

FACE OF THE FUTURE

As the first biometric terminal launches in Atlanta, we examine the impact that the technology will have on air travel

B iometric authentication – matching someone's unique physical traits against a database to confirm they are who they say they are – has excited the imagination for decades. Back in 1971, the James Bond of *Diamonds are Forever* outwitted an adversary using a fake fingerprint. Kirk used a voice-recognition system to blow up the USS Enterprise. And the *Mission: Impossible* team have disproved the franchise's title time and time again by bypassing biometric passwords including iris, facial and gait recognition.

On a bright November morning at Atlanta's Hartsfield-Jackson airport, the technology's real-world adoption is looking somewhat less dramatic. Tired-looking passengers form a queue about a hundred deep into Terminal F, shuffling forward to board a 15-hour flight to Seoul Incheon. There is little to indicate that they are among the first users of the first ever "biometric terminal" in the US, save for the small camera right before the airbridge that is approving passengers just a few seconds faster than a human agent would.

But there is no doubt that what is happening is a huge step towards the airport experience of the future. The passengers were able to use face recognition technology to check in for the flight, drop off their luggage, pass through security, and now to board the aircraft. US Customs and Border Protection (CBP) obtained the image they were matched against through visa applications, a submission of their passport details online, or through a self-service passport scan when they arrived at the airport.

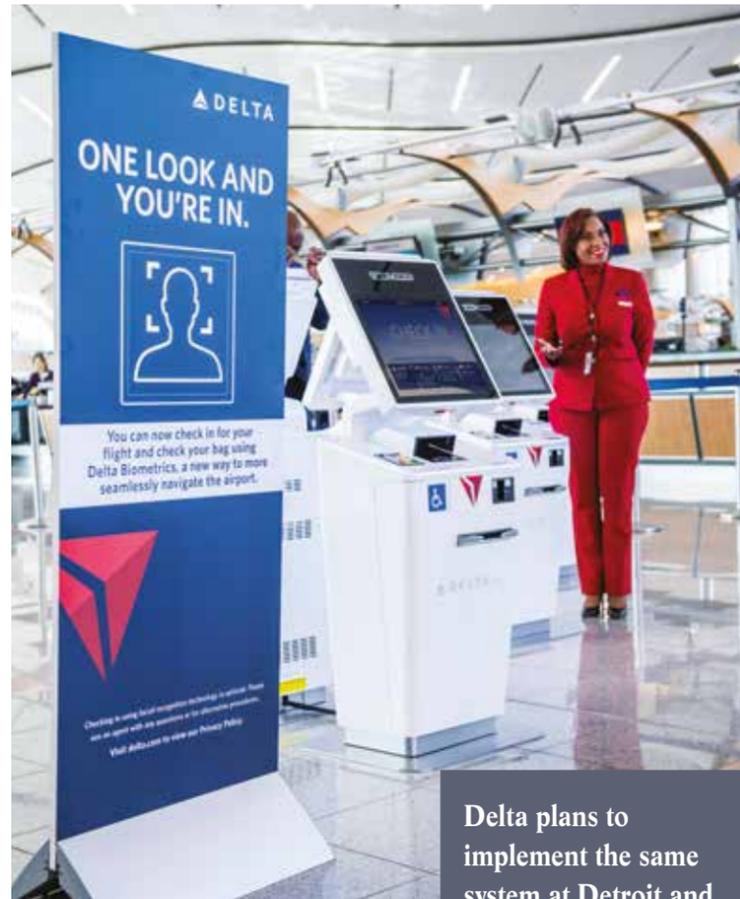
Delta Air Lines led the push for this end-to-end biometric terminal at its Atlanta hub, working with CBP for several years and pumping millions into the project. Biometric departures are now available to all passengers at Terminal F. The technology promises a future where passengers breeze through airports, proving their identity by glancing at cameras rather than rifling through their bags for documents three or four times. It is also likely to change entirely the way we view passwords, security and personal data.

BYE BYE, BOARDING PASS

No passenger can get from taxi to plane with their face alone just yet. At Hartsfield-Jackson, for example, while all of the identity verification can be done through face recognition, you'll need a passport when you arrive in another country, so airline staff check you have one with you at boarding. A digital or physical boarding pass will also need to be shown at security to prove you have a flight to catch.

Still, both of these steps will most likely be unnecessary in the future. Terminal F may not require boarding passes as soon as later this year. In a report at the end of 2018, the US Transportation Security Administration (TSA) proposed one day using biometrics for all forms of ID.

Outside of phones and banking, the airport will probably be most people's first encounter with the new generation of face-recognition technology. Bjoern Becker, a product director at Lufthansa, says he expects to see biometrics widely utilised in air travel in the near future. →



Delta plans to implement the same system at Detroit and is testing options at other US airports

Passengers can expect to see many Indian airports adopting the technology as part of an initiative to reduce queues by the country's Civil Aviation Authority.

All of this means biometrics are a big growth market. Companies such as Vision-Box, Aurora CS and SITA are seeing rapid growth providing software and hardware tools that allow airport systems to take the pictures and communicate with external databases. Statista reports that biometric systems brought in US\$21.8 billion globally last year, with the technology and financial sectors the biggest users – but the transport industry and governments being the fastest risers.

MATCH POINTS

In 2017, the TSA tested fingerprints as a potential way to remove the need for a boarding pass and ID. But placing your fingers on a pad takes longer than a camera does to snap your image, and requires you to manually give the prints somewhere in advance (although fingerprints are not yet dying out as a form of identification, with fast-track US border control systems such as Clear using them alongside other methods).

Angela Gittens, director general for Airports Council International, told the *New York Times* that the group forecast that airport passenger figures would double in the next 17 years, with biometrics a crucial way to manage that increase. SITA reports that 71 per cent of airlines and 77 per cent of airports are planning major programmes or research into the technology.

TESTING TIMES

Having pipped its US rivals to the post with its end-to-end biometric terminal, Delta plans to implement the same system at McNamara Terminal in Detroit and is testing options at other US airports. For passengers hoping to try it, further developments are afoot.

British Airways has worked with CBP to run tests at Orlando, Los Angeles, Miami and New York JFK, saying it halved the time it took to board long-haul aircraft. All domestic departures from the airline's hub at London Heathrow T5 are now boarded through biometrics. Next year it says it will roll the technology out further at Heathrow, London City and Gatwick as well as the 30 airports it serves in the US.

Emirates is planning to launch its own "biometric path" in Dubai using facial and iris recognition, with data stored by the General Directorate of Residency and Foreigners Affairs. The airline says it will get passengers through immigration in 15 seconds.

Last year, Qantas partnered with SITA to trial biometric boarding at airports in Brisbane, where passengers enrolled by scanning their passports at home on an app; Sydney, which signed up passengers at airport kiosks; and Los Angeles, which, like Delta, accessed a CBP database. The trial demonstrates three approaches airlines can pick to adopt the technology.

Following tests at Amsterdam Schiphol, KLM's chief executive, Pieter Elbers, says he has even considered using facial recognition technology in airport lifts so that a passenger's arrival is expected before they arrive.

Not all of the investment will come from airlines. Gatwick has been trialling the technology in collaboration with Easyjet, and Heathrow has announced a £50 million investment in a bid to roll out "the world's largest deployment of biometrically enabled products" by the summer. San Jose Mineta international airport has been working with the CBP as an early adopter, while Sydney airport and others are trialling end-to-end systems.



Our Focus is You

Providing worldwide ground transportation solutions with an obsession for quality and a dedication to customer excellence.



Operating in over 3000 cities across six continents, TBR Global Chauffeur maintains a world class service by combining a global reach with local expertise.

By providing a fully managed end-to-end service and cutting-edge booking solutions, we deliver peace of mind to our clients who rely on us for international corporate ground transportation, worldwide project managed events and multi-city financial roadshows.





BIOMETRICS IN NUMBERS

15 seconds

How long Dubai airport says it will take to pass immigration using biometrics

10 minutes

The time BA takes to board 240 people using biometric scanning, half the usual time

40%

Reduction in airport waiting time in Delta's Atlanta biometric terminal

63%

of airlines expect to be using biometrics within the next three years

100%

of smartphones and tablets are forecast to use biometric technology by 2020

10.4 million

The number of people that pass through airports daily, expected to double in the next 20 years

\$231 million

Estimated revenue of airport biometrics market in 2019

Sources: SITA, Acuity Market Intelligence

Facial recognition will be familiar to anyone who has used an e-passport to go through arrivals. There, while your face is captured and matched against the image in your passport in less than a second, the machine is also scanning and checking data from the chip on your passport, which can take 6-10 seconds.

Departure routes like the one in Atlanta run more seamlessly. For the scan to work, the passenger's picture must already be stored in a database ready to be matched against. Depending on how airlines develop their own systems, that could be held by them, an airport, a private company, or a government agency such as CBP. Most of those images will come from passports, either scanned at an airport kiosk or submitted online. If border officials are involved, they may come from documents such as visa applications.

When it enters the database, a passenger's image is converted into a template using points on their face, which is stored in cloud space. Airlines must have a way of communicating with this database to report who should be allowed on a particular flight. Then, when a passenger is photographed by a biometric camera at the airport, the image is sent to the same cloud space. The system turns that image into a template and compares it with existing ones. If the image is, say, a 90 per cent match (the level currently required by CBP), the passenger is approved.

The facial match happens remarkably quickly, and doesn't require you to manoeuvre your face into a certain position or gaze unsmiling into the camera. It also won't be affected by superficial changes such as scars, beards, haircuts or make-up.

The technology is not infallible. Research, including by regulatory body NIST, has found that facial analysis technology is less successful at identifying people with dark skin. That could lead to people being unfairly targeted based on race. Women are also more likely to be incorrectly rejected than men. CBP deputy commissioner John Wagner says that the Atlanta

terminal is working at a 98 per cent success rate, although other reports have claimed that the technology incorrectly rejects as many as one in 25 travellers.

TOO MUCH INFORMATION?

Where some see biometrics as making travel and other areas of life easier, others spy something more sinister. For years, biometric passwords have been touted as providing unparalleled security. A body part is pretty hard to forget, forge or steal. Many people already use their fingerprints or faces to unlock their phones, make payments or access buildings. Law enforcement agencies have long used it as a way to track criminals, and are only doing so more as the technology improves.

Still, the Georgetown Law Centre on Privacy and Technology in Washington DC is one organisation with concerns about its growing use. In a 2018 report, it called biometric airport screening a "solution in search of a problem", arguing that government agencies had failed to justify its introduction while there were still flaws in the technology. It warned that in a bid to make the process simpler for valid travellers, the bar may be lowered to allow more imposters to slip through. Privacy campaigners have also raised concerns about how long security agencies, airlines and airports will keep the biometric data and what they will do with it.

When *Business Traveller* asked about security concerns, Wagner said: "A templatised version of a photograph is the only data being transmitted back and forth. Personal data like your name, date of birth or passport number are not stored."

Even so, some campaigners argue that biometrics are particularly sensitive personal data. They cannot be replaced, and your inclusion in some databases could allow you to be identified at any point, even if you don't know it's happening.

→ CONTINUED ON PAGE 82



MARLIN YOUR HOME AWAY FROM HOME

Marlin is the leading owner-operator of serviced apartments and aparthotels in central London. At Marlin, we know that the most sought-after accommodation for the business traveler is comfortable, inviting and affordable. Marlin is just that, plus more. Offering guests up to eight times the space of a standard London hotel room with home comforts like a kitchen, living room area, dining table, sofa, TV, and complimentary Wi-Fi. Marlin's newest location is opening in Dublin this August! The 300 bedroom hotel will be located right in the city centre on St Stephen's Green. Facilities include meeting spaces, media hub, free high speed Wi-Fi and a high-end bar with food offering.



BOOK NOW

www.marlin.com | reservations@marlin.com | 111 Westminster Bridge Road, London, SE1 7HR

T: +44(0) 20 7378 4840 | F: +44(0) 20 7378 4841

Marlin 

FACE OF THE FUTURE BIOMETRIC TECHNOLOGY IN AIRPORTS

Continued from page 54



“We need to think about the benefit to people for providing their information in facilitating their journey,” says Aaron Beeson, director of business solutions at Vision-Box. “Privacy concerns need to be at the forefront.”

As part of the “Happy Flow” end-to-end biometric boarding system introduced by Vision-Box at Schiphol and Aruba airports, passengers submit their biometric data via a passport scan at check-in and can have it removed from the system as soon as they board the aircraft.

“It gives people the ability to anonymise,” Beeson says. “It gives them the option to control the data like a passport and choose when to provide that to someone else.”

He believes making sure biometric systems can be opted out of is important. But given how widely their use could quickly spread, is it realistic to think people will be able to keep their data private?

Beeson himself foresees the technology spreading enough to allow air travel to be done entirely without passports or boarding passes, and a rise in “smart buildings” with biometric-approved entry and other features. Vision-Box’s technology is used for driving licence enrolment in Lebanon, and is being picked up by stadiums as a new form of ticketing.

Companies such as Yoti offer businesses a way to use their customers’ biometrics for services like age checks, data sharing and document

signing. Retailers including Walmart are using biometrics to track customers and shoplifters. Last year, Hertz partnered with Clear to offer biometric-approved car rentals. And it was recently reported that musician Taylor Swift used facial scanning technology, disguised behind a screen playing rehearsal videos, to identify known stalkers at a concert. Caryn Seidman-Becker, chief executive of Clear, has described the possibilities as “endless”, citing use in credit cards, health insurance and hotel check-ins. She describes such changes as coming in the “not-so-distant future”.

Government interest is rising, too. Last year India’s Supreme Court put limits on a government programme that was seeing biometric information being increasingly required to access public and private services, from welfare collection to banking. China has faced international attention for using facial recognition along with a vast network of CCTV cameras to monitor its 1.4 billion citizens.

The US Department of Homeland Security has earmarked about US\$1 billion for biometric exit programmes, with a key objective being to catch undocumented migrants and people overstaying their visa. The UK Home Office has highlighted biometrics as an important tool for immigration control, law enforcement and counter-terrorism. And the Australian government has pledged AU\$22.5 million (£12.7m) to get facial recognition technology adopted across Australian airports, again citing security benefits.

There is no doubt that biometrics will bring big benefits to travellers. Most airlines are allowing passengers to opt out of the system, although Delta says that only about 2 per cent are choosing to do so. IATA research found that 64 per cent of passengers would be willing to share their biometric data for a better travelling experience – leaving a third of people who would not.

Given the momentum building, it seems inevitable that one day they won’t have any choice. **BT**

China has faced international attention for using facial recognition to monitor its citizens

SHORT SHRIFT DOMESTIC AVIATION

Continued from page 62



All airlines carry out this practice, and the tariff calculations and the way that revenue is apportioned remains a closely guarded secret. What it means, says Strickland, is that “the domestic part of the operation can end up with crumbs as revenue is shared with long-haul flights”.

BA is a network carrier. Low-cost carriers such as Easyjet do not suffer this issue because they are solely point-to-point and, at the time of writing, do not interline. It means Easyjet knows exactly how much revenue it would earn per seat on a flight linking Glasgow to London Stansted or Edinburgh to Gatwick.

A few countries are blessed with not having the bother of a domestic network, or a limited one – think KLM of the Netherlands, or Swiss. Environmentalists criticise UK domestic aviation, saying travellers ought to take the train. But they forget that rail isn’t always a feasible option and that many domestic passengers are flying simply to make connections. In addition, Flybe operates the vast majority of its domestic routes with small turbo-prop aircraft, which are more environmentally friendly than larger jets.

Mainland Europe has high-speed rail networks, which means loss-making domestic networks can be slimmed down (see “The air-rail trail” in December 2018-January 2019). Airlines need operate only a few well-timed flights linking to international services – which frees up slots for more lucrative long-haul services.

As the UK’s only high-speed track is between London and Folkestone, we lack the air-rail flourishing of mainland Europe. And with HS2 years away, if it will be built at all, it is likely domestic aviation will retain its importance. **BT**