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Opportunities and challenges for urban **aviation mobility**

International Airport Review's Editorial Assistant *Lily Mae Pacey*, speaks with Ivonne Kuger, Vice President Corporate Development at Munich Airport International, to discuss the de-velopment of urban air mobility.

Where does Urban Air Mobility stand today?

The development of urban air mobility (UAM) solutions is no longer a vision. It will soon be-come reality and will have significant implications for the transport and logistics sector world-wide.

As UAM develops, are there good reasons for airports to be actively involved?

There are indeed several good reasons for airports to be actively involved in developing and paving the way for this new form of transport. UAM will on one hand contribute to the decar-bonisation of aviation. As European airports are committed to Net Zero by 2050 UAM will di-rectly "pay into that account". As an innovative mobility concept, it also has the potential to directly connect rural regions ➤➤

> *As European airports are committed to Net Zero by 2050 UAM will di-rectly "pay into that account"*

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and remote places with airports, and last but not least, to decon-gest public transport in megacities. As Europe's first 5-star airport, Munich Airport has always been at the forefront of innovation, adopting new technologies and business models for con-tinuous improvement of operational efficiency, service quality and profitability. The introduc-tion of urban air mobility requires, amongst others, a high level of aviation expertise. For us, it is quite natural to get involved and participate in making it a reality.

Munich Airport is part of the recently launched Air Mobility Initiative (AMI). What is the idea behind this initiative?

The Air Mobility Initiative is a joint undertaking of corporate partners such as Airbus Urban Mo-bility, and start-ups, as well as renowned German research institutes and universities. We are proud to be one of the founding members and are looking forward to working with our partners towards the successful demonstration of air mobility solutions on our home turf. By combining knowledge and expertise of the different partners in the initiative, we will be able to develop a holistic solution paving

IVONNE KUGER

Vice President Corporate Development at Munich Airport International

the ground for commercial services. The joint objective is to develop sustainable UAM solutions and integrate them seamlessly into existing transport systems and urban environments. As part of the initiative, we are leading a project on the integration of 'vertiports' into airports. The aim of this project is to develop concepts and solutions for the planning, permitting, implementation and operation of vertiports at airports. To integrate a vertiport and eVTOL operations at a commercial airport, a variety of interdependencies and regulations must be considered: environmental impact, intermodality and connectivity issues, slot neutrality, approval of flight procedures or certification of ground infrastructure, to name just a few. New digital solutions are also needed to ensure a seamless travel chain. Last but not least, public and user acceptance will play a major role in the success of these new solutions. The projects of our other partners focus on the development and certification of 'eVTOLs' (drones and air taxis) and unmanned traffic management services, so-called UTM. The UTM activ-ities deal with the safe and efficient navigation of vehicles on their routes in the lower airspace and how to integrate them into the existing air traffic management system. »

> **1,600 start-ups are at home in Munich alone. The region is also known for its strong focus on technology, IT, mobility, and aviation industries**

AMI was launched in Munich with mainly Bavarian or Germany-based partners. Will the net-work also be open for international collaboration?

Bavaria and its capital city Munich are the perfect setting for AMI, providing a great innovator, founder, and start-up scene. 1,600 start-ups are at home in Munich alone. The region is also known for its strong focus on technology, IT, mobility, and aviation industries. Nevertheless, the majority of our partners are active globally just like us. The initiative is therefore open and new partners are welcome to join in the coming years. Munich Airport International (MAI) is a glob-ally acting company – thus an international expansion of the initiative and collaboration with global partners is strongly desired.

What are the challenges and barriers for a successful realisation of urban air mobility? How does Munich Airport hope to help overcome these?

Beyond the obvious challenges of developing aircraft and preparing for certification, there are numerous concerns related to regulations, technology, and commercial viability. Right now, there is, for example, no existing legislation or regulatory framework for planning, developing and operating ground infrastructure for air mobility, so-called vertiports. MAI has joined EASA's Vertiport Prototype Specifications Task Force to work with other industry partners in defining and bringing standards to market. Furthermore, we still lack suitable technologies for handling eVTOLs on the ground. A fundamental challenge will also be to supply sufficient energy – pref-erably from renewable energy sources – for rapid charging of the eVTOLs. With a faster turna-round, higher capacities can be realised. Another critical point will be to integrate eVTOLs with-in an airport's controlled and busy air space. German Air Traffic Control (DFS) and MAI have started to investigate this issue and to work on solutions. In addition to all the technical and regulatory hurdles, solid business plans are needed for the economic viability of UAM. Our ex-perts have developed a first traffic forecast and respective business plan model for vertiport operators, which is built on the idea of starting small and then expanding in line with traffic growth. And of course, at the end the use of air taxis must also be attractive for consumers in terms of cost, which means value for money needs to be guaranteed. ✈
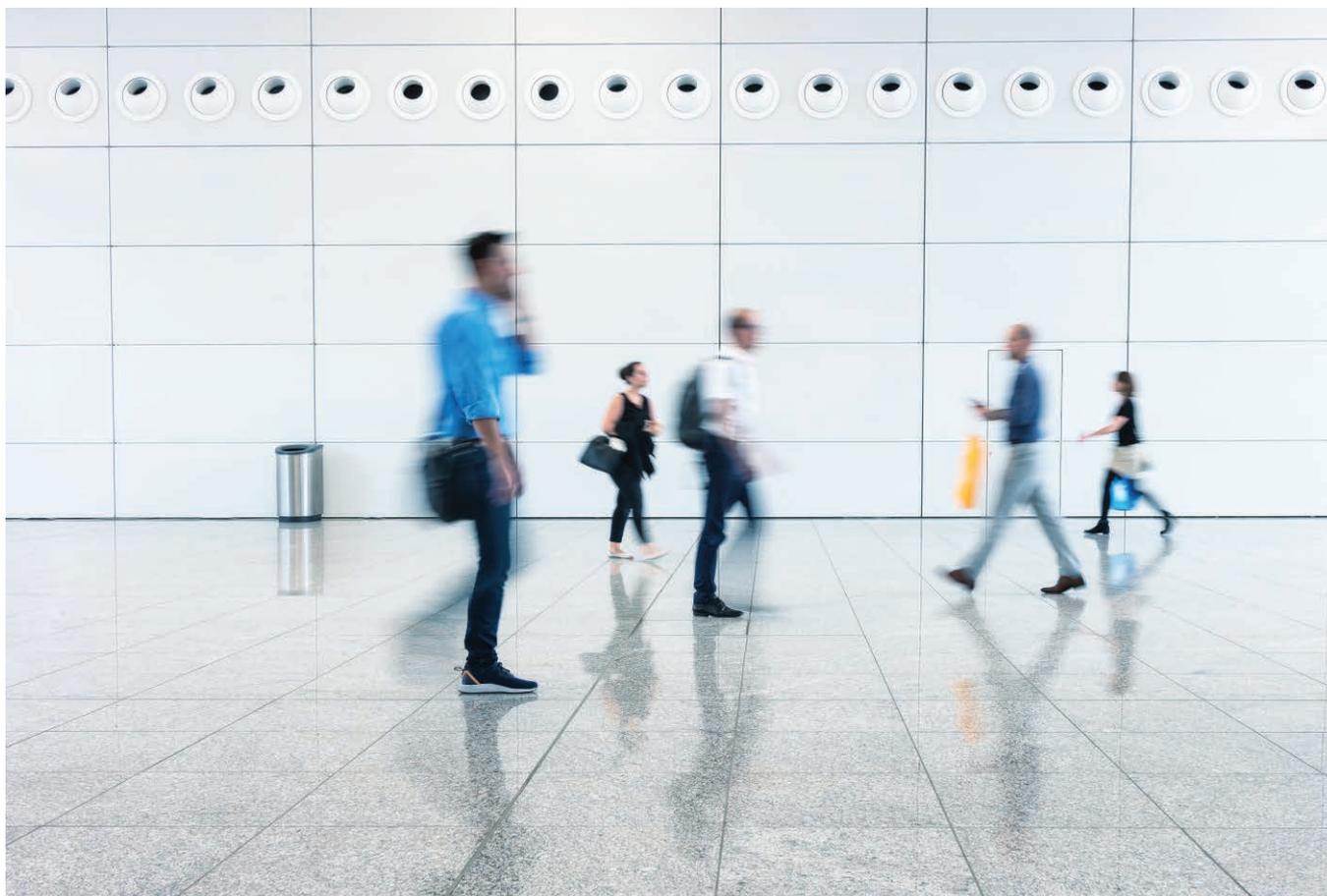
In conversation with **Mohamed Albinfalah**, CEO of **Bahrain Airport Company**

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International Airport Review Editor Holly Miles, sat down with *Mohamed Albinfalah,* the CEO of Bahrain Airport Company – the operator of Bahrain International Airport. Together they discussed how things are going for the airport, his lessons learned for the future and the exciting developments that are in store for the airport. Mohamed is speaking at the International Airport Summit 2022 at Twickenham, London and he is looking forward to meeting you! ⊠

The way we see
innovation

Giulio Ranucci, Head of Innovation & Digital for Aeroporti di Roma, outlines the operator's newly launched innovation model and shares the exciting projects that they have been working on.

INNOVATION IS A FUNDAMENTAL value of Aeroporti di Roma's (ADR S.p.A.) mission, which over the last year has consolidated and strengthened its strategic direction, promoting a corporate culture of innovation through the definition and implementation of a new open innovation model with the objective of strengthening innovation, digitisation and environmental sustainability of airports and industry.

This pandemic has assuredly accelerated the strategy and deployment in terms of innovative projects aimed to enhance customer experience, in particular to avoid physical contacts, but at the same to reshape the way we see our infrastructure, with start-ups having a key role in terms of unique ideas and possible new business cases.

The innovation model proposed by ADR, in fact, aims to be inclusive at 360 degrees: it involves start-ups, universities and SMEs, aiming at a review of business processes and work profiles, enhancing the cultural component.

To implement its innovation strategy, ADR has entered into agreements with:

- Plug & Play, a world-class player in the open innovation sector, to increase scouting capacity (involving universities, corporations, investors, start-ups) and reduce time-to-market of new ideas
- LVenture, an Italian player very present in Europe, with great experience in the management of physical spaces to incubate/accelerate start-ups

Space to innovate

In Terminal 1, 2022 will see ADR create the first corporate vertical incubator in the aviation sector, a 600m² Innovation Hub to facilitate the »

Above: The biggest LED wall in the airport sector in Europe in Terminal 1 of Rome-Fiumicino Airport measures 200m long and 600m² in surface area.

identification and development of new digital solutions, with the aim of investing in start-ups.

The 'call for ideas' launched proposes six different areas of work, six challenges for the innovators of the future:

- Improving flight punctuality and increasing airport capacity
- Creation of data driven systems for planning and real-time management of airport spaces
- Projects aimed at reducing energy consumption and increasing energy from renewable sources
- Identification of new services dedicated to enriching the passenger digital experience
- Automation of processes and controls within the airport
- Solutions dedicated to omnichannel commerce.

During the five-month incubation period, the selected start-ups will have the opportunity to collaborate with the innovation cabin crew team – the 30 innovators within Aeroporti di Roma – in order to have constant support in the growth of the project, also guaranteed from ADR's economic investment.

ADR will guarantee support of €65,000 to each of the selected start-ups, demonstrating how initiatives related to innovation are, together with sustainability, a central theme of the corporate strategy and cornerstone of the vision.

The journey of innovation

ADR began implementing its Open Innovation strategy in 2020, with the organisation of a hackathon in collaboration with the BEST association of the University of Tor Vergata. It then set up the innovation cabin crew within the company and developed national partnerships with players of the calibre of ENI and ENEL and international partnerships, such as the one with Aena, with which ADR created the Airports for Innovation network.

Call for ideas

The launch of the first call for ideas establishes the path of our strategy focused on innovation. Starting from the hackathon, moving onto the implementation of the new operating model aimed at promoting the innovation culture, up to the identification of a series of innovation ambassadors (the innovation cabin crew) and the signing of international collaborations through the new network Airports for Innovation. We are now ready for the next step: engaging start-ups by investing €390,000 in their ideas, sharing our expertise and focusing on the development of their projects within our Innovation Hub, located in Terminal 1 of the Leonardo Da Vinci International Airport.

Our new model of widespread innovation results in a pool of excellence aimed at enhancing local and territorial skills by attracting start-ups from all
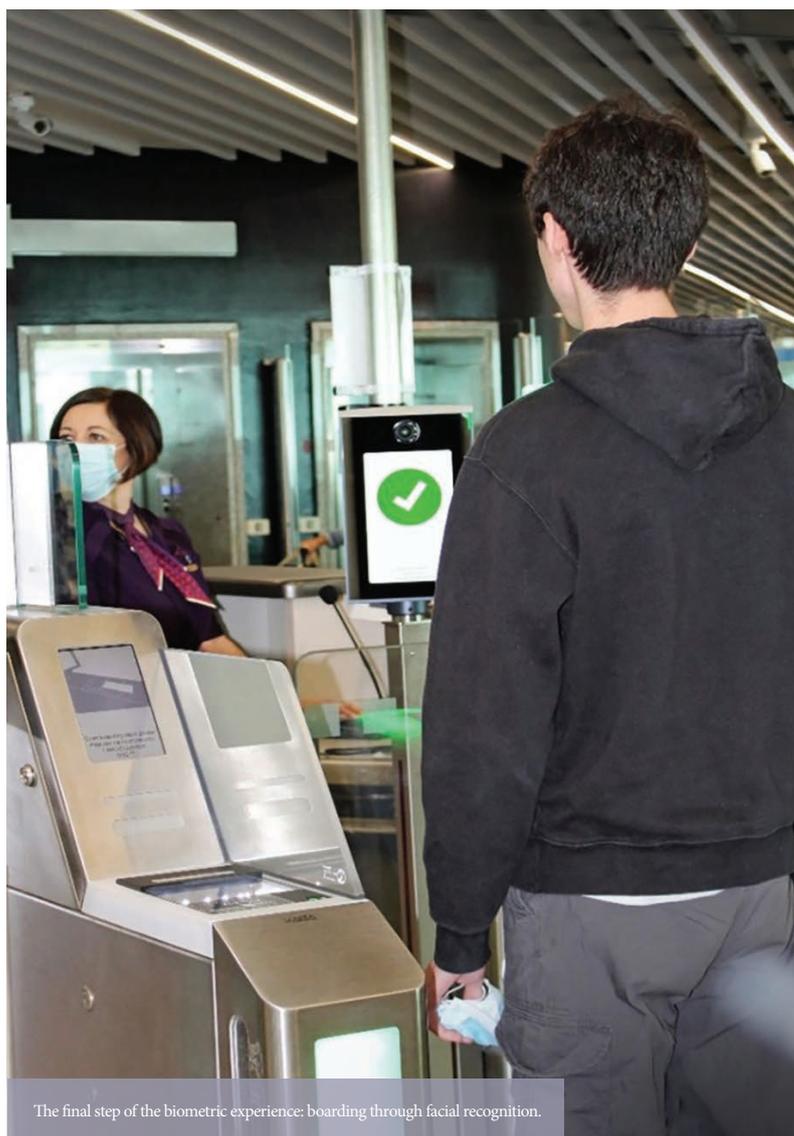
The final step of the biometric experience: boarding through facial recognition.

over the world, who will have access to a unique opportunity to develop their ideas directly in an industrial hub dedicated to the aviation sector.

The results are more than 140 projects from 98 companies from around the world on six different topics.

In addition, we have deployed different iconic projects that already embrace our new way to see infrastructure and travel in general.

Biometrics

Our first intercontinental and COVID-tested corridor, totally contactless and identical both ways from Rome to Atlanta and vice versa, enables a safer and quicker boarding experience.

Launched in July 2021, by ADR and Delta Airlines, the new boarding procedure for the Rome-Atlanta route is characterised by biometric face detection. Departing passengers can now make their entire journey quickly and safely through the airport without having to repeatedly show their documents or boarding pass. »

Our new model of widespread innovation results in a pool of excellence aimed at enhancing local and territorial skills by attracting start-ups from all over the world, who will have access to a unique opportunity to develop their ideas directly in an industrial hub dedicated to the aviation sector

Furthermore, this new boarding procedure acquires even more value in terms of containing the contagion from COVID-19, allowing an entirely touchless process. The system provides for the installation in specific airport areas of equipment (check-in; passenger track security checks; boarding gates) that detects the biometric characteristics of passengers and temporarily acquires the information contained in their ID and boarding passes.

Improving passenger communication and information

In May 2021, ADR introduced a new layout and functionalities to provide flight information to passengers: the possibility to track a flight directly from their smartphone without the need to be physically in the airport. In addition, our Flight Information Display System (FIDS) has been updated both in terms of graphics and ICT architecture. We introduced a clearer and more attractive graphic layout (added airline logos), greater flexibility and speed in the creation of non-standard content (passenger communications, videos, photos, etc.)

Lastly, we have updated the ADR website, with a new graphic layout, making it clearer and more intuitive, as well as adding the flight tracking function (both departing and arriving), with the possibility of receiving real-time updates via email.

Digital signage and new LED wall

To enhance customer experience, we introduced digital totems inside the airport, for complete digital assistance.

Passengers can ask for information by interacting with the totems through a touchscreen and by making a call with operators. This represents the first step of our automation strategy aimed to deliver a better user experience. Furthermore, we have been able to achieve savings of 12.8 FTEs, that we destinated for other core activities.

In June and July 2021, we introduced two fully custom LED walls. The first is an immersive tunnel through which departing passengers can go through pier Extra Schengen. The second is the biggest LED wall in the airport sector in Europe – 200m long and measuring 600m^2 – that plays fully-motion video and flight info, giving the passenger a sense of place, as well as a unique digital effect.

In addition, the LED wall plays customised media content made by the students of an Italian Academy of Art, focused on images and visual inputs strongly linked to the Italian territory for travel, art and food, called 'Italian Stories'.

Digital out of home

ADR has improved customer experience by introducing customised real-time media content with programmatic digital out of home advertising. This technology allows you to insert multimedia content programmatically using physical sensors on the screens. Thanks to integrated OTS (opportunity to see) technology, it is possible to garner insights into how many people are next to the outdoor screens and the 'type' of cluster to which they could belong (e.g. single traveller / groups etc.), so passengers can receive customised media content. For instance, a businessman would see SKY News 24, while a family would see a toy advertisement.

It is clear to see the culture of innovation is strong at ADR, promising a bright future for the passenger experience. ✈

GIULIO RANUCCI

Ranucci is Head of Innovation & Digital for Aeroporti di Roma (ADR S.p.A.).
An expert in digital transformation and innovation, Ranucci's mission is to define and deploy the first innovation plan for the company, leading to the excellent standards on innovation that the airport has already achieved at a European level in terms of quality and passenger experience.

In conversation with **Tara Mulrooney,** VP Technology and Innovation at **Edmonton International Airport**

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International Airport Review Editor *Holly Miles* caught up with *Tara Mulrooney*, VP of Technology and Innovation at Edmonton International Airport. Together they discussed the recovery of Edmonton International from COVID-19, how they are now investing more into technology programmes, how her team has innovated to promote safe and seamless passenger journeys, as well as their digital transformation journey – or rather as they call it, their "innovation expansion". Tara also outlines their most exciting developments at the airport and also looks to the future. Tara says that airports do not have to grow their physical space but they can automate things within terminal and meet their passenger growth projections. They take the approach of innovating to gain more efficiency from their existing infrastructure rather than bricks and mortar construction.

Tara will be speaking in-person at the **International Airport Summit** and is looking forward to meeting you!

How to avoid
airport chaos

Graham Olver, CEO of Luton Rising, the company that owns London Luton Airport, speaks to *International Airport Review* about why the airport is in a good position during the post-pandemic chaos due to its unique ownership model.

T'S BEEN HARD to escape the wall-to-wall media coverage lately highlighting scenes of 'chaos' and lengthy queues at UK airports. But, one airport that has been noticeably absent from these stories is London Luton Airport (LLA) – and there is a good reason for that.

For the year to date, average waiting times at LLA have been 15 minutes for check-in, seven minutes for security, and 11 minutes for passport control.

So how has LLA achieved this? Hasn't it been subject to the same post-pandemic staff shortages as other airports?

The answer lies in LLA's unique, but highly effective ownership model. Luton Rising, the company that owns the airport, is itself owned for community benefit through its sole shareholder, Luton Council. The airport is operated by a separate company, London Luton Airport Operations Ltd (LLAOL), which is backed by AENA, the world's largest airport »

GRAHAM OLVER

Graham Olver is CEO at Luton Rising – the Luton Council company that owns the airport, plans for its long-term success, and acts as the leading investor in the town's community services. He has over 30 years' international experience in major infrastructure projects.

operator, and AMP Capital, a specialist global investment manager.

A new partnership agreement

As LLA, like all airports, saw passenger numbers plunge at the start of the pandemic, Luton Rising and LLAOL signed a new partnership agreement, with Luton Rising providing £45 million in funds to stabilise the airport's revenue.

This provided the financial stability allowing LLA to keep nearly all of its directly employed staff, with just 50 compulsory redundancies, far fewer than any other UK airport. As the economy recovered, and the job market tightened, LLA reacted with improved pay and conditions for the lowest paid workers, as well as setting up a dedicated security recruitment team. This meant that the airport was far better prepared for the subsequent bounce-back.

> **We can justifiably claim to be the most socially impactful airport in the country, with, for example, a level of contribution per passenger to community organisations which is more than 20 times that of any other UK airport.**

A strategic approach

This is not to beat other airports with a stick. Their ownership models do not provide the opportunity for this long-term partnership approach. In contrast, we can see beyond short-term financial projections, and adopt a more strategic, systemic approach.

Our owner/operator partnership creates a balanced eco-system between the needs of passengers, airlines, the community and the environment. Indeed, because we are owned for the benefit of the community, our values are not just financial. We can justifiably claim to be the most socially impactful airport in the country, with, for example, a level of contribution per passenger to community organisations which is more than 20 times that of any other UK airport.

By the same token, our recent partnership agreement also includes provisions to enhance local recruitment for jobs at the airport, ensuring that all airport employees receive the Real Living Wage, and strengthened commitments on environmental impact.

We are always looking forward – how can we create more value, in all senses of the word? In this instance, we were looking past the pandemic, focusing on recovery and what that would require. How could our partnership prepare us for success?

So, does it work? According to LLA's passengers, we are passing with credit. ✈

In conversation with
Simon Earles,
Planning and Sustainability
Director at
Bristol Airport

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In this exclusive interview, *International Airport Review* Editorial Assistant *Lily Mae Pacey*, spoke with *Simon Earles*, Planning and Sustainability Director of Bristol Airport at Airports Development & Future of Aviation Conference. Together they discussed the future of sustainable aviation and how reaching Net Zero should be a crucial focus for airports as the industry continues its journey to post-pandemic recovery.

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