

*Lugovskaya T. S. Air Passenger Control: Passenger Data Exchange and Biometric Identification*

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The growth in air travel leads to continuously evolving security threats, and passengers being increasingly dissatisfied with queues and intrusive measures<sup>49</sup>.

A number of initiatives to improve the passenger process, such as One ID, Fast Travel, Smart Security and Automated Border Control, seek to introduce a streamlined, friction-free and passenger-centric process that allows an individual to assert their identity to the required level at every process step, while maintaining the privacy of personal data. This will allow a more personalized customer experience to be delivered, cost-efficiency to be improved, security benefits to be gained, and the opportunity to generate enhanced additional revenue.<sup>50</sup>

Passenger data exchange is a key element on a way to achieving this goal. It is electronic data concerning passengers' identity – Advanced Passenger Information (API), or travel reservations – Passenger Name Records (PNR), which is used by public authorities for border control.

API data is produced during check-in, and includes all passport or identity card data necessary to identify the passenger or crew member, as well as general information on the flight. PNR data refers to the records held by airlines for each flight booked by a passenger, and is used by the airline for its own operational purposes. This data makes it possible for all parties in the aviation sector (including travel agencies, air carriers and airport handling agents) to identify each passenger and to access all information about his/her trip, return flights, any connections and any special assistance requested on board<sup>51</sup>. Besides identifying passengers, PNR data can be used for risk-based assessment of travelers about whom you may not have other API information. It is also more valuable in the identification of suspicious trends, relationships and travel patterns.

Advanced Passenger Information (API) is information related to biographical data, that is, passengers' identity such as full name, date of birth and nationality. API can be provided electronically to government authorities in the state of arrival, departure or transit. API's pre-identification features can be useful for immigration and customs authorities, but also in some

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<sup>49</sup> IATA – Smart Security [Electronic resource]. – Mode of access: <http://www.iata.org/whatwedo/security/Pages/smart-security.aspx>. – Date of access: 17.03.2018.

<sup>50</sup> IATA – Passenger Facilitation [Electronic resource]. – Mode of access: <http://www.iata.org/whatwedo/passenger/Pages/passenger-facilitation.aspx>. – Date of access: 17.03.2018.

<sup>51</sup> Moraes, F. M. Air passenger control: how Brazil changed the game / F. M. Moraes // WCO news. – 2018. – №85. – P. 36-38.

cases for aviation security as well – to assist in the identification of risks of unlawful interference before passengers step on the airplane. API data can be transmitted as a single manifest containing information about all passengers on a flight, or the data can be transmitted individually as passengers are checked in and receive their boarding passes.

Legacy, or batch API is the simplest form of API to implement: carriers automatically transmit a single list with details for all persons (or separately for all crew) for a given flight at a given time. All passenger details are transmitted as a single data file, or “batch”. Since data is usually provided upon the closure of the flight boarding process, government intervention is limited to the time of arrival. So batch API is designed originally for the control of arriving passengers by the destination or transit country; data quality validation is limited to a batch process and no-real time correction can be requested.

As an alternative to legacy “batch style” API – many states are adopting interactive API as their preferred method of receiving passenger data. Under this system, airlines provide passengers’ biographical data in real time on a passenger-by-passenger basis to the authorities, while check-in is taking place. The authorities must then evaluate that data and determine if any issues are preventing the passenger from entering the destination country, leaving the origin country or boarding an aircraft. Following this assessment, authorities send a “Board” or “Do not Board” response to the airline also in real time.

Interactive API systems, while more complicated and costly to implement for both governments and airlines, can bring tangible benefits to governments and airlines. For instance, reduction for airlines in the number of inadmissible persons that they transport and who are then required to be returned to their place of origin at the carrier’s expense.

PNR refers to information about passengers and their travel plans that are collected and stored in airline reservation systems at booking. It is collected by the airline for its own business purposes. Therefore, the amount and the nature of the information in individual PNR record can vary tremendously from airline to airline and from passenger to passenger. Reservation systems are evolving since more and more people are booking travel online as opposed to via a travel agent. A PNR may contain little information such as a name, an itinerary, some contact information and a ticketing/ticketed indicator. The name may not even correspond to the person’s actual name as stated in the passport, because accuracy is not always necessary for reservations. However, sometimes PNRs contain vast amounts of information covering a wide range of issues relating to the person’s special service requests, contact details, credit card information and other data. In today’s environment certain data are

considered particularly sensitive and may not be shared in accordance with many states' data privacy legislation.

Digital processes is rapidly moving travel towards a day when a face, iris, or a fingerprint will provide the key to a seamless travel experience<sup>52</sup>.

A facial recognition system is a technology capable of identifying or verifying a person from a digital image or a video frame from a video source. The image taken by the cameras is then processed using facial recognition software. It scans a person's face and analyses whether it matches against an image library of people considered as representing a risk and who must be controlled or prevented from entering state's territory.

Iris recognition is an automated method of biometric identification that uses mathematical pattern-recognition techniques on video images of one or both of the irises of an individual's eyes, whose complex patterns are unique, stable, and can be seen from some distance. Iris recognition is most reliable form of biometric identification. It turns what used to be a slow process for travellers into a convenient, quick and more secure experience<sup>53</sup>.

Biometric identification is carried out without human interference in the passenger line as they are moving at a walking speed. When the system identifies a passenger whose face matches the face of a target, a signal is sent to the Customs officer on duty, who will then approach the target and begin an inspection. The use of facial recognition tools is also particularly effective in case of involving fraudulent documents since the facial characteristics of the target remain mostly unchanged even if he/she travels on false documents. In a broader sense, Customs acts as a "second barrier" for national immigration control in order to further safeguard the country's security<sup>54</sup>.

Brazil and UAE became a bright example of effective using of passenger data exchange and biometric identification. In 2013, as Brazil was preparing to host the 2014 World Cup and the 2016 Olympic Games, the Brazilian Customs administrations started exploring ways to improve air passenger control in order to be able to effectively process the athletes and millions of tourists who were expected to attend or participate in these events.

Two major investments were made by the Federal Revenue Service of Brazil (RFB): a risk assessment system that would enable API and PNR to be processed, and a passenger facial recognition system. The implementation of new analytical tools to screen passengers in

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<sup>52</sup> IATA – Passengers want technology to give them more control over their travel experience [Electronic resource]. – Mode of access: <http://www.iata.org/pressroom/pr/Pages/2017-10-24-02.aspx>. – Date of access: 17.03.2018.

<sup>53</sup> International airport review [Electronic resource]. – Mode of access: <https://www.internationalairportreview.com>. – Date of access: 17.03.2018.

<sup>54</sup> Moraes, F. M. Air passenger control: how Brazil changed the game / F. M. Moraes // WCO news. □– 2018. – №85. – P. 36-38.

2015 was a game changer, especially with regards to identifying travellers who fit drug smuggling profiles. There was an increase of more than 360% in drug seizures between 2014 and 2016, a record in the history of the Customs service. Other common crimes or offences include the transport of undeclared cash, the illicit acquisition of cultural objects, and the smuggling of guns.

After observing several intrinsic characteristics of API during the first two years of the system's implementation, the RFB developed a brand new software for API data analysis. Using a broad range of algorithms, the software is able to analyse received API messages, identify travellers, create a unique traveller archive. This functionally enables the system to automatically correct API that contains errors such as incorrect passport numbers, complete missing data, and solve other issues that could lead to flawed conclusions.

Two high-resolution cameras being installed in “nothing to declare” line area at 14 international airports enables Brazilian Customs officers to easily identify the targets pinpointed by the API/PNR risk assessment system without disrupting the general flow of passengers. The intelligence based and risk assessment approach allows Customs border control to identify air passengers who are on watch lists as well as suspicious passengers, and is an effective measure to counter the movement of foreign terrorist fighters too. To address security related risks, a special list of persons being targeted as a result of their association with a possible security threat was created. Customs, the Federal Police Department and the Brazilian Intelligence Agency are all responsible for data included in the list. If the system identifies an individual, the Federal Police proceed to formally identify the suspect before taking appropriate measures<sup>55</sup>.

As part of a commitment to seamless travel, Dubai Airport has brought in 100 biometric gates with facial and iris-recognition technology in January, 2018. The kiosks contain a face and iris biometric capture device which can be integrated into a variety of application solutions. For example, being installed in a smart gate it is commonly referred to as the ‘Eyen’ gate system. It can identify passengers within one or two seconds scanning the faces of travellers over a relatively short space, taking in their retinas and distinctive features as they move<sup>56</sup>.

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From June 21 to June 30, 2019 the Republic of Belarus will become a host of the 2nd European games, that is why international experience (Brazil's case, Dubai Airport, etc.) is very useful for forthcoming events.

The implementation of passenger data exchange and biometric identification systems at all airports of the world will significantly decrease smuggling and illegal immigration while facilitating mutual assistance of Customs authorities of different countries through the acquired information exchange.

*Луговская Т. С. Контроль пассажирских авиаперевозок: обмен данными о пассажирах и биометрическая идентификация*  
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Увеличение количества авиаперевозок ведёт к постоянному росту угроз безопасности и все более недовольных очередями и жёсткими мерами контроля пассажиров<sup>57</sup>.

Ряд инициатив по совершенствованию процесса контроля пассажиров, таких как OneID, FastTravel, Smart Security и Automated Border Control, призваны разработать рациональный, беспрепятственный, ориентированный на удобство пассажиров порядок контроля, позволяющий подтвердить личность на уровне каждого этапа его проведения и при этом сохранить конфиденциальность личной информации. Такая модель обеспечит осуществление индивидуального подхода к обслуживанию пассажиров, сэкономит средства в перспективе, а также будет выгодна с точки зрения безопасности и дополнительных денежных поступлений<sup>58</sup>.

Обмен данными о пассажирах – ключевой элемент в достижении этой цели. Это информация о лице в электронной форме – предварительная информация о пассажире (API), или о его бронированиях – запись регистрации пассажира (PNR), которая используется государственными органами в целях контроля на границе.

Данные API накапливаются в результате регистрации пассажиров и включают в себя все паспортные данные или данные удостоверения личности, необходимые для идентификации пассажира или члена экипажа, а также общую информацию о рейсе. Данные PNR – результат учёта информации о каждом рейсе, забронированном

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