Arrival and departure management

Efficient, predictable and sustainable operations

Benefits

- Improves efficiency by balancing arrivals and departures
- Optimises planning for inbound and outbound flights
- Reduces costs and environmental impacts caused by capacity imbalances
- Enables air traffic flow management (ATFM) through additional functionality

Arrival Manager (AMAN)

The Arrival Manager (AMAN) helps air traffic controllers efficiently manage incoming flights to use available runway and airspace capacities. AMAN provides decision support for all controllers managing arrival traffic and, if required, in a multi-runway configuration and multi-airport environment. The system offers a set of advanced features like route, holding and speed advice, calculation of take-off times for short-route flights and what-if analysis. With the help of these advanced features, aircraft holding is reduced to a minimum resulting in more efficient and predictable flight operations.

Departure Manager (DMAN)

The Departure Manager (DMAN) provides consistent optimised planning of the outbound traffic at airports and accordingly optimised target times at the runway and the stands. DMAN maximises runway capacity utilisation, minimises fuel burn and provides significant improvements in outbound traffic predictability. DMAN advanced functions include: minimum departure intervals to support efficient TMA management, stand contentions to de-conflict push-backs from adjacent stands and coupling with A-SMGCS or surface management (SMAN) systems.

Integrated AMAN/DMAN (IAD)

The Integrated AMAN/DMAN (IAD) efficiently balances inbound and outbound traffic demand. The respective traffic streams are planned in an optimised mixed-mode runway sequence for the best use of the constrained runway capacity. Moreover, a more realistic and precise accuracy on landing and departure times will increase predictability resulting in increased runway throughput. While the system supports the coordination between tower and approach, the situational awareness of the involved controllers is improved. Following its use in a SESAR project to investigate the coupling of AMAN/DMAN, IAD, is now deployed at major hubs like Singapore Changi airport.

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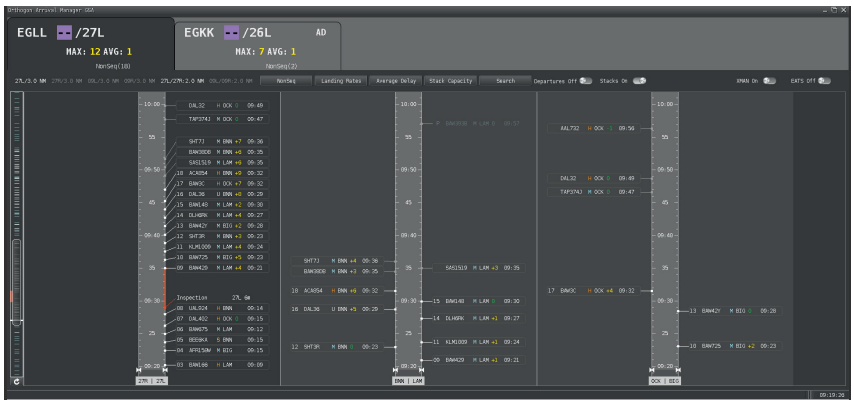

Proven references

Our software is the application of choice for air navigation service providers, airports, system integrators and research organizations worldwide. As every airport and airspace has specific characteristics and requirements for ATC software systems, AMAN and DMAN are highly adaptable, inter-operable and are consistently advanced and improved. The strong technical competence and operational experiences gained throughout the high number of customer projects allows the company to offer and implement a decision support solution that is fully tailored to each individual customer's needs, ensuring operational and cost efficiency. Our team offers comprehensive service and support after implementation.

"The Arrival Manager software meets all technical and operational requirements as well as the safety management and quality assurance objectives. Avinor judged this AMAN the most user-friendly and the most mature arrival management software on the market."
Kristian Pjaaten, Project Team Manager at Avinor

Efficient operations

The reduction of costs and environmental impact caused by demand-capacity imbalances has become a high priority objective. Our products have been designed to increase resource capacity, operational efficiency and traffic predictability. Air navigation service providers, airports, airlines and other stakeholders are supported in minimising delays and collaboratively managing traffic flows.

Key for ATM modernisation

AMAN and DMAN are key components of the ICAO Aviation System Block Upgrades (ABSU): "Metering allows ATM to sequence arriving flights such that terminal and aerodrome resources are utilised effectively and efficiently. Departure management tools maximise the use of airspace capacity and assure full utilisation of resources." The systems provide enhanced coupling supporting optimised, flexible and efficient usage of mixed-mode runways in alignment with ICAO ASBU Block 2.

Pre-departure sequencing

DMAN provides all pre-departure sequencing capabilities, as required for airport collaborative decision making (A-CDM), including the calculation of target take-off times (TTOT) and target start-up approval times (TSAT), based on variable taxi times. AMAN and DMAN are operational at the A-CDM airports London Gatwick and Singapore Changi supporting efficient runway management.

Extended horizon

AMAN provides the functionality to extend the planning horizon. For the London TMA, the extended AMAN horizon was a key enabler for the successful cross border arrival management project, providing fuel costs savings for airlines of €7.5 million per year. Martin Rolfe, Managing Director, Operations at NATS, commented, "This is the first cross border arrival management—or XMAN—trial of its kind anywhere in the world and a great example of partnership working for the benefit of our customers and a potential future model for the industry."

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