

# Efficient Airports@PROAVIA

Our latest «case studies»



# Automated guided vehicles (AGV) designed for baggage handling

## BagXone High Speed AGV



### The Solution

BAGXONE is a high-speed AGV (Automated Guided Vehicle) designed to handle individual bags.

AGV can cover

#### short distances

- check-in to screening machines or
- from the screening machines to an Early Bag Store (EBS)
- reconciliation room
- make-up carousel

#### long distances

(i.e. link between two terminals) and are easily adaptable to suit scalability and redundancy requirements.

**BAGXone**

### Benefits

- Easily interfaces to load/unload from BHS
- Speeds of up to 7.5m/s for long distance connections
- Mixed zone speeds of 2m/s
- Capable of horizontal transfer or dynamic transfer from above
- Dynamic unload to chutes
- Opportunity charging to maintain fleet performance



## Refurbishing the runway



### The Project

The project involved the complete rehabilitation of the airport's only runway, an infrastructure that plays an essential role in the country's economy.

The 4,000-meter-long, 60-meter-wide runway had not been fully renovated since 1984.

Teams from Colas, Felix Giorgetti SàRL and C. Karp-Kneip Constructions SA executed the earthworks, asphalt paving, drainage, utilities networks, marking, etc.

In order not to disrupt regular air traffic, the work was carried out mainly at night, between 11 p.m. and 6 a.m.

The work also included the structural reinforcement of the shoulders, a new drainage system and the replacement of existing lights with 1,500 LEDs.



### Benefits

- Energy saving and reducing CO2 emissions thanks to LEDs
- Runway completely renovated in a very short amount of time
- Non closure of the airport during the day as work carried out at night.
- Reduction in carbon footprint with materials transported from nearby plants





# Optimizing stand and gate capacity



## The Solution

**DELMIA Quintiq** interfaces with the central airport operational database (AODB). It is able to automatically update plans with any new information from BAC's various partners.

For example, if updated flight plans for incoming aircraft cause a stand assignment conflict, DELMIA Quintiq resolves it automatically.

Changes to stand the stand and gate plan are immediately communicated back to all relevant partners.

The solution supported planners in coping swiftly and effectively with gate changes by enabling them to:

- Forecast, analyze and prepare for possible change scenarios
- Create flexible plans two days in advance
- Receive immediate alerts of last-minute changes and quickly calculate best responses to minimize delays

to know more



## Benefits

- Higher planning efficiency
- Better utilization of the available resources
- More transparency and visibility of aircraft locations during the parking period
- More accuracy in invoicing airline clients for using the stands

## TESTIMONIAL ★★★★★

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"The system is very user friendly and the planning tool is easily and quickly familiarized with.

In addition, it is good to know that the user interface is flexibly and easily modified, allowing each planner to work with his or her own preferences without making the planning any more complicated."

Tim HERMANS, Resource Optimization Officer at BAC

"Since we have been involved with DELMIA Quintiq, the number of complaints regarding the calculation of parking fees has gone down by 90%. This reduction has also freed up a full-time member of the finance team to concentrate on other issues."

Roland COPPIN, Head of operational control at BAC

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# Los Angeles Int'l Airport 2019 - 2023

by



## LAX INTERNATIONAL AIRPORT Automatic Biometric Boarding Gate



### The Solution

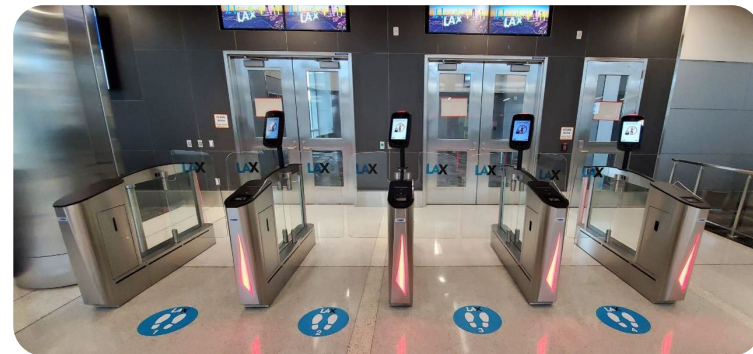
**EASIER** was awarded through a competitive RFP process an ongoing contract to deploy and maintain biometric e-gates connected to the TVS verification system of the CBP, the US border agency, to verify the identity of travelers on outgoing international flights via facial recognition in response to a congressional mandate.

**EASIER** deployed over 125 Skylane e-Gates throughout the Tom Bradley International Terminal (Terminal B). Passengers can board in 1-step, without having to show boarding pass or passport, with response given in less than 2 seconds. EASIER software connects to the airlines' Departure Control Systems via the common use platform. Over 50 airlines currently use the biometric technology, making LAX the largest deployment of biometric e-gates in the US.



### Benefits

- Improved passenger experience, contactless by design
- Faster boarding time – A380s board in 20 minutes
- Improved safety with positive passenger match
- Integrated and tested with most of the world's leading airlines
- Compliant with US Customs





## Smart Vigie Airport – information sharing made easy



### The Solution

After a successful proof of concept at Pau-Pyrénées airport in 2022 and 2023, this innovation, jointly developed with start-up Ubiplace, is now being implemented at Ostende and Antwerp airports in Belgium, in which Egis is a shareholder and operator.

#### Smartvigie Airport simplifies and digitalises airport processes.

Through a dedicated application available on smartphones and tablets, the solution centralises the reporting and sharing of all observations made by airport staff on breakdowns, damage or anomalies inside the airport.

These observations are automatically assigned to the relevant airport teams to ensure they are taken into consideration and effectively resolved as quickly as possible.

The standardisation of the process and the resulting responsiveness will help improve service quality and support smooth operations for all customers and airport stakeholders.



### Benefits

- **Smartvigie Airport** enables all-digital management of the procedures and documents that support regular control of installations and equipment (checklists, patrol reports, scheduled visits, etc)
- The flexibility of the product makes it possible to change the settings and adapt to the specific requirements of an airport in no time at all
- **Smartvigie Airport** is primarily intended for use by the operator's staff but can also be used by the entire airport community (handling companies, shops, service providers, etc.), therefore helping to improve efficiency of information sharing and reporting.

### TESTIMONIAL ★★★★★



"The trial at Pau Pyrenees Airport has quickly led to the conclusion that the Smartvigie Airport solution is relevant and efficient for our operations. It also helped to mobilise and bring together our airport teams as part of our continuous service quality improvement process".



Jérôme LE BRIS, CEO of Pau-Pyrénées Airport



# Lyon Saint-Exupéry Airport 2020

by



and



## Mona Biometric journey through a mobile-controlled digital Identity



### The Solution

**IDEMIA**, biometric security solutions, and **RESA**, editor and integrator of I.T. airport systems, have joined forces to supply Lyon Saint-Exupéry airport operator **Vinci Airports** a contactless solution that runs exclusively on passenger biometric data from registration right through to aircraft boarding.

Facial recognition technology coupled with latest-generation automatic gates provides for a smooth, seamless and secure airport experience that factors in social distancing whenever required.



### Benefits

- Rapid and safe passenger flow solutions for the airport
- Time saving, safe and contactless solution for the passenger
- Compliant with airport health and safety measures

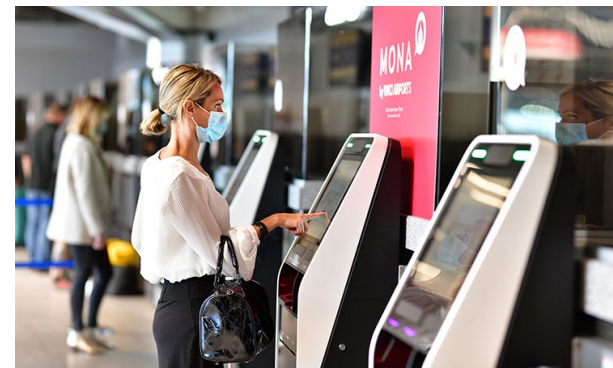


### TESTIMONIAL ★★★★★



We are thrilled to launch MONA today, a world first, at a time when airports need game-changing innovations so they can give passengers an even safer, more enjoyable and personalized experience. I warmly congratulate all staff involved including IDEMIA and RESA people, who managed to overcome tough restrictions these last few months and deliver a great trial in barely a year

Valérie Vesque-Jeancard,  
Vinci Airports France & Americas Area Director







# ABC GATES UPGRADE FOR FRENCH AIRPORTS 2023

by



## Automatic Border Control solution Accessible for more international travellers



### The Solution

**IN Groupe**, expert in identity, smart border and traveller experience solutions has worked closely with the French Interior Ministry to upgrade the current ABC gates for Nice, Marseille, Lyon, Bordeaux, Bale-Mulhouse airports with new biometric checks and improve the process for data collection & matching.

Facial recognition, anti-spoofing & unicity detection alert are merged in our solution to offer the smoothest journey to cross the border.



### Benefits

- Combination of software and hardware upgrade on existing eGates with a limited impact daily passengers workflow
- From 40 to 93 nationalities eligible to ABC gates
- Secure & fast option to cross the French border in Entry and Exit of the territory



### TESTIMONIAL ★★★★★

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We are very proud of joints efforts done by IN Groupe, the French Air Police and our team to be ready for the kick off of the Rugby World Cup 2023. We improved flow management process and increased the eligibility for our international supporters by enabling them to use automatic border control eGates. A faster process to cross the border and be welcome in Bordeaux.

”

Stéphane LOUNE,  
IT Projects Director at Bordeaux Airport







# Newcastle International Airport

by



## Express Car Park “pay on exit” system



### The Solution

Orbitality is the provider of the car park management system for Newcastle International Airport, which includes equipment, the system itself, and a ticketless passenger drop-off solution.

Specific equipment configurations include a successful pay-on-exit solution. Here, customers can pick up and drop off their passengers directly outside the terminal before proceeding to the exit points to make payments using either coins or credit cards. Cameras record vehicle entries and exits through automatic number plate recognition (ANPR), ensuring high accuracy in reading license plates and facilitating a speedy exit from the car park.



### Benefits

- Cost-effective and efficiently high levels of reliability and performance
- Simple to integrate into existing airport systems and infrastructures
- Reliable performance, accurate financial reconciliation capabilities, and the resilience of equipment exposed to, at times, severe wintery weather conditions

### TESTIMONIAL ★★★★★

A NIAL spokesperson said of the project

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“Our investment in Orbitality’s car parking solutions has afforded us the ability to offer a range of reliable parking options which our customers demand from us when visiting our airport. Air travel can at times be stressful and we are working hard to mitigate this by offering a positive customer experience which for many starts in our car parks”.

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# « Lidar-based 3D Spatial Intelligence »

The System is used in two areas of Paris-Charles de Gaulle airport in the international Terminal 2E, including the baggage claim zone.



## The “3D LiDAR Smart Monitoring provides & enables

- Precise Spatial intelligence Information
- Detailed analyses of
  - traveler density & counting
  - people flow and
  - their interaction with airport assets
- Operational awareness
- Higher efficiency
- Valuable insights into people flow
- Asset utilization to operators of large premises





# Optimize HVAC systems for better control and management

## Connected, digitized HVAC equipment

### The Solution

The EcoStruxure™ solution building management system (BMS) is now at the heart of Bristol Airport's 24/7 operations.

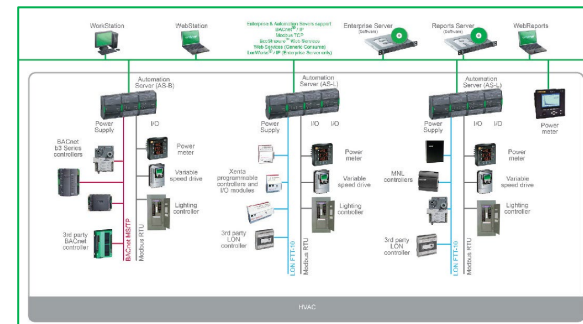
Connected, digitized HVAC equipment. IoT technology, like sensors and metering, provides real-time updates on system performance, enables condition-based monitoring, and uses predictive analytics;

Many airports are a round-the-clock operation and there is no time to shut down HVAC systems for a major repair. They are also high-traffic areas and any operational failure could be unsafe for those in the vicinity.

The data analysis from sensor information takes into account the many factors of heating and cooling a large building with a constantly changing occupancy level.

Airports can use variable speed drives (VSD) to control the speed of pumps and fans, thus only using as much energy as needed.

System integration and remote access give facility personnel anytime/anywhere access to systems, while helping ensure that its all-important energy goals are the priority.



### Benefits

- Software is available through web services
- Graphical interfaces and seamless third-party integration
- Perfect to control both from the main terminal building and via smart devices both on- and off-site
- Engineering efficiency improved
- Better control and management of their systems
- Minimized wasted energy, optimized system performance and improved airflow





# JFK International Airport, NYC 2023

by **Schneider Electric**

## JFK New Terminal - One Microgrid AlphaStruxure

### The Challenge

- Transform NTO into a resilient airport that can function off-grid during power disruptions
- Deliver on aggressive NY State and City sustainability laws
- Deliver energy reliability and resilience with guaranteed system-level uptime
- Produce lower carbon intensity, more efficient, locally generated energy
- Stabilize energy costs over the long-term

### The Solution

- Integrated 11.34 megawatt microgrid comprised of 7.66 MW rooftop solar, 3.68 MW fuel cells, 2 MW/4MWh battery energy storage, and a circular waste heat to chilled water system
- Consists of four power islands: each an integrated energy system with sources of generation, storage, and automation
- The AlphaStruxure Integrate digital platform manages the microgrid performance and operations in a cyber-secure environment
- The Energy as a Service business model provides JFK NTO with long-term, predictable operating costs and guaranteed performance without upfront capital expenditures



### Benefits



## Largest rooftop solar array in New York City

and on any airport terminal in the U.S.  
13,000 solar panels cover all viable roof space



### 38% decrease

in immediate greenhouse gas emissions over source energy



### 100% airport operations

during power disruptions and the first fully resilient airport transit hub in the New York region



### Compliance

with ambitious New York State, City, and Port Authority sustainability mandates



### Long-term cost predictability

of energy supply



# Greenhouse Gas (GHG) footprint calculator

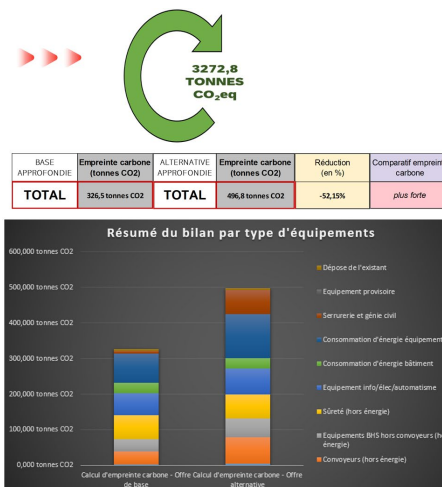
## Design-build BHS system



### The Solution

This GHG calculator was designed by TG Concept to assess the amount of GHG emissions emitted from a project, from cradle to grave.

- Each stage of the life-cycle of every equipment installed (Production, Distribution, Usage (maintenance and exploitation, including energy consumption), End of life management)
- For each equipment of the system
- Estimation of the impact of project management (travelling, movement on the job site, temporary equipment etc.)
- Based on verified data (Life cycle analysis of a conveyor, vetted by footprint experts)



### Benefits

- Raise awareness on the impact of the project
- Gives an indicator to compare the impacts of different projects or options
- Helps in choosing the best environmental and technical solution
- Better understanding of the system and its biggest impacts
- Provide keys for continuous improvement, eco-design and energy savings solutions

