

The Airport CDM elements

Overview

Airport CDM Information Sharing

This element is introduced in the system by the automatic collection, storage and redistribution of information. The redistribution of information is demonstrated by introduction of four different human interfaces tailored to the needs of Airport Operator, Airline Operator, the Air Traffic Controller and the Ground Handler.

The design of the system meets fully both the criteria of the EUROCONTROL CDM concept and the demands of the users. The system was tested by operational experts to achieve a user friendly application tailored to needs of users.

The Milestones Approach

In the system flight plans and airframes are automatically correlated for subsequent flights to be performed by the same aircraft. This results a continuous process that includes all flight segments as well as the turn-round between flight segments. The system shows all deviations from the plan at a very early stage. The adjustable system of alarms enables user to have warnings at predefined situations that enables a perfect situational awareness.

Variable Taxi Time Calculation

The system provides a fully automated taxi time calculation process. This enables precise calculation of in-block and take-off times. Those times are important for better resource utilisation and slot adherence. In the same time this feature minimises additional workload and stress for controllers enhancing safety.

Collaborative Management of Flight Updates

This feature of the system ensures the completeness of information between en-route and airport operations, provides link between the airports and airport and the ETFMS. The feature improves predictability of ground operations through enhanced initial information about inbound flights and improves estimates of take-off times for all flights in ETFMS, allowing a more accurate and more predictable view of the traffic situation.

Consequently, to improve the ATFM slot allocation and management processes and optimise capacity management. The link is implemented by introduction of automated DPI and FUM messages. The messages are creating a sophisticated link with an aim to provide early and progressively more precise information on flights for tactical planning.

Collaborative Pre-Departure Sequence

Collaborative pre-departure sequencing allows ATC to arrange the Target Off Block Times (TOBT) obtained from the Turn-Round Process in a way that flights can depart from their stands in the optimum order, taking also the operational situation into account. The resulting list of sequenced TOBTs forms the basis of the Target Start Approval Time (TSAT) order that is then provided to the CDM partners and is significant since it takes into account the partners' preferences.

This component provides great flexibility - Aircraft Operators/Ground Handlers will be able to communicate their preferences and ATC will take those into account together with other operational constraints such as Calculated Take Off Times (CTOTs), other traffic and the take-off sequence.

Increased punctuality is reached in process of ground handling as the Aircraft Operators, Ground Handlers and ATC can work together to optimise the start-up order. As a result, improved slot-adherence will be reached - the pre-departure sequence will lead to more accurate Estimated Take Off Times (ETOTs). Any ETOT which falls outside the slot tolerance window will raise an alarm requiring action to be taken to resolve the discrepancy.

CDM in Adverse Conditions

CDM in adverse conditions aims at collaborative capacity management during periods of reduced capacity (due to fog, strong winds, snow etc.). CDM in adverse conditions disseminates relevant information to all partners in anticipation of disruptions and to facilitate expeditious recovery following disruptions. This is achieved by systematic strategies to deal with disruptions, allowing quicker recovery to normal operations.

During the adverse conditions the process of handling and taxiing are also affected. The system takes into consideration the influence of weather or other factors on the taxi times and provides full overview of the ongoing handling processes at the airport.