Eyes on the prize

A total of 26 nominations were received for the *Jane's* ATC Awards 2019

The *Jane's* ATC Awards 2019 attracted entries from across the global air transport industry, highlighting major innovations and projects that enhance airspace capacity, safety, and environmental sustainability.

Winning entries will be announced on 12 March in a ceremony at 3 pm in the Delegate Theatre during the World ATM Congress in Madrid.

PTZ infrared and video camera system at Saarbrücken Airport. (DFS)

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The 26 nominations are summarised below in alphabetical order.

AEROTHAI launched its ATM Modeling Simulator in October 2018, as a flexible and distributed platform to create air traffic management (ATM) scenarios and evaluate the benefits of new airspace design initiatives.

The plug-and-play simulator can be configured to suit the different requirements of modelling and analysis, eliminating the need to build an ad hoc and standalone simulation tool for each new ATM-related development.

During the design phase of the new route within Bangkok Flight Information Region (FIR), the ATM Modeling Simulator is being used to study and quantify the benefits and impacts on flight operations. It is also used to assist the process in deciding new air traffic flow management measures.

With the capability to process real-time traffic information, including surveillance data, the ATM Modeling Simulator can support tactical planning by providing a predictive traffic model out to 24 hours. As a flexible system, it can also be configured to experiment with future SWIM-enabling concepts such as Flight and Flow Information for Collaborative Environment (FF-ICE) using standardised XML-based information exchange models.

The challenge with integrating unmanned aerial vehicle (UAV) operations near airports is to ensure that timely and high-quality information is shared in real time between ATM and unified threat management (UTM) systems. Altitude Angel played its part in efforts to achieve this objective, by joining NATS, Manchester Airport, Frequentis and other partners (such as Heliguy) in Operation Zenith in November 2018.

The GuardianUTM Airspace Management Operating System from Altitude Angel interacted directly with Frequentis smartSTRIPS electronic flight strips in the air traffic tower at Manchester. A set of live demonstrations (across eight scenarios) in fully operational airspace proved that ATM and UTM can be integrated successfully in real-life situations at a major UK airport. GuardianUTM provided all paticipants with a real-time moving map of all aerial activity, which the UTM system was also used to send data to nearby highly automated UAVs or UAV operators to help them operate safely in proximity. As the UTM system was integrated with air traffic control operations at Manchester, controllers received a detailed picture of all approved and unapproved activity.

Azerbaijan is forecast to enjoy strong air traffic growth in the coming years – coupled with its advantageous geographical position on overflight routes between Europe and Asia, this means that air navigation service provider (ANSP) AZANS may play a significant role in the regional air traffic flow management of the region.

AZANS inaugurated the Azerbaijan Airspace Supervision & Efficiency Centre (ASEC) in February 2018, as a base for Thales systems such as the Ecosystem ATFM platform tool. AZANS also paves the way for implementation of new collaborative concepts such as the SESAR TOPLINK project, and has the potential to be a key connection point with the Eurocontrol Network Manager (NM).

ASEC has tested and evaluated new ideas, concepts and technologies in a series of successful airspace simulations in co-operation with DFS, and Kazakhstan was one of the first customers to use the new centre. Fast-time simulations were conducted of new R-NAV SIDs/STARs and approach procedures for Astana and Almaty international airports.

The Co-ordinated Capacity Ordering and Trajectory Pricing for Better-performing ATM (COCTA) project, which ended in September 2018, was led by the University of Belgrade,

as an exploratory SESAR project for improving the performance of the European ATM system by redesigning major parts of the value chain.

COCTA developed an innovative concept to strengthen the role of the NM, by combining co-ordinated capacity provision with a novel approach for demand management. The team developed a complex optimisation model and applied it to a large-scale case study involving more than 11,000 flights from eight ANSPs in highly congested European airspace.

The case study combined real-world data (such as airspace structure and actual flight schedules) with some random effects such as non-scheduled flights. The mathematical model is highly customisable and could assist NM decision-making. Results showed that COCTA can handle the same traffic volume using 6% fewer sector-hours compared to the baseline, at the same time reducing the total delay minutes by 83% and the incidence of long delays by 89%.

Clayton J. Lloyd International Airport (CJLIA), in the British Overseas Territory of Anguilla, was badly hit by Hurricane Irma in September 2017. The Non-Directional Beacon (NDB) at CJLIA was destroyed, meaning that no instrument approach procedure (IAP) operations were possible. It was critical to replace the IAP to allow the restoration of all-weather and night time operations, reduce operational costs and, importantly, improve business resilience from future hurricanes.

In its recovery effort, CJLIA identified the need for new GNSS Instrument Approach Procedures (IAPs) as the only solution that enabled its quick deployment to allow for all-weather and night operations. However, CJLIA terminal airspace is just 11 n miles from the Juliana CTR on the neighbouring island of Saint Martin/Sint Maarten, so close liaison was required.

Unlike the previous NDB procedure which was susceptible to night and sea effects, the new global navigation satellite system (GNSS) procedures provide a 'straight in' 3D instrument approach in all weathers with the addition of vertical guidance to enhance approach safety. The GNSS IAP also requires virtually no physical infrastructure, which helped at CJLIA as the main runway is surrounded by rising terrain. Aviation consultancy Helios assisted CJLIA and the Anguilla Air and Sea Ports Authority on the project, which began on 1 January 2018 and was completed on 17 September when CJLIA received regulatory approval.

A new digital remote control tower began live operations at Cranfield Airport in the UK on 13 December 2018, as part of the GBP67 million (USD84.3 million) Digital Aviation Research and Technology Centre (DARTeC), which is spearheading the UK's research into digital aviation technology. DARTeC aims to establish a new research and development paradigm, streamlining the ATM ecosystem and enabling ATM technology to move faster from the drawing board to deployment.

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