THE CONCEPT OF A «FULLY BIOMETRIC AIRPORT»

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This article is devoted to identifying ways of implementation of biometric technologies in the work of customs and border agencies at airports worldwide and analyzing the concept of a «fully biometric airport». Initially, it examines the definition of the term «fully biometric airport» and outlines its main advantages. Then the author emphasizes and reviews in detail the international organizations and airports involved in the process of implementation of biometric systems and technologies. Special attention is paid to the challenges that remain to be addressed because in today's world passengers are more concerned about the safety of their biometric data than ever before, which makes the topic relevant. In conclusion, the author makes a rather promising forecast that a long-term goal will be reached progressively as obstacles such as technological limitations, privacy concerns, cooperation between actors are removed.

Key words: fully biometric airport; single token; touchpoints; International Air Transport Association; International Civil Aviation Organization; Seamless Traveler program, biometric air exit initiative.

Air transport stakeholders face a key challenge: the industry forecasts a doubling of air passenger traffic over the next 20 years, which airport capacity won’t be able to accommodate. [1] At the same time, procedures’ automation through self-service facilities comes as a major need beyond the check in process. While at first sight this expectation seems simple to fulfill, security concerns are rising and require more stringent scrutiny of each traveler. Biometrics has been identified as a tool to securely facilitate the passenger processes at airports. So, how will biometrics shape the future traveler experience and how advanced are the airport biometric initiatives? The concept of a «fully biometric airport» means the use of passenger biometrics to replace all forms of travel documentations. The passenger biometric details (iris, face, or fingerprints) will be created at the first touchpoint. At this stage called the enrollment process, the traveler’s digital biometrics are captured, stored on a secure platform, and matched with the passenger’s travel documents to create a «single token» while background checks via government agencies’ databases are performed. (fig. 1) [1]

Figure 1

Single token travel & digital biometrics: two key components
In other words, the passenger will be able to proceed from check-in to boarding a flight using biometric self-service facilities which will verify his identity at all touchpoints (check in, bag drop, border clearance and boarding) without the need to present any further document. (fig. 2) [1]

Figure 2

The end to end biometric airport

We think the long-term prospect such single travel tokens will be used not only at a specific airport but also more broadly between airports across departure, transfer and arrival processes for domestic as well as international flights.

According to our research, International Air Transport Association (IATA) plays a key role in encouraging the collaboration between air transport stakeholders and facilitating global implementation of new initiatives through frameworks and standards. [2] International Civil Aviation Organization (ICAO) Traveler Identification Program (TRIP) purpose is to establish a global framework for traveler identification management for the different partners involved in the process. [3]

As part of the Seamless Traveler program, Australia’s Department of Immigration and Border Protection (DIBP) has the ambition to introduce bio-
US Customs and Border Protection (US CBP) has developed the controversial biometric air exit initiative. All international passengers departing from US airports will have their photo taken by a facial recognition system, which will be cross-checked with a US Department of Homeland Security (DHS) database. More than verifying the passenger identity, the purpose is to ensure foreigners haven’t overstayed visas or are illegally present in the US. [4]

We’ve done some research into application of biometric technologies at airports. In recent years however, airport trials on biometric identification and authentication have been conducted with the aim to cover further stages of the airport passenger journey.

Bangalore, Singapore Changi and Aruba airports pilot programs are well advanced with the potential to offer end-to-end self-service options for the passengers from check in to boarding the flight through the use of facial recognition. Some trials have investigated the potential of biometrics to replace ID and travel documents. Aruba Happy Flow project employs Vision-Box facial recognition technology as the basis of a single passenger token. Dubai airport UAE Wallet App enables passengers to store their biometric data by taking a selfie with their Smartphone together with their passport and travel documents. [1]

What challenges remain to address?

Firstly, it’s the challenge to achieve a high level of accuracy in identity confirmation for any individual. Two major types of errors can occur. False Acceptance Rates (the system authorized an unauthorized person) and False Rejection Rates (the system fails to recognize a traveler who was authorized to pass through the biometric self-service facility).

Secondly, collaboration between public and private stakeholders involved in passenger identification and authentication must be enhanced at all steps, including off-airport processes.

Thirdly, travelers must be convinced that their data is secured. [1]

In conclusion, biometric technologies present the opportunity to revolutionize air travel experience. The claim that the airport process is stressful and time-consuming will soon no longer be valid, with the passenger becoming in control of his journey. Many initiatives launched at various levels support the end-to-end biometric airport vision. However, this goal will not be reached in the short-term but progressively as obstacles are removed. Technological limitations, privacy concerns, cooperation between actors are all the challenges which still need to be addressed.
References


