

Chapter 5 -Initiation phase

Attachment 5.1

TBOT AND TSAT PERFORMANCE MEASUREMENT TEMPLATE

Introduction

With the implementation of A-CDM, there will be a change from current operating procedures as it introduces two new time elements, namely Target Off Block Times (TOBTs) and Target Start-up Approval Times (TSATs) and the procedures around these time elements. These operational changes relates to:

- The management, including input and updates as needed, of Target Off Block Times (TOBTs) for either the aircraft operator or the ground handler.
- The management, including input and updates as needed, of TSATs for the Air Navigation Service Provider (ANSP)
- The start-up and push back procedures.

It is very important that the impacts of these procedure changes are measured, so that the effectiveness of the A-CDM implementation can be assessed. This will allow all stakeholders to effectively monitor how the A-CDM procedures are complied with and identify where improvement can be made, which is just as important as getting A-CDM implemented in the first place.

Key performance indicators (KPIs) related to TOBT and TSAT are required to assess the effectiveness of an A-CDM implementation.

Other KPIs may be used as supplement for monitoring the performance of the A-CDM.

Measurements of TOBT

Achieving inputs and updates of TOBT as accurate as possible is one of the first steps in the A-CDM implementation. The Aircraft Operators or Ground Handling Agents will need to provide TOBT for all the departing flights to enable the A-CDM procedures to flow efficiently and effectively.

Without TOBT, there will be no predictability of departure readiness and TSAT will not be available.

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The following measurements are related to TOBT:

Table 1 - Measurement of TOBT

Name of	TOBT input participation rate
Value of Indicator	Allows the A-CDM project team to see the amount of participation from airlines/ground handling agents in TOBT inputs before proceeding to measure the accuracy and use TOBT for pre-departure
Data requirement	Manual TOBT updates/inputs
Formula	Track number of TOBT inputs from each airline and ground handling agent through different time references before departure, e.g. at TOBT- 10mins, -20min and -40mins
Indicator Forms	Participation rate in TOBT inputs and when does it occur
Tips/Warning	<p>It is important to achieve a high % of participation in order for the A- CDM concept to work.</p> <p>A-CDM with low participation rate will lead to questions on fairness when TSAT is used for pushback and eventually the collaborative concept may fail.</p> <p>To improve participation rate, more A-CDM awareness workshops or compliance measures may be required.</p>
System requireme	Data analysis tool of the A-CDM portal if available or TOBT input records

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Table 2 - Accuracy of TOBT

Name of	TOBT Accuracy
Value of Indicator	<p>Allows airlines/ground handling agents to understand whether their TOBT submission workflow/process is effective in achieving an accurate TOBT.</p> <p>Allows the A-CDM project team to assess whether the TOBT quality is acceptable and can be used to generate TSAT.</p> <p>It also gives a general indication of compliance rate for TOBT submission.</p>
Data requirement	<ul style="list-style-type: none"> • TOBT • Actual Ready Time (ARDT) and/or Actual start-up request time (ASRT)
Formula	<ul style="list-style-type: none"> • Compare TOBT against ARDT and/or ASRT • Compare TOBT against AOBT
Indicator Forms	<ul style="list-style-type: none"> • Accuracy of TOBT • TOBT compliance rate
Tips/Warning	<p>Low TOBT accuracy with high TOBT participation rate indicates that the airline/ground handling may have to improve their internal workflow/process for updating of TOBT.</p> <p>How to measure the accuracy of the TOBT depends on the procedures applied for the A-CDM implementation. To be able to measure the TOBT accurately, it is highly recommended that pilot shall call ready within a window of the TOBT and that ATC indicates this time via an ARDT or ASRT.</p>
System requirements	<ul style="list-style-type: none"> • Data analysis tool of the A-CDM portal if available or TOBT input records • AOBT from appropriate source ARDT and/or ASRT from an Electronic Flight Strip system or alternative means.

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Measurement of TSAT

A Pre-Departure Sequencer/Departure Manager solution might be used for pre-departure sequencing in the A-CDM implementation, which should be generating an optimal TSAT to achieve the best sequence to maximize runway throughput and regulate traffic to holding point.

However, if ATC or pilots are not adhering to the TSAT, the benefits will not be achieved.

TSAT compliance plays an important role in achieving the objective of reducing taxi-out time and also shows the level of commitment to TSAT in the A-CDM procedures.

Table 3 - Measurement of TSAT

Name of indicator	TSAT Compliance
Value of Indicator	Allows the A-CDM project team to assess whether ATC is following the TSAT for pushback and also pilots' adherence to the TSAT procedure.
Data requirement	<ul style="list-style-type: none">• TSAT• Actual Start-up Approval Time (ASAT)• AOBT
Formula	<ul style="list-style-type: none">• Compare ASRT and/or ASAT against TSAT• Compare AOBT against TSAT
Indicator Forms	<ul style="list-style-type: none">• TSAT compliance rate
Tips/Warning	<p>If the compliance level is low, it may mean either the A-CDM procedures are not followed by ATC/Pilots or ATC did not enforce TSAT compliance or the TOBT submitted by airlines/ground handling agents is not up to desired accuracy.</p> <p>How to measure the compliance to the TSAT depends on the procedures applied for the A-CDM implementation. To be able to measure the compliance it is highly recommended that pilot request within a window of the TSAT and that ATC indicates this time via an ASRT. ATC shall also give the start-up approval within the given TSAT window and indicate this via an ASAT.</p>
System requirements	<ul style="list-style-type: none">• Data analysis tool of the A-CDM portal if available or TSAT records from DMAN/PDS• AOBT from appropriate source• ASRT and/or ASAT from an Electronic Flight Strip system or alternative means.

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