

Thales Airport Solutions: Addressing the Challenges Faced by Airport Operators



Defining a new normal for airports & airport operators

The business activity and successful functioning of airports is centred around the three pillars of security and safety, operational efficiency and passenger experience. Before the COVID-19 pandemic outbreak, airports and airport operators were working to accommodate air traffic growth and overcome airport congestion, and were competing to propose the best-in-class passenger experience. Although these challenges remain the long-term goals of airports, for the time being it is a matter of navigating the new social distancing measures in order to regain passenger trust and redefine a “new normal”.

Optimistic by nature, we at Thales are convinced that airports’ pains and issues can be an accelerator for tomorrow’s airport where social distancing and new security measures are the “new normal”. However, this can only happen provided airport operators have trusted partners who deliver innovative technologies for security, safety, optimal operational efficiency and the best passenger experience.

We are fully aware that when it comes to engaging with airports pains, the real imperative is to make the requirements of two seemingly mutually exclusive realities coexist: the necessity of security and operational efficiency on one hand, and the need to improve passengers flow, services and freight on the other; all while maintaining new social distancing measures.





Decisive functions as a game changer: restoring business during & after crises

We know that the delicate responsibility for ensuring the viability of airport traffic and operational efficiency often falls to decisive positions such as airport security management, airport duty management and border management. These are the core functions of an airport and a crisis of any nature will, as a result, impact them directly.

These functions cannot be bypassed when addressing issues of global safety and security of air traffic infrastructures in the current climate of fear and concern where new threats - cyber-attacks, hacking, pandemic - allow the expansion of old ones like terrorism.

Helping airport operators overcome their obstacles: building tomorrow's airport

We understand that these key functions have a determining role to play in meeting today and tomorrow's challenges: ensuring health and social distancing measures while improving safety and security, passenger experience and operational efficiency. Thales is therefore a trusted partner and takes up the challenge by providing airport operators with a comprehensive and innovative range of solutions deployed in a multi-layered approach: Thales Airport Solutions and the AiRISE Suite.

Thales Airport Solutions and the AiRISE Suite provide end-to-end security management of airport infrastructure, operations, data, passengers and personnel to boost overall operational efficiency and enable strict compliance with regulations, safety and health protocols.

Our value proposition revolves around the particularity of each of these decisive positions and the specific needs that come along with them, so we can respond with the right expertise, the right tools and the best innovative technologies.

As a trustworthy and first choice partner, Thales brings its expertise and innovative technologies to help these decisive functions navigate uncertainty with confidence and turn challenges into growth opportunities.



Tailoring our expertise & technologies to suit your needs

Our dual positioning combined with a comprehensive range of innovative solutions

In order to support both our Brownfield and Greenfield partners, our value proposition is built around a dual positioning that allows us to tailor our offer to your needs, bringing you the right expertise and assisting you with the right technologies. Our offer and our expertise are flexible and modular.

Covering Greenfield projects means that we are a Master Systems Integrator (MSI) qualified to run the overall integration/interface management process. We are in charge of delivering the overall technology in the terminal thanks to a "Design & Build" turnkey solution and widely integrated Special Airport Systems (SAS) package that includes Control Centres, Security Systems, ICT Systems, Telecom and Airport Operations Systems.

As a partner for Brownfield projects, we provide digital platform solutions to meet the needs of our clients in terms of security, efficiency and passenger experience. These solutions are all part of our ARiSE Suite:

- For our Brownfield partners who want to improve their security, ARiSE responds with the SafeLand solution; an integrated security management platform encompassing the cutting-edge Face Recognition Platform (FRP) to increase the reactivity of security agents by reducing the complexity of the technology they have to deal with.
- To meet capacity and operational efficiency requirements, the Shareview Solution of the ARiSE Suite transforms the Airport Operation Centre (APOC) into a collaboration centre by implementing a 'Performance-Based Management' paradigm to make airport business measurable thanks to information sharing.

- The AiRISE Suite also includes InFlow, the essential assistant for managing and improving the passenger experience. As a decision-support tool, InFlow leverages the capabilities offered by "eGates" border control technologies to assist airport operators in managing the flow of passengers through the terminal, from the entrance to the boarding gate. This will maximize passengers' leisure time while minimizing the time spent queuing. ABC (Automated Border Control) gates, in particular, represent a self-service border control subsystem designed to facilitate passenger travel while maintaining consistently high security.

Our multi-layered approach to help you overcome crises

Optimistic by nature, we believe that the unprecedented, unexpected and dramatic effects of COVID-19 and any future crisis can be turned into an opportunity to redefine the passenger experience if airport operators have effective expertise and ironclad solutions to implement the new social distancing measures, operational procedures and sanitary control protocols.

In the context of crises, our solutions ensure a real-time global situational awareness of any critical infrastructure. This enables stakeholders to monitor, detect and respond to security incidents and threats by integrating the different technological subsystems within the infrastructure, including IoT devices.

Whether it is to manage occupancy with Thales InFlow Passenger Flow Management System, detect crowds and check temperatures thanks to SafeLand or even deploy contactless operations with Fly to Gate, we believe that Thales Airport Solutions and the AiRISE Suite are the best allies for airport operators to overcome crises and bring tomorrow's airport to life.





Cybersecurity: the backbone of our solutions

We believe that the current challenges faced by airports could overshadow the existence of other threats that could take advantage of these vulnerabilities to attack critical infrastructures. It is not the time to lower our guard on this front. We have a DNA of innovation boosted by important continuous investments in the four key digital technologies of Connectivity, Big Data, Artificial Intelligence and Cybersecurity.

Given the very nature of their function and the threats to which they are exposed, cybersecurity is becoming an absolute necessity for all airports and airport operators.

By making cybersecurity the foundation and backbone of our solutions, Thales is perfectly positioned to provide airport operators with best-in-class assistance. This assistance and support intervenes in the following domains:

- **Business Continuity:** being prepared for cyber threats
- **Legacy Systems:** being protected by upgrading all your legacy systems
- **Regulation Compliance:** being compliant to all cybersecurity regulations
- **Safety & Security:** being protective by setting up cybersecurity conditions across the entire system lifecycle

Where classical vendors manage cybersecurity on the edge by adding some protection facilities such as anti-virus and simple factor authentication, we on the other hand, support you through the complete cybersecurity lifecycle:

- Identifying issues through product activities (pentest, law compliance...) or services (e.g. risk analysis)
- Protecting systems with an exhaustive suite of possible solutions (hardening, encryption, MCS, MAF...)
- Detecting threats by performing vulnerability tests, adding intrusion protection probes or integrating existing SOC (Security Operations Centres)
- Responding to attacks with various possible services such as rapid intervention forces
- Recovering from attacks with various possible services such as support to response plan

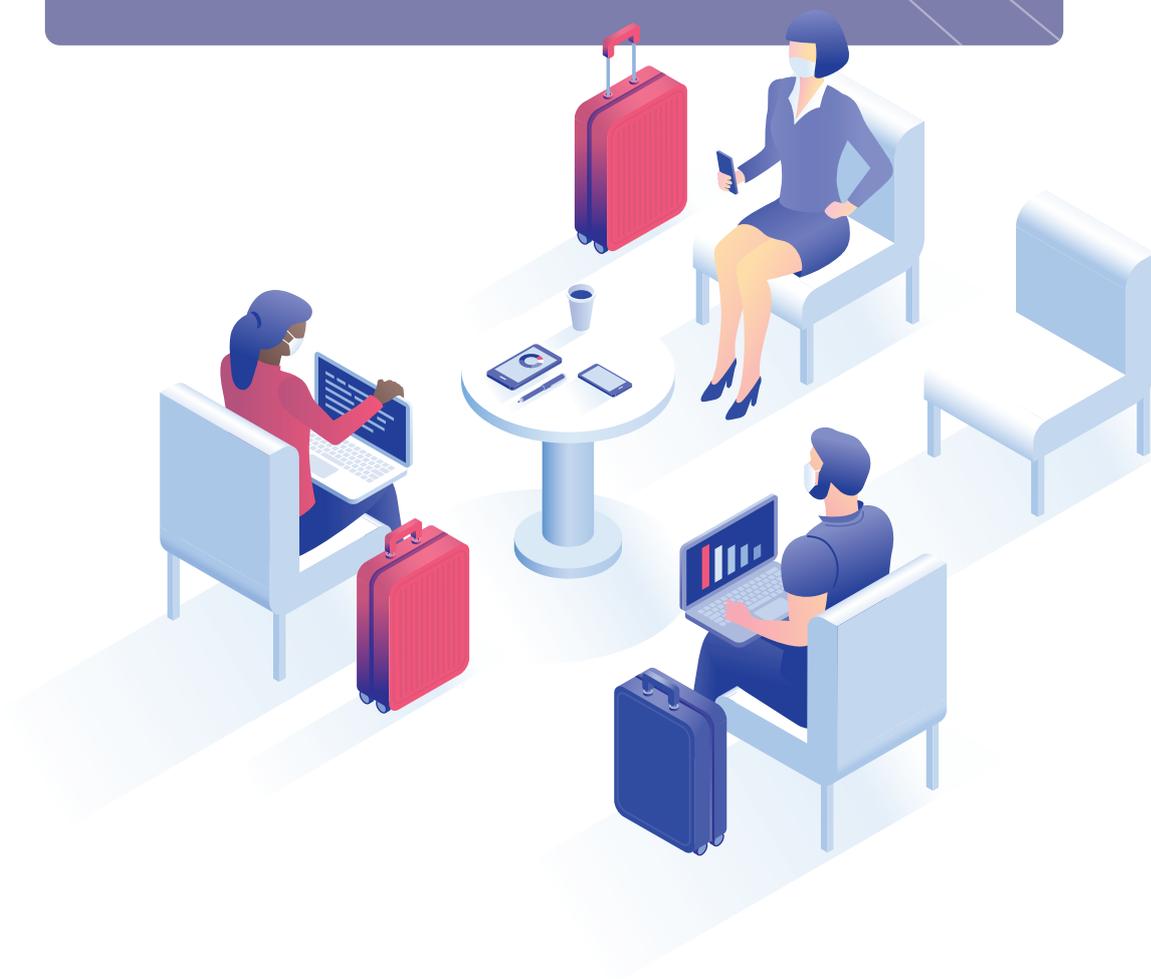


Did you know?

Cybersecurity is part of Thales's DNA and we have made massive investments of more than \$8 billion in cybersecurity and digital technologies over the last 5 years.

At Thales, we offer:

- Cybersecurity skills enriched by multi-sector knowledge
- Agility we have acquired from civilian markets with our military grade expertise
- Resilient solutions using the latest cybersecurity technologies
- Tailor-made products and solutions to match the exact needs of our customers
- Cutting-edge cybersecurity technologies developed in our dedicated crypto labs





Innovative technologies for decisive functions

At Thales, we understand that new procedures, technologies and security protection for integrated systems are critical to an airport's ability to optimize operations. They are the only way for airports to combine efficiency — in terms of capacity utilization, cost structures and environmental performance — with the highest levels of security and safety. Our aim is to put the human at the heart of the technology to assist the key functions of the airport ecosystem and meet their operational needs. At Thales, we seek to find the perfect balance between the sharpness of the human mind and the accuracy of the machine.

| Airport Security Management

Preventing, detecting and eliminating any kind of security incidents, as well as reducing inspections and audits by government offices is a major challenge for the Airport Security Management. However, so is improving reactivity during Standard Operating Procedures (SOPs) and ensuring the safety and protection of passengers and airport staff. Overcoming such challenges is not an easy task to say the least.

Meeting these challenges requires the Airport Security Manager to move away from the all too often passive and wait-and-see posture, to have a near-immediate reaction time to counter all security breaches in real time. The challenge consists in anticipating and preventing different types of security threats. Acting instead of reacting, preventing rather than repairing.

At Thales, we understand that current devices in control centres (APOC) overwhelm operators. Heterogeneous data causes their attention span to drop by 70% on average after 10 minutes and delays interventions by 10 minutes on average to react and an additional 20 minutes to coordinate effective interventions.



In order to change paradigm and reverse this dynamic, the Airport Security Manager and staff can rely on our SafeLand platform designed exclusively to meet their requirements. Thanks to SafeLand, anticipation, reactivity and real-time intervention become the reflex of every Airport Security Manager.

Computing, Artificial Intelligence and Facial Recognition Platform (FRP) within SafeLand allow not only real-time analysis of a colossal mass of multi-source data but also follow-up and traceability of potential current or future risks.



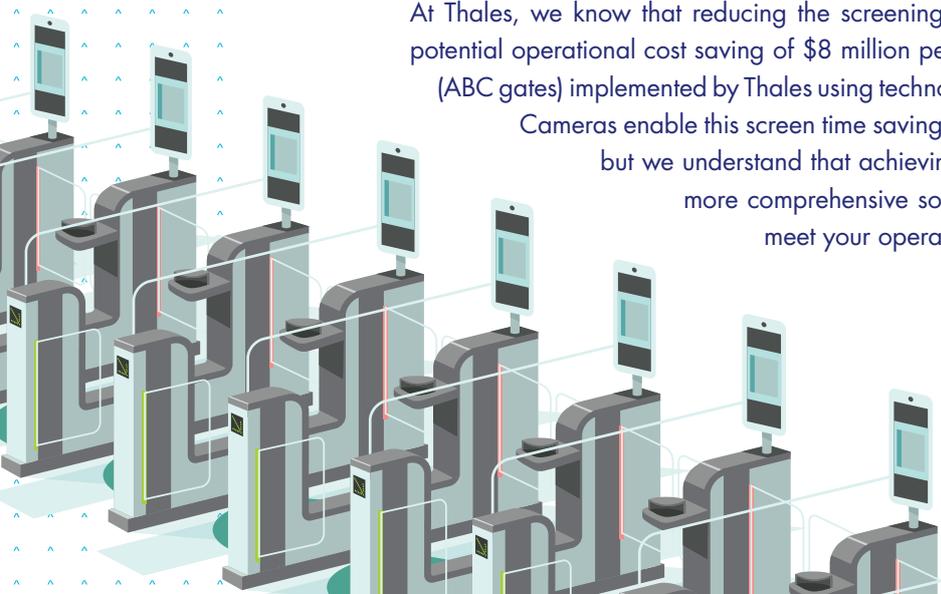
A closer look at SafeLand

SafeLand enables airport operators to overcome the complexity of a centralized airport security management and meet safety and security requirements. Through the increased intelligence of the SafeLand integration platform, Airport Operators can improve the efficiency of their operations, reducing drastically the impact of security incidents. Furthermore, SafeLand allows a significant cost saving by enabling operators to focus on critical incidents as opposed to micromanagement. SafeLand has successfully achieved the transition from the traditional subsystem approach that required a dedicated team to constantly monitor activities, to a smarter integrated approach, which proactively deals with an increasing volume of available information in the security control areas.

Airport Duty Management

For this key position, reducing passenger transit time is as important as increasing passenger traffic flow. As part of Airport Duty Management, the primary mission is the real-time management and organization of complex operations in both normal times and in times of crisis. However, in many cases this can be impossible at worst, and at best it can be fraught with obstacles such as capacity issues that require achieving maximum operational efficiency from limited assets. Limited tools can also hamper efforts to reduce or eliminate disruption and operational costs per flight or passenger.

At Thales, we know that reducing the screening time for each passenger to 2 minutes is a potential operational cost saving of \$8 million per year. The Automated Border Control gates (ABC gates) implemented by Thales using technologies such as Face Capture and Quick Static Cameras enable this screen time saving (average time spent in a gate is 17 seconds), but we understand that achieving your operational objectives requires much more comprehensive solutions. Our InFlow and ShareView solutions meet your operational requirements.





More on ShareView

IoT capabilities and the integration of several sources of information both landside and airside are a key asset that allows our ShareView platform to combine this large set of data and make collaboration happen. On top of integration capabilities, ShareView proposes a set of features to link landside and airside processes and to predict airport operation trends in the upcoming three to six hours in order to anticipate disruption through 'What if' tool simulating countermeasures.

With Shareview, the APOC becomes the real brain of the airport that commands all the resources on the field through collaboration tools like iSOP (Digital Standard Operating Procedures). Stakeholders can then solve issues as a team and the APOC can pilot the airport infrastructure to make passenger life easier.

I Border Management

This is also a central and strategic function that ultimately contributes to national and international security. Cumbersome regulations and complex processes can, however, often slow down and hamper the operational efficiency of border management. Flexibility therefore becomes the primary driver for operational efficiency. Thales understands this imperative and the impact it has on costs and revenues. To meet this requirement and deal with any operational contingencies, Safeland with its liveness detection technologies and precheck Kiosk, not only reduces the time-consuming impact of the new Entry/Exit System (EES) regulations, but also enables the almost immediate detection of suspicious profiles and their reporting to the various control centres.



Private Networks and data protection for airports

Airport Security Management, Airport Duty Management, Border Management and airports as a whole rely on multiple wireless and wired communication technologies like public mobile networks, TETRA and WiFi to reach different users and achieve various use cases across multiple geographical sites. Those systems are not integrated and not suited for business digitization.

They also increasingly need to protect their data within a virtualized, open and shared IT environment via a global encryption policy. This goes from the detection and classification of airports' sensitive operational, business and personal data, to the storage of sensitive encryption keys, encrypting data at rest and in motion whatever IT system is used and across data centers, public and private clouds.

Emerging 4G/5G Private Networks enable airports to take the full advantage of their digitization. Not only do they contribute to increased operational performance during aircraft landing and take-off, but they also improve the wireless connectivity experience for all users, both consumers and professionals. They ultimately create new digital services for B2B customers hosted by airports infrastructure, while maintaining top-notch network security grade monitoring system and avoiding any digital threats or data hack.

At Thales, we aim at securely connecting airports' Private Networks throughout their lifetime so that they can deploy reliable, resilient and trusted private critical communication networks. For example, airport employees can intuitively switch from public mobile networks to private networks in response to operational requirements or unexpected coverage issues.





Creating a world-class passenger experience

The recent reinforcement of processes, control, regulation and protection can be an obstacle to a smoother passenger experience. Revised passenger flows, processes to ensure social distancing, and contactless operations will pose a great challenge to travel infrastructures and technology will play a major role. We know airports are continually striving to improve the passenger experience. Whether a passenger is travelling for pleasure or business, their journey through the airport should be anything but an ordeal. Making the airport experience more positive and more pleasant is also one of our priorities.

Passengers are the real end users and their needs and preferences are constantly evolving. A seamless experience is a 'must have' for airports if they want their business to meet the evolving demands of passengers. The principle is to set up a contactless journey through a biometric pathway, from check-in to boarding, using biometry as a traveller authentication method at all passenger touch points. By assigning each passenger with a unique ID token, Thales's Facial Recognition Platform (FRP) implements an end-to-end management of passengers' processing based on edge face recognition algorithms.

In order to offer the experience passengers expect, efficiency, social distancing and a perfect – yet invisible – organization are the main targets for any modern airport. Border Kiosks, ABC Gates and InFlow are a great help to achieve just that. InFlow Passenger Management Suite offers a clear and comprehensive approach to passenger management. Fully compliant with IATA 4 standards, it regulates and simplifies access to boarding areas while ensuring the highest levels of security at all times. InFlow provides accurate forecast and real-time integration with monitoring systems in order to raise predictive warnings to operators giving them time to solve issues before they become critical. Planning capabilities also help airport operators handle staff according to demand and capacity analysis.

With the Border Kiosk and ABC Gates, travellers will be able to use self-service solutions with only their passport and themselves. This contactless user journey will securely save them substantial time spent at departure and arrival compared to longer manual controls.



Thanks to InFlow, the operator benefits from accurate forecasts to plan resources as well as real-time analysis providing predictive alerts (1 to 3 hours in advance) to anticipate, avoid and address bottlenecks and other terminal-related issues. In addition, ancillary analyses dedicated to retail areas and people behaviour are an essential tool not only for marketing evaluation but also for crowd prediction so that security and operational issues can be avoided.

Our solution is capable of predicting and monitoring passenger flows throughout the terminal, helping the operator to better allocate resources and supporting passenger management through artificial intelligence. InFlow is enriched with biometric identification and identity management functions to streamline the flow, reduce passenger stress and allow passengers to spend time in retail and leisure areas, which is an opportunity for both our customers and Airport Operators to generate more revenues.





Why Thales?

Our expertise and experience at your service

At Thales, we have the expertise, experience and technologies to meet the diversity of any Airport Operator's requirements.

Putting people at the heart of technology is what we believe in; it is our commitment and our philosophy. Thales solutions meet the needs of Airport Operators, security services, regulators and airlines, and are ideal for existing systems as well as new airport projects. They provide end-to-end security management of airport infrastructure, operations, data, passengers and personnel to boost overall operational efficiency and improve the passenger journey. Making Thales your trusted partner means making your airport the airport of tomorrow. Our proven solutions have been installed in many transit hubs all around the world; such as Muscat, Salalah, Bahrain, Lyon, or even Geneva and Paris.

**Thales: Together, building a future
we can all trust**

With Thales Airport Solutions, travelling has never been so easy and safe



PREPARING TO FLY



AI-based technology verifies passengers' trusted identity



Smart security solutions protect their data



ARRIVING AT THE AIRPORT



Symptom screening



Mask detection



Automation of sanitation devices

SECURITY AND BORDER CONTROL

SELF CHECK-IN



Biometrics enable contactless operations and improve security

SELF BAGGAGE DROP-OFF



Biometrics for a smooth passenger journey

AUTOMATED BORDER CONTROL



Automatic gates

AT THE AIRPORT

SHOP & DUTY FREE AREA FOOD COURT & COFFEE



Integrated cameras monitor temperatures



Crowd monitoring systems and controlled access allow social distancing



Smart tags alert to prolonged close contact

BOARDING



Quicker passenger boarding thanks to a unique digital ID token

AIRPORT OPERATIONS CONTROL CENTRE



Monitoring passenger flow and impact on flights



Consolidating data management with dashboards and KPIs



Tackling COVID-specific challenges

IN THE TERMINAL

UPON ARRIVAL



Symptom screening



Smart tags and crowd monitoring systems prevent prolonged close contact



AT THE AIRPORT

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