

WHITE PAPER

Departures 10:53

Time	Destination	Flight	Gate	Remarks
10:55	Stockholm	SK2498	13	Final call
11:10	London LHR	BA805	5	Final call
11:20	Alicante	FR8067	10	Gate Open
11:50	Helsinki	AY700		Gate info: 11:05
11:55	Brussels	EY249		Gate info: 11:10
12:55	Milan/Bergamo	FM723		
13:35	Amsterdam	DL9417		
14:10	Frankfurt	TP7575		
14:15	Copenhagen	SK1284		
14:20	Bourgas	SK7435		
14:30	Riga	BT148		
14:40	Keflavik	F273		
15:15	Paris CDG	G35256		

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Bilund Airport

Delivering Touch-Free Curb to Gate Experiences with Digital Signage

Newly affordable digital technologies including displays and sensors create attractive and personalized options to guide passengers from curb to gate.

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White paper

In 2019, [4.54 billion passengers](#) took to the skies, representing a 137% increase over air traffic just 15 years earlier. Today, despite the temporary near-total passenger flight shutdown resulting from the COVID-19 pandemic, experts remain optimistic, and data from other travel industries already shows spikes as high as a [41% increase over 2019 in bookings for 2021](#). Passengers still want and need to travel, for business and pleasure. At the same time, COVID-19 will forever change how people travel, with most experts predicting demands for sanitization, more personal space, and less human interaction.

Modern digital technology allows airports to seamlessly offer these features, delivering a safe, touch-minimalized experience for travelers. Curb-to-gate technologies have been trending for some time, with big players like Samsung, LG, NEC, and NDS, heavily involved. What are the opportunities for airports in reducing passenger frustration and solving new issues highlighted by COVID-19? And what technologies are needed to leverage seamless “Curb to Gate” experiences?

Redefining the Curb to Gate Experience

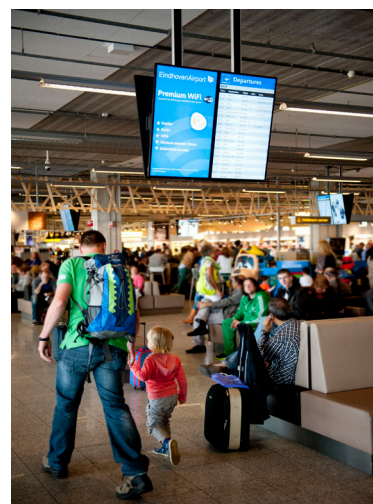
Curb to Gate experiences are traditionally less than streamlined. Passengers arrive at parking lots only to be presented with an overwhelming array of information – signs, people, taxi, tram and busses – all pulling in different directions. Navigating to the gate is not a simple experience of checking one thing, but first determining which terminal you need to go to, if you can walk or need transportation, where to drop luggage, which gate the flight is departing at, and where in the terminal the gate is. Once there, things don’t become easier. Security lines are long, check-in requires having documents ready, and passengers frequently have to check updates while they wait. People make it to planes frustrated and grateful time in the airport is over – for now.



A [survey](#) by the International Air Transport Association shows that passengers want more seamless, more automated experiences, with more personal control through technology.

- 68% want to self-tag baggage, 48% want to self-drop baggage.
- 72% of passengers want to handle self-boarding processes.
- 58% of passengers use automated security gates, satisfaction for these gates is at 90%.
- More than 58% of passengers want real-time information for boarding, security lines, queue times, baggage tracking, and live flight updates – with an overwhelming preference for live data sent to an app on a mobile device.
- 64% of passengers said they would opt into a single identity token via biometric identification to facilitate faster movement through the airport.

Curb to gate technology delivers this, and more, completely redefining how passengers access and utilize airports. Single platform solutions like PADS4 offer central control for every aspect of curb-to-gate communication. These solutions use smart technologies and full integration of all data sources to facilitate real-time updates based on rules. Developing seamless digital signage means passengers receive the data they need at every touchpoint, with a minimum of wait time and hassle.



Parking – License-plate-recognition means passengers can pre-book car parks and garages, reserving parking spaces, and automatically receiving directions to park as close to their terminal as possible.

Wayfinding – Wayfinding implements facial recognition and device recognition to pair users with flights, allowing for seamless directions through the airport. Apps and SMS updates guide passengers to their terminal, to baggage drops, or across terminals. Through rule-based updates provided by PADS4, passengers avoid crowds, broken escalators/elevators, and closed areas, reducing missed transfers and flights.

Personalized Information – Smart technology is only as smart as the information it receives. Digital algorithms pair with face recognition technology to deliver personalized information. It can be based on flights, passenger walking speed, passenger origin/destination, listed preferences in the app, currency, payment information, and boarding type. This information can be used to prompt information when passengers stand in front of touchscreen kiosks, to offer personalized directions to gates and baggage checks, and to offer personal promotions.

Security – Biometric data streamlines the security process and begins as soon as the passenger enters the airport. With a single biometric security token, passengers can quickly move through the airport, speeding up security lines, and reducing the need to share IDs at baggage drops.

F&B and Lounge Areas – A smart and versatile food and beverage area drives sales and leaves a lasting impression with travelers. With real-time changes, food items can be based on time-of-day, or the weather. Facial recognition technology offers a personalized experience throughout the lounge area. It allows for complementary flight and gate information, and reduces missed flights.



Promotions – Airports have used digital signage to offer promotions, driving sales for duty-free shops and eateries, for more than a decade. In-airport advertising drives additional revenue for the airport, and for its brands. In Global Shopper Connections 2, [JCDecaux OneWorld 2016](#), 70% of global passengers admitted to being incentivized to visit a shop or eatery after viewing an advertisement. And, during Calvin Klein's 4-week campaign in Heathrow Airport, they saw a 268% increase of sales [during the campaign](#). Airport passengers expect to see ads, and they work, so brands are often willing to pay well for their placement. Curb to gate technology means further refining that process, delivering promotions based on passenger origin/destination, time-till-flight, the weather, public transport, and where they are in their journey.

Real-Time Updates – Real-time updates, driven by smart rules, allow you to share conditional information based on corresponding information and influencing factors such as wait times, boarding time, queueing, etc. Airports can direct security queue information to mobile applications, or to relevant kiosks and displays when the passenger is in front of them. Passengers can also check to see real-time boarding information, flight status, and baggage status, either on a display or on their personal device.

Self-Boarding – Self-boarding gates fast-track boarding, reducing wait-times and improving customer satisfaction. Here, passengers who have already uploaded passports simply scan a code at the gate, or walk through on facial recognition alone, and are immediately let through when it's their turn to board. Paired with digital signage and app notifications to ensure passengers know when to board, self-boarding reduces wait times while cutting total costs. Integrating self-checkout with mobile phone apps means passengers only ever have to touch their phone, never the kiosk itself.

Multi-lingual Support – Today’s passengers hail from such diverse locations as the Asia Pacific [34.3%], Europe [26.3%], North America [22.4%], [and the Middle East \[10.4%\]](#). Meeting the communication needs of those passengers has historically been difficult and expensive. Personalized displays and promotions mean displays can seamlessly update to display content in the language used on the passenger’s mobile app, or by their country of birth, or destination/origin to provide a better and more relevant experience.

Document-Free Boarding – [New technologies like IATA – One ID](#), IDEMIA ID management platforms, [Known Traveler Digital Identity \(KDTI\) technologies](#), Duon, and others allow passengers to fly solely based on biometric information. These technologies rely on biometric information including fingerprinting and facial recognition to move through airports without sharing passports and identification. This could greatly speed up security checks and boarding processes, reducing demand on airport staff, and improving customer experience. And, while these technologies are new, they’re already being trialed by [Schiphol Airport in the Netherlands](#), [Denver International Airport](#) in the USA, and [Fiumicino Airport in Rome](#) among others, with [one survey](#) showing 77% of responding airports are heavily investing into biometric security and document-free security over the next 5 years. With strong needs for interoperability between departure and arrival airports, large, single-solution options like IATA – One ID are expected to become the standard in this space.

Technology

Curb to gate technology relies on implementing digital technologies to track passengers, display data, and link inbound data sources such as FIDS and sensors to displays.

Sensors – Passenger tracking, indoor mapping, personalization services, queue sensors, smart wayfinding, and other services all heavily rely on a network of sensors. Bluetooth Low Energy iBeacons are the standard mapping technology for indoor wayfinding. Cameras serve to support facial recognition systems. Motion sensors and cameras provide for most queue management and traffic management needs. This data can be simultaneously pushed to digital signage software and apps for use in wayfinding, mapping, security, and personalization across the airport.

Software – Any Curb to Gate technology is powered by a series of sensitive algorithms, capable of collating and utilizing data in real time. Algorithms may not be built into digital signage software management such as the PADS4 platform, but are implemented separately and linked into the platform in real time. Digital signage networks require a full array of software including network management, content management, display management, server, and designer, which you can source individually, or through a full-service platform like PADS4.

Displays – Most airports already utilize an extensive array of displays. Seamless curb-to-gate requires standalone and self-service displays at every major passenger touchpoint, from parking to lounges.



Challenges in Implementation, Privacy, and Security

Curb-to-Gate technology faces several important challenges, including privacy and security concerns.

Passenger Adoption – Today, [an estimated 28% of passengers](#) utilize airport applications for self-check-in. This is up from an estimated 6% in 2018, and tracks alongside dwindling usage of desk check-in [just 48% of passengers in 2019 used manned check-in desks]. Still, seamless curb-to-gate technology is heavily improved by personal device integration for biometrics, location tracking, and real-time information including mapping and flight tracking. This information can be pushed to general screens, but with privacy concerns, not all information can be pushed.

Privacy – Modern curb to gate algorithms use rules to assign intent to passengers based on location, identity, and behavior. This requires collecting and tracking each of these aspects, using either facial recognition, device recognition, or a combination of the two. Some passengers will find this highly invasive. It is necessary to integrate opt-in/opt-out programs for passengers. Airports such as Schiphol, Gatwick, and many more are already using biometric data, but mostly for verifying passenger identity at boarding. Tackling ongoing privacy concerns as these technologies move out of security points will be a priority.

Security – Passenger security and data protection remains a concern, especially as passengers move to single security token biometrics that handle their entire flight. It becomes imperative to integrate security measures to prevent data theft. Most airports already have intensive security and encryption in place.

Seamless curb to gate implementations will streamline airports in the coming years, resolving passenger frustration, reducing costs, and creating a better passenger experience. Implementing automated check-in, security and baggage drop-off based on biometric data reduce wait times and human contact, creating a faster, safer, solution for everyone involved. And with dozens of airports already installing solutions, installing curb to gate technology will help airports to meet expectations, while delivering a better passenger experience.



About NDS – NDS launched its first FIDS solution in 1994 at the start of the digital signage revolution. Today, the software guides passengers with real-time flight information and wayfinding in 80+ airports. We've come a long way from "just" FIDS, with high-end digital signage solutions for targeted display communication including digital advertising, interactive wayfinding, menu boards, touchscreen, queue management, and more, but FIDS is still our core product. With one solution to help you make the most of every display on your network, smart airport signage has never been easier. We're here to help you guide passengers – from curb to gate – with one simple, platform solution.

www.fids.com