Demand Capacity Balancer (DCB)
Tomorrow´s performance, delivered today

Features

- Flight movement predictions
- Airport performance predictions
- Extended planning horizon
- Proactive decision-making
- Target time of arrival (TTA)
- Cloud-based technology
- Enabling the airport operations plan (AOP)
- What-if probing and scenario planning
- Simulation results in less than a minute

Demand Capacity Balancer (DCB) is a decision-making platform, which empoweres its users with the necessary predictability to ensure the right decisions are made at the right time. This proven solution extends the airport operations planning horizon by accurately forecasting demand, capacity and performance metrics on the day of operations and up to six months in advance.

Creating certainty ahead of change

DCB combines a range of data sources - including weather conditions, accurate flight arrival/departure times and airport operational data – with a powerful digital twin simulation of the operation to allow key stakeholders to determine the best outputs and to support most efficient airport operations. It allows 'what-if' scenario planning to confirm the best operations plan and outcome for business continuity.

Opening a new chapter for intelligent control and influence of traffic

DCB replaces the conventional schedule-based planning with a rolling Airport Operations Plan (AOP) together with the ability to distribute the collaboratively agreed plan across the airport systems. This provides resilience and stability across the whole airport operation, allowing the right resources to be deployed as needed.

DCB extends the current planning horizon of Airport Collaborative Decision Making (A-CDM) to support the AOP implementation in accordance with the ACI ground coordinator concept and in full compliance with the Common Project One (CP1) regulation and SESAR deployment in Europe. Moreover, with its unique capability to calculate Target Time of Arrival (TTAs), DCB enables integration with the Network Operations Plan (NOP) as well as User-Driven Prioritisation Processes (UDPP). An increased predictability of demand hotspots allows airports to pre-emptively deploy measures to reduce ground and airborne delays and therefore decrease CO_2 emissions, e.g. via use of TTAs.

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FOR A SAFER WORLD

Benefits

- Maximises airport performance
- Reduces airport and airline operating costs
- Improves passenger experience
- Resilient and stable airport operations
- Reduction in CO2 emissions

Strategic Advantage

The combination of key data sources with advanced simulation capabilities leads to the reduction of uncertainties as well as improvement of arrival and departure predictability. On the day of operations, the solution can integrate with Air Traffic Control (ATC) systems - such as Arrival and Departure Managers (AMAN/DMAN) - to provide airport stakeholders with the most up-to-date predictions.

The accurate prediction of performance metrics allows users to plan, not only based on demand data (such as estimated arrival times), but also on operational outcomes (such as punctuality). This enables timely decision-making based on common situational awareness, thus achieving agreed performance targets, such as environmental sustainability, cost-effectiveness, punctuality and maximum connectivity for transfer passengers.

Enhancing reactive to proactive management

DCB enables timely and pro-active decision-making during strategic, pre-tactical and tactical planning phases, resulting in a more effective resource allocation. This saves time and costs associated with managing the operational resources and hence significantly reduces overall OPEX.

Proactive management of the airport operations, such as issuing Target Time of Arrivals (TTAs), reduces the need for operational buffers, makes best use of available capacities, minimises the need for cancellations during disruptions and thus reduces airline operating costs.

Advanced partnertship

DCB has been developed in partnership with UK´s Air Navigation Service Provider NATS and is in operation in London Heathrow. The strong partnership between NATS operational excellence globally and Frequentis proven optimisation algorithms result in a consistent, robust, timely and intelligent insight for high performance airports.

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