Demand Capacity Balancing

The power of predictability when every day is different

Demand Capacity Balancing (DCB) minimises disruption and optimises operations using powerful, accurate forecasting that balances demand with capacity allowing the airport to anticipate and mitigate disruption.

DCB is a predictive decision making platform, drawing on a range of data sources including weather conditions, live flight data and airport operational data to deliver seamless, uninterrupted airside operations.

The in-the-moment operational response capability ensures peak performance for the airport on-the-day through proactive plans the airport operations teams create.

DCB is deployed at Heathrow Airport to generate the information needed for optimal interaction of the Airport and Network Operation Plans.

Demand Capacity Balancing

− **Active Demand Prediction**
Arrival times are calculated up to 10 days in advance using global data coverage that encompasses the influence of operational and weather conditions

− **Advanced Operational Foresight**
Further improvements in punctuality and passenger connectivity can be predicted 7 days ahead using applied deep learning to enable local responses to changes in weather and operational conditions

− **Scenario Planning**
The transparent, robust and consistent output provided during disruption allows airport operations teams to be confident in planning and delivering resource optimisation across the operation reducing unnecessary buffers

− **Anywhere, Anytime**
DCB is cloud-based, highly secure and is accessible wherever and whenever needed

Target Times of Arrival

If a problem is identified, DCB generates Target Times of Arrival to smooth out any demand/ capacity imbalance. This supports collaborative intervention to maintain inbound flow.

− **Identify the demand and capacity hotspots**
Provide an accurate view across key metrics including airborne delay that will result in operational issues

− **Work to plan**
Control the demand on the airport through flow of traffic and issuing of TTAs. This reduces the need for operational buffers, enhancing capacity and reducing costs

− **Customisable performance metrics**
Optimise to a given metric − including minimum delay, departure punctuality, maximum capacity, reduced night jet movements − to align decisions across teams and assure operational outcomes.

Influencing Demand

DCB influences demand on the airport using Target Times of Arrival (TTAs) for aircraft.

TTAs manage and reduce airborne holding in line with principles being introduced by SESAR (the Single European Sky ATM Research programme).

The predictive decision-making provided by DCB smooths hotspots in demand by automatically selecting candidate flights for TTAs and moving them out of the hotspot. These include flights running earlier than scheduled that cause the peak in demand.

Airport Capacity Enhancement

DCB is one of the products and consultancy services from NATS that supports airport capacity and resilience.

NATS' Airport Capacity Enhancement methodology identifies the optimal method to support operational needs.

Find out more

If you would like to learn more about DCB and the services we provide, please contact:

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