Incheon A-CDM Operation Manual

Incheon International Airport

Log of Revision

NO.	Date applicable	Based on	Main Contents of Amendments	Remarks
Rev.0	Nov 30 2017	IIAC, Aerodrome Operations Group-4792	Establishment of A-CDM Operation Manual	
Rev.1	May 28 2018	IIAC, Aerodrome Operations Group-1688	- Inserted Log of Revision - Reflected ATCC COBT - Modified Milestones(inserted SOBT) - Modified the automatic TOBT generation standard(considering massive delay) - Added VDGS introduction and features - Unified TSAT vocabularies (System TSAT/Tower TSAT) - Reflected system update and modified other phrases	
Rev.2	Nov 8 2018		- Change Milestones Time	

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Chapter 1 General

1.1 Purpose

This manual is to help users to understand Airport-Collaborative Decision Making (A-CDM) developed to utilize limited resources effectively and to support efficient flight operation in response to the increasing demand for air traffic. It is aimed at sharing flight operation and resource information of the Incheon International Airport with air traffic controllers, Airport Corporation, aircraft operators, ground handlers and other collaborative partners and enabling efficient decision-making and rapid response by using A-CDM portal system and other associated systems in an effective manner.

1.2 Scope of Application

This manual is applicable to Seoul Regional Office of Aviation, Incheon International Airport Corporation, aircraft operators, ground handlers, etc.

1.3 Relevant Rationale and International Standards

1.3.1 Domestic Rationale

_____(Notification of the Ministry of Land, Transport and Maritime Affairs)

1.3.2 International Rationale and Standards

1. ICAO, Aviation System Block Upgrade (ASBU)
2. ICAO, DOC 9971 (Manual on Collaborative Air Traffic Flow Management)
3. Eurocontrol, Manual (Airport CDM Implementation Ver.5)

1.4 Definitions

Terms and abbreviations used in this Manual are defined as follows:

ATFMS	**Air Traffic Flow Management System** is used by the Air Traffic Command Center and provides CTOT/COBT and FIR time information.
DMAN	**Departure Manager** is a planning system to improve the departure flows at an airport by calculating the Target Take Off Time (TTOT) and Target Start up Approval Time (TSAT) for each flight, taking multiple constraints and preferences into account
FIA	**Flight Information Assistant** is a system that enables aircraft operator and ground handler to enter gate opening, passenger boarding, final call, etc. in front of the gate. It enables TOBT input.
Turn Around	**Turn-Around** refers to a series of processes starting from the time an aircraft arrives at Incheon Airport, goes through ground handling and gets ready for departure, until the time it leaves.
Milestone	**Milestones** mean 16 reference points that affect the operation and preparations of a flight during the processes where an inbound aircraft takes off from the originating airport and arrives at Incheon Airport, and an outbound aircraft gets ready to take off from Incheon Airport. They consist of detailed time information. See <Table. A-CDM Milestone Information>
De-icing	**De-icing** is removal of frost, ice or snow piled up or formed on an import location of an aircraft surface for the purpose of the safety of an outbound flight. It is performed in a designated place equipped with de-icing equipment.
Return-to-Gate	**Return-to-Gate** means a situation in which an aircraft has to return to a parking stand after push-back or taxiing for reasons such as technical problem, weather condition, passenger disembark, etc.

The time information used in this manual consists of 39 time parameters that break down each milestone. Major information is defined as below:

< Table. Major Time Parameters of A-CDM >

Acronyms	Term	Description
ACGT	Actual Commence of Ground handling Time	The time when ground handling on an aircraft starts.
AEZT	Actual End of De-icing Time	The time when spraying of de-icing/anti-icing fluid on an aircraft and inspection are complete at the de-icing pad.
APIT	Actual de-icing Pad In Time	The time when an aircraft actually enters the pre-assigned de-icing pad for de-icing.
APOT	Actual de-icing Pad Out Time	The time when an aircraft actually exits the de-icing pad after de-icing.
ACZT	Actual Commence of De-icing Time	The time when de-icing/anti-icing fluid starts to be sprayed on an aircraft on the de-icing pad.
AIBT	Actual In Block Time	The time when an aircraft arrives in-blocks (the time when VDGS and ASDE recognize an aircraft in-blocks).
ALDT	Actual Landing Time	The time when an aircraft lands on a runway.
AOBT	Actual Off Block Time	The time when an aircraft is cleared by the Apron Control Tower and pushes back.
APP	Approach Control Unit	The time recognized by Seoul Approach Control Unit that an inbound aircraft approaches a terminal control area.
ARDT	Actual Ready Time for movement	The time when an aircraft is ready for start up on the stand. It is calculated with the time when a boarding bridge is removed from an aircraft.
ARIT	Actual Ramp In Time	The time when an aircraft approaches the apron after landing or when a pilot contacts the apron controller before approaching the apron.

Acronyms	Term	Description
AROT	Actual Ramp Out Time	The time when an aircraft enters the maneuvering area from the apron or when the apron controller transfers the frequency of an outbound aircraft to the control tower before it enters the maneuvering area.
ASAT	Actual Start Up Approval Time	The time when the Apron Control Tower gives push-back approval for an aircraft that received flight clearance so that it can depart (in case of remote spot, the time of approval for engine start-up).
ASBT	Actual Start Boarding Time	The time when an outbound aircraft starts passenger boarding.
ASRT	Actual Start Up Clearance Request Time	The time when a pilot of an outbound flight requests engine start-up or push-back for departure to the Apron Control Tower.
ATOT	Actual Take Off Time	The time when an aircraft takes off from the runway.
AXIT	Actual Taxi In Time	The time required for an inbound aircraft to move from the runway to the aircraft stand after landing.
AXOT	Actual Taxi Out Time	The time required for an outbound aircraft to taxi from the aircraft stand to the runway.
COBT	Calculated Off Block Time	The off-block time calculated and issued by the Air Traffic Command Center, taking into account the route capacity and adjusting the airport capacity.
CTOT	Calculated Take Off Time	The take-off time calculated and issued by the Air Traffic Command Center, taking into account the route capacity and adjusting the airport capacity.
EIBT	Estimated In Block Time	The estimated time when an aircraft arrives in-blocks after landing and taxiing.
EPIT	Estimated de-icing Pad In Time	The estimated time when an aircraft arrives in-blocks after landing and taxiing.

Acronyms	Term	Description
EPOT	Estimated de-icing Pad Out Time	The estimated time when an aircraft leaves the de-icing pad, factoring in the time required to move from the de-icing pad to the transfer of control point after de-icing/anti-icing.
ELDT	Estimated Landing Time	The estimated time when an aircraft will touch down on the runway. It refers to an estimated landing time automatically adjusted with AFTN, the time notified by an airline via wired communication, or a landing time calculated by the approach control radar when an inbound flight enters a terminal control area.
EOBT	Estimated Off Block Time	The estimated time at which an aircraft will start movement off-block for departure.
ERIT	Estimated Ramp In Time	The estimated time at which an aircraft will enter the apron after landing and moving to the apron.
EROT	Estimated Ramp Out Time	The time when an outbound aircraft is transferred from the Apron Control Tower to the control tower, after push-back.
ETOT	Estimated Take Off Time	The estimated take-off time from the runway, which is calculated by adding EOBT and EXOT(or VTT).
EXIT	Estimated Taxi In Time	The estimated taxi time from the runway to the gate after landing.
EXOT	Estimated Taxi Out Time	The estimated taxi time for an outbound aircraft from the gate to the runway after push-back clearance.
FIR	Flight Information Region	The time recognized by the Air Traffic Control Center when an inbound aircraft approaches the Flight Information Region of the Republic of Korea.
MTTT	Minimum Turn-round Time	The minimum turn-round time agreed with an AO/GH for a specified flight or aircraft type. It is set as the reference value for each aircraft operator or an average value of inbound/ outbound quick－turn aircraft.

Acronyms	Term	Description
SLDT	Scheduled Landing Time	Scheduled time an aircraft is expected to land on the runway, derived by an aircraft operator schedule.
SOBT	Scheduled Off Block Time	Scheduled time an aircraft is expected to depart from the parking position, derived by an aircraft operator schedule.
TOBT	Target Off Block Time	Target estimated time when an aircraft will be ready, boarding completed, all doors closed, boarding bridge removed, push-back vehicle available and the pilot ready to start up immediately upon reception of push-back clearance.
TSAT	Target Start Up Approval Time	Target estimated time that the Apron Control Tower is expected to approve push-back for an outbound aircraft (in case of remote spot, engine start-up approval time). It is calculated with TTOT generated by the control tower, on the basis of TOBT provided by an aircraft operator. However, it is restrictively issued and operated in Phase 1 Operation.
TTOT	Target Take Off Time	The control tower's target take-off time taking into account TOBT, CTOT, traffic conditions, en-route situation and altitude separation. However, it is issued and operated restrictively in Phase 1 Operation.
VTT	Variable Taxi Time	The taxi time that an aircraft spends on the ground between its parking stand to the runway, or vice versa. A-SMGCS calculates it, factoring in an aircraft's ground taxing speed.

Chapter 2 Incheon A-CDM Introduction

2.1 Overview

2.1.1 Incheon Airport A-CDM supports the decision-making based on accurate forecasting for all partners including airport operator, the Air Traffic Control Center, aircraft operator and ground handler that perform the aircraft operation at the airport and other related jobs. Furthermore, it enables users to respond to the continuously increasing demand for air traffic and utilize limited resources at the airport efficiently, thereby actively managing flight delays.

2.1.2 The success of A-CDM depends on collaboration and efforts of partners to share time information such as aircraft operation support, preparation and air traffic control, which has been managed separately by individual entity, and to predict and comply with the target time based on the shared time information.

2.1.3 Individual partners share the pre-estimated flight operation time information via A-CDM Portal System, which enables them to perform better decision-making by taking accurate measures in a timely manner. The whole process will help them to realize that they serve in the same aviation community.

2.1.4 Decision-making based on accurate forecasting is environment-friendly and also enhances the operational efficiency at the airport in that it optimizes the distribution of resources among individual partners and reduces unnecessary aircraft delay on the ground, which will reduce not only fuel costs but also carbon emissions.

2.1.5 A-CDM system takes the milestone approach that divides aircraft movement time information into milestones and manages flight arrival and departure time, taxiing, ground handling and so forth as milestone time information.

Thus, it allows for information management by systematically integrating with other systems at the airport such as the Air Traffic Service Unit, aircraft operators and ground handlers.

<Figure 2-1. Associated Systems of Incheon A-CDM>

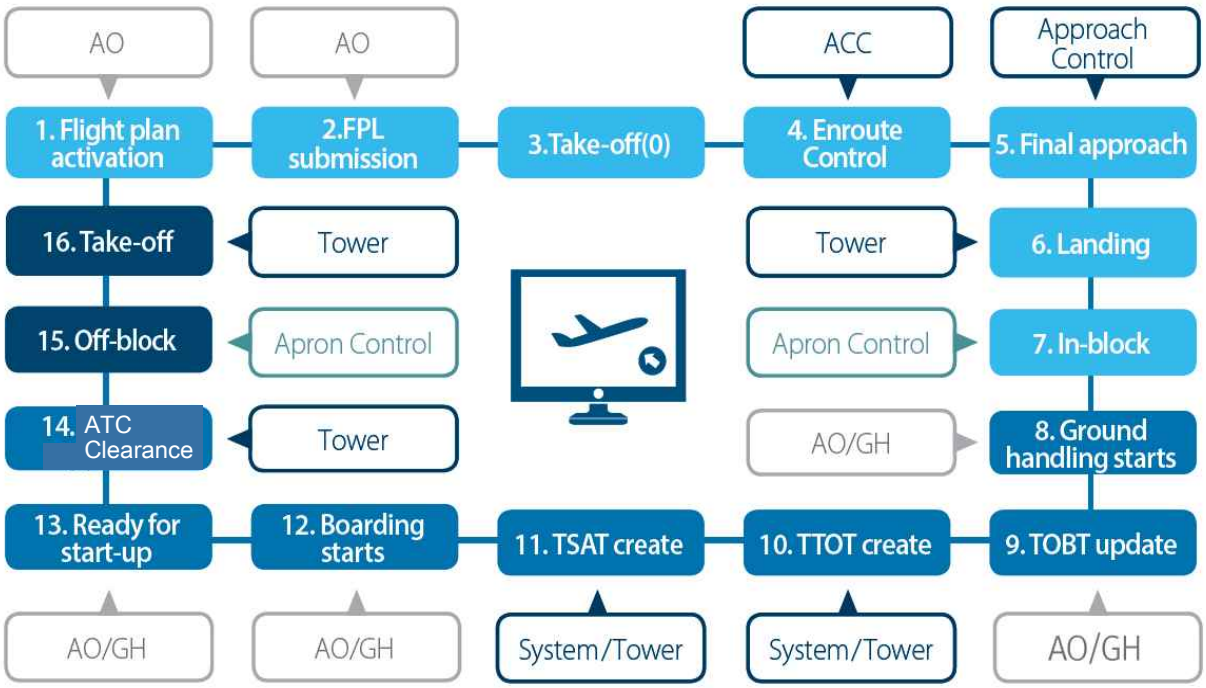
2.1.6 The operation of Incheon Airport A-CDM is planned to be divided into 3 phases as follows:

- Phase 1 Operation (Dec. 2017 - Dec. 2019): Share basic time information with partners via A-CDM and implement system stabilization
- Phase 2 Operation (Jan. 2020 - Dec. 2024): Improve TTOT/TSAT and enlarge the scope to cover de-icing/anti-icing aircraft by upgrading DMAN (Departure Manager)
- Phase 3 Operation (Jan. 2025 -): Implement automation of A-CDM by using Industry 4.0 (Artificial Intelligence) and enhance the quality of information mutually shared with the Air Traffic Control Center

2.2 Basic Procedure

2.2.1 Understanding of Milestones

2.2.1.1 Incheon Airport A-CDM defines the whole process as milestones from the moment an inbound aircraft gets ready and takes off from the originating airport toward Incheon Airport and arrives at Incheon Airport until it goes through turn-around including boarding and ground handling, becomes ready for departure and takes off from Incheon Airport.



<Figure 2-2. Incheon A-CDM Milestone and Process>

2.2.1.2 Incheon A-CDM shares essential flight operation information generated from a total of 16 milestones that cover arrival, turn-around and departure, and it also provides partners with individual event occurrence information according to the procedure. Therefore, they can make the use of the information in a timely manner, make decisions and take immediate measures based on the updated information.

2.2.2 Role of Individual Collaborative Entity

2.2.2.1 Effects of Incheon Airport A-CDM can be maximized through active cooperation among partners such as the Air Traffic Service Unit, Incheon Airport Corporation, aircraft operators and ground handlers.

2.2.2.2 **Ground handler** shares accurate information on ground handling status and progress via the associated system automatically or manually. In addition, it may enter TOBT (Target Off Block Time) for an aircraft operator that cannot directly enter TOBT into the system under a separate agreement with aircraft operator.

2.2.2.3 **Aircraft operator** shares up-to-date flight arrival/departure schedule information with partners automatically via its own system or manually via A-CDM Portal System, and monitors aircraft preparation status of ground handlers and provides partners with TOBT of outbound aircraft. However, under a separate agreement with an aircraft operator that cannot directly enter TOBT, ground handlers may enter TOBT instead of the aircraft operator.

2.2.2.4 **Control Tower** produces TTOT (Target Take Off Time) and TSAT (Target Start Up Approval Time) for an aircraft for which ATFM (agreed take-off, etc.) was issued, taking into account TOBT, CTOT, traffic conditions, en-route situation and altitude separation.

2.2.2.5 **Apron Control Tower** controls push-back clearance and taxiing of outbound aircraft, taking into account traffic conditions inside the apron, TSAT, TTOT and so forth produced by the control tower; provided, however, that if de-icing/anti-icing is performed, it shares information such as de-icing pad in/out time.

2.2.2.6 **Apron Management Unit** supports update of EOBT provided by aircraft operator as well as off-block time input, and allocates and adjusts aircraft stands according to the inbound/outbound schedule.

2.2.2.7 **Air Traffic Command Center** provides CTOT/COBT (Calculated Take Off Time/Calculated Off Block Time) for Portal system, in case CTOT/COBT is issued.

2.2.3 Procedure for Inbound Operation

2.2.3.1 Inbound milestones of Incheon Airport A-CDM consists of 7 out of a total of 16 milestones, and manages and shares 14 time parameters.

1. Flight Plan activation	EOBT-3(Dep)	3 hrs prior to the originating airport EOBT
2. Flight Plan Revision	EOBT-1(Dep)	1 hrs prior to the originating airport EOBT
3. Take-off	ATOT(Dep)	Actual Take Off Time from the originating airport
4. Approach Incheon FIR	FIR	Approach time to Incheon FIR
5. Approach Terminal control area	APP	Approach time to Terminal control area
6. Landing	SLDT/ELDT/ALDT EXIT/AXIT	Scheduled/Estimated/Actual landing time Estimated/Actual taxi in time
7. Arrival at stand	EIBT/AIBT ERIT/ARIT	Estimated/Actual in block time Estimated/Actual ramp in time

<Figure 2-3. Inbound Milestones and Time Parameters >

2.2.3.2 The inbound procedure starts with receiving and sharing departure information from the originating airport 3 hours and 1 hour prior to the off-block time of the inbound aircraft at the originating airport.

2.2.3.3 When an inbound aircraft takes off from the originating airport, the take-off time is received and shared via AFTN.

2.2.3.4 The estimated time of landing on the runway at Incheon Airport is provided as ELDT (Estimated Landing Time) when an inbound aircraft approaches Incheon Flight Information Region and Seoul Terminal Control Area in the Republic of Korea.

2.2.3.5 EIBT (Estimated In Block Time) of an inbound aircraft is calculated by adding EXIT (Estimated Taxi In Time) to the pre-assigned aircraft stand to ELDT prior to landing, and is calculated on the basis of the actual movement speed of the aircraft by using A-SMGCS system. However, EIBT does not consider a situation where an inbound aircraft stand is not open.

2.2.3.6 Therefore, an aircraft operator shall maintain correct and up-to-date information on the originating airport schedule and take-off of an inbound flight. At the same time, it shall actively maintain delayed and revised schedule of an aircraft departing Incheon Airport and share it with partners.

2.2.4 Procedure for Outbound Operation

2.2.4.1 Outbound milestones of Incheon Airport A-CDM consists of 9 out of a total of 16 milestones, and manages and shares 19 time parameters.

2.2.4.2 The outbound milestones start with the step to commence ground handling after the arrival, and estimate and automatically share TOBT of a turn-around aircraft, taking into account MTTT (Minimum Turn-round Time) and in-block time (EIBT and AIBT).

2.2.4.3 TOBT, which is the most important parameter in A-CDM, is input by aircraft operators or ground handlers from 90 minutes prior to TOBT via A-CDM Portal System or FIA system at the passenger terminal gate to be shared with partners. If TOBT deviates from the automatically calculated TOBT for 5 minutes or more, TOBT shall be revised.

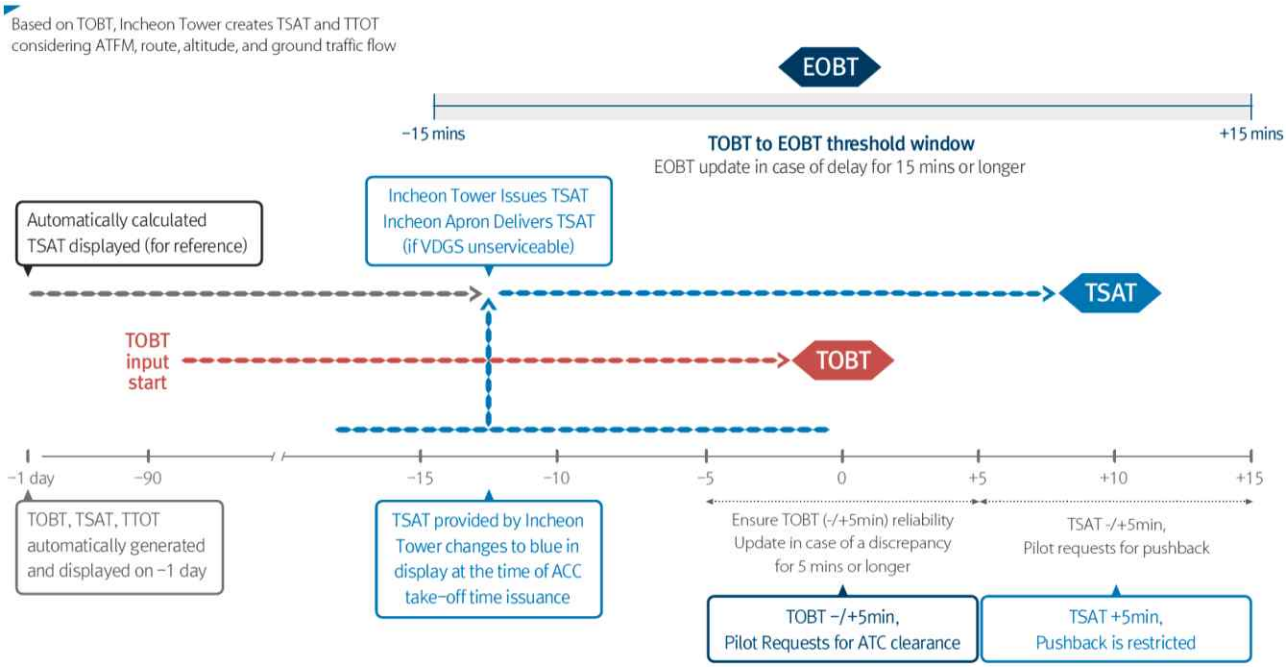
8. Ground Handling Commence	ACGT MTTT	Actual Commence of Ground handling Time Minimum Turn-round Time(each AO/average)
9. TOBT estimation	TOBT SOBT/EOBT	Target Off Block Time Scheduled/Estimated Off Block Time (ETD connected change)
10. TTOT calculation	TTOT CTOT	Target Take Off Time Calculated Take Off Time (Daegu ATCC)
11. TSAT issue	TSAT	Target Start Up Approval Time
12. Boarding	ASBT	Actual Start Boarding Time
13. Ready for start-up	ARDT ASRT	Actual Ready Time for taxing Actual Start Up Clearance Request Time
14. P/B clearance	ASAT	Actual Start Up Approval Time
15. Actual P/B	AOBT EROT/AROT	Actual Off Block Time Estimated/actual Ramp Out Time
16. Take-off	ETOT/ATOT EXOT/AXOT	Estimated/actual Take Off Time Estimated/actual Taxi Out Time

<Figure 2-4. Outbound Milestones and Time Parameters of Incheon A-CDM >

2.2.4.4 In Phase 1 Operation, TTOT is automatically calculated in A-CDM based on TOBT provided by aircraft operator and then is color-coded in black and displayed on the portal system. However, if ATFM (Air Traffic Flow Management) is issued and agreed take-off is in progress, the Control Tower provides TTOT at the time agreed with Incheon Air Traffic Control Regional Office, taking TOBT into account. This is revised and shared in blue on the portal.

2.2.4.5 In Phase 1 Operation, TSAT is automatically calculated in A-CDM based on TOBT and is displayed in black on the portal system. However, if ATFM (Air Traffic Flow Management) is issued and agreed take-off is in progress, TSAT calculated with the difference between TTOT provided by the Control Tower and EXOT (Estimated Taxi Out Time) is revised and shared in blue on the portal. The pilot can be informed of blue TSAT through VDGS (Visual Docking Guidance System) or the company frequency. At the aircraft stand without VDGS(including VDGS unserviceable stands), TSAT is provided upon request, or if needed, when contacting the Apron Control Tower after the aircraft receives a ATC clearance.

2.2.4.6 Aircraft operator can manage passenger boarding and flight departure with reference to TSAT provided by the Control Tower in blue based on ATFM (agreed take-off, etc.). Since route and weather conditions may cause sudden changes in TSAT, however, the aircraft operators shall monitor TSAT, ATFM and weather information and take a proper measure.



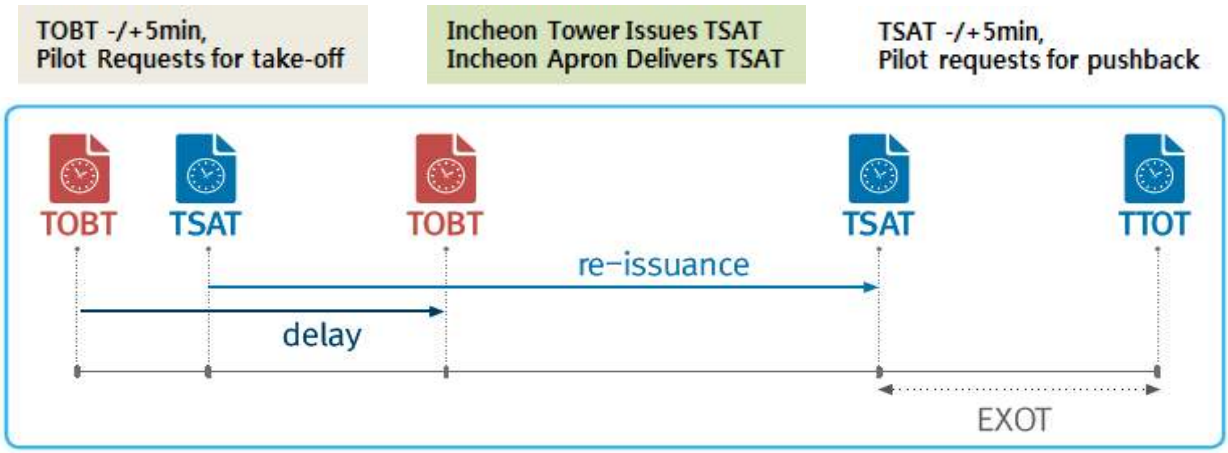
<Figure 2-5. TOBT and TSAT Flow Diagram >

2.2.4.7 If departure is delayed for internal reasons such as aircraft maintenance check, passenger, freight and ground handling, leading to a variance in TOBT of 5 minutes or more, TOBT shall be modified. If TOBT deviates from EOBT for 15 minutes or more, EOBT shall be modified, and TOBT changes to the value of EOBT.

2.2.4.8 The pilot shall request a ATC clearance to Control Tower within TOBT ±5 minutes window. However, if it is not possible due to maintenance check, etc, the pilot shall request the relevant aircraft operator or supporting ground staff of the aircraft operator to update TOBT or EOBT to ensure that a further delay caused by clearance omission is avoided.

2.2.4.9 The pilot who received TSAT keeps monitoring the Apron Control Tower frequency, and then contacts the Apron Control Tower within TSAT ±5 minutes window to request engine start-up and push-back. If he/her fails to request push-back within TSAT +5 minutes window, the flight clearance might be cancelled and TOBT(or EOBT) needs to be re-entered, and a clearance and TSAT re-issued.

2.2.4.10 The pilot without TSAT shall notify the Apron Control Tower that it is ready for departure, once the preparation is complete, and follow the instruction of the Apron Controller.



<Figure 2-6. Role of Pilot and Flow Diagram in case of Delay>

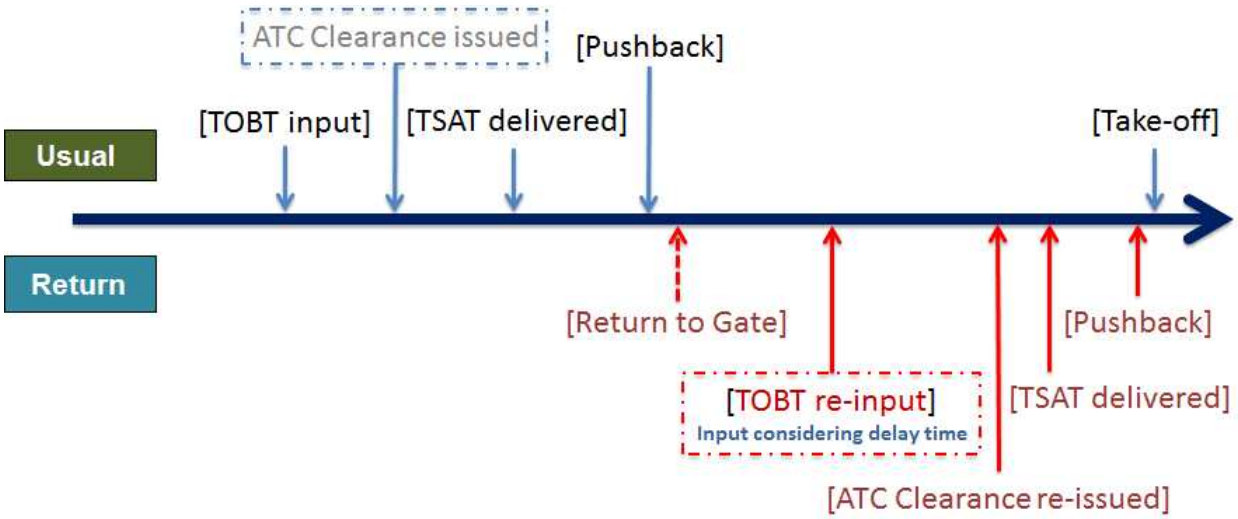
2.2.4.11 TSAT produced in accordance with ATFM (agreed take-off, etc.) is color-coded in blue and displayed on the portal system. Additionally, at the aircraft stand with VDGS (Visual Docking Guidance System), TSAT is provided via VDGS at the stand.

2.2.4.12 Partners can check ASBT (Actual Start Boarding Time), ARDT (Actual Ready Time for movement), ASRT (Actual Start Up Clearance Request Time), ASAT (Actual Start Up Approval Time), AOBT (Actual Off Block Time),

EROT (Estimated apron Out Time), ETOT (Estimated Take Off Time) and so forth, which are automatically provided via A-CDM Portal System.

2.2.4.13 ETOT is calculated by adding pre-defined EXOT to TSAT. Also, after an outbound aircraft pushes back, it is provided as the estimated time required to reach the assigned runway, which is calculated on the basis of the actual taxing speed of the aircraft from A-SMGCS. Therefore, the value may be subject to change depending on push-back, traffic and taxiing speed.

2.2.4.14 If an outbound aircraft returns to gate after push-back due to aircraft maintenance check, passenger disembark, crew member, weather condition or for other reasons, the Apron Control Tower inputs the return-to-gate event, TTOT is cancelled and the TOBT, TSAT and TTOT values of the outbound aircraft remains unchanged. Thus, aircraft operator or ground handler shall revise EOBT and TOBT to get ready for departure.



< <Figure 2-7. Return-to-gate Flow Diagram >

2.3 Major Milestones

2.3.1 TOBT (Target Off Block Time)

2.3.1.1 Definition

TOBT is the time that an Aircraft Operator or Ground Handler estimates that an aircraft will be ready, all doors closed, boarding bridge removed, push back vehicle available and ready to start up / push back immediately upon reception of clearance from the apron control tower.

2.3.1.2 Necessity

TOBT serves as basic time parameter for pre-departure management that takes into account take-off sequence of an outbound aircraft and for calculation of TSAT and TTOT. Therefore, it shall be accurately managed for the purpose of accurate pre-departure management and stable operation of A-CDM.

2.3.1.3 Automatic Generation and Update

1. TOBT of an outbound aircraft is automatically generated from one day before the flight with reference to EOBT in the flight schedule.
2. If TOBT is not manually input, TOBT is automatically updated as follows:
   - If EIBT(AIBT) of the inbound aircraft plus MTTT (Minimum Turn-round Time) is not earlier than EOBT, TOBT is updated to the calculated value.
     * MTTT is the total average value or pre-defined by aircraft operator.
   - For other outbound aircraft, the value remains the same as EOBT.
3. Aircraft operator and ground handler that operate their own systems should integrate them with A-CDM and automatically update TOBT.

2.3.1.4 Input Management

1. Aircraft operator or ground handler is responsible for generating, managing and complying with TOBT, and the responsibility for the overall management is on the relevant aircraft operator.
2. An error in TOBT impedes the overall operational efficiency. Thus, in case of any change in TOBT, it shall be updated immediately.
3. The accuracy of TOBT shall be within the range of ±5 minutes. Therefore, TOBT shall be updated in case of a variance by 5 minutes or more from automatically or manually input TOBT due to a delay caused by aircraft or ground handler including aircraft maintenance and passenger. The reliability of TOBT is separately monitored and shared.
4. If it is not possible to predict a delay for reasons attributable to aircraft operator and ground handler, EOBT shall be updated as soon as possible taking into account the estimated time of departure so that TOBT can be automatically updated.
5. A delay caused by external conditions such as en route and ground traffic is not reflected in TOBT. Thus, if the preparation for departure follows TSAT, TOBT shall not be updated.

2.3.1.5 Manual Input and Update

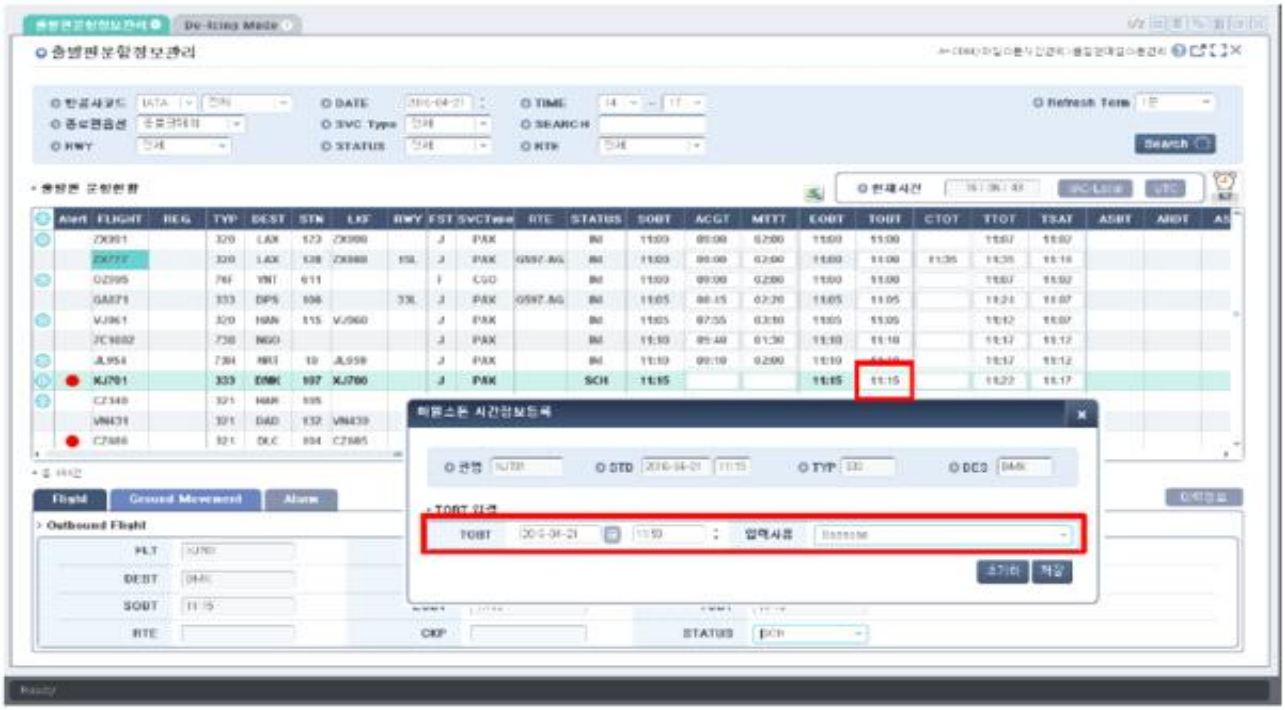
Aircraft operator and ground handler manually input or update TOBT to ensure the reliability of TOBT according to the following procedure:

1. TOBT can be manually input or updated from 90 minutes prior to EOBT and will be displayed in green color. However, EOBT can be updated before then, separately from TOBT.
2. If a variance of 5 minutes or more is expected, TOBT shall be updated to the estimated time. If a variance from EOBT of 15 minutes or more is expected, EOBT shall be updated. In case of EOBT update, TOBT is automatically updated to the value of EOBT.
3. EOBT is updated as below.
   - Through the airlines system if the there is a system interface between the systems of airlines and Incheon Airport.
   - If the request for EOBT(ETD) update is made to the Apron management Unit.

4. After manual input, TOBT is not automatically updated. However, if EOBT changes, TOBT will be automatically updated so that it equals EOBT.
5. Aircraft operator and ground handler can input and update TOBT without limitation in number of times before TSAT is color-coded in blue on the portal system. After the color code of TSAT changes to blue in the portal system, direct input by aircraft operator and ground handler is limited. Thus, new TOBT shall be notified to the Apron Management Unit for update via wired communication. Aircraft operator and ground handler can update TOBT up to three times and after the third update, they shall update and share EOBT. In case of revision, TOBT cannot be greater than TSAT, and if it is greater than TSAT, EOBT shall be modified, new TOBT shall be shared. and new TSAT shall be created by the Tower.
6. After the Control Tower produces TSAT based on ATFM (agreed take-off, etc.), TOBT is not revised on the FIA system. Therefore, if TSAT is displayed on the FIA and it is not allowed to input the value in the FIA system, delay information shall be notified to the Apron Management Unit via wired communication to update EOBT and the modified time to be reflected on TOBT.
7. If TSAT and TTOT change to blue color on the portal system, it means that the take-off sequence has been set and take-off time and the off-block time determined. Therefore, if aircraft operator cannot comply with TSAT, it shall immediately update EOBT in order to avoid further delay caused by clearance re-issuance.
8. If TOBT is later than the blue TSAT, TOBT will change to red color on the portal system

2.3.1.6 Input Tool

Aircraft operator and ground handler can input TOBT on the departure management screen of A-CDM Portal System and on the FIA system installed at the terminal gate. If the FIA system is not available, EOBT shall be notified to the Apron Management Unit via wired communication so that TOBT is updated.



< Figure 2-8. TOBT entry screen on A-CDM Portal System>

< Figure 2-9. TOBT input screen on FIA >

2.3.1.7 Display and Utilization

TOBT is displayed on PDU (Pilot Display Unit) of VDGS from 30 minutes prior to TOBT. Once the Control Tower issues TSAT with ATFM (agreed take-off, etc.), TOBT display will be terminated and TSAT will be displayed instead. At the aircraft stand without VDGS or at the aircraft stand where VDGS is under maintenance, aircraft operator can share it with the pilot by using the company frequency.

2.3.2 TSAT (Target Start-up Approval Time)

2.3.2.1 Definition

TSAT (Target Start-up Approval Time) is the estimated time when the Apron Control Tower is expected to approve engine start-up and push-back for an outbound flight. It is calculated by the Control Tower, taking into account ATFM limitations, ground movement time, runway capacity, control separation, traffic situations, etc. However, in Phase 1 Operation, TSAT is divided and shared as follows:

1. System TSAT : if there is no delay, or if delay is unpredictable, system TSAT if defined as the same value of TOBT.
2. Tower TSAT : the pushback time which reflects TWR-provided take-off time after the consultation with ACC considering ATFM.
3. TSAT reflecting COBT: defined as the same value of COBT which is provided from ATCC.

2.3.2.2 Necessity

TSAT is provided so that aircraft operator can predict push-back time in advance to manage passenger boarding and to get ready for departure efficiently.

2.3.2.3 Automatic Generation

1. System TSAT : Automatically generated TSAT refers to the time when a pilot makes preparation for departure according to TOBT, gets a ATC clearance for the flight and obtains approval for engine start-up and push-back when there is no delay. It is shared on the portal system from one day earlier, color-coded in black. However, if delay occurs due to surrounding traffic conditions and route congestion, automatically generated TSAT may be different from an actual push-back time.
2. TSAT reflecting COBT : shared as the same time of COBT which is calculated and provided from ATCC based on air tracfic flow management considering weather conditions and route congestion. However, if COBT is earlier than the airlines-provided TOBT, it is logically appropriate and COBT shall not be reflected on TSAT.

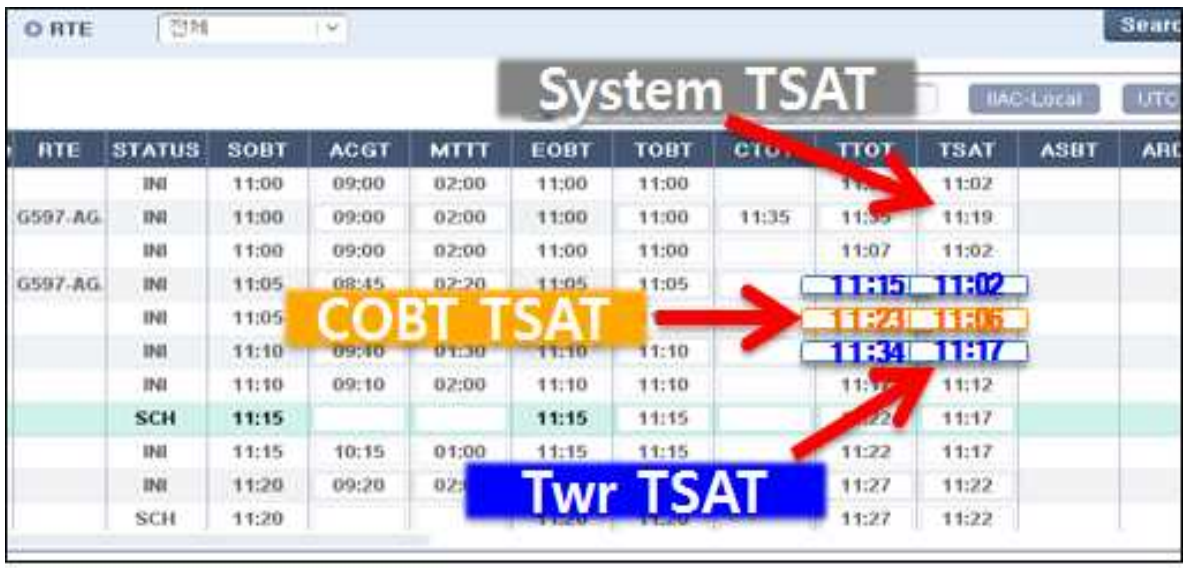
2.3.2.4 Manual Generation and Update

The Control Tower produces TTOT when it agrees with Incheon Air Traffic Control Regional Office on take-off time due to ATFM (agreed take-off, etc.). Then, TSAT is calculated by taking into account the time required to taxi from the gate to the assigned runway, together with produced TTOT. Manually generated TSAT changes System TSAT automatically generated on A-CDM portal system and TSAT reflecting COBT.

2.3.2.5 Display and Provision

TSAT is divided into System TSAT automatically generated on A-CDM portal system and Tower TSAT calculated with manual input of TTOT by the Control Tower, and TSAT reflecting COBT from ATCC.

1. System TSAT automatically generated on A-CDM portal system is displayed in black, and TSAT reflecting COBT is displayed in orange. In this case, the pilot does not receive TSAT information, and it is not displayed on VDGS.

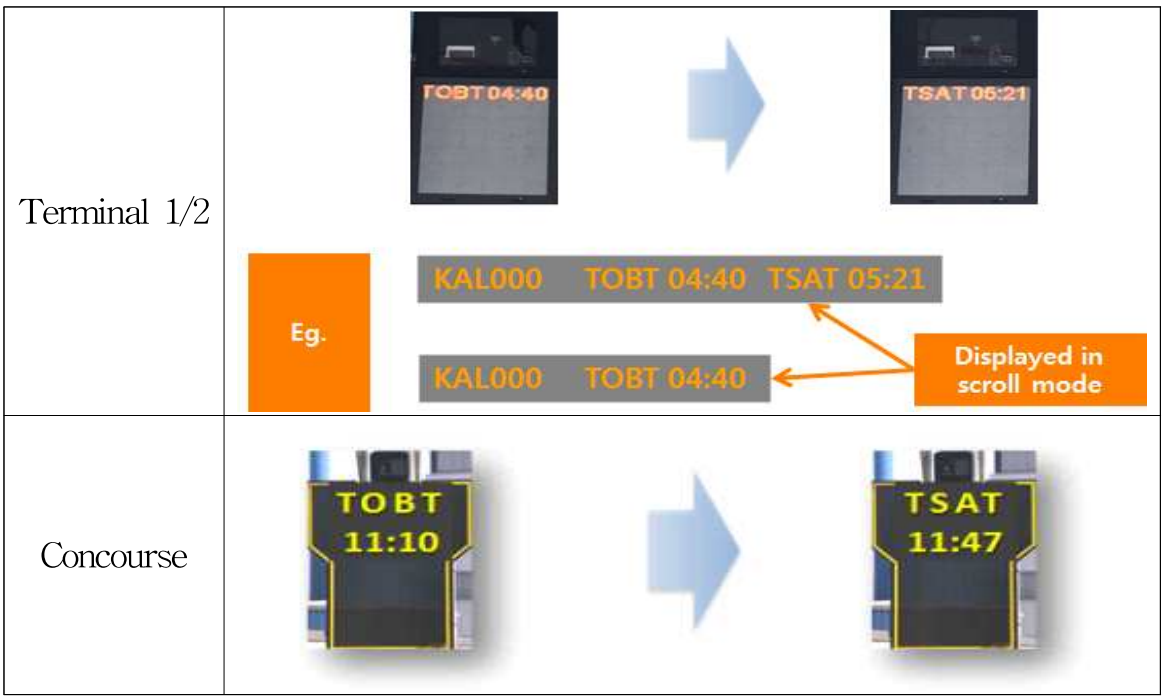


<Figure. 2-10 TSAT display screen >

2. If the Control Tower produces Tower TSAT taking into account ATFM, it is displayed in blue. The pilot can receive TSAT upon request, or if needed, when obtaining a ATC clearance by the Control Tower or when contacting the Apron Control Tower. However, there might be a delay in providing TSAT, depending on the consultation with Incheon Air Traffic Control Regional Office for reasons such as en route and consultation with surrounding countries.

3. At the aircraft stand that has VDGS, Tower TSAT produced by the Control Tower with ATFM (agreed take-off, etc.) is displayed.
   - Terminal 1/2 VDGS : TOBT and Tower TSAT both displayed on PDU.
   - Concourse VDGS : TOBT displayed on PDU is changed to Tower TSAT

4. In case VDGS is inoperable or the aircraft stand does not have VDGS, aircraft operator or ground handler can provide TSAT for the pilot by using company frequency, if necessary.



< Figure. 2-11 TSAT display screen >

2.3.2.6 Utilization

If there is a big difference between TOBT and TSAT, aircraft operator and ground handler can perform departure management including ground handling and boarding based on Tower TSAT produced by the Control Tower. However, TSAT may be subject to change due to environmental changes (change in take-off sequence as the preceding flight fails to depart, additional delay in the route or early termination of ATFM due to improved weather condition at the destination, etc.), and if TSAT changes, the cell background color on the portal system will change to sky-blue color. Thus, it is required for the aircraft operator to keep monitoring whether TSAT was revised continuously and secure sufficient time to get ready.

2.3.2.7 Cancellation

The pilot shall request engine start-up and push-back to the Apron Control Tower within ±5 minutes window of TSAT produced by the Control Tower. If a delay occurs for internal reasons of aircraft operator such as aircraft maintenance check, delay information shall be provided to the control tower and Apron Control Tower immediately. Also, aircraft operator shall request to change EOBT through the Apron Management Unit.

2.3.3 TTOT (Target Take-Off Time)

2.3.3.1 Definition

TTOT is the estimated time of take-off from the runway. The Control Tower calculates TTOT based on TOBT, taking into account ATFM limitations, ground taxing time, runway capacity, control separation and traffic conditions.

However, in Phase 1 Operation, TTOT is divided and shared as follows:

1. System TTOT : if there is no delay, or if delay is unpredictable, system TSAT is TOBT + aircraft moving time from the stand to the runway.
2. Tower TTOT : defined as the take-off time provided from the Control Tower after the consultation with ACC considering ATFM.
3. TTOT reflecting COBT : ATCC-provided COBT + aircraft moving time from the stand to the runway.

2.3.3.2 Necessity

TTOT serves as the reference time that becomes the basis for accurate TSAT estimation and calculation. It enables each partner to predict when the flight will take off.

2.3.3.3 Automatic Generation

1. System TTOT : Automatically generated TTOT refers to the time when the pilot gets ready according to TOBT, obtains a clearance, pushes back and taxies and is fully ready to take off from the runway. It is automatically shared via Portal System one day before, color-coded in black. However, automatically generated TTOT may be different from actual take-off time, depending on delay or taxiway congestion.

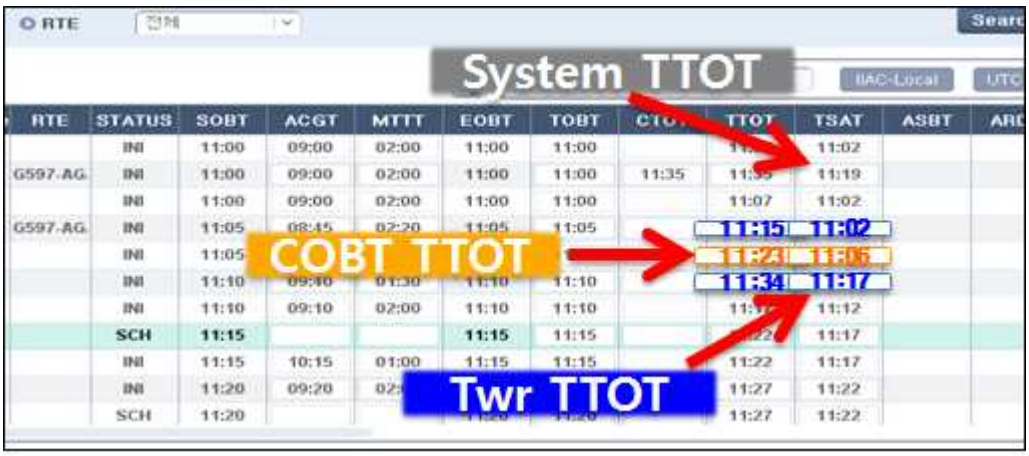
2. TTOT reflecting COBT : shared as the time which adds COBT, provided from ATCC based on air tracfic flow management considering weather conditions and route congestion, and the aircraft moving time from the stand to the runway. However, if COBT is earlier than the airlines-provided TOBT, it is logically appropriate and COBT shall not be reflected on TTOT.

2.3.3.4 Manual Generation and Update

The Control Tower issues TTOT when it agrees with Incheon Air Traffic Control Regional Office on take-off time due to ATFM (agreed take-off, etc.). TTOT provided by the Control Tower substitutes System TTOT automatically generated on the portal system and TTOT reflecting COBT.

2.3.3.5 Display and Provision

On the portal system, TTOT is divided into System TTOT automatically generated on A-CDM portal system and blue Tower TTOT provided from the Control Tower, and TTOT reflecting COBT from ATCC. If the blue TTOT changes due to the en-route situation, the cell background color on the portal system will change to sky-blue color.



<Figure. 2-12 TTOT display screen >

2.3.3.6 Utilization

1. The calculated TTOT may change due to congestion on the runway and the taxiway and sudden change of the runway, and may be different from ATOT (Actual Take-Off Time).
2. In case an outbound aircraft is on standby on the taxiway or in another area after push-back due to aircraft maintenance check, etc. and taxis again (except for return-to-gate), automatically calculated TTOT may be different from ATOT (Actual Take-Off Time).

2.3.3.7 Cancellation

In case an outbound aircraft returns to the stand after push-back or during taxing, TTOT is cancelled and the TOBT, TSAT and TTOT values of the flight remain unchanged. Therefore, aircraft operator shall revise EOBT and obtain a new ATC clearance to avoid any confusion in departure.

2.4 De-icing/Anti-icing

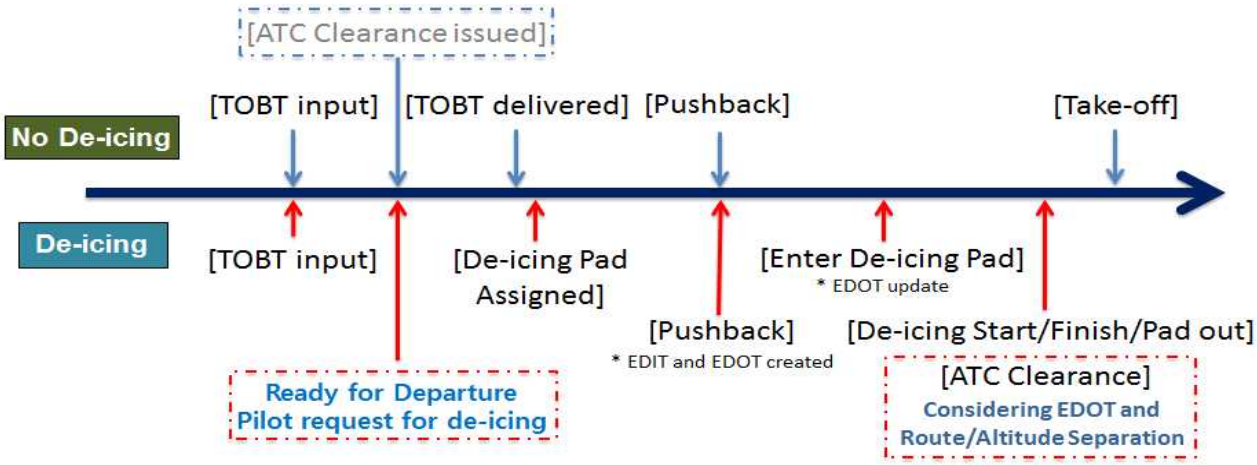
2.4.1 De-icing/Anti-icing Procedure

2.4.1.1 Aircraft operator or ground handler shall manage TOBT in preparation for the operation during snowfall. If de-icing/anti-icing is necessary, the pilot makes a request for de-icing/anti-icing to the Apron Control Tower after preparations for departure is completed and confirmed.

2.4.1.2 The Apron Control Tower allocates a de-icing pad according to the de-icing/anti-icing request from the pilot and the order of flight ready for departure, and approves push-back considering the order of de-icing/anti-icing and traffic conditions in the apron. EPIT (Estimated De-icing Pad In Time) and EPOT (Estimated De-icing pad Out Time) are automatically generated when the aircraft that requested de-icing/anti-icing begins push-back. However, in Phase 1 Operation, EPIT and EPOT, both automatically generated, are provided as reference information.

2.4.1.3 The Apron Control Tower allocates de-icing pads, taking into account traffic conditions in the apron and de-icing pads. Allocation information can be viewed in De-icing Information in the airside control menu of the Integrated Information System (IIS).

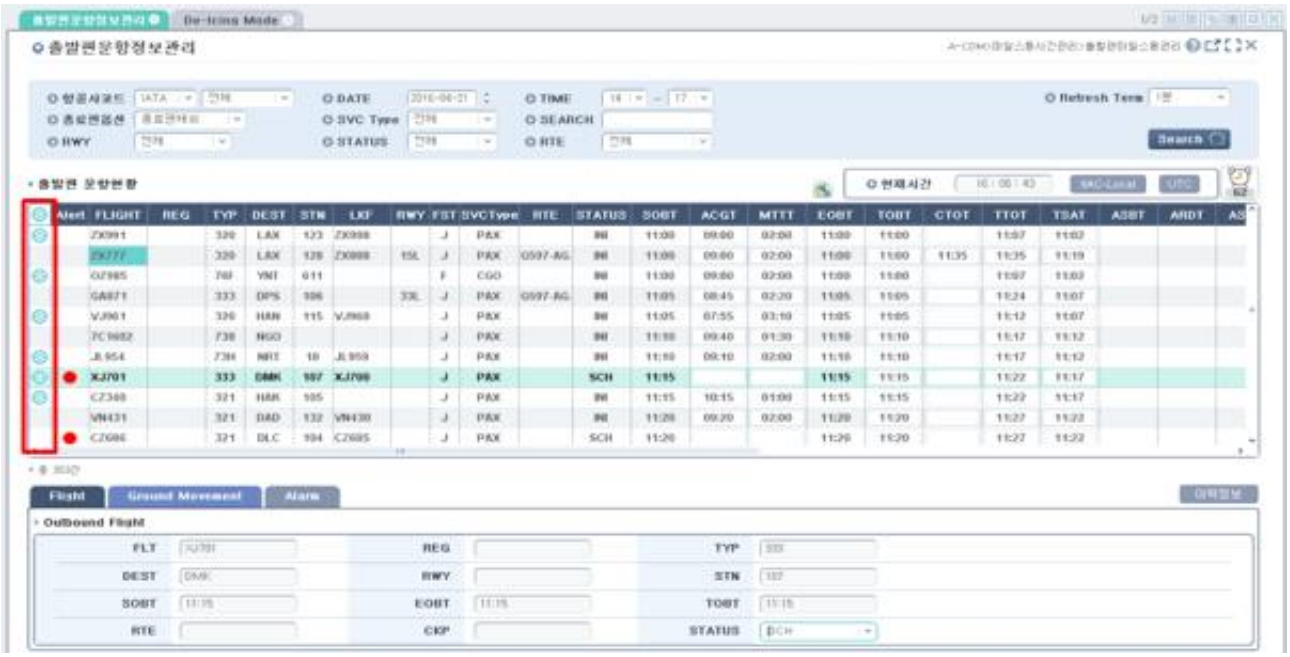
2.4.1.4 After an aircraft enters the de-icing pad, EPOT is updated and the Control Tower can issue a clearance for the aircraft and provide TTOT with reference to updated EPOT. However, the timing of TTOT calculation at the Control Tower and the time may change depending on ATFM limitations, traffic conditions, etc. and TTOT may not be issued.



<Figure. 2-13 De-icing/Anti-icing Operation Flow Diagram>

2.4.2 Display and Provision

2.4.2.1 If an outbound aircraft requests de-icing/anti-icing to the Apron Control Tower, de-icing/anti-icing information will be displayed on the left side of the outbound flight information management screen on A-CDM Portal System.



< Figure. 2-14 De-icing/Anti-icing information display screen >

2.4.2.2 EPOT, which is generated when the de-icing aircraft pushes back, is updated when the aircraft enters the de-icing pad, taking into account APIT (Actual De-icing Pad In Time).

2.4.2.3 In Phase 1 Operation, ACZT(Actual Commence of De-icing Time) and AEZT(Actual End of De-icing Time) display the time provided from the de-icing ground handlers.

Chapter 3 A-CDM Portal System

3.1 System Overview

A-CDM Portal System is one module of the Integrated Information System (IIS) and enables partners (Air Traffic Control Unit, Airport Corporation, aircraft operator, ground handler) to share flight movement time including departure from Incheon Airport or arrival at Incheon Airport, and departure again.

Information provided by the portal system is shared only among relevant partners. Furthermore, such information is not shared among aircraft operators and ground handlers that compete with one another.

3.2 How to Access System

3.2.1 Request for Account and Password Management

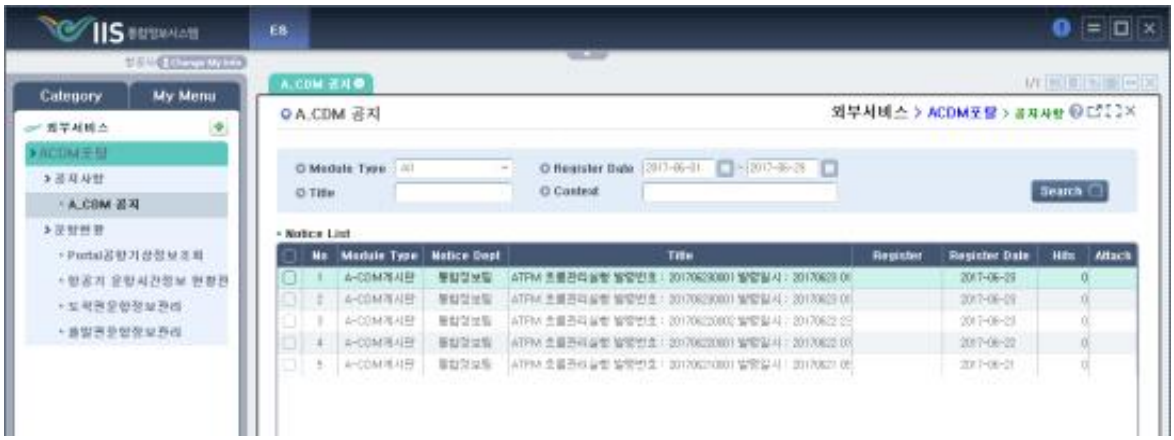
Those who wish to use the portal system shall prepare and request an application for account according to the guidance on the Airport Corporation website (www.airport.kr/acdm). If the application is submitted successfully, the applicant will receive an e-mail to the e-mail address in the application form, which will explain whether an account was assigned and how to install the system.

3.2.2 System Installation and Login

1. Installs the system using the link http://iis.airport.kr:21781/ui/Install/install.html and then icon  will be created on the desktop.
2. Execute the icon, enter ID and password and click on the Login button.
3. A message for OTP (One Time Password) authentication will be called. Click the OK button, and authentication method combo box and OTP Send button will be activated.

< Figure. 3-1 Portal system login screen >

4. After OTP authentication is complete, log in and click on A-CDM Portal.



< Figure. 3-2 Initial screen after login to the portal system >

3.3 Layout of All Menus

Menu Name	Description
Display Notice	Display notices on airport conditions including ATFM and the portal system
Display Airport Weather Information	Display weather information at Incheon International Airport
Manage Flight Schedule and Status	Manage flight schedule information and status
Manage Inbound Flight Information	Enter, change, delete and display arrival time information
Manage Outbound Flight Information	Enter, change, delete and display departure information

3.4 Main Screens

3.4.1 Display Notice

3.4.1.1 Register and Display

A user can register and display system notices and various notices on airport operation.

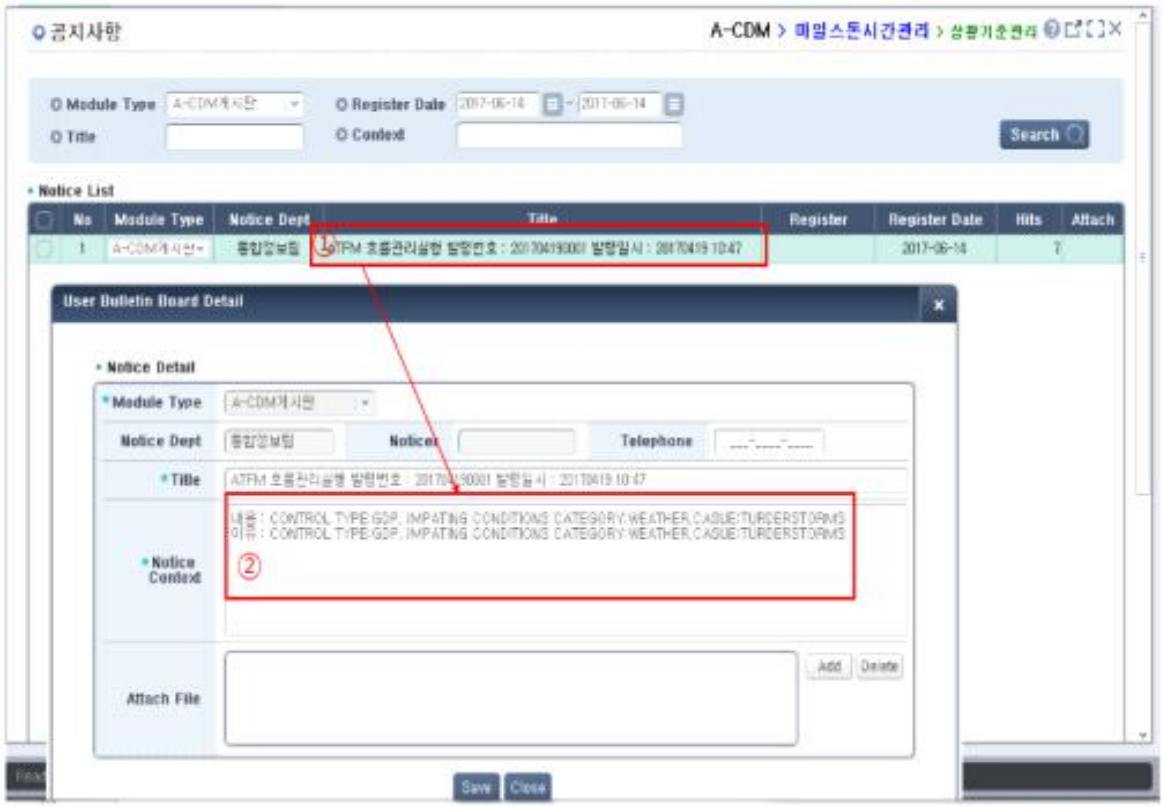
< Figure. 3-3 Screen to view notices >

① A user can display notices by entering search conditions (Register Date, Title, Context).

② A user can enter a new notice by clicking the Register button.

3.4.1.2 Display ATFM (Air Traffic Flow Management) Information

A user can check implementation information of flow management (ATFM) transmitted from ATFMS of the Air Traffic Command Center. At the initial moment when AFTM is generated by ATCC, the system will open up a pop-up window that contains ATFM. Afterwards, a user can view the information in the Notice in the menu.



< Figure. 3-4 Notice detailed view screen >

① If a user wants to view details of the ATFM flow management, double click the implementation number and date, and double-click the field.

② A user can view details and a reason of the implementation of ATFM flow management.

3.4.2 Display Airport Weather Information

In this screen, users can display information on airport weather conditions that affect the operation of milestones. Information is automatically refreshed every two minutes. It displays information on runways currently in use and other weather conditions. However, there might be delay or difference from the actual information due to an environment of the interface with the Aviation Meteorological Office.

< Figure. 3-5 Screen to display airport weather information >

① Runway weather information: Runway currently in use, wind, fog, cloud information

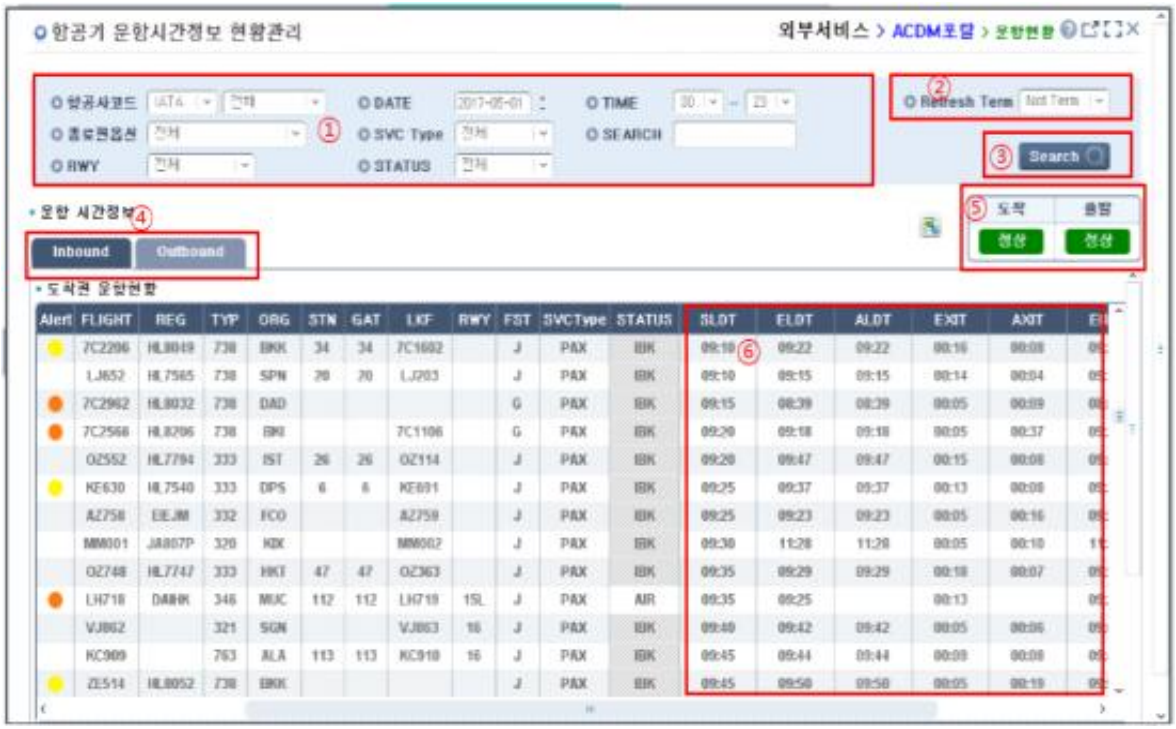
② Terminal Aerodrome forecast: The latest TAF information as of the current date

③ Meteorological Aerodrome Report : The latest METAR information as of the current date

④ Significant Metoerological information: The latest SIGMET information as of the current date

3.4.3 Manage Flight Schedule and Status

This screen enables A-CDM users to view departure/arrival time information by aircraft. A user enters Airline Code, Date, Time, Completed, SVC Type, RWY, STATUS and RTE (outbound flight) to search for results and manage information. Airline code can be found in IATA and ICAO information, and it is also possible to filter the search results.



< Figure. 3-6 Screen to manage flight schedule information and status >

① Fields to enter search conditions
- Airline Code (IATA, ICAO), DATE, TIME, Completed, SVC Type, RWY, STATUS, RTE (for outbound flight)

② Define the refresh interval (Refresh Term).
Not Term, 30 sec, 1 min, 3 min, 5 min

③ Click the Search button to display the up-to-date information.

④ Select Inbound or Outbound to display flight schedule information.

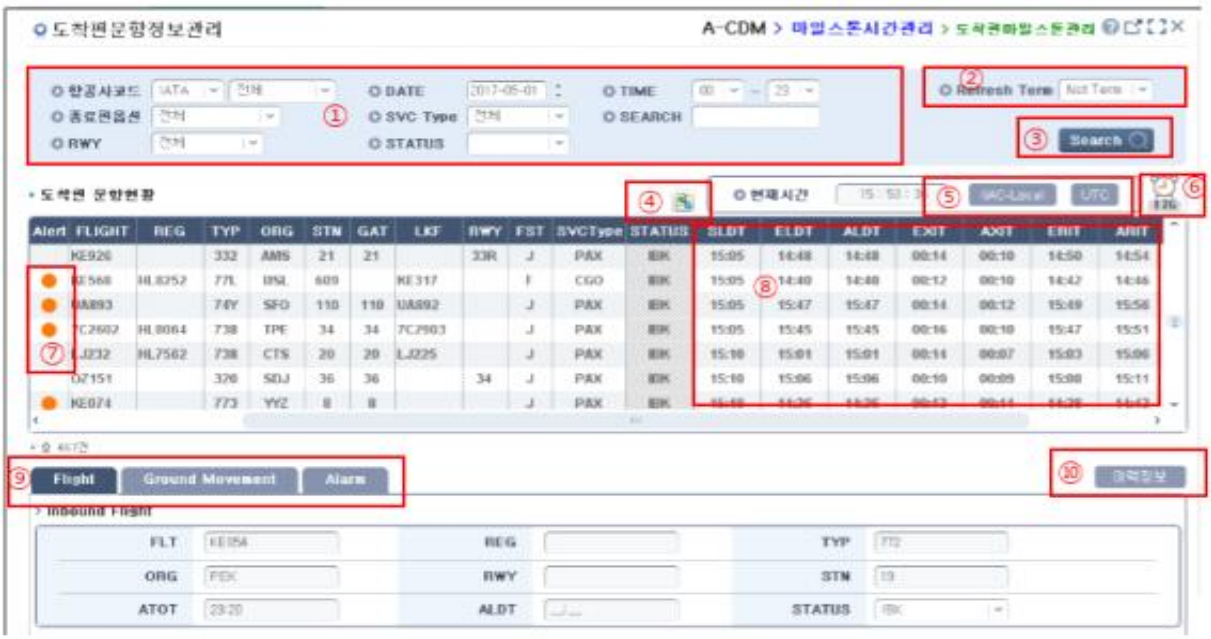
⑤ Display departure/arrival status information (normal, slightly congested, congested, emergency)
- Normal: delayed flights per hour account for less than 5 %
- Slightly congested: delayed flights per hour, ATA/ATD against STA/STD, account for 5 - 10%
- Congested: delayed flights per hour, ATA/ATD against STA/STD, account for 10-30%
- Emergency: Abnormal situation (delayed flights per hour account for 30% or higher)

⑥ Display milestone time information.

3.4.4 Manage Inbound Flight Information

3.4.4.1 General

A-CDM users can view time information of inbound flight. Users enter Airline Code, DATE, TIME, Completed, SVC Type, RWY and STATUS to search for results and manage information. IATA and ICAO airline code can be used for searching, and it is also possible to filter the search results.



< Figure. 3-7 Screen to manage inbound flight information >

① Fields to enter search conditions.
- Airline Code (IATA, ICAO), DATE, TIME, Completed, SVC Type, RWY, STATUS

② Define the refresh interval (Refresh Term).
Not Term, 30 sec, 1 min, 3 min, 5 min

③ Click the Search button to display the up-to-date information.

④ Click on the Excel download button to export the data on the screen to an excel file.

⑤ Select the current time information Type(IIAC-Local, UTC).

⑥ Display the number of flights for which alert was generated.
⑦ Indicate the flights for which alert was generated.
⑧ Display milestone time information of inbound flights.
⑨ Select among Flight Information tap, Ground Movement Information tap and Alarm Information tap.
⑩ Check the change history of flight milestones.

3.4.4.2 Display the detailed status of inbound flight

In the flight information displayed, move the cursor to FLIGHT, REG, TYP, ORG (DEST) columns and double-click them, which will open a pop-up window that shows the detailed status of the selected flight.

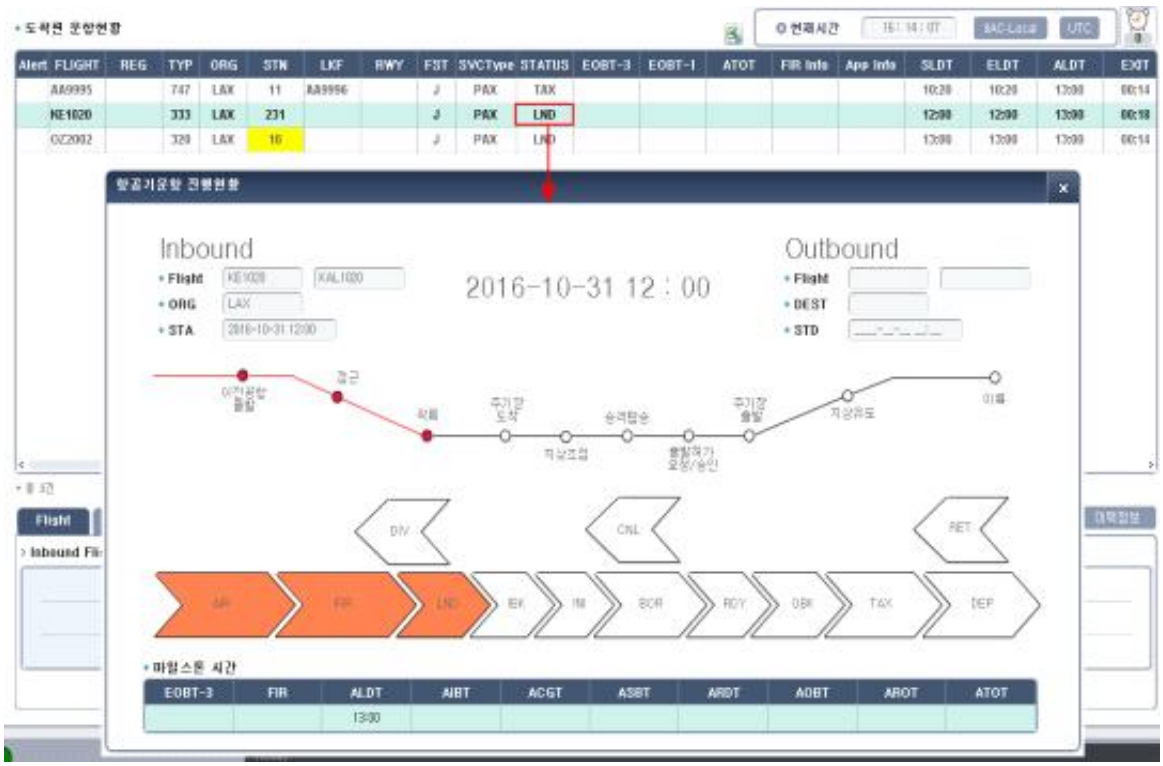
< Figure. 3-8 Screen to display the detailed status of inbound flights >

3.4.4.3 Display alert information in the inbound flight information Click the image shown on Alert item in the flight information displayed (Alert defined in 3.6), and the alarm information generated for the flight will be displayed on the tap.

< Figure. 3-9 Screen to display inbound flight alert >

3.4.4.4 Display the status of flight operation

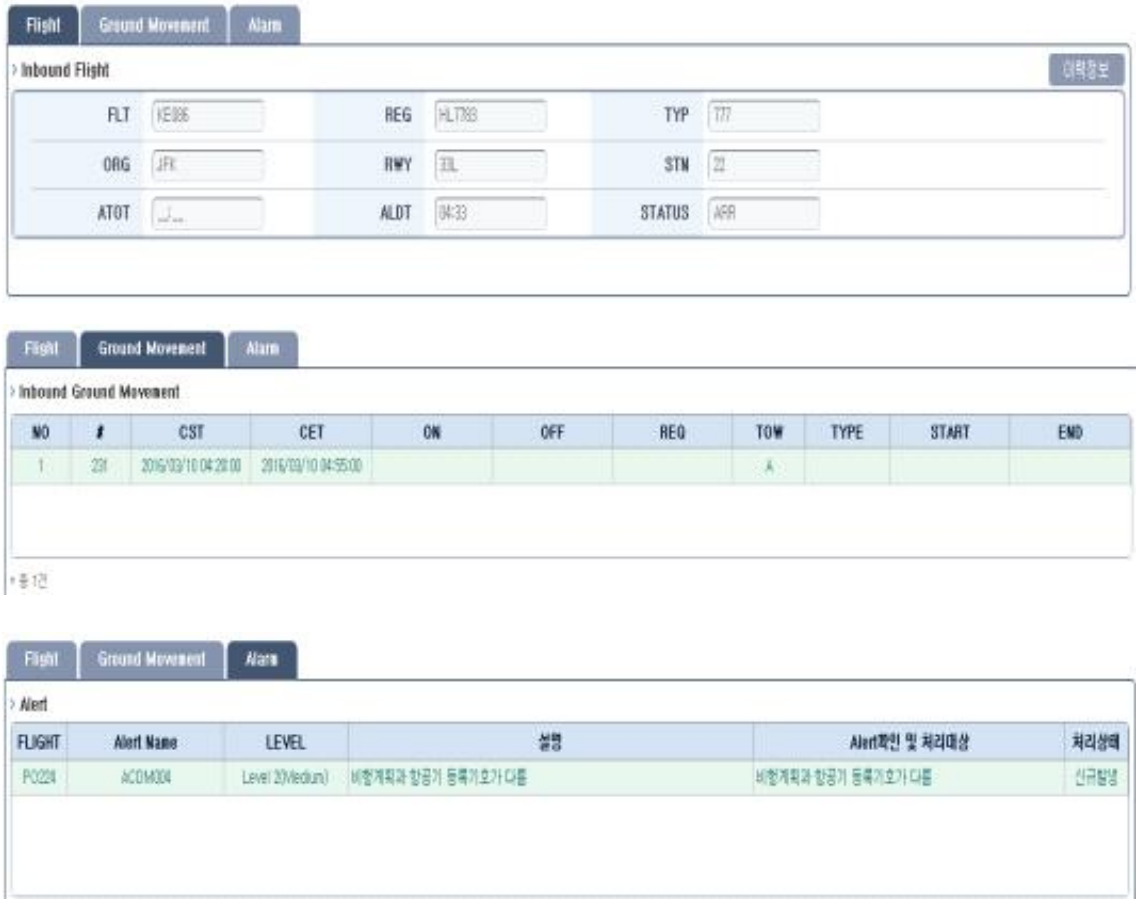
Double-click the STATUS column in the flight information displayed and the system will open a pop-up window that shows the operation status of the selected flight operation.



< Figure. 3-10 Screen to display the status of flight operation >

3.4.4.5 Display flight, ground movement and alarm information

Click the Flight tab, the Ground Movement tab and the Alarm tab, and the information will be displayed for each tap as follows:

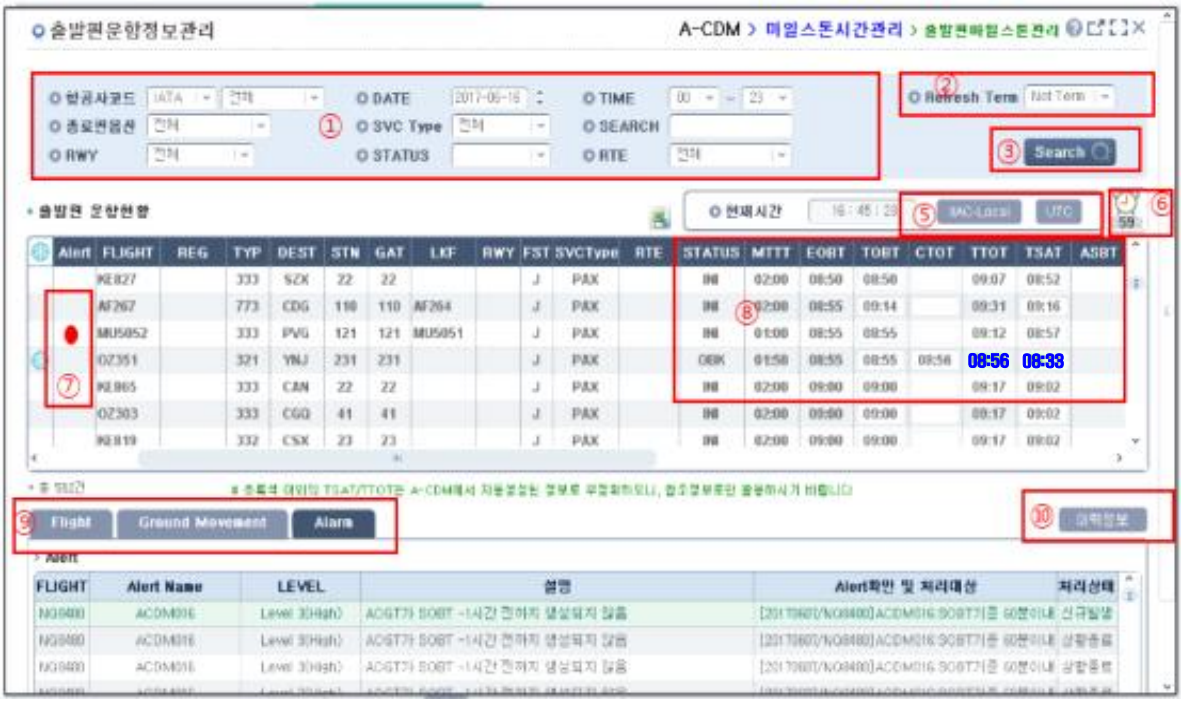


< Figure. 3-11 Screen to display detail taps for inbound flight status >

3.4.5 Manage Outbound Flight Information

3.4.5.1 General

A-CDM users can view time information by outbound flight. Users enter Airline Code, DATE, TIME, Completed, SVC Type, RWY, STATUS and RTE to search for results and manage information. IATA and ICAO airline code can be used for searching, and it is also possible to filter the search results.



< Figure. 3-12 Screen to manage outbound flight information >

① Fields to enter search conditions
- Airline Code (IATA, ICAO), DATE, TIME, Completed, SVC Type, RWY, STATUS,

② Define the refresh interval (Refresh Term).
- Not Term, 30 sec, 1 min, 3 min, 5 min

③ Click the Search button to display the up-to-date information.

④ Click on the Excel download button to export the data on the screen to an excel file.

⑤ Select the current time information Type(IIAC-Local, UTC).

⑥ Display the number of flights for which alert was generated.

⑦ Indicate the flights for which alert was generated.

⑧ Display milestone time information of outbound flights.

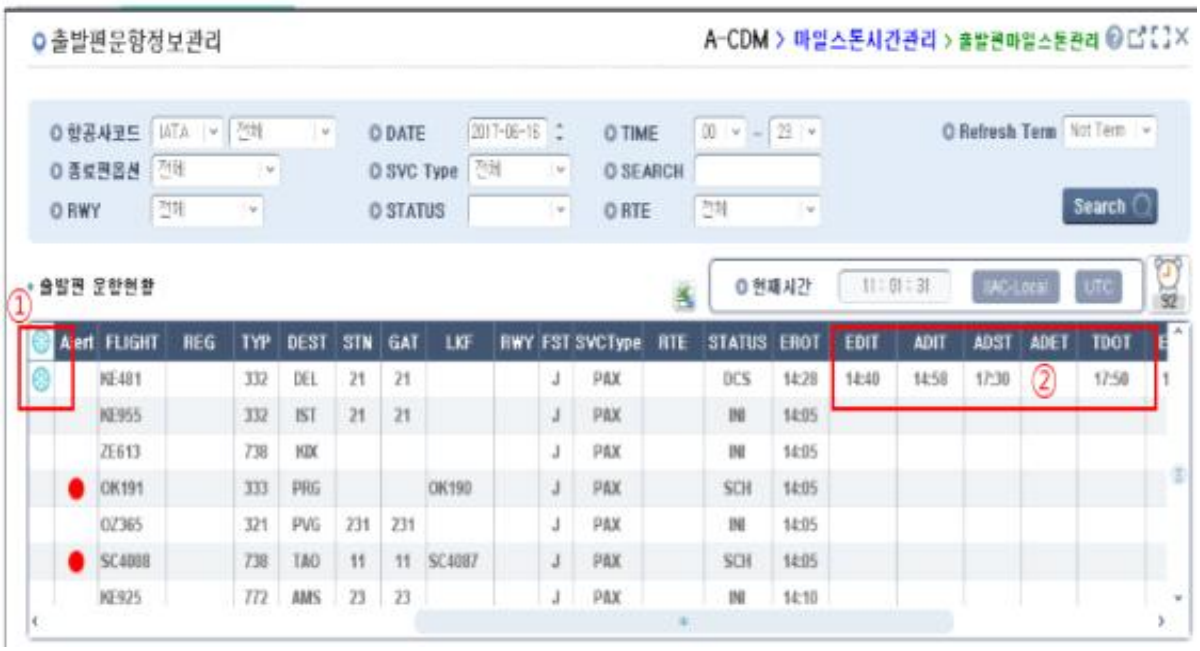
⑨ Select among Flight Information tap, Ground Movement Information tap and Alarm Information tap.

⑩ Check the change history of flight milestones.

Detailed functions are same as Manage Inbound Flight Information described in 3.4.4.

3.4.6 Display Milestones of De-icing/Anti-icing Aircraft

Users can display milestone time of a de-icing/anti-icing aircraft in the Manage Outbound Flight Information screen.



< Figure. 3-13 Screen to check and display de-icing/anti-icing aircraft>

① For de-icing/anti-icing aircraft, a snow icon will be shown on the left column of the flight name. When a pilot requests de-icing/anti-icing to the Apron Control Tower after the aircraft is fully ready for departure, the flight is marked as de-icing/anti-icing aircraft as shown above.

② Users can display milestone time information of de-icing/anti-icing aircraft.

3.5 TOBT Update

3.5.1 TOBT Input on A-CDM Portal System

① Click TOBT on the Manage Outbound Flight Information screen, and the system will open a pop-up window to register milestone time information.

< Figure. 3-14 TOBT input screen on the portal system >

② Aircraft operator/ground handler revises TOBT time, selects/enters a reason and then clicks on the Save button. After the Control Tower produces TSAT (color-coded in blue on the portal system), aircraft operator/ground handler is not allowed to directly revise TOBT, but needs to contact the Apron Management Unit to request TOBT update.

3.5.2 TOBT Input via Gate FIA

① Check the outbound flight on the FIA screen and enter the time in the TOBT change field.
② Push the function key 'F6' and only the revised TOBT will be saved.
③ Push 'F3' or click on the Save button and all the revised values on the screen will be saved.

< Figure. 3-15 TOBT input screen on the Gate FIA system >

3.6 Alarm Message

ALERT	Description
ACDM003	(Situation) The aircraft type does not correspond with the type in the flight plan.
	(Display) The aircraft type does not correspond with the type in the flight plan. It is needed to check and correct the flight type.
ACDM004	(Situation) The aircraft registration does not correspond with the registration in the flight plan.
	(Display) The aircraft registration does not correspond with the registration in the flight plan. It is needed to check and correct the aircraft registration.
ACDM005	(Situation) The aircraft destination airport does not correspond to the destination in the flight plan.
	(Display) The aircraft destination airport does not correspond to the destination in the flight plan. It is needed to check and correct the destination airport.
ACDM007	(Situation) EIBT+MTTT exceeds TOBT+5 min.
	(Display) Check SOBT of the outbound flight and update EOBT or TOBT, if necessary.
ACDM008	(Situation) TOBT is outside EOBT +/-15 min window.
	(Display) TOBT and EOBT have a discrepancy by 15 min. or more. Update EOBT.
ACDM009	(Situation) ASBT has not occurred until TOBT-10 min.
	(Display) The aircraft boarding has not started. Update EOBT or TOBT.
ACDM011	(Situation) ARDT value does not exist within TOBT+5 min window.
	(Display) TOBT tolerance (5 min) was exceeded. Update EOBT or TOBT.
ACDM022	(Situation) ASRT is not input until Tower TSAT +5min is exceeded.
	(Display) The pilot is not compliant with Tower TSAT. Update EOBT or TOBT for new TSAT.
ACDM013	(Situation) No ATC flight plan available.
	(Display) There is no ATC flight plan.
ACDM034	(Situation) Return-to-stand
	(Display) The outbound aircraft has returned back to the stand. Update EOBT.

3.7 Flight Status Information

A/D	Status	Description
Arrival	SCH	Schedule
	AIR	Airborne(Take off from ORG)
	FIR	Flight entered local FIR
	APP	Final Approach
	LND	Landing
	TAX	Taxing
	IBK	On Block
Departure	SCH	Schedule
	INI	Ground handling Initiates
	BOR	Boarding
	GTC	Gate Closed
	RDY	Ready (in case of PBB release)
	OBK	Off Block
	TAX	Taxing
	DCI	De-icing pad in
	DCS	De-icing Start
	DCE	De-icing End
	DCO	De-icing pad out
	RRT	Ramp Return
	DEP	Take Off
-	DEL	Delay
	CNL	Cancel
	DIV	Divert

Chapter 4 Contingency Procedure

4.1 Overview

Air Traffic Service Unit, Airport operator, aircraft operators and ground handlers share TOBT, TSAT, TTOT and so on via A-CDM Portal System. The information provided by the system enables individual partners to perform reasonable decision-making. Nonetheless, if such information is not shared normally due to a problem of the portal system or other associated systems, relevant parties shall respond to the situation according to the following procedure to minimize confusion.

4.2 Types of Contingency

4.2.1 Interruption of A-CDM Portal System

A situation in which all information sharing and services are completely unavailable due to system failure in Incheon Airport A-CDM.

4.2.2 Interruption of Interfaced System

A situation in which some of information sharing and provision are unavailable due to system failure or interface failure in a system linked with Incheon Airport A-CDM. The situation includes an interface problem with an aircraft operator system as well.

4.2.3 Others

A situation in which information sharing and provision are partially unavailable in a certain area due to a partner's internal circumstance although other systems linked with Incheon Airport A-CDM are in normal condition.

4.3 Response Procedure

4.3.1 In Case of A-CDM Portal Service Unavailable

4.3.1.1 Non A-CDM Procedure

1. Without TOBT input, aircraft operator and ground handler should comply with ETD (EOBT) and in case of delay, they should update ETD (EOBT) to get ready for departure.
2. Pilot should comply with the departure procedure in Incheon AIP.

4.3.2 In Case of Interface System Interruption

4.3.2.1 Failure in Controller Equipment (including ACC)

1. TSAT and TTOT supposed to be provided by the Control Tower are not provided while only TSAT and TTOT automatically calculated in A-CDM are provided. VDGS at the stand displays TOBT only.
2. Aircraft operator should manage TOBT as usual so that TSAT and TTOT can be provided normally once the system in the Control Tower is restored.
3. Also, aircraft operator should input and manage TOBT continuously because TOBT from aircraft operator is utilized for the purpose of aircraft stand operation and adjustment for inbound flights.

4.3.2.2 Failure in Interface with the Air Traffic Command Center

CTOT/COBT from the Air Traffic Command Center is not transmitted to A-CDM Portal System.

4.3.2.3 Failure in Interface with Aircraft Operator/Ground Handler System

1. Flight information shared by the relevant aircraft operator/ground handler is displayed as the previous STD and information established before failure.

2. Aircraft operator/ground handler should provide TOBT via the portal system and Gate FIA, and request EOBT update to the Apron Management Unit via wired communication to share TOBT with partners.

4.3.2.4 VDGS Failure

1. Since TOBT and TSAT provided by the Control Tower with ATFM (agreed take-off, etc.) are not displayed in VDGS, aircraft operator and ground handler need to refer to the portal system.
2. The pilot is provided with TSAT when he/she contacts the Apron Control Tower after obtaining ATC clearance by the Control Tower. If the pilot needs to know TSAT earlier, aircraft operator or ground handler delivers TSAT by using the company frequency.

4.3.2.5 Gate FIA Failure

As it is not possible to input TOBT at the gate, aircraft operator or ground handler should input TOBT on the portal system, and requests EOBT update to the Apron Management Unit via wired communication to share TOBT with partners as soon as possible.

4.3.2.6 A-SMGCS Failure

Given that it is not possible to calculate and provide the estimated movement time using the actual speed of the aircraft, statistical average figures are provided for ETOT after outbound flight push-back and for EIBT after inbound flight landing.

4.3.3 Others

In case information sharing is limited due to internal circumstances of partners such as PC terminal problems, aircraft operator or ground handler should input TOBT on the portal system, and requests EOBT update to the Apron Management Unit via wired communication to share TOBT with partners as soon as possible.