



BORDER MANAGEMENT INFORMATION SYSTEMS FOR 2025:
 What Can We Expect and How Will They Integrate with Existing Systems?



3rd CONFERENCE on TECHNICAL COOPERATION
 & CAPACITY BUILDING for BORDER MANAGEMENT
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Foreword

Border management is an increasingly complex and dynamic area of work. Advances in border management systems and technologies are consistently being met by advances in the systems and technologies used by those who seek to circumvent or undermine them. To address and stay ahead of these challenges, it is more important than ever that the global border management community come together to actively collaborate and exchange information.

The Conference on Technical Cooperation & Capacity Building for Border Management series, more commonly known as the Border Management Conference (BMC) series, has been increasingly seen as a forum that addresses this need: bringing together key stakeholders—governments, industry leaders, the public and private sectors, and international organizations—all with an interest in cooperating on strengthening border management systems to facilitate the safe and orderly movement of people crossing borders globally. In four short years, the BMC series has become one of IOM's flagship conferences, renowned for providing a venue for conference participants to exchange ideas, innovative solutions and cutting-edge technologies in border management.

The 3rd BMC explored the future, and considered what Border Management Information Systems for 2025 will look like and how the existing systems will evolve into them. The format of the 3rd BMC was similar to that of the 2nd in 2012, however, this conference found a better balance between presentations, and interactions among participants. In this vein presentations in plenary were followed by question and answer sessions which facilitated information sharing.

As a complement to the plenary sessions, four workshops on topical issues were held. These allowed participants to examine the Border Management Information Systems for 2025 and issues surrounding legal sharing of information using automated channels, as well as to explore new developments in supporting technology for BMIS and automated solutions to facilitate border crossings.

The three intense days of presentations and discussions during this conference contributed to the formulation of a concrete outline of the emerging challenges, trends, and responses for Border Management Information Systems toward 2025, and specifically, the shape that BMIS are expected to take in the future. The presenters, workshop chairs and participants themselves, representing a wide range of backgrounds, all provided important input into the conference, demonstrating once again that effective border management is dependent upon partnership and collaboration among all relevant stakeholders.

Andrew Bruce
Regional Director
Regional Office for Asia and the Pacific
International Organization for Migration

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Conference Background, Objectives and Sequence

The International Organization for Migration (IOM) and Asia Pacific Smart Card Association (APSCA), with the support of the Department of Consular Affairs of the Ministry of Foreign Affairs, Thailand, hosted the 3rd Conference on Technical Cooperation and Capacity Building for Border Management (also known as the Border Management Conference (BMC)) from 2-4 December 2014 in Bangkok, Thailand. More than 300 participants from governments, international organizations and the private sector gathered to discuss the conference theme, “Border Management Information Systems for 2025: What can we expect and how will they integrate with existing systems?”

The conference was a follow-up to the 2nd BMC held in Bangkok in June 2012, which was successful in providing a platform for diverse stakeholders to discuss and exchange ideas for facilitating travel and reducing risks through efficient pre-departure data management. The 3rd BMC, as with the previous two BMCs in the series, has been designed with an overarching objective to improve border management in the Asia-Pacific region through closer consultation and cooperation among national authorities responsible for border control, industry experts and key international partner organizations.

Given the tremendous growth in the movement of people across borders, simultaneously with the growth in transnational crime, countries in the Asia-Pacific region are increasingly looking to upgrade their border management information systems (BMIS) to facilitate the legitimate movement of people and goods. While countries that still use manual systems are interested in off-the-shelf solutions to facilitate quick and accurate traveler registration, those that already use a computerized BMIS are considering upgrading their systems. To do so, countries must determine the most appropriate technology based on their context, means for sharing information across borders, persons and entities that should be allowed to access the information, legal requirements for data protection and privacy, and roles for various immigration and border control agencies to play in the process. Against this background, the specific role played by international organizations in data sharing and data standardization, as well as that played by the private sector in developing technologies, should also be clarified.

In this context, IOM and APSCA decided that the 3rd BMC look at how countries should develop or adapt their border management infrastructure in line with these changes and aligned with future needs and priorities. A strong BMIS to assist in such efforts will include a holistic approach to such components and principles as IT infrastructure, detection equipment, information sharing, trend analysis, and capacity building of staff. This theme is also quite timely as the concept of “humanitarian border management” is becoming increasingly important as the world community deals with mass movements caused by humanitarian crises and disasters, and immigration and border management agencies around the world are called upon to deal with unusual, and often sudden, movements.

The main aim of the 3rd BMC, therefore, was to share state-of-the-art, technology-based solutions with governments, immigration, border management agencies, airlines, airports and other participants throughout the region. The conference dealt with implementation mechanisms needed, potential roles of various national agencies, and privacy and data protection safeguards. New

technologies, best practices in information sharing and other border management developments were also discussed.

Day 1 consisted of plenary sessions with presentations from governments, namely Hong Kong, Netherlands, Japan, Bhutan, Indonesia, Australia and the Republic of Korea. Presentations by regional and international organizations covered perspectives from ICAO, UNCTED, INTERPOL, UNODC, WCO and UNESCAP. Netrust Pte. Ltd. represented the private sector.

Four workshops were organized on Day 2, which focused on an in-depth examination of the following topics:

- Border Management Information Systems of 2025
- Legal Sharing of Information using Automated Channels
- Supporting Technology for BMIS
- Automated Solutions to Facilitate Border Crossings

Workshops were co-chaired by representatives of government, international organizations and industries. Speakers delivered presentations related to each topic, which were followed by in-depth discussions among participants. A series of concrete recommendations and next-steps surfaced during the workshops.

For the morning plenary session on Day 3, representatives of the Governments of Macau, Botswana, the Netherlands, and Thailand made presentations on their national BMIS and best practices to be gleaned. A presentation by Oberthur Technologies highlighted the range of technologies that could be used to support biometric identification. During the afternoon plenary session, workshop co-chairs presented the recommendations, followed by discussions.

Acknowledgements

The 3rd Border Management Conference (3rd BMC) was held in Bangkok on 2-4 December 2014 and brought together 344 participants representing 30 governments, 7 international organizations, 3 educational institutions and representatives of various related industries. The conference was co-organized by the International Organization for Migration (IOM) and the Asia Pacific Smart Card Association (APSCA).

The 3rd BMC was successful, with both IOM and APSCA receiving positive feedback from participants, both on the content and organization of the three-day event.

On behalf of APSCA and IOM, I would like to first express our appreciation to the Ministry of Foreign Affairs of Thailand for their continued support, which has enabled us to hold the BMC series in Bangkok since 2010. I am also grateful to the sponsors, speakers, and conference chairperson and workshop co-chairs for their time, commitment and willingness to take part in the various aspects of the conference. Finally, thanks are due to the conference participants, whose attendance, input and enthusiasm for the event contributed greatly to helping the 3rd BMC achieve its goal: to serve as a forum for the border management community to come together, build networks, and discuss the latest developments, challenges, and state-of-the-art technologies in our dynamic field. Thank you.

This report was put together by the Immigration and Border Management (IBM) Unit of the IOM Regional Office for Asia and the Pacific (ROAP) and attempts to summarize the proceedings of the 3rd BMC.¹ It is organized in chronological order and consists of summaries of 48 speeches and presentations, and 8 workshop discussions. Copies of the presentations are accessible at <http://www.apsca.org/infodesk/presentations.php> (select "APSCA Meeting 153: 3rd Border Management Conference," guest ID: guest 153, password: Bnqw09mc). The conference programme and list of recommendations from the four workshop are attached as Annexes.

I hope the report is helpful in reminding you of the three thought-provoking days we spent together at the 3rd BMC. I look forward to seeing you again at the next conference.

Sincerely,

Sjef Broekhaar

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IOM Regional Office for Asia and the Pacific
Bangkok
January 2015

¹ Fumiko Nagano (IBM Unit, IOM Regional Office for Asia and the Pacific (ROAP)) compiled this report based on guidance from Sjef Broekhaar (Head, IBM Unit, IOM ROAP) and detailed summaries and notes prepared by Courtney Chow (IOM Thailand), Sabira Coelho (IOM ROAP), Chris Foulkes (IOM ROAP), Vanessa Guidorizzi (IOM Thailand), Sally James (IOM Thailand), Pukchanok Pattanabud (IOM Thailand), and Sanam Rahman (IOM ROAP). The IBM Unit is grateful for their invaluable assistance, without which this report would not have been possible.

Day 1: Official Opening and Plenary Session

The official opening and plenary sessions, held on 2 December 2014, consisted of speeches and presentations on the topic of border management information systems for 2025 by representatives of government, international organizations, and the private sector. Governments represented include those of Hong Kong, the Netherlands, Japan, Bhutan, Indonesia, Australia, and the Republic of Korea, while regional and international organizations included UNCTED, INTERPOL, UNODC, WCO and UNESCAP. Netrust Pte. Ltd. represented the private sector.

Official Opening

Mr. Chris Foulkes, the Master of Ceremony, welcomed all delegates, and called upon **Mr. Andrew Bruce**, IOM Regional Office for Asia and the Pacific, to deliver the keynote speech and officially open the conference.



The 3rd BMC opens on 2 December 2014, bringing together more than 300 participants.

Mr. Andrew Bruce, Regional Director, IOM Regional Office for Asia and the Pacific, warmly welcomed delegates and participants to the 3rd Border Management Conference (BMC), stating that in four short years, the BMC series has become a flagship conference renowned for providing a platform where key stakeholders assemble with an interest in mutually cooperating to strengthen their border management capacities and enable the safe and orderly movement for all through innovative solutions and cutting-edge technologies in border management. Mr. Bruce stressed that border management is an increasingly complex and dynamic area of work, and more advanced techniques and technologies are required to prevent those who attempt to circumvent the system. Mr. Bruce highlighted IOM's work in this field, emphasizing the organization's stance to advocate for a holistic approach in border management and its commitment to supporting and assisting governments and other agencies in this effort. His speech ended with words of praise for the border management community for its achievements, and encouragement to utilize the conference as an opportunity to share ideas and best practices, and to build networks.

Ms. Rabab Fatima, Regional Coordinator and Advisor for South and South Asia, IOM Regional Office for Asia and the Pacific, next assumed her role as Chairperson, and joined Mr. Bruce in welcoming everyone to the BMC. She expressed gratitude to the co-organizers for their work in organizing the event. Ms. Fatima stated that discussion on border management is timely, given the various humanitarian crises, wherein immigration and border management agencies around the world are called upon to deal with unusual, and often, unexpected and sudden mass movements. She hoped that this year's BMC would lead to fruitful exchange of ideas on border management information systems (BMIS) of the future, identification of technology-based solutions to existing and anticipated challenges, and that the roles and responsibilities of different stakeholders in border management could be further defined.

Mr. Raymond Lok, Principal Immigration Officer, Information Systems, and Head of Information Systems (Development) Division, Hong Kong Immigration Department, delivered a presentation titled "Hong Kong's future border management systems," centered on Hong Kong's challenges, experiences and vision for the next generation of border control system. Mr. Lok discussed how the development of e-Gate assisted Hong Kong Immigration Department in handling the ever-increasing number of travelers and relieving the stress of continual increase of manpower, and how, looking ahead, the global trends of applying biometrics and information technologies as well as adopting electronic travel documents are gaining their roles in border management. He also explained that Hong Kong's status as a global financial hub and tourist attraction has put a strain on the Immigration Department, leading to the Department's decision to use biometrics technology and smart identity system. Mr. Lok gave an overview of the history, development, and adoption of the e-channel and the benefits it has yielded. He also shared the Department's plans to promote and implement automated border management systems that include upgrading all existing e-channels to multipurpose gates that can serve both eligible local residents and enrolled frequent visitors.

Ms. Gerdine Keijzer-Baldé, Chairperson of the ICAO-Technical Advisory Group and Director of Personal Records and Travel Documents Agency of the Ministry of Interior and Kingdom Relations, Netherlands, next gave a presentation, "ICAO Traveler Identification Program (TRIP): how organizations can anticipate on that development." This presentation summarized the focus and challenges related to the implementation of ICAO's TRIP program. Ms. Keijzer-Baldé began by explaining the operating modalities of the ICAO working groups and committees and ICAO's strategic objectives from 2014-2016. TRIP works under the assumption that all member states can achieve the same strategy in their operations, which means that work needs to be done to explore how member states can indeed adopt the same strategy. Ms. Keijzer-Baldé then showed a video of how an agency works to provide reliable and high-quality passport, travel documentation and identity verification services, and shared other initiatives designed to raise public awareness of identity fraud and to increase understanding among immigration officials of the security features for verifying documents for authentication. Last but not least, she explicitly invited representatives of governments to participate in ICAO working groups to assist with the implementation of TRIP.

Mr. Greg Pote, Chairman of APSCA, welcomed everyone to the conference and expressed his gratitude to IOM for collaborating with them to conduct this conference. He also acknowledged the partners of the conference, and the sponsors and exhibitors for their sponsorship. He briefly described APSCA's work in the field of border management, and then spoke about the

conceptualization of the BMC. The theme of the conference was highlighted, and the objectives of each of the sessions were outlined.



IOM Regional Director Andrew Bruce cuts the ribbon to mark the official opening of the Conference exhibition.

Plenary Session

Mr. Christian Mahr, Senior Legal Officer, United Nations Counter-Terrorism Committee Executive Directorate (UNCTED), presented on “Border Management in the Age of Foreign Terrorist Fighters (FTFs).” After briefly introducing UNCTED, Mr. Mahr discussed the impact of the recent adoption of Security Council Resolution 2178 (2014). The resolution obliges all UN Member States to put in place a variety of measures aimed at preventing the movement of foreign terrorist fighters across national borders. This implies that there will be a renewed emphasis globally on the need to implement effective border controls, which will not be limited only to the most affected regions. Specifically, Advanced Passenger Information (API) will become a requirement for all Member States, document security following ICAO standards will become crucial, and immigration screening may have to be done at transit points. In order to better understand travel patterns of FTFs, new methodologies will have to be developed while technologies and solutions that help tackle the challenges of porous borders will be increasingly relied upon. In conclusion, Mr. Mahr reiterated that governments and the private sector can cooperate to effectively implement this resolution.

Mr. Michael O’Connell, Director, Operational Police Support, ICPO, INTERPOL, spoke about INTERPOL’s Stolen and Lost Travel Documents (SLTD) Database. This database was developed to enable law enforcement entities to prevent lost or stolen travel documents from being used in an illegal manner. Furthermore, it allows for the exchange of accurate, reliable information on lost or stolen travel documents on a real-time basis. Since its creation in 2002, 44 million stolen/lost/revoked travel documents have been recorded in the database from the 167 participating countries. In 2014, nearly one billion checks have been performed by around 180 countries worldwide. In order to enhance the effectiveness of the platform, Mr. O’Connell outlined the SLTD strategic objectives, which aim to increase data contribution from countries, enhance data quality with the objective 99% of data accuracy, increase data consultation globally, and decrease number of “administrative” hits. In order to expand the use of the database, INTERPOL works with

member states to raise awareness through capacity building and training programmes. Mr. O’Connell concluded by reiterating the importance of integrating the SLTD with ICAO PKD so that they become the basic operating system for the airline industry.

Mr. Giovanni Broussard, Programme Coordinator, United Nations Office on Drugs and Crime (UNODC), next made a presentation entitled “Border Control and Transnational Organized Crime.” Mr. Broussard highlighted how illicit markets have a tendency of developing in parallel with licit economies. In recent years, the growing volume of transnational crime flows in Southeast Asia has become apparent, amounting to a value that exceeds US\$90 billion per year. This amount, which is larger than the GDP of several states in Southeast Asia, fuels corruption and the movement of illegal goods (such as counterfeits, drugs, and environmentally sensitive goods), and compromises border management. This growth in transnational crime will continue as the ASEAN region moves towards greater integration, which makes the need for improved border security more urgent. UNODC engages member states to strengthen border security by addressing existing challenges, including the lack of information sharing between border agencies, lack of capacity, and limited use of technologies. Finally, Mr. Broussard emphasized that border security needs to be enhanced and strengthened, but this should not be done at the cost of trade or the movement of people, which needs to be facilitated.



Conference Chairperson Rabab Fatima facilitates a session, striking the right balance between presentations and discussion.

Mr. Kazunari Igarashi, Head, World Customs Organization (WCO) Asia and the Pacific Regional Office for Capacity Building, presented on “Coordinated Border Management from the Customs Perspective.” The WCO has listed the concept of “coordinated border management” in the cross-border movement of people and goods as an important building block for customs in the 21st century. This approach is intended to support border control agencies to achieve a shared goal and a cohesive government response. Through this, customs will be regulated in a better and efficient manner while maintaining an appropriate level of control. Mr. Igarashi noted that the cooperation of business and government agencies is essential to tackle this challenging issue. To this end, several institutional arrangements for customs have been established and collaboration between and among international agencies is also underway. The WCO/IATA/ICAO platform, API/PNR, and the

ICAO Public Key Directory (PKD) are examples of this collaboration. Mr. Igarashi concluded by stating that there needs to be an inclusive approach for connecting stakeholders.

Mr. Sandeep Jain, Economic Affairs Officer, Transport Facilitation and Logistics Section, Transport Division, UNESCAP, next spoke about the “Model on Integrated Controls at Border Crossings.” The model developed by UNESCAP provides more efficient information flow and sharing among various border management agencies at land border crossings through the application of modern technologies and streamlined process of documentation and procedures. Its main purpose is to avoid duplication by storing relevant information in a database which can be shared among border agencies, and at a later stage, between two governments. Mr. Jain concluded his presentation with a vision for the BMIS of 2025, which should be: “instrumented,” containing substantial data that is cautiously collected; “interconnected,” with more information shared among border agencies and across borders; and finally, “intelligent,” with real-time tracking and big data, which will be the way forward to deal with increasing globalization.

Mr. Takahiro Inagaki, Assistant to the Director at the Bureau of Immigration, Ministry of Justice, Japan, next spoke about the “New Challenges by Japan’s Immigration Bureau Based on Technology.” The Government of Japan has been aiming to become a “Tourism-Oriented Nation.” To attain this priority, Japan’s Immigration Bureau has worked on an important task of streamlining immigration procedures at the ports of entry while preventing undesirable foreigners from entering. In this context, the Bureau has made efforts to make the usage of the Automated Gates even more prevalent and is looking into the wider use of biometrics technology. The two sets of experiments conducted for this purpose were described. Mr. Inagaki explained that the findings pointed to the possibility of implementing facial recognition technology in the future, but that its success would depend not only on improvements in hardware and software, but also on the proper guidelines given to users and their understanding on how to use the automated gates correctly.



Mr. Thinley WangChuk discusses Bhutan’s use of biometrics in its operations.

Mr. Thinley WangChuk, Director General of the Department of Immigration, Bhutan, delivered a presentation titled “Strengthening Border Management with Biometrics (AFIS) in Bhutan.” The presentation focused on online registration and verification of biometrics to curb imposters and detect fraudulent identification documents, improvement of service delivery and reduction in turn-around time, and sharing of biometric data. He also spoke about the scope of biometric data use in immigration procedures in Bhutan in light of the country’s geographic location and porous borders,

and described the biometric enrolment process. Mr. WangChuk gave a live demonstration from the Department’s website to illustrate how the system has been running since 2008, following which he elaborated on the challenges faced by the Department.

Mr. Rochadi Iman Santoso, who acts both as Director of Immigration Information System and Technology for the Directorate General of Immigration, Ministry of Law and Human Rights of Indonesia, as well as IT Coordinator for the same Ministry, presented on the topic, “Balancing the Needs for Security and Services in Border Control.” He spoke about security in 2025, and stated that while there are differences between countries due to differences in national interests and varying systems of management, he believes there is scope to bridge them through mutual cooperation between states and agencies. Mr. Santoso claimed that autogate services may become more common, verification procedures may no longer require physical presence, and that while BMIS systems are likely to be integrated into many external systems, the systems may have to simultaneously adjust to the country's own needs and have the ability to communicate with systems of other countries. Immigration modalities and perceptions in Indonesia were highlighted as examples, and the development and evolution of the immigration system in Indonesia were also described.

Mr. Paul Cross, Assistant Secretary, Identity, Department of Immigration and Border Protection, Australia, next delivered a presentation entitled “Biometrics and Data Sharing.” In this presentation, he emphasized the notion of the integrity of borders increasingly relying on the use of biometric information. In order to effectively use and share this information, partnerships between government agencies, between governments and private enterprises, and between international entities are also essential. Information sharing schemes will require strong trust models, secure system integration, and strong data and privacy protection regimes. This presentation provided an introduction to the most important themes underpinning information sharing in today’s connected world. It was also a valuable primer for the workshop on Day 2, during which Mr. Cross would deliver a presentation entitled “Building Strong Trust Models.”



Conference booths enable vendors and international organizations to demonstrate their latest technologies. Pictured is IOM’s Sjeff Broekhaar showing VERIFIER TD&B, IOM’s software that uses biometrics to support the detection of fraudulent documents and imposters.

Mr. Foo Jong Ai, Chief Executive Officer, Netrust Pte Ltd, presented on “Validating E-Passports at the Border: The Role of the ICAO PKD.” This presentation was an introduction to Workshop 3 on “Supporting Technology for BMIS,” held on Day 2 of the conference. Mr. Foo explained that while e-passports are the most secure type of travel documents, they are not being used in the proper manner because they are not validated at majority of the immigration check points. He noted that without proper validation of the contents of the chip in an e-passport, the advantages of this increased security are not realized. In order to follow the proper method for the validation of e-passports, immigration officers must verify the information in the chip. He identified several “trust levels” that must be met to determine the legitimacy of a passport. Noting that over two-thirds of all passports presented at the border are from PKD participating countries, Mr. Foo concluded by emphasizing that all e-passport issuing countries should join the ICAO PKD.

Mr. Soowan Park, Chief Immigration Officer, Korea Immigration Service, Ministry of Justice, provided an introduction to Workshop 4 on “Automated Solutions to Facilitate Border Crossings,” with his presentation entitled “The Introduction of Korea’s Automated Immigration Clearance System.” Mr. Park began with an overview of the Republic of Korea’s immigration and border control system. He then discussed Korea’s automated immigration clearance system, called the “Smart Entry Service” (SES). All Korean nationals can apply for SES, while certain other nationals who meet the eligibility criteria can also apply. Since the beginning of this service, more than 29 million passengers have used the SES. It has proven effective in reducing the time required for immigration checks; tightening enforcement on illegality and strengthening border security. Mr. Park discussed the prospect of border control and the expansion of SES in the future. It is expected that the SES will be expanded to several new airports to be utilized not just by “special” passengers of a particular nationality, but for all passengers universally.

Day 2: Workshops

Day 2 on 3 December 2014 was dedicated to an in-depth exploration of four topics centering on the theme of border management information systems for 2025.

Workshop 1: Border Management Information Systems for 2025

Presentations

Mr. Lee Wilson, Manager, Border Systems, Ministry of Business, Innovation & Employment, Immigration, New Zealand, presented on the topic, “Achieving the Vision with Immigration New Zealand’s Border Management Systems: 2025 and Beyond.” The presentation provided a look into the current and future systems that Immigration New Zealand is implementing at the border to achieve its vision of “growing New Zealand for all.” In response to the growth of tourism and other in-migration, Immigration New Zealand is promoting heightened IT infrastructure, automation, biometrics and increased data sharing to enhance facilitation and risk management of New Zealand’s borders.



Mr. Michael O’Connell and Mr. Raymond Lok co-chair Workshop 1, which proved a popular workshop drawing many participants.

Mr. Damian James, Commercial Director, Australia, New Zealand and South Africa, SITA, next gave a presentation entitled, “A View of the Key Technologies & Process Changes Required to Implement and Operate Effective BMIS in 2025.” This presentation focused on security and facilitation of key technologies from the perspective of Government agencies. Requirements for an effective border management system according to the speaker included such characteristics as “secure,” “fast” and “integrated.” Furthermore, an “intelligent border” would include the following characteristics and features: border passes, travel documents, risk assessment, biometrics, and advanced passenger data. Based on these concepts and principles, countries such as Australia and New Zealand that have implemented an Advanced Passenger Processing system have been able to push the border offshore and move from reactive to proactive processing. In the future, countries will need to enhance their IT infrastructure, however, this is already taking place through the introduction of the e-visa regime and biometric passport validation on arrival.

Mr. Alejandro Gomez de Cuenca, Director Area Business Development, Gemalto, presented on the future of border management in the presentation “2025: A Quick Look into the Future of Border Control Systems.” He discussed the potential changes and improvements in border management systems, focusing on self-processing, data exchange and technological advancements. In particular, Mr. Gomez de Cuenca underscored the importance of standardizing international principles and practices related to biometrics, data exchange and data access as well as the potential to leverage biometrics and technological advances to positively impact areas related to border management, for example, in the control and identification of infectious diseases.

Discussion

The discussion dealt with two main issues. Firstly, the possibility of having all biographical and biometric data stored on chips embedded in e-passports. While it is theoretically possible within the next few decades, the panel agreed that due to established practices, variations in technological development and data privacy standards, it was unlikely to be realized any time soon. Secondly, participants raised the issue of technological advancements to land borders as currently, airports

outpace other border crossings in terms of technological advancements and investment in border management. Panelists conceded that airports have dominated the discussion of border security and biometrics, but stated that land borders have seen significant advances in recent years and that these are expected to continue over the next few years as airport technology is currently being adapted to land border crossings. To facilitate this process, additional and sustained funding and improved bilateral cooperation are needed.

Presentations

Mr. Dino Mas, Acting Deputy Chief Migration Officer, Visa & Passport Division, Immigration and Citizenship Service Authority, Papua New Guinea (PNG), gave a presentation, “Border Management Systems–The PNG Experience: Looking Back and Looking Forward.” This presentation included an overview of PNG’s Border Management System (BMS) and the geographical characteristics of land and sea borders, as well as customary arrangements with neighboring countries. Mr. Mas also described the growth and change of PNG’s BMS over the past 15 to 20 years, including PNG Immigration and Citizenship Authority’s organizational and legislative reform process over the past few years. The issues that surfaced included those related to time, scope and cost. In particular, funding constraints, both in financial and human resources, have impacted the functionality of BMS. Mr. Mas explained that PNG’s BMS is a server-based system and not a web-based system, which also makes it less efficient, with a problematic internet connection prone to failure.



Workshop presentations are followed by a lively discussion.

Mr. Gordon Wilson, President, WorldReach Software, then discussed pushing borders outwards through pre-departure screening processes in his presentation, "Know Your Traveler: Get the most out of your BMIS investments from the virtual border to the real one." He explained that systems should move to integrated solutions which improve both facilitation and security simultaneously at low incremental costs to improve return on investment in border systems and allow identification of low-risk travelers so that resources may be better distributed. Mr. Wilson explained the benefits of voluntary registration in visa waiver programmes and stated that the ideal border management system would be on demand, use biographical and biometric data, allow for time to crosscheck

passenger information in various databases and allow for efficient ABC for a large percentage of travelers at low cost.

Ms. Annick Alligier, Marketing Manager, Government ID Secure Micro Division, ST Microelectronics, outlined the future of a border control system (BCS) for 2025 from a European perspective in her presentation, “Border Control Information Systems for 2025.” Ms. Alligier stated that countries must use existing systems to collect information required in the context of dramatically increasing passenger flows, variety of borders, and various types of passengers. She explained that the objectives of a border control system should aim to: better control immigration, reduce terrorism, and contribute to generating economic growth. Such a BCS will be based on the use of e-documents, manual border controls, automated border controls (ABC), and entry/exit database, and it should be secure, reliable, interoperable, flexible, convenient, and cost-effective. Ms. Alligier noted that the key challenge is to provide a system that is connected with existing systems that indeed is secure, reliable, flexible, convenient and cost-effective. Going forward, she described the importance of reinforcing automated border control usage, collecting advanced passenger information, and actively using and verifying e-passports at border control.

Discussion

Discussion during this workshop centered on mobile technology and its relation to border management. Panelists stated that the infrastructures that are being used currently to promote remote biometric and biographical identification are leveraging commercial mobile applications. With the massive infrastructure that already exists with smartphones, a system can be built that can capture many of the low-risk travelers and increase pre-departure, and APIS/PNR systems for improved data collection. Panelists explained that building trust was crucial to advancement in this area as many people would not be comfortable with storing biometric data on their mobile devices.

The workshop chairs then provided a summary of the session. The key issues raised among participants were: the need to become proactive and activate all capabilities; the need to promote self-service capabilities; ensuring accuracy of biometric data; addressing issues of data storage, privacy and security; standardizing existing and upcoming systems; developing land border capabilities; developing plans and securing government support to move forward; and balancing security and facilitation to support integrated solutions and future actions. An ideal BMIS will contain the following features: be a marriage between biometric and biographical data; be designed to allow in-time screening and push checks upstream; use technological infrastructures to its advantage; maximize data usage; and be built upon more effective bilateral and multilateral agreements.

Workshop 2: Legal Sharing of Information Using Automated Channels

Presentations

Mr. Paul Cross, Assistant Secretary, Identity Branch, Risk Fraud and Integrity Division, Department of Immigration and Border Protection, Australia, started Workshop 2 with his macro-level presentation on “Building Strong Trust Models.” He presented approaches to handling travelers’ personal data, including their biometric data, in the context of partnerships between government agencies and private sector services. Mr. Cross reiterated the importance of using partnerships and data to build

stronger borders, while ensuring the protection of people’s privacy. He explained that on the basis of a proper legal framework, countries can apply technology to verify data integrity and ensure data protection.



Mr. Paul Cross presents on the topic, “Building Trust Models,” in Workshop 2.

Ms. Isabelle Moeller, in her presentation, “Introduction to the Biometrics Institute,” stepped in as a last-minute replacement speaker to present the work of her organization, Biometrics Institute. The institute aims to promote the responsible and ethical use of biometrics. Ms. Moeller explained that the Institute developed an international biometrics Privacy Guideline based on the Institute’s Australian Biometrics Institute Privacy Code from 2006, which was a first of its kind. The Guideline is a best-practice guide providing 17 guiding principles about biometrics and privacy. She presented several of the more noteworthy principles, including: proportionality (is biometrics the right solution?) and purpose (what the information is collected for), among others.

Mr. Ross Greenwood, Principal, Identity Matters Consulting, next presented an idea on the possible application of automated data sharing that deal with legal issues, privacy, data protection, and some of the sensitivities surrounding this topic in his presentation, “Exit Control—the e-passport and enhanced standards based data collection and sharing.” Mr. Greenwood noted that identity verification is a shared responsibility that relies on international law as the foundation. It would be important to leverage both the technical infrastructure as well as legal infrastructure to enable the sharing of Advanced Passenger Information (API) and Passenger Name Records (PNR) data. Mr. Greenwood concluded by stating that it would be critical to create a framework that ensures improved assurance of traveler’s identity that also provides a more reliable traveler risk and threat assessment, which would yield both facilitation benefits (in terms of pre-clearance) and security benefits (in terms of interventions for preventing travel).

Discussion

The discussion was lively and elicited many questions from the floor. Participants discussed promoting the idea of data exchange on the basis of Australia’s border management operations to prevent people from arriving without documentation and presenting themselves as someone else. The sharing of biometrics data—especially of fingerprint images, which are good for 1:N checks—is

important for identifying serious fraud and criminals. Participants also discussed the collection of biometrics data for children and how the rights of children should be protected. In Australia, fingerprints of children under 15 are not collected, and such data, if they exist, are shared only to locate their families or for other reasons to assist them. One participant remarked that verification is the foundation for better identification, and that the concept of the UN Security Council Resolution 2178 (2014) is about the sharing of Advanced Passenger Information data, and working on packing data that is enhanced. Another participant explained risk management as well as information sharing and analysis from the perspective of known “knowns,” known “unknowns,” and unknown “unknowns.” There are approaches to tackling each of these categories of information and travelers, and the use of technology is important in all aspects. For example, risk analytics can be used to develop risk profiles to glean existing data from databases.

Presentations

Ir. Prof. Raymond Wong, Adjunct Professor, Hong Kong Polytechnic University, next gave a presentation entitled “Sharing of Data? The S Concept” on the need for the sharing of information as well as the need for a consensus on the specific types of information to share and with which specific agencies to share the information. Mr. Wong explained that any excessive distribution of personal information would certainly invite criticism, and rightfully so. Mr. Wong suggested that a photo with the Passenger Name Records (PNR) could certainly help, as names without photos are not unique, and face is already quite an accurate biometric data that can be used. Mr. Wong urged participants to identify the common thread to find out which data can be shared in advance to assist immigration officers in their decision-making, while at the same time addressing privacy concerns of individuals.

Mr. Steven Grant, Director, Business Development, WorldReach Software, explained that the border management systems are an important, but very narrow slice of the identity management continuum in his presentation, “Data Sharing Examples from the Edges.” If we limit our view of travel documents to how they are interacting with border management systems, we are missing some important elements of a comprehensive identity ecosystem—an ecosystem that is local, national and international in scope. To support his point, Mr. Grant presented two practical examples on how cooperation in information-sharing at the national (in Canada) and regional (in the Caribbean) levels have been beneficial. Data sharing and cooperation can work well, both domestically and regionally. Mr. Grant predicted that as ICAO’s TRIP strategy develops, activity will move beyond focusing only on travel documents and border management to the source documents, to the issuance of identity documents.

Mr. Andre Oeyen, Director, Biometrics Business Development, Government & Security Solutions, SITA, next gave a presentation, “The Intelligent Border.” He described SITA’s best practice in supporting data sharing in the European Community where privacy and data standards are most strict and most onerous, and where the global standards on many issues in this field are set. He stated that the border management community needs to pay attention to the highest standards being set in data protection and privacy areas as the community looks at how to and what information to share, and with whom. Mr. Oeyen stated that connected travel will come, with the paradigm to be built on the principles of satisfaction, security and increased operational efficiency. Biometrics information sharing is very important in the end-to-end process. He concluded by stating

that collaboration is the way forward, and to always remember the passenger, who is paying for the travel that supports the airline industry.



Participants listen to the presentation in Workshop 2.

Discussion

Two main points surfaced during the discussion, the first of which was about the idea of information sharing via a switchboard or a “cloud” directory, with all data being maintained by the owners of the respective data. Such a mechanism would allow for sharing of some – but not all – data. Another participant asked why e-visas have not been more widely adopted after they were introduced nearly two decades ago. Participants discussed people’s natural preferences for sticking to what they know, and agreed that the main point is the importance of getting information in advance about any given traveler to make an intervention, if necessary, based on risks and threats.

Workshop 3: Supporting Technology for BMIS

Presentations

Mr. Fons Knopjes, Senior Research & Development Advisor, Travel Documents, Ministry of the Interior and Kingdom Relation, Personal Record and Travel Document Agency, the Netherlands, delivered a presentation entitled “LDS-2, Explaining the Concept, Dispelling the Myths.” A central concept for LDS-2 is that it will be a new version that will allow for optional data to be implemented as separate and individual applications on the chip. Mr. Knopjes explained that the LDS-2 will have three applications – visas, travel stamps, and additional biometrics – which are all optional components of the eMRTD and can only be deployed under the direct policy control of the travel document issuing state.

Mr. Carsten Loschinsky, Vice President & General Manager, Government ID, Chip Card & Security Division, Infineon Technologies, then presented on ““Making Border Crossing Safer and Faster.” Infineon focuses on achieving greater security and convenience for travelers while reducing waiting time. Mr. Loschinsky outlined what technology can provide in order to achieve this aim and facilitate

border management evolution and new possibilities for government. He discussed future proven technologies, including e-passports, the utilization of LDS2.0, eGates, and how they can increase efficiency of border management, reduce human error and increase security. States that use the LDS2.0 operating system will pave the way for additional services to the passport holder and the VHBR technology is the future proof technology.

Mr. Henry Leung, Senior Marketing Manager, Government Solutions, Entrust DataCard, presented on “Preparing for the Future – Identity & Credential Lifecycle Management Platform.” Mr. Leung detailed common challenges at the borders, such as document-based processes being prone to counterfeiting, the inability to validate data, slow manual processes, and non-integrated identity processes. Mr. Leung affirmed that citizen enrolment, credential issuance and credentials at the border are the key components of the border management processes. He concluded by explaining that identity and credential lifecycle management platforms can speed up deployment times, reduce risks and be scalable to evolving technologies.

Discussion

During the discussion, it was stated that multimodal biometrics are the current prevailing trend. The importance of developing legislation and standards was also noted to allow ongoing and planned programmes to progress.

Presentations

Dr. Chatura Ranjan De Silva, Head, Department of Computer Science & Engineering, University of Moratuwa, Katubedda, Sri Lanka, and consultant to the Sri Lanka Biometrics projects, next spoke about the evolution of Sri Lankan immigration and border control process in his presentation, “One Person, One Identity: Integration of Biometrics into Sri Lankan Travel Document Enrolment Process”. Mr. De Silva discussed the recent initiatives to enhance Sri Lankan identity management procedures for the issuance of national identity cards and travel documents. Presently, there are two large ongoing projects at the Sri Lanka Department of Persons Registration and the Department of Immigration and Emigration to integrate digital fingerprints and ICAO compliant facial images in their enrollment procedures. Mr. De Silva explained the design of the projects and how a number of technical, social, cultural and political issues were managed.

Mr. Patrick Lam, Director, Services, Arjowiggins Security Limited, then discussed “LDS 2.0 with Keys Distribution.” The ICAO Logical Data Structure 2.0 (LDS2) would prompt the post-issuance ability of an electronic passport to allow foreign countries to securely position and sign the electronic travel stamps and to provide signed electronic visa with additional biometrics. The speaker introduced the logical structure of LDS2 as drafted by ICAO, with the Key Management and Key Distribution environments, for the e-passport, e-visa, and e-stamp issuers to securely embed, retrieve and verify the e-stamps and e-visas from the e-passports.

Mr. John A. Peters, Product Manager, New Business, OVD Kinegram AG, delivered a presentation on “Innovations in optical security to support future border management processes.” This presentation discussed ways in which new developments in optical security technologies and antenna manufacturing techniques can support a more secure implementation of BMIS. Imposters or “look-a-likes” using stolen or lost travel documents impose a major counterfeit threat. Assuming the

electronic data in the e-passport can be read and matched to the biometrics of the document bearer, but due to a failure of the public key retrieval process, the verification of the country signing certificate is not always possible. Mr. Peters presented innovative methods for an on-the-spot verification that confirms that the chip, the document and the bearer all belong together.

Discussion

Discussion points during the workshop included: incremental processes in implementing new passport technologies, challenges in validating the identity of a person crossing the border in the current climate where governments are not willing to share data, security of micro-chips, and the likelihood that physical documents will still be part of border security during our lifetime. The chairs summarized the presentations and recommended that LDS2 strategies be developed with the participation of border and immigration authorities, potentially through existing working groups, and to improve visual security features to facilitate border checks and reduce risks.

Workshop 4: Automated Solutions to Facilitate Border Crossings

Presentations

Ms. Bolormaa Purev, Senior Officer/State Inspector, Chinggis Khan International Airport, Mongolia Immigration Office, delivered a presentation, “Border Inspection of Mongolia Immigration Office.” She explained that all persons entering or exiting from Mongolia are subject to examination and inspection by Mongolian immigration officers. An examination and inspection can be as simple as a few questions, or can include more intensive questioning. The intensity of an examination depends on reasonable grounds. Border inspection officers of the Mongolia Immigration Office at Chinggis Khan International Airport, Ulaanbaatar, Mongolia will be implementing a new system in 2015, which focuses on improving its structure to secure its borders, prevent any immigration-related issues, ensure safety and control the flow of legal immigration. This system will include e-passports and e-gates.

Mr. Alejandro Gomez de Cuenca, Director, Area Business Development, Gemalto, presented on the pros and cons of the use of fully-automated border crossing systems. Mr. Gomez de Cuenca noted that this was a relevant topic because, while there had been huge investments in automated systems, it was easy to forget some of the basics of border management. He noted that while ABCs will never be a stand-alone solution, they have nonetheless become an important component of border management. The positives of ABCs mentioned include: the speed of processing; reduced cost; the introduction of some real-time verification processes; reduction in pressure on immigration authorities; reduction in the space required at border crossing points; introduction of a mix of security and ABC efficiency benefits; and time and money savings for airlines. Conversely, the challenges include: inability to prevent all spoofing attacks; adoption of a document-centric approach rather than conducting a proper risk assessment; adoption of a one-size-fits-all approach; limitations on who can use the ABCs; increased costs of exceptional implementation problems; controlled and non-controlled factors that lead to failure; and limitation in the ability to gather additional information during processing. Among others, the gaps to be addressed include: improvements in biometric algorithms; advanced bilateral agreements; better training for travelers; reducing traveler-ABC interaction to avoid mistakes; and a two stage processing system.

Mr. Heng Wa Seng, Head, Product Management Department, IRIS Corporation, gave a presentation entitled “From 1st e-Gate in the World to Future Smart Gates: ABCs Deployment Challenges in Malaysia,” on the history and future of Smart Gates in Malaysia. The speaker noted that the first e-passport was introduced in Malaysia in 1998 in response to an increasingly sinister use of Malaysian passports to gain entry into other Commonwealth countries. This was followed by the first e-Gate introduced in 2000, and additional biometric information being added in 2006. Mr. Heng outlined some problems experienced with the use of e-Gates, including: long queues for non-Malaysian citizens who are not pre-registered with the ABC and thus must use manual posts; the need for government support, both in-state and overseas, to ensure the most efficient system possible; and the requirement for stamps as proof of the place of embarkation. In the three generations of e-Gates used in Malaysia, they have gone from solely relying on photographs and bio-data, to using Basic Access Control and Extended Access Control, facial recognition technology, and boarding-pass scanning. For non-Malaysian citizens, pre-registration and a small annual fee enable the use of the e-Gate system, which is particularly useful for those who regularly use land crossings.



Dr. Pratit Santiprabhob and Ir. Prof. Raymond Wong facilitate Workshop 4.

Discussion

Workshop panelists and participants talked about the need to treat border crossing not as a machine, but as a brain. ABCs should always have a human element to them. The emphasis was on the fact that the ABC systems are used at different types of border crossing and are used for multiple purposes. ABCs are fast developing, and along with this process, there are corresponding challenges with the systems.

Presentations

Mr. Eric Byukusenge, APCs Project Manager, Directorate General of Immigration and Emigration, Rwanda, next gave a presentation, “Automated Passenger Clearance System in Rwanda: Land Border Challenges.” He presented the challenges faced and benefits derived by Rwanda in the implementation of the Automated Passenger Clearance System (APCS), which aims to ensure efficient and effective management of travelers at the land border. Rwanda’s unique processing challenges include processing one unique individual crossing up to 20 times/day. Another challenge includes eGates being located outside and exposed to weather patterns that can trigger sensors and

false alarm. Yet another challenge includes travelers' luggage triggering false alarm, with the system mistaking the luggage for another person. On the benefits side, the eGates have led not only to improved facilitation and security, but also to an efficient use of the existing national infrastructure. Mr. Byukusenge concluded his presentation by posing a series of questions for the future, including what the future of eGate is, whether Rwanda could have an eGate that is waterproof and can work completely outside, what the standard biometrics in 2025 will be, and whether tailor-made eGates that can clear passengers in 5 seconds can be expected in the future.



Mr. Eric Byukusenge talks about Rwanda's experience with eGates.

Mr. Jean-Francois Lennon, Director, Global Business Development, Sales & Marketing, Vision-Box SA, began his presentation with the continuing debate on how to strike the right balance between facilitation and security. To sustainably deploy a biometric-based solution at the border, one needs to capture the biometric data (face, fingerprint, iris, and voice). The quality of capture is essential, and to sustain the use of automation, standards are essential, as set by ICAO. Mr. Lennon explained that airports, airlines, governments and border control authorities all benefit from integrating ID management in security and facilitation. There is a need to create a chain of trust, with biometrics as the token, but one must remember that technology is only a vehicle. To tackle the potential abuse of data being shared excessively, privacy needs to be considered as the most important, fundamental principle by all stakeholders and seen from the right angle. If anyone infringes on the privacy of citizens, then citizens are entitled to sue and receive compensation. Mr. Lennon presented three innovative case studies of eGate deployment in Finland, Qatar and the UK, and urged participants to think about how to educate citizens to use the technology such as eGates.

Mr. Carl Gohringer, Business Development Manager, Europe and Asia-Pacific, Cross Match Technologies, explained that with the vast increase in the number of people crossing borders, there is a need to focus resources on the potential criminals rather than low risk passengers. Mr. Gohringer noted that the use of biometrics can support these processes, but questioned how one ensures that the rights and privacy of those who use the system are not infringed upon, and how to use multiple technologies in the enrolment process when capturing biometrics. Mr. Gohringer also explained that biometrics by themselves is not a solution; they are only components of a system that needs to be complemented by subject identity management to associate the biographical data to

the biometrics. He also cautioned that biometrics is not binary, that is, it is not absolute, and secondary inspection needs to complement the biometrics check. In conclusion, Mr. Gohringer stated that the ABC system removes low-risk passengers from the visibility of border guards, so that they can focus on those that need closer examination. Mobile technologies and mobile solutions can support the operations of border guards.

Discussion

During discussion, several questions were posed about Rwanda. With respect to the involvement of other agencies, such as customs, in the ABC deployment, the Rwandan project managers had the responsibility to bring all actors together and that customs clearances for Rwandan citizens are not required at the actual border crossing points in that country, with the ABC system only focusing on immigration processes at this stage. Training of users, particularly in rural areas, has been a challenge and requires a continuous process using various mediums of communication, such as leaflets, radio and TV programmes, among others. Another question was on whether ABC could collect information for other agencies, to which one of the panelists explained that it is possible to add anything to the system but it would affect its efficiency.

Workshop panelists and participants discussed that, in the future, ABC systems will be more intelligent and will be better integrated at both the back-end and the front-end, to fulfil the ultimate goal of facilitating easy and convenient travel experiences while not undermining the security and sovereignty of countries. The universal use of biometrics is the future of the ABC systems, and this needs to be reconciled. ABC systems also now need to be better integrated with other systems used in the process of border crossing.

Day 3: Plenary Session, Workshop Recommendations and Closing

The third and final day of the conference focused on various country and industry approaches to new developments in border management systems. Presenters showcased advanced approaches, new automated systems and improved integrated strategies to facilitating border management, and the successes and future plans for further roll-out. To conclude the conference, presentations on workshop findings and recommendations were discussed.

Plenary Session

Ms. Rabab Fatima, Regional Coordinator and Advisor for South and South West Asia, IOM's Regional Office for Asia and the Pacific, opened Day 3 of the conference on 4 December 2014 with a summary of the first two days. The first day of the conference gave an overview of the border management information system whereas the second day was dedicated to in-depths discussions that resulted in a set of recommendations.

Ms. Cindy Sin Yin Kun, Chief of the Department of Organization and Information, Identification Services Bureau of the Macao Special Administration Region of the People's Republic of China, gave a presentation entitled "Introduction of Electronic Services of Macao SAR Electronic Identity Card." Ms. Kun presented the evolution of the Macao identity card from paper-based to electronic-based with biometric data chip in 2002 and the recent introduction of the Contactless Macao SAR Electronic Identity Card that provides additional photo for recognition in October 2013. She explained how Macao SAR Electronic Identity Card is used as a basic infrastructure for the Macao

SAR Government to provide different electronic services and applications to cardholders, including multi-function kiosks, self-service kiosks for ID card renewal, applications for the certificate of criminal record, and passenger automated system. Currently, there are approximately 45 kiosks located in 30 different locations, some of them operating 24 hours a day, 7 days a week, to conveniently serve customers. Plans involve providing more kiosks in the future.

Ms. Fabiola Bellersheim, Head of Sales Subsidiaries, Government Solutions, Giesecke & Devrient presented the topic of “Botswana’s Border Control and Passport System: An Integrated Turnkey Solution.” Ms. Bellersheim explained how Botswana was the first country in Africa to introduce an e-passport, switching from paper-based to more advanced security documents with high-speed personalization. This project was implemented within 2 years of which Giesecke & Devrient was the main contractor. The country looks forward to integrating other documents into the system, such as Visas as part of the HIGHSEC border control solution.



Ms. Fabiola Bellersheim discusses Botswana’s project to introduce e-Passports.

Mr. Fons Knopjes, Senior Research & Development Advisor Travel Documents, Ministry of the Interior and Kingdom Relation, the Netherlands, delivered a presentation entitled “Development of Documents: the Dutch Approach.” Mr. Knopjes explained that the development of a travel document is a periodically recurring activity for governments. The reasons for introducing new documents are varied: the contract may have simply expired, or political ambitions arise or as a result of international developments. Before the development of a new travel document begins, it is important to thoroughly analyze the past experiences gained from the existing document. He stated that there are hardly any features that have been specifically developed for automated verification. Security features that support automated verification are conditional for reliable automated comparisons. Furthermore he underlined that developers of documents should continuously consult document inspectors in order to produce a document that can be properly and reliably verified. This applies not only to the physical world, but also to an environment where verification is done by an automated process. This presentation provided an insight into the Dutch approach and the anticipation on chain dependency.

Mr. Raschada Jiwalia, Director Passport Division, Department of Consular Affairs, Ministry of Foreign Affairs of Thailand, provided an overview of “Thailand’s e-Passport Services.” Thailand was the fifth

country in the world to issue e-passports since 2005. Its integration system is used for instant data check involving relevant agencies, such as the Ministry of Interior, Department of Special Investigations, and so on. The passport application process only takes 20 minutes. Once a passport is issued, the data is sent real-time to the Immigration Bureau to allow the holder to cross borders with the authorized passport. In 2012, the auto channel was introduced at the Suvarnabhumi Airport. Since the closure and re-opening of the Immigration Division in 2013, the Ministry of Foreign Affairs has been improving the capacity of the reserve passport application centers to 100 percent in order to support the issuance of passports.

Mr. Roswell S. Wolff, President, Asia Pacific and Managing Director, Identity Business, Area, Oberthur Technologies, delivered a presentation on “E-Passport Readers, Key Management Systems, Cameras and Scanners to Support Biometric Verification and Identification.” Oberthur Technologies has been providing support in border control to secure personal data and prevent fraud by integrating various biometric verification techniques. Cross-border traffic has been steadily increasing and is projected to double in 20 years. To accommodate for the volume and enhance efficiency and security, Oberthur Technologies offers mobile control solutions, automated border controls and 2D barcodes. Mr. Wolff concluded his presentation by noting that he foresees mobile units as the trend for the year 2020.

Mr. Amando L. Amisola, Immigration Supervisor under the Bureau of Immigration, Department of Justice, Republic of the Philippines, highlighted the significance of “Biometrics in Immigration.” In an effort to strengthen and secure the Philippines’ borders, the biometric security system has been implemented in accordance with the Bureau of Immigration’s Information System plans since 2012. The program is designed to enroll ten fingerprints and facial images from every traveler who crosses the Philippines’ borders as well as of those who have already entered the country. Moreover, the Philippines have recently introduced the microchip-based identity card this year to supplement the passport and enhance verification of individuals. As a result, biometric identification is substantially beneficial to automated travelers.

Workshop Recommendations

The afternoon session of Day 3 were dedicated to the presentation of workshop recommendations by the workshops chairs. A lively discussion took place among panelists and participants, where views and opinions were exchanged on challenges and recommendations for the future of border management.

Workshop 1: Border Management Information Systems for 2025

Mr. Raymond Lok summarized the workshop discussion topics, which included: the need to proactively “activate” all current capabilities; importance of promoting self-service capabilities; wider use of biometrics to ensure more accurate identification; set up of global standards (e.g. APP/PNR); collecting best practices for the use of e-Gates; and development of sea and land border capabilities as for air borders.

An ideal border management system for 2025 would include the following main recommendations, among others, as its guiding principles: a) use of both biometric and biographical data; b) checking pushed upstream for better decision-making; c) lower cost solutions based on advancements in technology; d) more effective bilateral or multilateral arrangements; e) a cultural change in traveler behavior based on trust; f) wider sharing of trend analysis data rather than the data itself for more effective border management; g) wider sharing of CSCA certificates to facilitate proper inspection of e-passports; h) more automation to improve efficiency; i) closer collaboration between government departments and private sector, particularly in tourism; and j) “big data” analysis.



The co-chairs present the recommendations coming out of the four workshops.

Workshop 2: Legal Sharing of Information Using Automated Channels

Mr. Ross Greenwood explained that this workshop took into account both the national and international frameworks on data protection, and recommended that cooperation is the way forward in response to travelers’ experiences and concerns. The two main recommendations from this workshop included:

- Citizen concerns about data sharing are valid and real. Transparency is important. Consultation with stakeholders is essential (“why”, “what” and “how”); and
- Automated, lawful data sharing of identity information is possible in border control applications. Collaboration is the way forward. Solutions should have a traveler focus to ensure efficiency and traveler experience objectives are achieved along with improved security.

Workshop 3: Supporting Technology for BMIS

Ms. Gerdine Keijzer-Balde and Mr. Paul Cross provided a summary of the workshop. Four main recommendations coming out of this workshop included:

- Border and immigration authorities need to actively participate in ICAO's New Technologies Working Group. There is a need to work together with passport and border authorities for broad spectrum advice;
- LDS2.0 can help meet two challenging objectives: providing more security and reducing waiting times for travelers in a context where the numbers of air passengers are rapidly growing. States can reduce waiting times significantly using e-gates and by adopting the PKD model. Introducing e-visa stamp in the LDS will automate retrieval of more important information and entry/exit stamps will provide further quality information relevant to border integrity objectives;
- Governments should think of an implementation program to make use of technology capabilities in an efficient way. Introducing life cycle management can help find the balance in short term and long term choices and investments; and
- Despite the growing use of ABC gates, it is imperative to keep on investing in designing safe documents and recognizing the importance of reliable visual inspection. Security features that are easy to communicate, verify and are hard to imitate, play a vital role for all partners. Greater security can be derived by interlocking visual security with the electronic devices.

Workshop 4: Automated Solutions to Facilitate Border Crossings

Ir. Prof. Raymond Wong recapped the discussion from this workshop. The Automated Border Control (ABC) system is already popular around the world with users over all continents. It helps border control agencies to cope with the ever increasing volume of travelers at air, land and sea checkpoints while upholding secure identity management. As a modern tool, it should not be meant to replace the experience and wisdom of border management professionals, who will be deployed on more intelligent and productive assignments like supervision, intelligence collection, and surveillance, instead of the laborious and onerous counter duties. Rather, it should form an integral component of the Border Management Information System (BMIS) of the future. The workshop identified some new features for the next generation ABC systems, as follows:

- Standardized biometrics technologies to be adopted for identity verification so as to enable interoperability of ABCS globally for wider groups of users, including foreign visitors without the need of prior enrolment;
- Forming integral part of a powerful backend border management systems integrating with sources of useful information, such as the ICAO PKD, INTERPOL SLTD/MIND/FIND, and data from other country or countries, APIS/APP/MAS, etc.;
- ABC systems for outdoor users; and
- Other envisaged improvements on energy consumption, user-friendliness, reliability, less exception handling, among others.

Recommendation from the presentation, "Development of Documents: the Dutch Approach."

Since there are no standards for the validation of the equipment (ABC-systems) that is used at borders, it is not possible to ascertain whether the equipment is adequate implemented on the basis of international standards and test protocols. If acknowledged that states have a collective

responsibility for the organisation and security of our borders, an international set of standards is a precondition.

- A. To assess the reliability of ABC systems it is a precondition to develop and use international test protocols.

Closing

Mr. Andrew Bruce, IOM Regional Director for Asia and the Pacific, closed the conference by thanking the sponsors, partners, presenters, chairperson, organizers and participants for making this conference a success. Mr. Bruce looked forward to the continuing knowledge sharing in border management among stakeholders as the basis for development of robust policies and procedures, and welcomed feedback as a way to improve the organization of the next BMC.

Conclusions

The lively discussions and exchange of ideas that took place among participants of the 3rd Border Management Conference centered on and led to a number of important additional observations to the points already described. Firstly, experiences gained with an existing document provide crucial input for the development of a new document. Secondly, the collection of data, necessary for conducting a fraud risk analysis is a huge and time-consuming task. Thirdly, an analysis of authentication features that are used in a document gives a good idea of the risks covered by these features. Fourth, authentication features must be carefully considered when the design of a security concept is selected, and choices must be explainable and transparent. Fifth, the reliability of automated verification can be significantly improved through consultation between the document developers and the document inspectors when a document is being developed. Finally, a precondition for assessing the reliability of Automated Border Control will be to develop and use international test protocols. These observations should be explored further in future conferences.

Annex 1: Conference Programme



3rd CONFERENCE on TECHNICAL COOPERATION & CAPACITY BUILDING for BORDER MANAGEMENT

Bangkok, 2-4 December 2014

“Border Management Information Systems for 2025: What can we expect and How will they integrate with existing systems?”		
 <small>IOM International Organization for Migration</small>	Supported by: Department of Consular Affairs Ministry of Foreign Affairs of Thailand	 <small>Asia Pacific Smart Card Association</small>
CONFERENCE PROGRAMME: DAY 1 Tuesday, 2 December 2014		
		Version: 1.0
08.00	Welcome and Registration	BMC Secretariat, Main Foyer of the Dusit Thani Bangkok Hotel
09.00	Opening's Ceremony International Organization for Migration (IOM)	Mr. Chris Foulkes Master of Ceremony
09.20	Keynote Speech International Organization for Migration (IOM)	Mr. Andrew Bruce Regional Director IOM's Regional Office for Asia & the Pacific
09.35	Introductory Remarks Conference Chair Person	Ms. Rabab Fatima Regional Coordinator & Advisor for South and South West Asia IOM's Regional Office for Asia & the Pacific
09.40	“Hong Kong's future border management systems” Hong Kong Immigration Department	Mr. Raymond Lok Head Information Systems Development Division
10.00	“ICAO Traveller Identification Program – TRIP: how organizations can anticipate on that development” Ministry of the Interior and Kingdom Relations, The Netherlands	Mrs. Gerdine Keijzer-Baldé, Chair Person ICAO/TAG Director, Personal Records and Travel Documents Agency
10.20	Official Opening of Exhibition Asia Pacific Smart Card Association (APSCA)	Mr. Greg Pote Chairman, APSCA
10.30 11.15	REFRESHMENT BREAK & VISITING the EXHIBITION	
11.15	UN Counter-Terrorism Executive Directorate “Border Management in the Age of Foreign Terrorist Fighters”	Mr. Christian Mahr, Senior Legal Officer
11.30	International Criminal Police Organization “INTERPOL's SLTD border security system and its current development strategy”	Mr. Michael O'Connell, Director, Operational Police Support and Chair of the Integrated Border Management Task Force (IBMTF)
11.45	UN Office of Drugs and Crime “Border Control and Transnational Organized Crime”	Mr. Giovanni Broussard Programme manager, Regional Office for Southeast Asia and the Pacific

12.00	World Customs Organization "Coordinated Border Management from the Customs Perspective"	Mr. Kazunari Igarashi Head of Asia/Pacific Regional Office for Capacity Building (ROCB A/P) World Customs Organization
12.15	UN Economic & Social Commission for Asia & Pacific "Model on Integrated Controls at Border Crossings"	Mr. Sandeep Jain Economic Affairs Officer Transport Division
12.30	LUNCH	
14.00	"New Challenges by Japan's Immigration Bureau based on technology"	Mr. Takahiro INAGAKI Assistant to the Director Bureau of Immigration Ministry of Justice Japan
14.25	"Strengthening Border Management with Biometrics (AFIS) in Bhutan"	Mr. Thinlay WangChuk Director General Department of Immigration Ministry of Home & Cultural Affairs Royal Government of Bhutan
14.50	An introduction to: Workshop 1: <i>Border Management Information Systems for 2025</i> Title: "Balancing the Needs for Security And Services in Border Control"	Mr. Rochadi Iman Santoso Immigration Director of Systems and Information technology Directorate General of Immigration Indonesia
15.15	REFRESHMENT BREAK	
15.45	An introduction to: Workshop 2: <i>Legal Sharing of Information using automated channels</i> Title: "Biometrics and Data Sharing"	Mr. Paul Cross Assistant Secretary, Identity Branch Risk Fraud and Integrity Division Department of Immigration & Border Protection Australia
16.10	An introduction to: Workshop 3: <i>Supporting Technology for BMIS</i> Title: "Validating E-Passports at the Border: The Role of the ICAO PKD"	Mr. Foo Jong Ai Chief Executive Officer ICAO Public Key Directory Singapore
16.35	An introduction to: Workshop 4: <i>Automated Solutions to Facilitate Border Crossings</i> Title: "The Introduction of Korea's Automated Immigration Clearance System"	Mr. Soowan Park Senior Immigration Officer Information System Division Immigration Service Republic of Korea
17.00	Closing Ceremony Day 1	Ms. Rabab Fatima Regional Coordinator & Advisor for South and South West Asia IOM's Regional Office for Asia & the Pacific

CONFERENCE PROGRAMME: DAY 2

Wednesday, 3 December 2014 (Morning)

Napalai Ballroom		Dusit Thani Hall	
Morning: 09.00-12.30		Morning: 09.00-12.30	
Workshop 1: Border Management Information Systems for 2025		Workshop 2: Legal Sharing of Information using automated channels	
Chairs: Mr. Michael O'Connell & Mr. Raymond Lok		Chairs: Mr. Christian Mahr & Mr. Ross Greenwood	
09.00	Introduction by the Chair persons	Introduction by the Chair persons	
09.10	<p><i>"New Zealand Immigration's Border Management Systems - 2015 and beyond"</i> by: Mr. Lee Wilson Compliance, Risk & Intelligence Services Ministry of Business Innovation & Employment - Immigration New Zealand</p>	<p><i>"Building Strong Trust Models"</i> by: Mr. Paul Cross Assistant Secretary, Identity Branch Risk Fraud and Integrity Division Department of Immigration & Border Protection Australia</p>	
09.30	<p><i>"A view of key technologies & process changes required to implement and operate effective BMIS in 2025"</i> by: Mr. Damian James Commercial Director, Australia, New Zealand and South Africa, SITA</p>	<p><i>"Criteria to be Considered for Collection and Sharing of Fingerprint Biometric Data"</i> by: Mr. Stephen P. Corcoran Co-Founder and Director of Engineering Lumidigm (part of HID Global)</p>	
09.50	<p><i>"2025: A quick look into the future of Border Control Systems"</i> by: Mr. Alejandro Gomez de Cuenca Director Area Business Development Gemalto</p>	<p><i>"Exit Control – ePassport & enhanced standards based data collection and sharing"</i> by: Mr. Ross Greenwood Principal, Identity Matters Consulting</p>	
10.10	Discussion	Discussion	
10.30	REFRESHMENT BREAK		
11.00	<p><i>"Border Management Systems – the PNG experience: looking back and moving forward"</i> by: Mr. Dino Mas Acting Deputy Chief Migration Officer, Visa & Passport Division Immigration and Citizenship Service Authority Papua New Guinea</p>	<p><i>"Sharing of information-scope? Sensible? Scary? Simple? The 5S concept"</i> by: Ir. Prof. Raymond Wong Adjunct Professor Hong Kong Polytechnic University Hong Kong</p>	
11.20	<p><i>"What will new BMIS systems look like and how can they be integrated with existing systems"</i> by: Mr. Gordon Wilson President WorldReach Software</p>	<p><i>"Data Sharing Examples from the Edges"</i> by: Mr. Steven Grant Director, Business Development WorldReach Software</p>	
11.40	<p><i>"Border Control Information Systems for 2025"</i> by: Ms. Annick Alligier, Marketing Manager, Government ID Secure Micro Division STMicroelectronics</p>	<p><i>"Using technology to improve data sharing while balancing the need to maintain information security"</i> by: Mr. André Oeyen, Director, Biometric Business Development, Government & Security Solutions SITA</p>	
12.00	Discussion	Discussion	
12.15	Outcome and Recommendations	Outcome and Recommendations	
12.30	End Workshop 1	End Workshop 2	
LUNCH			

CONFERENCE PROGRAMME: DAY 2
Wednesday, 3 December 2014 (Afternoon)

Napalai Ballroom		Dusit Thani Hall	
Afternoon: 14.00-17.30		Afternoon: 14.00-17.30	
Workshop 3: Supporting Technology for BMIS		Workshop 4: Automated Solutions to Facilitate Border Crossings	
Chair persons: Mrs. Gardine Keijzer-Baldé & Mr. Paul Cross		Chair persons: Prof. Ir. Raymond Wong & Dr. Pratit Santiprabhob	
14.00	Introduction by the Chair persons	Introduction by the Chair persons	
14.10	<i>"LDS-2, Explaining the Concept, Dispelling the Myths"</i> by: Mr. Fons Knopjes Senior Research and Development Manager Ministry of Interior and Kingdom Relations Netherlands	<i>"Border Inspection of Mongolia Immigration Office"</i> by: Mrs. Bolormaa Purev Senior Officer/State Inspector Chinggis Khan International Airport Mongolia Immigration Office	
14.30	<i>"Making border crossing safer and faster"</i> by: Mr. Carsten Loschinsky Vice President & General Manager, Government ID Chip Card & Security Division Infineon Technologies	<i>"Pros and cons of a fully automated border crossing implementation"</i> by: Mr. Alejandro Gomez de Cuenca Director Area Business Development Gemalto	
14.50	<i>"Preparing for the Future – Identity & Credential Lifecycle Management Platform"</i> by: Mr. Henry Leung Senior Marketing Manager, Government Solutions, Entrust DataCard	<i>"From 1st e-Gate in the World to Future Smart Gates: ABCs Deployment Challenges in Malaysia"</i> by: Mr. Heng Wa Seng, Head, Product Management Department IRIS Corporation	
15.10	Discussion	Discussion	
15.30	REFRESHMENT BREAK		
16.00	<i>"Introduction of biometrics to identity management in Sri Lanka"</i> by: Dr. Chathura Ranjan De Silva University of Moratuwa Katubedda, Sri Lanka	<i>"Rwanda Automated Passenger Clearance System, land border challenges and expected solutions"</i> by: Mr. Eric Byukusenge APCs Project Manager Directorate General of Immigration and Emigration Rwanda	
16.20	<i>"LDS 2.0 with Keys Distribution"</i> by: Mr. Patrick Lam Manager for Project & Solutions Management Arjowiggins Security Limited	<i>"Automated Border Control, a step forward in expediting travel: how to sustainably balance security and facilitation?"</i> by: Mr. Jean-Francois Lennon Director, Global Business Development, Sales & Marketing, Vision-Box SA	
16.40	<i>"Innovations in optical security to support future border management processes"</i> by: Dr. John A. Peters Product Manager New Business OVD Kinegram AG	<i>"Strong Identity in a Mobile Paradigm"</i> by: Mr. Carl Gohringer, Business Development Manager, Europe and Asia-Pacific Cross Match Technologies	
17.00	Discussion	Discussion	
17.15	Outcome and Recommendations	Outcome and Recommendations	
17.30	End Workshop 3	End Workshop 4	

CONFERENCE PROGRAMME: DAY 3

Thursday, 4 December 2014

09.15	Opening: 3 rd Day of Conference "New Developments in Border Management"	Ms. Rabab Fatima Regional Coordinator & Advisor for South and South West Asia IOM's Regional Office for Asia & the Pacific
09.25	<i>"Introduction of Electronic Services of Macao SAR Electronic Identity Card"</i>	Ms. Cindy Sin Yin KUN Department Chief Department of Organization and Information Identification Services Bureau Macao SAR
09.45	<i>"Botswana's Border Control & Passport System – An integrated turnkey solution"</i>	Ms. Fabiola Bellersheim Head of Sales Subsidiaries Government Solutions Giesecke & Devrient
10.05	<i>"Development of Documents: the Dutch approach"</i>	Mr. Fons Knopjes Senior Research and Development Manager Ministry of Interior and Kingdom Relations The Netherlands
10.30	REFRESHMENT BREAK	
11.00	<i>"Thailand's e-Passport Service"</i>	Mr. Raschada Jiwalia Director Passport Division Department of Consular Affairs, Ministry of Foreign Affairs of Thailand
11.20	<i>"E-passport readers, key management systems, cameras and scanners to support biometric verification & identification"</i>	Mr. Roswell S. Wolff President, Asia Pacific & Managing Director, Identity Business Area, Oberthur Technologies
11.40	<i>"Biometrics in Immigration: Country Presentation of the Philippines"</i>	Mr. Amando L. Amisola Immigration Supervisor, Bureau of Immigration Department of Justice of the Philippines
12.00	LUNCH	
13.30	Report by Chairpersons Workshop 1: Border Management Information Systems for 2025. Discussions	Mr. Michael O'Connell, Mr. Raymond Lok
13.45	Report by Chairpersons Workshop 2: Legal Sharing of Information using automated channels Discussion	Mr. Christian Mahr Mr. Ross Greenwood
14.00	Report by Chairpersons Workshop 3: Supporting Technology for BMIS Discussion	Mrs. Gerdine Keijzer-Baldé Mr. Paul Cross
14.15	Report by Chairpersons Workshop 4: Automated Solution to Facilitate Border Crossings Discussion	Dr. Pratit Santiprabhob Ir. Prof. Raymond Wong
14.45	Closing Ceremony Conference	
15.00	End of 3 rd BMC Conference in Bangkok	
		Version: 1.0/2014

Annex 2: List of Workshop Recommendations

Workshop 1: Border Management Information Systems for 2025

- A. Use of both biometric and biographical data;
- B. Checking pushed upstream for better decision-making;
- C. Lower cost solutions based on advancements in technology;
- D. More effective bilateral or multilateral arrangements;
- E. A cultural change in traveler behavior based on trust;
- F. Wider sharing of trend analysis data rather than the data itself for more effective border management;
- G. Wider sharing of CSCA certificates to facilitate proper inspection of e-passports;
- H. More automation to improve efficiency;
- I. Closer collaboration between government departments and private sector, particularly in tourism; and
- J. “Big data” analysis.

Workshop 2: Legal Sharing of Information Using Automated Channels

- A. Citizen concerns about data sharing are valid and real. Transparency is important. Consultation with stakeholders is essential (“why”, “what” and “how”); and
- B. Automated, lawful data sharing of identity information is possible in border control applications. Collaboration is the way forward. Solutions should have a traveler focus to ensure efficiency and traveler experience objectives are achieved along with improved security.

Workshop 3: Supporting Technology for BMIS

- A. Border and immigration authorities need to actively participate in ICAO’s New Technologies Working Group. There is a need to work together with passport and border authorities for broad spectrum advice;
- B. LDS2.0 can help meet two challenging objectives: providing more security and reducing waiting times for travelers in a context where the numbers of air passengers are rapidly growing. States can reduce waiting times significantly using e-gates and by adopting the PKD model. Introducing e-visa stamp in the LDS will automate retrieval of more important information and entry/exit stamps will provide further quality information relevant to border integrity objectives;
- C. Governments should think of an implementation program to make use of technology capabilities in an efficient way. Introducing life cycle management can help find the balance in short term and long term choices and investments; and
- D. Despite the growing use of ABC gates, it is imperative to keep on investing in designing safe documents and recognizing the importance of reliable visual inspection. Security features that are easy to communicate, verify and are hard to imitate, play a vital role for all partners. Greater security can be derived by interlocking visual security with the electronic devices.

Workshop 4: Automated Solutions to Facilitate Border Crossings

- A. Standardized biometrics technologies to be adopted for identity verification so as to enable interoperability of ABCS globally for wider groups of users, including foreign visitors without the need of prior enrolment;
- B. Forming integral part of a powerful backend border management systems integrating with sources of useful information, such as the ICAO PKD, INTERPOL SLTD/MIND/FIND, and data from other country or countries, APIS/APP/MAS, etc.;
- C. ABC systems for outdoor users; and
- D. Other envisaged improvements on energy consumption, user-friendliness, reliability, less exception handling, among others.

Recommendation from the presentation, “Development of Documents: the Dutch Approach.”

- A. To assess the reliability of ABC systems it is a precondition to develop and use international test protocols.