile APP; or
 - (b) Flight Information Assistant(FIA) at PBB boarding rooms
 - (c) A-CDM Operation Center (TEL : +82-32-741-2854)

- k. TOBT information is available through the following channels :
 - (a) A-CDM portal and mobile APP; or
 - (b) Flight Information Assistant(FIA) at PBB boarding rooms; or
 - (c) Visual Docking Guidance System(VDGS); or
 - (d) Radio communication with AO or GHA
- l. AO or GHA are required to provide TOBT to pilot in case VDGS is unserviceable or in cargo apron/ remote stand.

(3) Target Start-up Approval Time(TSAT) - without de-icing

- a. Pilot shall ensure aircraft is ready for push-back within 5 minutes of TOBT. If it is expected to differ by 5 minutes or more, pilot shall notify the AO or GHA to update TOBT.
- b. TSAT will be issued at TOBT -30 minutes.
- c. If the operation situation changes, departure manager(D-MAN) can update the TSAT already issued. AO or GHA has to monitor TSAT continuously before Actual Off-Block Time(AOBT).
- d. If TSAT is not issued at TOBT -30 minutes, AO or GHA has to take measures to make flight plan data of A-CDM portal system and ATC system identical.
- e. If TSAT cannot be complied with because the new TOBT is updated later than TSAT, new TSAT will be issued.
- f. If new TOBT is earlier than TSAT, TSAT may be improved only when free TSAT is available not affecting other flights TSAT.
- g. TSAT information is available through the following channels :
 - (a) A-CDM portal system; or
 - (b) Flight Information Assistant(FIA) at PBB boarding rooms; or
 - (c) Visual Docking Guidance System(VDGS); or
 - (d) Radio communication with GHA or AO; or
 - (e) Incheon Apron(In case VDGS is unserviceable)
- h. AO or GHA are required to provide TSAT to pilot in case VDGS is unserviceable or in cargo apron/ remote stand.

(4) Target Start-up Approval Time(TSAT) - regulated flight

- a. If a flight applied with CTOT is expected to be unable to comply with CTOT or TSAT due to AO or GHA internal issue, AO or GHA are required to consult with ATCC to get a new CTOT.
- b. If a flight applied with CTOT is expected to be unable to comply with CTOT or TSAT due to ATC issue, ATC will update TTOT/TSAT with new CTOT through consultation with ATCC.
- c. When a flight applied with CTOT cannot comply with TSAT but can comply with CTOT, pilot shall notify ATC of this situation. In this case, the estimated push-back time may be notified specifically.
Note - When D-MAN receives CTOT, D-MAN calculates TSAT without considering TOBT.
For this reason, TSAT may be earlier than TOBT.
- d. When TSAT is issued by ATC not by D-MAN, TSAT may be earlier time than TOBT or may not be updated as TOBT updated. AO or pilot are required to notify ATC in the following cases :
 - (a) If TSAT cannot be complied with due to TSAT earlier than TOBT.
 - (b) If TSAT is not updated even though updating TOBT later than TSAT.

(5) ATC clearance, start-up and push-back procedures

- a. Pilot shall request ATC clearance from Incheon Delivery via RTF or DCL within TOBT -10 minutes to +5 minutes. If pilot do not request ATC clearance by TOBT +5 minutes, ATC will cancel TOBT and TSAT will be canceled. AO or GHA shall re-enter TOBT to receive TSAT.
- b. Pilot shall request push-back from Incheon Apron within TSAT $\pm$ 5 minutes. If pilot do not request push-back by TSAT +5 minutes, ATC will cancel TOBT and TSAT will be cancelled. AO or GHA shall re-enter TOBT to receive TSAT.
- c. Taxi clearance must be requested at roll-out positions by TSAT +10 minutes.

(6) De-icing and A-CDM

- a. Incheon INTL Airport starts to implement trial operation for the de-icing milestones in A-CDM program with D-MAN, indicating start/end times and duration of de-icing from winter 2024/2025.
- b. If de-icing is required, AO or GHA has to request de-icing 40 minutes prior to TOBT through A-CDM portal system or mobile APP. As soon as the request for de-icing is received, Incheon De-icing will allocate remote de-icing zone. The pilot shall ensure aircraft is ready for push-back at TOBT. If pilot does not request push-back for de-icing within 5 minutes of TOBT, the order of pre-assigned de-icing can be changed.
- c. Whenever a flight has been flagged for de-icing, TSAT will be generated based on Estimated de-icing Pad In Time(EPIT) taking into account the taxi time to the pad + a standard queueing time. During trial operation for the de-icing milestones(2024/2025), airport operator will validate TSAT for de-icing milestones' accuracy, so TSAT will be not shared to stakeholders through channels (3.(3).g).
- d. Estimated End of De-icing Time(EEZT) is a calculated element, derived from Estimated Commence of De-icing Time(ECZT) + Estimated De-icing Time(EDIT). An update of EEZT is needed by GHA after the Actual de-icing Pad In Time(APIT) occurs with Integrated Information System(IIS) or mobile APP.
- e. (Engine Off) Once de-icing is completed, contact Incheon Delivery to get ATC clearance.
Report "Engine off de-icing and de-icing completed."
(Engine On) Once de-icing is started, contact Incheon Delivery to get ATC clearance.
Report "Engine on de-icing and de-icing started."
- f. Cancellation of de-icing request is possible through the following channels :
 - (a) A-CDM portal and mobile app; or
 - (b) Communication with the pilot and Incheon De-icing
- g. The general de-icing procedures at Incheon INTL Airport are described in detail in AIP "AD 2-22-3 4. de-icing operations".

(7) Non A-CDM procedures

- a. The non A-CDM procedures are applicable when A-CDM can not be operated normally due to system issue or maintenance as follows.
 - (a) If AO or GHA is unable to submit TOBT in any channels;
 - (b) If departure manager(D-MAN) and Integrated Information System(IIS) can not exchange TOBT and TSAT due to IIS system issues;
 - (c) If departure manager(D-MAN) has system issues;
 - (d) When switching from D-MAN main system to a back-up system.
- b. Except paragraph 3.(6).a above, even if non A-CDM procedures are being applied, when it is available to input TOBT, AO or GHA are required to enter TOBT continuously for prompt transition to normal operation.
- c. When non A-CDM mode, the following procedures are applied for requesting ATC clearance and push-back.
 - (a) ATC clearance can be requested via voice RTF or Data-link Departure Clearance Service(DCL) from EOBT -10 minutes.
 - (b) The sequence of departure of take-off is determined by ATC.
 - (c) If a flight is unable to commence push-back within 10 minutes after receiving ATC clearance due to the aircraft being unready, ATC clearance and TSAT will be cancelled.

(8) A-CDM contact and information

- a. Detailed information on A-CDM processes at Incheon INTL Airport can be found at <https://www.airport.kr>.
- b. Please email the A-CDM operation center at a-cdm@biz.airport.kr for application of A-CDM or mobile TOBT account if you have any queries.

4. REMARKS

- (1) During trial operation for phase 2, TSAT will be provided to all departure flights only when departure manager(D-MAN) system operates normally.
- (2) Only TOBT which is confirmed or updated by AO or GHA will be applied to pre-departure sequencing for calculating TSAT.
- (3) Any change to the contents of these pages will be notified by NOTAM or AIP.

(AIP SUP 68/25 is hereby superseded)