2015

Airport Automated Border Control Market Background

- Airport Perimeter Security
- Airport Terminal Surveillance
- Intrusion Detection
- No-Fly Passenger Pre-Screening
- Travel Document Checker
- Checked Baggage Screening
- Air-Cargo Screening
- Command & Control
- Air Marshals
- Bomb Appraisal Officers
- Random Employee Screening
- Hardened Cockpit Door
- Flight Deck Officers
- Cabin CCTV Surveillance

Homeland Security Research Corp.

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1 Airport Automated Border Control - Present & Pipeline Technologies

1.1 Airport Automated Border Control Market Background

People travel and migrate. International movement is on the rise and so are the numbers of border crossings each year too. In 2014 alone, there were over a billion airport border crossings, and estimates predict that there will be a 100% increase by 2030. Airport border crossings should be made as smooth and rapid as possible for travelers, without compromising security.

In order to achieve significant optimization of border control processes, these were subject to a thorough analysis. The airport automated border control will bring about a significant improvement of the necessary procedures in border control.

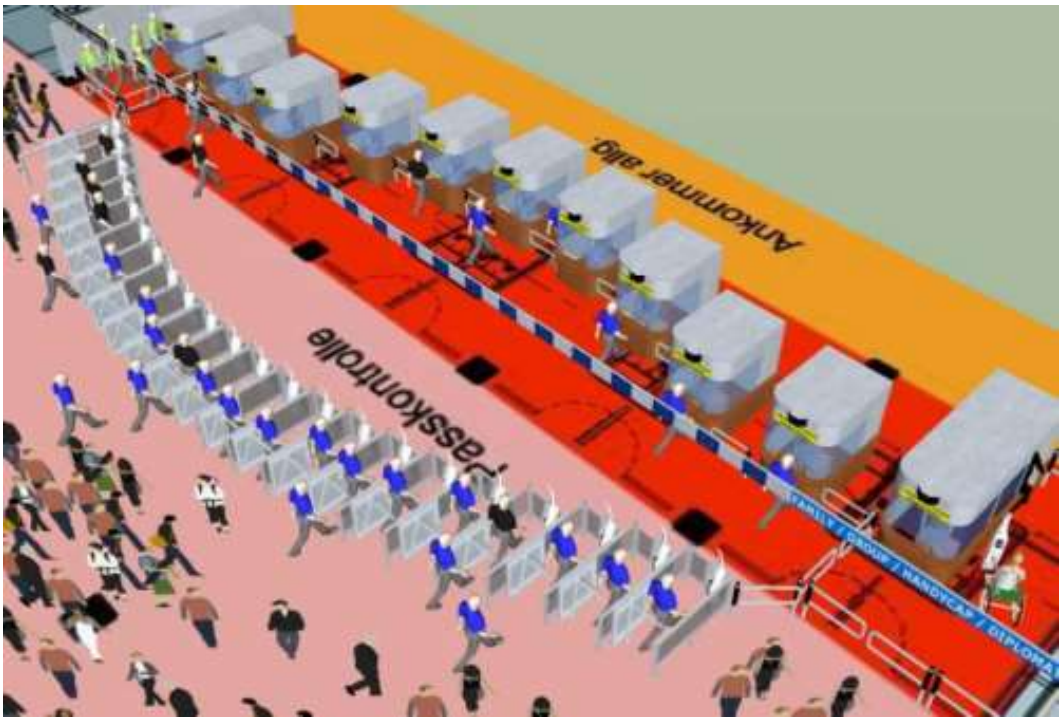
This approach represents a holistic and flexible upstream technical solution for the equalization and differentiation of in-depth control and minimal check of passenger traffic. New terminal processes allow it to be as pleasant and safe as possible for the traveler without excluding certain groups of people, thus reflecting a modern and progressive Airport.

With the Airport automated border control, the strategy of the Integrated Border Management has been recognized in terms of the quality and quantity of border crossing, the training of border control forces, the ratio of the number of control agents against the control forces, the technical / technological equipment and the optimization of individual processes of major importance.

It is estimated that there were up to 20 million illegal immigrants in the world. Half of them probably entered the country legally, but the authorized period of stay has been irregular (so-called over-stayers). The passport of any third-country nationals should be manually stamped on entry into and exit from the Schengen area. The period of stay of third-country nationals in the territory of the Member State shall be calculated based on these stamps, which are often difficult to interpret; sometimes they are unreadable or may be the target of counterfeiting.

The precise calculation of time spent in the Schengen area is done on the basis of stamps in the travel documents, which is time consuming and difficult. In addition, the length of stay of third country nationals in the Schengen area is not currently covered. Therefore, the present determination of whether a third-country national is overstaying or not is hardly reliable. There is no consistent record of entries into and exits from the Schengen area, which could contribute to the improvement of border management, security and planning; also it is not possible to collect information about over-stayers.

Figure 1 - The EU Airport Automated Border Control Concept



The airport automated border control system is generally applicable to all boundaries. It would ensure all cross-border clearance and thus unify the security that is the guarantee for the return in the responsibility of each country.

The airport automated border control can act as an intelligent queuing system. Finally, the extraordinary thing about the airport automated border control is that it allocates to the passenger what is best for him in border control and switches to the next so that the previously unused waiting time effectively brings in process acceleration benefits. Another particular advantage of this approach is that the traveler, regardless of nationality, can choose any upstream control lane, as the actual assignment is controlled by the switch to the airport automated border control dynamically. Bad pitching is no longer possible - the traveler is placed in each trap.

For the traveler, further advantages can be seen in the concept of classical elements of customer service.

Advantages for border officials result from the fact that they have already submitted information from the electrical tests before the passenger in front of them. Also, the psychological pressure is reduced as the impact so far through long queues was on the border officials. What is important is also that the border control forces along with the airport automated border control also continue to participate actively in the clearance processes, rather than give away their experience to the observation of surveillance images.

The technology used to adapt to the development with loss of function and downstream control of the security shows that the airport automated border control is best suited to be used as a test vehicle for new technologies without hindering the traveler.

ABC4EU stands for automated border control Gates for Europe. It is an EU wide project and involves a Consortium of 15 partners from 8 different countries with 70% EU funding. The aim is to make border control more flexible by enhancing the workflow and harmonizing the functionalities of automated border control (ABC) gates, which is only one example of automation. The project started in January 2014 and will last for 3-5 years.

1.2 The Concept of Airport Automated Border Control

In order to optimize the general characteristics of automatic border control and to give the process a new form and a new way of thinking, the concept of Airport automated border control has been presented.

The principle of airport automated border control is the division of border control both upstream and downstream. In the upstream control, there are more technical systems in which several passengers can approach each parallel to one of these systems. The downstream control describes the immigration officers and their switches. The upstream control track uses the inevitable wait actively for the equalization and differentiation of the passenger flow, but the traveler has the option to accelerate the edition of his travel document and the process flow. The traveler is visually and acoustically welcomed in his own language. Furthermore, waiting time and services (weather, taxi, exchange rates, etc.) are also displayed. Optionally, biometric features are retrieved and compared. Upstream control already has mandatory and time-consuming tests which can detect travelers under police surveillance so that further action can be taken. Ultimately, an automatic assignment is to a free and individually suitable border control switch.

The downstream control is made according to the qualifications (experience, language skills etc.) of the border control staff, its willingness to position and training is delivered to the plants. The information from the upstream control is transferred to the respective officials targeted, so that the control depth can be reduced if required. Through the support of the document, the traveler has already contributed to the acceleration of the overall process.

The design of this concept allows for effective utilization of automated support for flexible use and a dynamic adjustment of the upstream lanes - depending on the composition of traffic. This principle is applicable internationally.

1.3 Function of Airport Automated Border Control

The Airport automated border control is in principle suited to control the current tour in-depth control and minimal check. The standardized machine-readable (ICAO-compliant) line of travel document is required, which has already gained positivity worldwide. It can be used for the addressee-oriented handling of important information, such as:

- the type of document (service passport, diplomatic passport, , refugee passport, alien passport, etc.)
- nationality of the document
- age of the traveler (appointment of focal points)
- gender of travelers (attention to ethnic aspects)

Passengers are subject only to minimal scrutiny which can happen in the ideal case without further manual control (achieved by monitoring the respective border control check-in counters).

Passengers under a peculiar subject of control pass through specialized officers. With the offer that the passenger's travel document can be electronically read in the waiting position, valuable time is gained to the traveler to lead a detailed discussion under Borders Code. Different skill levels of immigration officers have to be considered. In addition, the clearance process of physically disabled people, as well as business travelers or families with children, diplomats and registered travelers are sufficiently considered and optimized.

The implementation of various airport automated border control projects such as Entry/Exit, VIS II, registered travelers, seasonal workers, foreign passport, are due to the modular structure of the Airport automated border control . The flexibility and the simple design favors widespread use, with the aim of standardization in the Schengen area. Future technical developments may optionally be used and recorded by the Airport automated border control (e. g. as RFID, including fingerprint, facial recognition, sensors based in terms of prevention in the field of radiology / nuclear detection, temperature measurement on pandemic, etc.). These factors contribute to investment and planning security.

Automated border control (ABC) uses self-service kiosk technology to partially automate the Primary Inspection Line processing of eligible travelers.

ABC offers a secure and viable alternative for the processing of eligible travelers. The benefits of ABC include reduced queue times, less congestion in the Primary inspection areas and increased passenger satisfaction with border processing procedures.

Figure 2 - Automated Border Control Process

Faced with a constant increase in air passenger traffic number since 1995, Israel deployed palm biometrics based automated border control kiosks for Israeli citizens to simplify and accelerate control without compromising security. This program streamlined passenger throughput and saved passport control personnel. Travelers insert their ePassports or a Trusted Traveler card into a kiosk that checks their eligibility to use the automated process and issues a ticket. The traveler then inserts this ticket in the biometric gate and a biometric sensor compares their biometric feature against their ePassports or a national biometric database. If the captured biometric feature matches the stored data, and clearance is verified, the gate opens to allow entry or exit. This process is completely automated and allows the relevant passport control agency to provide more processing points to help handle future increases.

Figure 3 - Face Recognition Based Automated Border Control

More information can be found at:
Global Airport Security: Technologies, Industry & Markets – 2015-2020