

The big screen

With biometric-enabled kerb-to-gate passenger flow implementations becoming more ubiquitous, Paul Sillers explores how stakeholders are embracing their multiple benefits.

As airports cope with the aftershocks of the pandemic (especially the challenge of gearing up with a paucity of skilled personnel), biometric screening is high on the agenda to help accelerate passengers through the checkpoints, cut queues – and much more.

Biometric screening is a catalyst for new design thinking in the airport environment, and there's growing evidence that it helps streamline the passenger journey. How? Biometric technologies, when combined with cloud technology, passenger smartphones and AI, enable much of the internal architecture of terminals (such as desks, hard-wired computers, fixed workstations and physical partitions) to be replaced with software-based infrastructure. This facilitates more agile terminal environments that can adapt and scale when more capacity is needed, thereby liberating valuable



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real estate for other needs. In turn, more efficient passenger processing translates into extra dwell time, which means more opportunities for passengers to indulge in a little preflight retail therapy – a boon to the airport operators’ balance sheets.

“Globally, 27% of airports either have implemented, or plan to implement in the very near term, a biometric-enabled passenger processing solution; 84% plan to have something in the works by 2024, regardless of the size of airport,” Sherry Stein, Head of Technology Strategy, SITA told *Regional Gateway*.

“Passengers, especially digital natives, prefer autonomous self-service capability,” claims Stein.

Notwithstanding privacy concerns, she adds that “as long as the passenger knows how their data is being collected, used, and responsibly managed, then they’re willing to share their biometrics

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as long as it makes travel easier for them.” This finding is evidenced in SITA’s ‘2022 *Passenger IT Insights*’: When asked about comfort levels with biometric identification throughout the journey, passengers scored an average of almost 7.3 out of 10 (with 10 representing most comfortable).

REGIONAL ROLL-OUT

At a regional airport scale, Stein cites the example of how biometrics are already

influencing terminal design layout at Kansas City International (MCI – the airport’s code confusingly derives from when the airport was called Mid-Continent International) Airport’s new 39-gate terminal, poised to open this Autumn. The project, a collaboration between Siemens, SITA and the Kansas City Aviation Department, employs SITA’s scalable cloud-based ATI, “making it easier to more directly integrate biometrics, bringing that forward to not



Automatic for the people: Collins Aerospace's SelfPass communicates with the airline host.

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just international travel, but also to support US domestic flights.”

Upon arrival at MCI, passengers can use SITA Flex (a cloud-based common-use platform) to check in via biometric scan at one of the self-service kiosks and use their face as their boarding pass for international flights.

The Kansas revamp is part of a broader drive to revitalise US airports (following years of underinvestment) and involves renovation and new construction projects to address capacity limitations. The challenge, says Stein, is “you’ve got constraints such as the size of the buildings and the number of runways, so we have to figure out how to do more with less to optimise the use of the physical resources in the terminal and create that differentiated customer experience.”

With biometric tech connected via the cloud, the presence of hard-wired workstations at new terminal implementations is likely to diminish, continues Stein: “If you think about the airport of the future, imagine the lobbies being more open, maybe with restaurants in areas where the general public can come and eat, or celebrate

the arriving passenger, and be able to make use of that space without such obstructions as counters and kiosks. Perhaps the agents may walk around with a tablet, or we can boost on-demand capacity using the autonomous mobile kiosks we’ve already trialled. We’re building airports that are designed to last for years, and those are the things we need to think about.”

Another perspective on the merits of biometrics and their bearing on the shape of the passenger journey is offered by Tony Chapman, Director of Industry Affairs, Alliances and Strategic Initiatives at Collins Aerospace.

“We’re at the start of a journey where mobile is becoming key,” he says. “I foresee scenarios where you drop your bag in an automated way and move straight to the pre-security or immigration point, though that probably will require a gate of some form because authorities require a physical stop if the passenger does not conform to whatever regulations they want.”

When it comes to the boarding process, Chapman tells *Regional Gateway* that with technology such as Collins Aerospace’s SelfPass, the system

communicates with the airline host automatically in the background, not through a legacy workstation, enabling more flexibility and reducing the need for fixed workstations at the gate.

He says: “There’s an expectation that around 20% of existing desks will need to remain for those who can’t or won’t use them, or for those who need assistance, but the rest can be automated, and that approach is going to propagate down to the smaller and regional airports.”

As time evolves, there will be “walking pace technologies, but that’s maybe 5-10 years down the road,” adds Chapman, observing that wider deployment requires deep collaboration with governments, not just on airport processes, as “governments at both ends of the journey need to agree to that process.”

FLUID DESIGN

In the longer timeframe, one consultancy predicts that biometric-enabled airport terminals will become even more fluid in their design.

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Biometric screening



User-friendly: Star Alliance Biometrics installed at Hamburg Airport. Photo: Oliver Sorg

the passenger could proceed to an open belt area where the camera system matches the bag with the traveller," says Markus Pauly, Aviation Director at global design consultants Edenspiekermann.

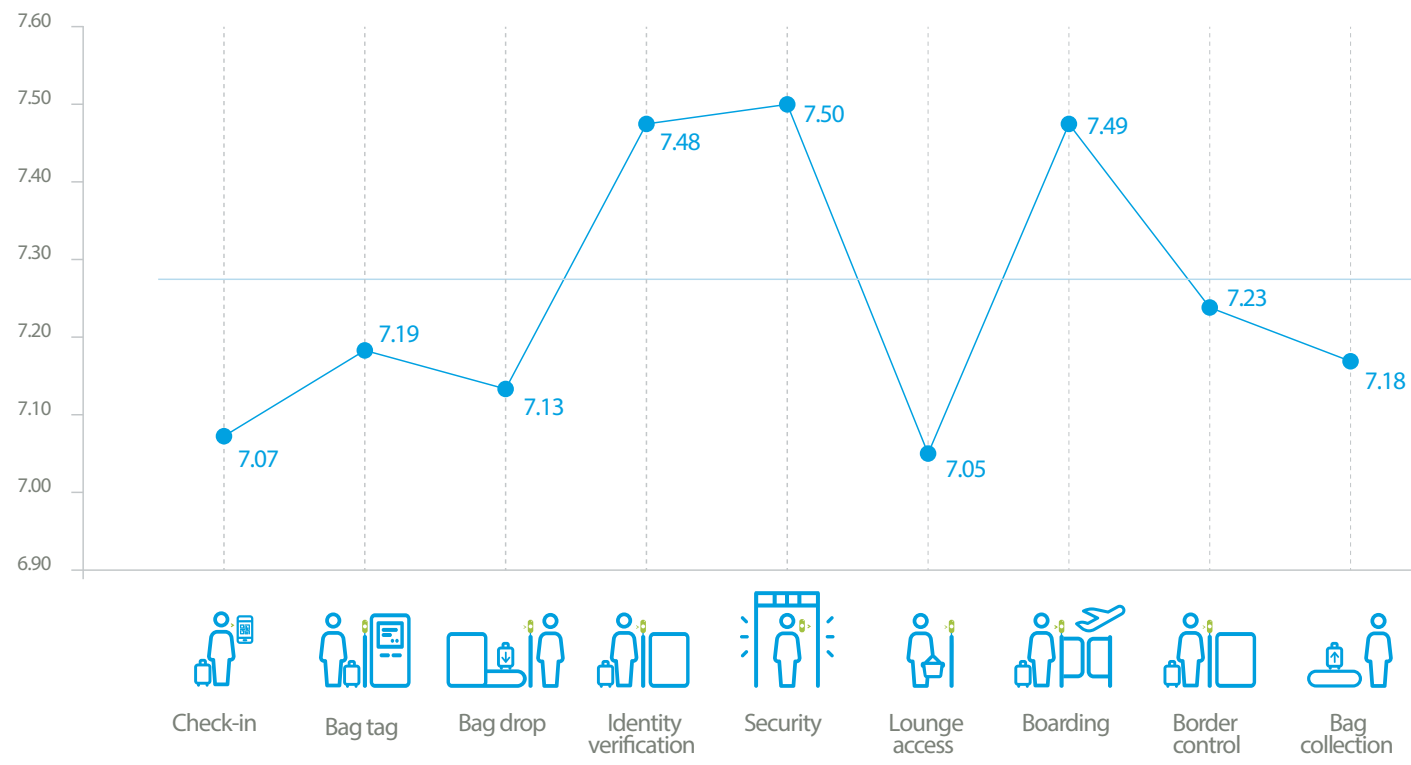
The consultancy is working on a multi-year collaboration with Amsterdam's Schiphol Airport to improve the passenger journey.

Pauly says that with biometric screening, potentially, "differentiation of Schengen/ Non-Schengen (domestic and international) departure areas would not be required anymore because the authorities will be able to identify each passenger and check documents before they arrive at the airport."

He adds that biometric-enabled gates will allow identification of any passenger entering or leaving the country. Security checks will also be required in the future.

However, he anticipates that "these might be addressed using a walk-through security

Passenger comfort levels with biometric identification



% of passengers ranking how comfortable they would be with the use of biometrics to identify them at each travel step in 2022

Source: SITA 2022 passenger IT insights.



tunnel, avoiding the need to queue for each process step.”

Edenspiekermann Partner and Creative Director, Jonne Kuyt, adds that understanding traveller behaviour is essential in order to optimise the benefits of biometric-enabled passenger flow:

“Standard procedures to use facial recognition gates do not yet exist. When a family with children are in front, who is going to be the first to enter? How many ways are there to put your finger on a scanner if the recognition uses fingerprints? And what do you do with non-recognised passengers? There are a lot of questions which affect the processing time per passenger, and the business case.” The solution, he suggests,

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“is not to concentrate only on implementing technical machines but to build the biometric process around the passenger.” For smaller airports, says Kuyt, “we recommend partnering with airlines and governments and choosing open

systems and vendor-agnostic technologies that allow you to connect to global or regional solutions – and to put the passenger into the heart of every project, and test and pilot their behaviour before the implementation decision is made.” ■

Smart screening for bags

The advantages of biometric screening can only be fully realised when the pace of passenger processing is synchronised with an equivalent acceleration in the screening of cabin bags.

AI software start-up SeeTrue has developed a machine learning-based solution that connects to existing legacy X-Ray and CT baggage scanners and provides real-time automatic threat detection and alarm resolution.

The company’s technology allows passengers to leave items in bags, thereby reducing manual interventions and increasing throughput while maximising safety.

“Passengers don’t like to stand in lines and don’t like having their suitcases opened if it’s unnecessary,” says Assaf Frenkel, the founder and CEO of SeeTrue.

“If we can expedite this process and open fewer bags while stopping those containing prohibited items, then we can deliver a better experience for the passenger.”

Being machine learning-based, the system’s ability to recognise prohibited items actually improves over time.

Frenkel notes that even the best human baggage security operatives are likely to become less focused after hours of staring at a screen, whereas AI-enhanced automated baggage screening technologies are indefatigable and can operate 24/7.

He says: “Automation can help in accurate detection of prohibited items with less ‘false rejects’ [where legitimate items are identified as threats].”

The added advantage, says Frenkel, is that “you don’t need to add extra checkpoints in order to scale – or if you don’t need to scale, you can reduce the physical terminal area for security screening and free up space for stores or whatever you want to do.”

SeeTrue’s solution, which is already implemented at various UK and European airports, has “already stopped thousands of prohibited items getting onto planes last year. Although we’re a startup, the product has already been working at airports for over three years and provides value to the airports it’s installed in,” adds Frenkel.

