IMPROVING THE CROSS-BORDER FLOW OF THIRD COUNTRY NATIONALS

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Abstract

The paper delves into several issues related to the European border crossing processes. It is motivated by the ongoing numerous research on automated border control (ABC) systems, which have been tested at a number of EU border crossing points (BCP) of various type. Moreover, taking into account the continuously growing influx of third country nationals (TCNs) travellers into the EU, the paper presents the complex procedures this group of passengers is currently required to go through. Facing these issues, potential remedies to highlighted problems are indicated including legislative as well as technological in nature. Central to the discussion, is the proposal to facilitate the cross-border movement of TCNs thanks to the ABC technologies and processes developed within EU-funded FastPass project. Based on the carried out technological and desk research, the paper provides a contribution to the further discussion on the automation of border processes for TCNs entering the European Union/Schengen zone pinpointing possibilities as well as obstacles lying ahead.

Keywords: Innovation, Automated Border Control, Smart Borders, EU borders, EU research projects, FastPass.

1   THIRD COUNTRY NATIONALS AND CURRENT EU PROCEDURES

Over the recent years, the EU border authorities have been experiencing an increased workload, which might be attributed to the number of factors. Most of all, such a situation is the result of the on-going migration crisis and steady growth of the number of passengers coming into the European Union/Schengen zone countries. All of the above contribute to exert a major strain upon the border guards at the external EU borders. The paper will primarily tackle the rise in the number of third country nationals and the complex procedures they have to go through in order to cross the EU external borders further suggesting potential facilitation of their cross-border movement. It is reported that in 2014 alone there were approximately 29 million TCNs entering and exiting EU borders. Future forecast indicate a substantial growth to 63 million in 2020 and 76 million in 2025 [1].

Currently, Third Country Nationals are required to undergo a complex process while travelling to the EU/Schengen countries. According to the Schengen Border Code, non-EU nationals are undergoing more detailed checks compared to the EU/EEA/CH area travellers. They are obliged to have a valid travel document and visa, present their travel purpose and prove that are in possession of sufficient means of subsistence. Additionally, TCNs are allowed to stay within the EU no longer than 90 days in any 180-day period. In compliance with the current procedures, each traveller from a third country is obliged to have his/her travel document stamped on entry/exit occasion in

order to have a record of stay duration. Facing an increasing flow of travellers into the EU and existing complicated procedures, the European Commission proposed the "Smart Border" initiative in 2013 with the intention of external Schengen borders management improvement, provision of data on overstayers as well as facilitation of cross-border flow of pre-vetted TCNs [2].

The EU Commission's proposal included the creation of Registered Traveller Programme (RTP) and Entry/Exit System (EES). The former, according to the 2013 proposal, was to take shape of a central database, which would store the data of pre-vetted and pre-screened TCNs including biometrics, alphanumeric data and unique identifier. Then, the unique identifier would be a token for a swift cross-border movement while maintaining the EU level of security. Furthermore, the proposal assumed the storage of personal data for a period of no longer than five years [5]. However, in a ruling presented in [4], issued in 2016, the EU Commission withdrew its proposal regarding the Registered Traveller Programme. The other assumption of 2013 proposal was the establishment of Entry/ Exit System. The original proposal was encouraged by the lack of Schengen Border Code's stipulation on recording traveller's entries and exits. At the moment, the only method to determine stay duration of a given TCN are the stamps in the travel document. As a consequence, monitoring and identifying overstayers seem to be quite problematic issues for the border guards. In response, EES was to replace the obsolete system based on stamps and monitor the remaining time duration for a given TCN staying within the Schengen zone, provide border guards with detailed information on an overstayer in order to facilitate proper counter-measures, biometric data storage of visa holders, and implementation of automated border control as soon as manual stamping is replaced. The system would also store the collected data of regular cases in a central database for six months [3]. The main purpose of such a system is to keep the border guard informed immediately, like ABC, if the checked person is an overstayer or not.

Following the release of the technical study in 2014 and a report from testing phase in 2015, the EU Commission published an updated legislative proposal for the development of Entry/Exist System in 2016, which featured several amendments in comparison to the original proposal. Namely, it is highlighted that the EES shall be interoperable with the Visa Information System, rely on four fingerprints and facial image as biometric features and storage of data for the period of five years. Additionally, the EU Commission proposed EES to be based on self-service systems and e-gates and allow Europol as well as national law enforcement agencies to have access to the EES database. The overall cost of EES implementation, taking into account the withdrawal of RTP proposal, is estimated at €480 million [4].

Feasibility of EES implementation was supported by the report released in 2015, which gave a glimpse at the carried out Smart Borders Pilot, which focused on operational tests as well as desk research. The pilot was conducted at air, sea and land border in twelve EU member states including Germany, Estonia, Greece, Spain, Finland, France, Hungary, Italy, the Netherlands, Portugal, Romania, and Sweden. The pilot delved into the biometric aspect of the Smart Borders initiative and provided statistical data regarding the acceptance of proposed solutions by Third Country Nationals. The report concludes with a positive outlook for the implementation of EU Commission's proposals acknowledging that ABC gates and kiosk at border crossing points can shorten the overall duration of cross-border processes [6].

The EU's interest and determination to test and implement the new border procedures is not solely reflected by the proposal made in 2013 (revised in 2016), but also by the number of EU-funded research projects handling the issue of Automatic Border Control implementation in the form of e-gates and kiosks, which include projects such as ABC4EU or FastPass. The research paper will present the FastPass project in more

detail highlighting its goals, assumptions and approach towards modernisation of the current EU border procedures.

2   FASTPASS INNOVATIONS

One of the goals of the EU-funded FastPass project was to correspond to the EU Commission's Smart Borders initiative. Therefore, the project aims at developing and subsequently testing automated border control solution with demonstrations taking place at all three border crossing types (i.e. air, land and sea). An inherent part of the project is close compliance with privacy, social, ethical and legal aspects, all of which are the basis of the modernized border control processes. Furthermore, project partners recognize that implementation of ABC gates is more complex than just solely depend on the guidelines provided by either government official or industry representatives. Therefore, FastPass handles the issue in a more holistic manner acknowledging the importance of meeting the expectations of both types of ABC users, i.e. border guards as well as travellers. The adopted user-centric approach relies on the feedback collected during the project lifetime from border guards as well as travellers. Apart from that, FastPass provides a comprehensive research of ABC technological components such as biometric identification technology, document verification tools, pre-border and border area surveillance, interoperability and adaptability of the system architecture and gate technology used for more comfortable and rapid movement. In addition, the joint work of the entities involved in the production of ABC gates is believed to pave the way for the standardisation of ABC equipment and harmonisation of border processes.

2.1   New cross-border processes for handling travellers

A set of solutions that is proposed by the FastPass solution is the outcome of the gathered user requirements towards automated border control and technological research. The proposed processes were developed so that they would be compliant with the EU legal, societal, and ethical values. As already mentioned, FastPass solution proposes a two-step approach, which requires a traveller to go through an enrolment process prior to e-gate crossing. The paper presents in detail the FastPass approach on the basis of the land border border type, which requires more complex checks to be performed than in the case of the other two border types. Also, the land border pilot will be supported by participating TCN (Serbian citizens). The project's land border scenario is to be tested at Moravita border crossing point between Romania and Serbia. Nevertheless, all processes proposed by FastPass require both enrolment as well as e-gate phases. It is assumed that the new harmonized procedures can be applicable both to EU citizens and Third Country Nationals facilitating and making their cross-border movement more convenient.

First of all, each passenger is required to enrol to the FastPass database. In case of the land border scenario, the enrolment process is performed for both a traveller and a vehicle. Moreover, the pilot at Moravita BCP is restricted only to Romanian and Serbian citizens over the age of 18. Additionally, FastPass land border solution is limited to two passengers per vehicle, which stems from the design of the e-gate.

In order to successfully complete the enrolment process, all passengers need to register as frequent travellers in a kiosk (see Illustration 1). The process starts with a scanning of a machine readable zone (MRZ) of a travel document (either passport or ID). The collected data are then verified in the SISII, VIS, and national police databases. The process continues with a facial recognition and enrolment of passenger's face IR template. The collected data are saved in the FastPass database with the travellers consent. The traveller's registration is valid until the expiration date

of the passport or ID. The enrolment process is further carried on for the driver/vehicle registration purposes.

Illustration 1. Enrolment Kiosk by MODI Modular Digits GmbH.

The driver continues the registration process by scanning the driving licence. The remaining part of the process shifts to the enrolment of the vehicle, which begins with a scan of the vehicle registration certificate and extraction of the vehicle number plates. Subsequently, the driver issues the expiration date of technical inspection and scans the green card. All of the gathered data are saved in the FastPass database. Following the enrolment procedure, the driver and passenger (if present) resume to the vehicle and approach the e-gate (see Illustration 2).
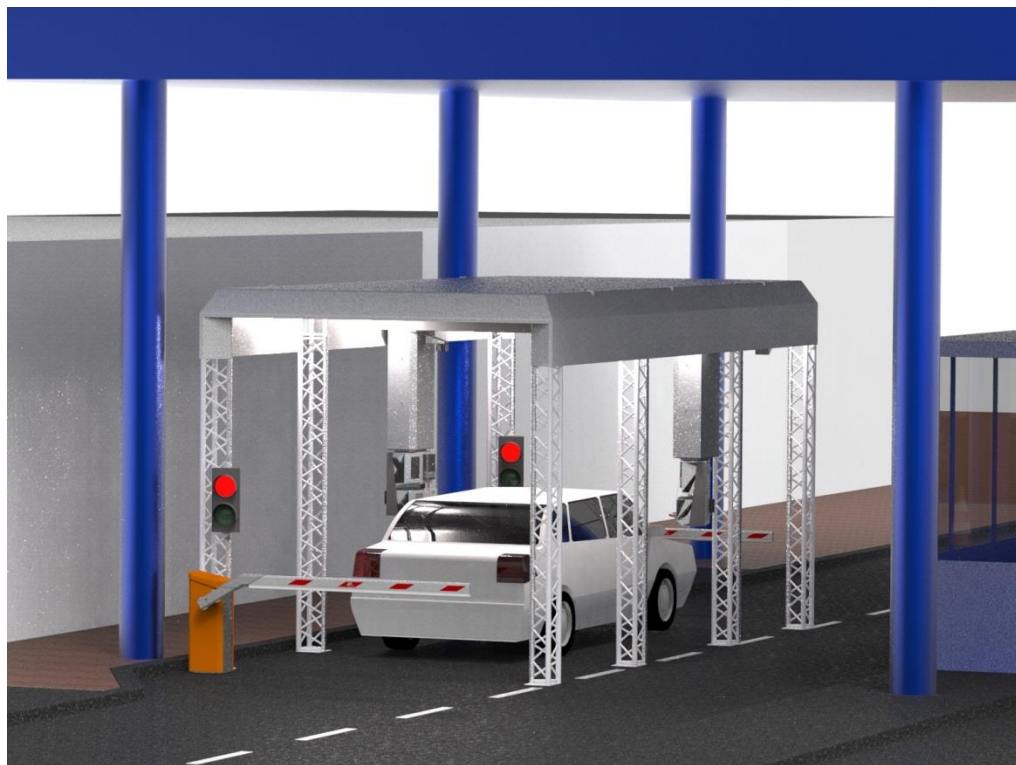

Illustration 2. The concept of the e-gate at Moravita BCP developed by Magnetic Autocontrol GmbH.

Prior to the e-gate entry, the surveillance camera reads out the vehicle's number plates and the system verifies whether the vehicle is entitled to use the FastPass solution. The process inside the gate was designed to take as little time as possible. Therefore, it requires the driver and co-driver (if present) to scan MRZ of their travel documents (passport or ID). Then, passengers' live images are captured inside the gate and compared to the templates stored inside the FastPass database. It must be added that the process, though automatic, is under the constant supervision of a border guard, who can decide to manually verify a given traveller if a suspicion arises. Of course, the travellers can use the e-gate directly if they are already registered

2.2   Technological components

The automation of border processes proposed by the FastPass project requires state-of-the-art technologies including hardware and software components. A crucial components of the FastPass solution are kiosk and e-gate. It is worth mentioning that the technologies used in the project are modular in nature and, thus, can be adjusted to a given scenario. The applied technologies allow for the collection of various biometric attributes including face, iris and fingerprint. In the land border scenario, however, only facial recognition is used as a biometric feature. Both kiosk and e-gate, in land border case, use a face-iris camera developed by MODI and document scanner provided by REGULA, both of which constitute a hardware basis of the entire automated system.

Starting with the camera, it has been developed by MODI and unlike other similar tools using a moving camera or multiple cameras, MODI's equipment applies a rotating mirror technology. It is, therefore, possible to capture a person's face as well as iris scan. The camera's scope of view may be changed in all directions. The tool is capable of providing up to 30 high resolution face pictures regardless of the person's height or position in front of the gate. Also, the camera makes it possible to handle people with height ranging from 1,20m up to 2,20m. The added value is the capability to carry out a facial recognition process while a traveller is on the move. During the enrolment process, the camera generates a near infrared (NIR) face template, which is then saved in the database. The advantage of NIR face template is its lack of susceptibility to external light. According to the data provided by the manufacturer, the camera has the capacity to conduct a facial recognition process on approximately 1000 people per hour. Regarding the document scanner, Regula 70X8 has been applied. The scanner is used both in the kiosk and in the e-gate. The device provides scans of all documents during enrolment (kiosk) and verification (e-gate) processes.

An important part of the technological components is software, which has been tailored to the applied hardware and user requirements. One of the software components is Optical Character Recognition (OCR), thanks to which alphanumeric data from the documents can be read out. An essential aspect of the FastPass software, during the developmental phase, was to create a user interfaces (UIs) meeting the border guards requirements. The step was essential since the border guard needs to supervise the entire process. The developed interface (see Illustration 3) gives an oversight over all collected data from a passenger. The submitted data can be either accepted or rejected by the border guard.

Illustration 3. FastPass UI for border guard by Mirasys Oy.

3   CHALLENGES

Though the proposed FastPass solutions and project-related actions might be a measure for facilitation of cross-border movement, harmonization and standardization of border processes and ABC equipment, there are still several obstacles to be overcome in order to implement modern automated border control. The difficulties stem from a variety of reasons including conflicting opinions about the overall shape of automated border control indicating a series of implications or legislative restrictions. The carried out research within FastPass gives a glimpse into existing objections across Europe. The conducted study required 44 participants to express their opinion on a series of questions related to the implementation of ABC and Smart Borders initiative. The participants were political figures and experts in areas such as border control, data protection, technology, policy and legal issues from European Union member states. The study concluded with three distinct views on the given questions.

Starting with the first and most popular view in the study, the participants highlighted their objections towards automated border control and identified several data protections issues. The majority of respondents were mostly left-of-centre political figures and several liberal politicians. According to their opinion, the decision on ABC implementation in purely political and its main objective is to collect data about the passengers. The participants put forward a concern regarding fair treatment of asylum seekers. Namely, still unclear is the process of asylum seekers registration with ABC solutions. Also, the open issue remains whether the passenger profiling may ultimately result in discrimination on the basis of nationality, race or ethnicity. Apart from that, doubts remain with regard to the use and collection of biometric data. The scepticism stems from the reported data mishandling from the past but also fear of the governments storing such sensitive personal data that could also serve other purposes than border control. Speaking of data sharing, the view represented by the group of participants argued that the collected passenger data should be only used for border

control purposes. It was also pinpointed that law enforcement's access to large databases are not necessarily a facet improving their work effectiveness. Further argument was given that the automated border control and the proposed by the EU Commission Smart Borders initiative may lead to the encroachment of EU citizens' rights reflected by the potential surveillance and misuse of the stored data.

The second view, which appealed to thirteen mostly right-of-centre political figures, is more supportive of the automated border control implementation. It has been highlighted that ABC solution is an essential one believed to enhance European security and integration. The group of respondents does not object passengers' data sharing. What is more, it is proposed that the law enforcement agencies would gain access to the EU-wide database, which would boost counteracting organized crime and terrorism. Moreover, the second view supporters contradict some of the statements presented in the previous view including the fact that ABC allegedly might infringe the rights of the EU citizens by surveillance. It is acknowledged, however, that transparency of such a solution is a must. Furthermore, study participants stressed the need for the harmonization of the automated border control. Such a process would contribute to the cost-efficiency of ABC solution, increased security across EU and would give impetus for the further integration of EU member states.

The remaining view included in the study was supported by the far right and Eurosceptic political figures. They highlighted that the EU is threatened by the illegal immigration and human trafficking. Therefore, there are no objections expressed towards fingerprint collection of third country nationals at border crossings. The overall attitude towards the implementation of automated border control is quite sceptical. The participants elaborated that ABC, in their opinion, would not be more successful than hiring more border guards. In addition, the participants supporting the sceptical view indicated the privacy issues should be brought to the centre of the discussion. It is argued that people may grow suspicious about the governmental actions aiming at collection of sensitive personal data.

Nevertheless, the study found that all participants, regardless of the political affiliations, expressed some shared opinions regarding the automated border control. First of all, the respondents agreed on the data minimization in the ABC processes. This means that the scope of collected personal data and data retention period should be limited to the bare minimum, which is needed for cross-border procedures. The second agreement was reached with regard to the transparency. It was agreed that the passengers should be clearly informed about the entire process of biometric data collection including what biometric features are to be collected, by whom and for what purpose they shall be used. Moreover, the transparency is required in the legal context. It is, therefore, required that proper legal instruments as well as oversight procedures should be implemented prior to the EU-wide system goes live. Furthermore, the participants argued that ABC process and implementation of Smart Borders proposals shall be preceded by providing democratic legitimacy at least on a parliamentary level of all EU member states. The remaining shared view is the accessibility of ABC systems for the disabled. It is highlighted that new solution should not in any way encroach on a fundamental civil rights and, thus, it is required that state-of-the-art ABC systems respect equal rights of the disabled.

4   CONCLUSIONS

Having considered all of the aforementioned issues, it seems that the flow of TCNs will, in all likelihood, continue to rise. As presented in the paper, existing border procedures for third country nationals are time-consuming and complex. Facilitation of their cross-border movement via automated border control will inevitably lead to the revision and amendment of the current border procedures. The automated border control, as

indicated by the pilots across the European Union and the research carried out within FastPass project, is technologically feasible. The presented novel processes for automated border control, both enrolment and at the e-gate, are assumed to speed-up the passenger flow across EU/Schengen borders. Nevertheless, in spite of the technological readiness to implement automated border control solutions for third country nationals, there are still obstacles lying ahead. This issue was partly addressed by the revised legislative proposal for the implementation of Entry/Exit System that was passed in 2016 by the European Commission. However, several other aspects need to be taken into account, especially the shared views described in the FastPass study included in the chapter 3 of the paper. Namely, the EU as well as national legislative bodies should consider such ideas as data minimisation, transparency, data protection, legitimacy of ABC approach as well as accessibility of automated border checks for the disabled. Therefore, it is assumed that further investigation is needed with regard to the legislative aspects of ABC implementation, considering the evidence described in this paper.

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