

Dubai Leads the World in Airport Technology Adoption

Artificial Intelligence, Biometrics and Digital Twins Take Centre Stage at Airport Show 2026

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/EINPresswire.com/ -- Exhibitors and speakers at the 25th edition of Airport Show, which concluded today at Dubai World Trade Centre, highlighted how artificial intelligence (AI), biometrics, digital twins and integrated data platforms are transforming passenger screening, baggage handling and energy management across airports in the region.

Airports are increasingly embracing smart operations that connect every stage of the passenger journey, from home to boarding the aircraft. Dubai is leading the way globally by enabling passengers to check in their baggage from virtually anywhere.

A panel discussion titled “Smart Airport Operations: Connecting Every Stage from Home to Flight” was held during the Global Airport Leaders’ Forum (GALF), alongside the 25th edition of Airport Show. The session explored key issues, including how airports can accommodate growing passenger volumes while maintaining high service standards throughout the journey, from check-in, security screening and baggage handling to boarding and arrival.



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Over the coming year, Dubai Airports will work towards implementing Baggage Collaborative Decision Making (B-CDM), supporting its broader Total Airport Management (TAM) framework.

Dubai Police outlined how it is integrating artificial intelligence, predictive analytics and next-generation screening technologies at Dubai International Airport (DXB). In August 2026, the airport introduced advanced security screening equipment that allows passengers to keep laptops, liquids and other personal belongings inside their hand luggage during screening.

Dubai Police has also implemented smart screening systems, centralised screening rooms, cameras for occupancy monitoring and behavioural analysis, vehicle-stopping systems, mechanisms for tracking missing passengers and monitoring passenger flows, as well as a digital twin model developed in collaboration with Dubai Airports.

These systems can forecast passenger volumes up to two months in advance, with predictions refined to 15-minute intervals. The new screening equipment can process three times as many passengers as previous systems. Currently, 98% of passengers at DXB wait less than five minutes at security checkpoints.

During a session tracing the journey of a passenger and their baggage, Ciaran O'Sullivan, Vice President of Airline Services at dnata, highlighted the company's "Check-in Anywhere" service, which enables passengers travelling with Emirates, flydubai and other airlines to check in their baggage from their homes, hotels or workplaces.

John Dyte, Vice President of Baggage at Dubai Airports, said: "We are currently exploring the use of electronic baggage tags and the introduction of off-airport check-in facilities at multiple locations across the city."

He also emphasised the opportunity for Dubai to lead the world in enabling passengers to check in their baggage from anywhere.

Kroos Ross, Vice President for the Middle East and Africa, Airports and Border Authorities at Amadeus, highlighted the role of biometrics based on a single enrolment system in integrating baggage reconciliation with aircraft weight and balance systems. This integration eliminates the need for manual data entry and contributes to reducing fuel consumption.

With the infrastructure at Dubai International Airport (DXB) largely complete, speakers agreed that future capacity improvements would depend on greater collaboration and data sharing rather than the construction of additional facilities.

In this context, Khurram Qureshi, Head of Portfolio and Stakeholder Management at Dubai Air Navigation Services (dans), said: "Airport Collaborative Decision Making is a journey towards ensuring that the right information is shared with all stakeholders across the airport

ecosystem.”

Looking ahead, panellists discussed current operations at DXB, which handles approximately 100 million passengers annually, in the context of preparations for Al Maktoum International Airport, which is expected to accommodate more than 200 million passengers within the next five to six years.

Ras Al Khaimah International Airport

Binu Gopal, Chief Operating Officer of Ras Al Khaimah International Airport, said the airport surpassed the one-million-passenger milestone last year and currently serves approximately 14 destinations, primarily in India, Pakistan and Egypt.

The airport is preparing for its next phase of growth, supported by major tourism developments across the Emirate of Ras Al Khaimah.

He said: “As an immediate step, we are currently developing a dedicated private aviation terminal to serve business jets, general aviation and VIP passengers. We are also in active discussions with airlines regarding the introduction of new routes from Ras Al Khaimah.”

Gopal explained that Ras Al Khaimah International Airport is planning a new passenger terminal with a capacity of at least two to three million passengers.

He added: “The project is currently in the preliminary design stage, and we expect it to be completed by 2030, in line with the anticipated growth in passenger traffic. In the meantime, the existing terminal will undergo upgrades and modernisation to meet current operational requirements.

“Through our participation in Airport Show, we are exploring advanced technologies that can enhance the passenger experience, particularly contactless systems and processes, as well as solutions that provide passengers with greater awareness of their surroundings and journey.

“We plan to introduce some of these technologies in the existing terminal, while the majority will be incorporated into the new facility.”

The Airport as an Integrated System

As airports continue to modernise their infrastructure to accommodate increasing passenger traffic, rapid technological advancements and increasingly complex operational requirements, infrastructure can no longer be designed independently of the systems responsible for managing and operating it.

In a case study presentation titled “The Airport as a System of Systems: Designing for an Interconnected Future,” Carlotta Godenzoni, Head of Infrastructure and Systems Design, Technical and Implementation Area at Bologna Guglielmo Marconi Airport in Italy, explained that modern airport design has undergone a fundamental transformation.

Rather than focusing solely on expanding capacity by constructing additional boarding gates or terminals, airport development is increasingly centred on maximising the use of existing infrastructure and improving operational efficiency.

She said: "Airports must be viewed as integrated ecosystems of interconnected systems, rather than simply collections of separate facilities or assets. Designers must incorporate modern technologies, systems for managing high-density air traffic and operational data to enhance capacity and improve operational efficiency."

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