



CADEO

Controller Assistance for Departure Optimisation

– a brief introduction –

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CADEO

- Is a controller assistance system for departure optimisation,
- Is the improvement of the Eurocontrol-DLR DMAN,
- Provides A-CDM support through TTOT and TSAT calculation,
- Is an operational prototype, easy adaptable to airports,
- Is able to be connected/coordinated with an AMAN,
- Provides HMIs for Clearance Delivery, Ground/Apron and Runway/Tower Controller,
- Makes available planning information for other systems e.g. to integrate with an operational EFS or other HMI.

CADEO Features

- 1 -

- Calculation of an optimized departure sequence
 - keeping the required separations
 - Departure-Departure
 - Wake vortex
 - SIDs
 - Departure-Arrival
 - Arrival-Departure
 - based on flight plans, EOBTs, TOBTs, CTOTs, standard taxi times
- Calculation of Target Takeoff Times (TTOT)
- Calculation of Target Start-up Approval Time (TSAT)
 - Start up of the engines as late as possible
 - Be at the runway „just in time“

CADEO Features

- 2 -

- Adaptation to
 - Plan deviations
 - Controller interventions
 - Flight plan updates
 - Multi Objective Optimisation
- Objectives:
- Maximise capacity (throughput)
 - Minimise taxi-out delays
 - Maximise CFMU slot compliance and punctuality
 - Maximise planning stability (similarity between consecutive takeoff schedules)

Planning Strategies

- Combination of the objectives with different weights

CADEO References

- Real time simulation for Arlanda Airport, Stockholm, within Gate2Gate project (2004, 2005). CADEO was integrated with i-acs HMIs.
- EMMA and EMMA2 (2004-2008). Real time simulations with CADEO and with CADEO integrated with EFS and passive shadow mode trials at the airport Prague.
- Integration with Barco AMAN OSYRIS (2004).
- Coordination with DLR AMAN 4D-CARMA and ADCO (AMAN DMAN Coordinator) (2005).
- Coordination with DLR's pretactical planner TOP (Total Operations Planner) (2007).
- Simulation trials with Arrival (4D-CARMA) Departure (CADEO) Coordination supporting displaced threshold operation for Frankfurt Airport (FP6 project OPTIMAL) (2007-2008).
- Passive shadow mode trials at Brussels Airport (2008).
- Passive shadow mode trials at Athens Airport (2008).



CADEO Contact

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