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ORTHOGON PRE-DEPARTURE SEQUENCER (PDS)©

Orthogon PDS provides all capabilities required for Airport Collaborative Decision Making (A-CDM). Optimizing push back times allows for reduced taxi times, enhanced sequence and departure time predictability and reduced queues.

AN AIRPORT SOLUTION FOR MAXIMIZING RUNWAY THROUGHPUT

Orthogon PDS automatically calculates Estimated Take-Off Times (ETOT) for each outbound flight, leading to an initial departure sequence. This represents the earliest possible take-off time without any capacity constraints at the runway. The basis for the calculation are the Target Off-Block Times (TOBT) and Variable Taxi Times (VTT).

The continuos take-off sequencing process results in Target Take-Off Times (TTOTs) and Target Start-Up Approval Times (TSATs) which can be share among all stakeholders. This allows airports and ground handling companies the ability to efficiently allocate their available resources.

User preferences and multiple constraints such as TOBTs, VTT, runway strategies, stand contentions and runway queue buffer times enable the user to reduce taxi and runway holding times, and save fuel while maintaining maximum runway throughput.
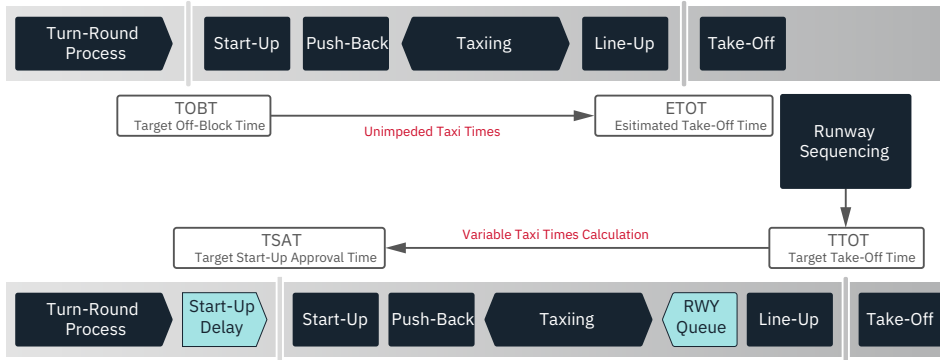
A core component for A-CDM

BENEFITS

> Optimizes pushback times to reduce airport queues for better on-time performance

> Provides user preferences that enable maximum runway throughput

> Offers more predictability and stability for airline and air traffic control (ATC) network operations

> Allows advanced functions for increased efficiencies when combined with Orthogon Departure Manager (DMAN)

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PDS FUNCTIONAL DIAGRAM:

*TSAT calculation process

DEPARTURE MANAGEMENT AS AN EXTENSION OF PDS

Orthogon Departure Manager (DMAN) provides a number of unique functions to airport and air traffic operators that expand beyond pre-departure sequencing. Adapting a capacity and airspace constrained airport with a DMAN solution provides improved predictability and efficiency while enhancing collaboration with air traffic control.

"L3Harris delivered an excellent tool for departure management which has enabled Gatwick to run under A-CDM operational procedures. Using the Orthogon DMAN, we look forward to continue to improve our operational performance."

-Erik Einset,
ACDM55 Program Leader at
Gatwick Airport

BENEFITS OF ORTHOGON PRE-DEPARTURE SEQUENCES	
Airports	> Better on-time performance > Increased slot capacity > Improved overall service quality to airlines > Improved passenger experience
ANSPs	> Improved departure time > Improved network predictability > Improved slot adherence
Airlines	> Reduce taxi times and reduce fuel burn > Less greenhouse gas and noise emissions > Reduced buffer times in flight schedules > More stability in airline network operations > Better recovery from existing delays
Service Partners	> More efficient resource planning > Improved service level agreement compliance

PERFORMANCE METRICS	WITH PDS	WITHOUT PDS
Efficiency	Reduction of taxi time 1 minute on average per flights	Average taxi time
Predictability	58–80%	40–50 %
Flexibility	Best planned – best served With consideration of airline intentions and preferences	First come – first served

*Source: ACI, EUROCONTROL, IATA: "Airport CDM – Steps to boost efficiency", 2009

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