EU-China Dialogue on Migration and Mobility Support Project
支持中欧人员往来和移民领域对话项目

WORKSHOP ON AUTOMATED BORDER CONTROL

Shanghai, 10-11 July 2018

Summary Report

On 10 and 11 July 2018, the International Organization for Migration (IOM) organized a two-day *Workshop on Automated Border Control* in Shanghai. The workshop follows other activities dedicated to anti-document fraud held by IOM under the *EU-China Dialogue on Migration and Mobility Support Project*, and it responded to an expressed request from Chinese stakeholders to receive further training on this area with specific attention to the application of technological innovation to border control.

This activity brought together 48 Chinese participants from relevant departments of the Public Security and Border Control Troops and Entry and Exit Frontier Inspections – all part of the China Immigration Inspection of the National Immigration Administration (NIA) – from several provinces and municipal administrations, including: Beijing, Guangzhou, Hainan, Hubei, Hunan, Jiangsu, Shandong, Shanghai, Shenzhen, Sichuan, Tianjin, Xiamen, Yunnan and Zhejiang. The Chinese delegation was led by senior officials from NIA: Mr CHEN Bin, Director-General; and Ms YUAN Su, Deputy Director, Immigration Inspection Division.

Three experts joined the activity as presenters: Dr Erik Slavenas, Biometrics and Identity Management Officer from IOM Head Quarters; Mr Glen Wimbury, Assistant Director, Border Force and Systems, United Kingdom; and Mr Jussi-Pekka Tanninen, Head of Border Control at the Helsinki Airport, Finland. Among the panellists, Ms SU Yuan from NIA provided an overview of Automated Border Control (ABC) in China.

Representatives from the British, German and Hungarian Consulates General in Shanghai also attended the activity.

The active engagement of NIA in the organization of the workshop reflects the commitment of the Chinese government in strengthening international cooperation on migration issues. During his opening remarks, Mr Chen, NIA Director-General, highlighted the key role that technological innovation plays in facilitating the work of border and migration agencies, guaranteeing efficiency while simultaneously ensuring that security concerns are addressed. To facilitate exchange between Chinese and foreign participants, the workshop was structured in two main sections: a series of technical presentations of ABC in China and other countries, which provided ample opportunity for discussion and practical exchange; as well as a field visit at Pudong International Airport, led by Mr Chen Jian, Director of the Immigration Inspection Division, Pudong Airport Station of Shanghai General Station's Exit and Entry Frontier Inspection.

The presentations and Q&A sessions highlighted a series of key points that can be summarized as below

1. **Traveler identification management** is a key element of ABC
2. Improving the e-gate service, especially by extending it to **a wider heterogeneous group of travelers**
3. The potential of ABC to **strengthen border security** and detect fraudulent passports and identities
4. **International exchange and cooperation** can enable border control agencies from different countries **to design and implement ABC systems** that efficiently respond to changing international migration (i.e. visas, international travelers' databases).

Traveler identification management was extensively discussed by Dr Slavenas, an IOM expert on Biometrics and Identity Management. Dr Slavenas provided an overview of Annex 9 of the Chicago Convention, which is dedicated to the formulation of methods and procedures for carrying out clearance operations ensuring efficiency whilst maintaining border security. In 1944, the convention established the International Civil Aviation Organization (ICAO), a specialized agency of the United Nations charged with coordinating and regulating international air travel. In 2016, IOM and ICAO signed a Memorandum of Understanding (MOU) aimed at strengthening international cooperation in border management. The core of the MOU is the ICAO Traveler Identification Programme (ICAO TRIP), which is described in detail in the ICAO TRIP Guide on Border Control Management, accessible online. The guide is structured as a reference tool providing a series of international recommendations and best practices, as well as self-assessment material.

For ICAO and its Member States, the vision in traveler identification management is that: all Member States can uniquely identify individuals. To do so, it is important that Member States adopt unified traveler identification systems, including Machine Readable Travel Documents (MRTDs), Public Key Information (PKI) and Public Key Directory (PKD), as well as Advanced Passengers Information (API).

Machine Readable Travel Documents (MRTDs) are electronic documents such as e-passports. E-passports contain biographic data (name, date of birth etc.); biometric data (holder's picture); as well as a Machine Readable Zone (MRZ). Located at the bottom of the identity page, the MRZ consists of two lines containing biographic and biometric data of the passenger as well as unique digital certificates that confirm the authenticity of the e-data. What differentiates e-passports from normal passports is a chip that contains all the above information in electronic format. The information stored in the MRZ are checked against the information stored in the chip making passport forgery more challenging.

Public Key Information (PKI) are the digital certificates of the passport issued by trusted issuing authorities.

Public Key Directory (PKD) is a database developed and provided by ICAO. The PKD accepts information on public keys (PKI) from States, stores them and makes them accessible to other States. The ICAO PKD provides an efficient means for States to upload their own information and download that of other States. The centralized nature of ICAO PKD ensures that information can be exchanged reliably, in a timely manner and on an open-ended, indefinite basis. Several governments issue e-passports, including those containing MRZ, however, only 61 States issue digital certificates and have joined the PKD system. The latter includes Finland, the United Kingdom and China.

Advanced Passenger Information (API) is a system through which airlines collect passenger information and share them with border control officers to perform risk assessment and facilitate pre-clearance. A more sophisticated version of API is the Interactive Advanced Passenger Information System (iAPI), which allows instant communication exchange between airlines and border control staff.

ABC also offer the possibility to screen passengers against national and international watch lists and other relevant databases including Interpol's Stolen & Lost Travel Documents (SLTD).

Nowadays, the majority of illegal border crossing involve identity fraud rather than passport fraud. It is therefore crucial that governments invest more effort in identity verification strategies. Dr Slavenas concluded by recommending that States consider the introduction of ABC, integrated with integral PKD and Interpol SLTD checks to facilitate clearance and to maximize security. International cooperation on information sharing is crucial to achieve the full potential of ABC and maximize the efficiency of e-passports. He also stressed the key role of international organizations, such as IOM, in promoting cooperation and information sharing between different countries.

The other presenters provided an overview of ABC systems in their respective countries, focusing on the advantages and challenges posed by technological application to border control.

China

Ms SU Yuan from NIA offered a comprehensive overview of the ABC system in China. ABC implementation in China started as early as 2005. Since then, the number of e-gates has grown to include 1170 channels in 70 ports of entries. Currently, e-gates can be used by Chinese citizens that possess e-passports, including both Chinese mainland citizens and Chinese citizens from Macao Special Administrative Region, China, Hong

Kong, Special Administrative Region, China, and Taiwan, Province of the People's Republic of China; as well as foreign citizens who possess a resident permit longer than six months and who have registered in advance. The ABC system in China comprises a two-step/two-gate process, as well as a self-service system through which passengers can access and print out their full travel record (up to five years). Participants discussed the potential of the printout service to replace exit stamps for passengers who require to show proof of exit and entry to fulfil any visa requirements.

Finland

Similarly to China, the Finnish ABC system also relies on a two-step integrated system that requires passengers to undertake e-passport and biometrical verification. As Mr Tanninen, Head of Helsinki airport's Border Control, explained, Helsinki airport is the only international airport in Finland. In 2017, it registered over 5 million border checks, of which 38% were operated through e-gates. There are 35 e-gates in the airport, 20 at arrivals and 15 at departures. Currently, the ABC system is open only to citizens of Finland, the European Union (EU), European Economic Area (EEA), Switzerland and a few additional non-EU countries, namely Japan, South-Korea, USA, Canada, Australia, and New Zealand. These countries have been selected due to favourable visa agreements (i.e. visa free) and to the high passenger flow from those countries. Finland plans to extend the ABC system to travelers from a larger number of countries.

United Kingdom

Mr Wimbury, Assistant Director of UK Border Systems, presented the ABC system in the UK. Border Force UK began operating e-gates in 2008 and, currently, there are 259 e-gates installed across 22 locations. E-gates can be used by UK, EU, EEA and Swiss nationals as well as by registered travelers from an additional 40 non-visa countries. In the past year, 70% of eligible passengers used e-gates. These numbers reveal the potential of ABC systems to ease officers from manual control for low risk passengers, while at the same time, enabling them to strengthen security measures, including manual check for high risk passengers. Technological innovation in ABC is developing quickly and is becoming faster, more efficient and more accurate. For example, the rejection rate of ABC is currently around 5%. Conversely from the Chinese and Finnish system, the British system involves only one-step gate, where passport and biometrical verification happen simultaneously allowing to reduce checking time to 14 seconds on average. Additionally, the e-gates provide an excellent tool for forgery and impostor detection: passports undergo Ultra-Violet, Infrared and template checks as well as being checked against government databases (e.g. watch lists, lost and stolen passport database etc); while facial recognition mechanisms are now able to detect "unicity" (only one person at the gate) and "liveness" (actual person and not picture).

The presentations highlighted a series of differences and similarities between ABC application in the three different countries. The main difference lies on biometrical identification. While the Chinese ABC system relies on fingerprints verification, the Finnish and British ABC systems, as the majority of European countries, rely on facial recognition. This is due to the fact that facial recognition is the only verifiable biometric available for all passengers regardless of their nationality, and can be matched against the chip image contained on the passport. Although fingerprints are surely more accurate, facial matching algorithm also

have been proven to be secure and effective. Differences in biometric information affect the design and structure of the e-gates used in different countries.

Since the first ABC implementation, e-gates technology has grown steadily. More and more people are familiar with the system, and, in turn, utilization, which is currently a challenge, is also going to improve. Technological advancement opens up several possibilities in the future of ABC, which were discussed during the workshop. For example, Mr Wimbury described several directions of possible ABC development such as "Cloud passports", a system based on "Face on the Move Technology" that would allow to use centrally held passport data to potentially remove the need to check material passports.

The workshop ended with a study tour at Pudong International Airport, where the participants had the opportunity to observe in person how border control management operates in a main Chinese airport. Specifically, it provided a space for foreign experts to learn and discuss about technical aspects of ABC in China.

Outcome

As international travel flows increase steadily, border control agencies are faced by new challenges. The workshop highlighted the need for increasing cooperation between different countries to share experiences and reflect on how border control management can better address these new challenges. As such, it provided a platform for both Chinese and foreign front-line officers to further enhance their understanding and share first-hand experience of their daily work. During the workshop, Chinese participants expressed their interest in learning more about the European ABC systems and wish to be able to conduct a study tour in Europe in the future.

They actively engaged in discussion and provided very positive feedback. They felt that the workshop was well organized and useful. Among the comments collected in the final evaluation questionnaire, many declared that reflecting on European approaches and measures on automated border control and border control management was helpful and relevant to their daily work, specifically on ways to improve ABC systems so to achieve their full potential in terms of security and efficiency in border control.

Annex 1
Agenda

Annex 2
Participants' list

Annex 3
Summary of evaluations