

# Taiwan migrates from MRP to e-passport

## Expectations and achievements

by BOCA

On 29 December 2008, three years following the start of its e-passport project, the Bureau of Consular Affairs (BOCA) of Taiwan's Ministry of Foreign Affairs officially introduced the country's new e-passport. Its development involved more than ten highly experienced foreign and domestic companies. Between them, they have created a high-quality, ICAO-compliant e-passport that will protect the identity of Taiwanese citizens for years to come. This article describes BOCA's experiences, and outlines what the bureau expects to achieve over the coming period.

Apart from being comparatively small in terms of landmass and population size, Taiwan has precious few natural resources. This makes its position as one of the world's leading hi-tech economies all the more remarkable. As befits a technological leader, Taiwan was among the first countries to introduce an ICAO-compliant machine readable passports (MRP) in January 1995. The document was further improved in 2000 (the incorporation of more advanced security features) and 2002 (the inclusion of an ultra-thin high-security kinegram overlay). In response to international demands for safer travel documents, the Taiwanese government has since researched the implementation of an e-passport, including the necessary software and hardware. This research culminated in Taiwan's new e-passport, which was launched on 29 December 2008.

The Taiwanese e-passport programme targets the following objectives:

### **1. Enhancing the security of Taiwan's travel documents, including the issuance process.**

Asian smugglers have - for a long time - used forged Taiwanese passports for the purposes of illegal immigration, taking advantage of facial and language similarities. This has served to undermine the passport's credibility and integrity. The new e-passport is far more difficult to counterfeit or forge - it boasts

better security features as well as an ICAO-compliant chip, which contains the passport bearer's biometric data. What's more, all electronic data is protected by a digital signature. To improve the verification of identities during issuance, a new facial recognition system (1:1 and 1: watchlist) was introduced. The system is able to compare new passport photographs to existing database images within seconds, creating a strong deterrent against identity theft (the use of third-party identities by unlawful applicants).

### **2. Accelerating and facilitating passenger clearance at border crossing points.**

According to the Taiwan Tourism Bureau, a total of 8.47 million outbound departures involving Taiwanese nationals were recorded in 2008. This compares to 4 million foreign visitors. To process such passengers volumes, passenger clearance will need to be expedited. In the future, e-passport holders will therefore benefit from rapid self-service gates, which will be installed at airport border control points in due course. By verifying passenger identities on the basis of biometric data, immigration authorities are able to minimise the risk of forged passports being used by imposters.

### **3. Obtaining visa exemption from other countries.**

Taiwan has granted a total of 38 countries visa exemption over the past 15 years, including the US, the UK, and all 25 Schengen Countries. However, Taiwan has yet to be offered a reciprocal arrangement. Indeed, if the eligibility requirements for visa exemption defined by the US and EU are applied, Taiwan meets all criteria (also in terms of per capita income and unemployment). The launch of its e-passport at the end of 2008 means Taiwan meets the latest requirements and trends. All the above developments have underpinned Taiwan's eligibility to participate in the visa exemption arrangements.

### **4. Cooperating with international anti-terrorism efforts.**

The attacks of 9/11 and global awareness of terrorism have resulted in more secure passports and tighter inspection procedures. As a new generation of passports is adopted around the world, Taiwan has made every effort to upgrade the passport's ability to tackle terrorism and other crime, making optimal use of

*The Bureau of Consular Affairs (BOCA) forms part of the Ministry of Foreign Affairs of Taiwan. BOCA's key responsibilities include the provision of passport, visa and document authentication services. It also provides emergency assistance to citizens abroad. BOCA is charged with the development and implementation of ICAO-compliant passport programs, and with facilitating transnational passport verification. Local BOCA services are currently available at Kaohsiung, Taichung, Hualien offices, and Taoyuan International Airport.*

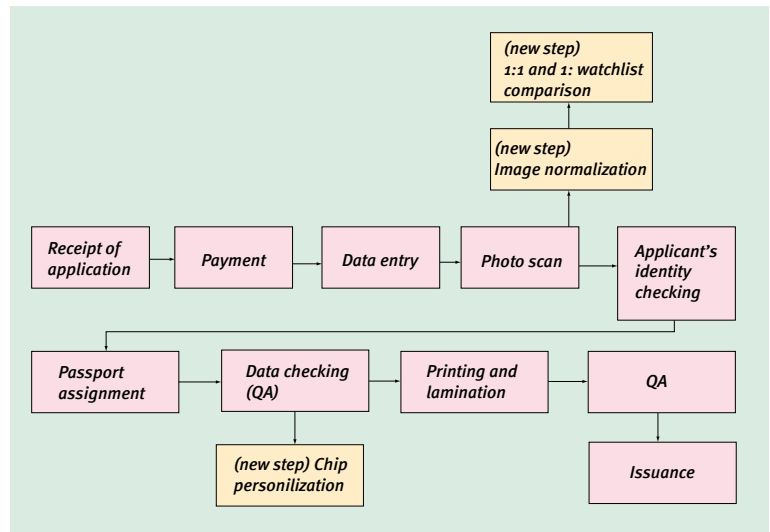
the country's technical and scientific expertise. Taiwan has also been very keen to participate in the Public Key Directory (PKD) mechanism introduced by ICAO in 2005. Indeed, the Taiwanese authorities are adamant that international politics should not obstruct the country's participation in PKD. In the absence of PKD participation, Taiwan bilaterally exchanges Public Keys with other countries.

### Workflow planning

The issuance of e-passports involves tasks at various levels (figure 1). Think, for example, of the architectural design of the system solution, the development of an issuance infrastructure, PKI research, and the exchange of certificate. In fulfilling these tasks, BOCA has identified the following key challenges:

- Ensuring that the e-passport issuance process remains smooth and efficient;
- Minimizing the project cost;
- Improving the quality and security of the passport booklets.

Under current regulations and practice, the Ministry of Foreign Affairs issues passports to applicants within four working days. Taking into consideration the daily issuance volumes, the available hardware budget, the need to procure software, the system integration requirements, and the requirement for personnel training, BOCA decided to retain the existing issuing centres at its Taipei headquarters and three branch offices in Taichung, Kaohsiung and Hualien. A 24/7



**Figure 1**  
*E-passport issuance workflow.*

emergency centre at Taoyuan Airport is also authorized to issue e-passports. Since 29 December 2008, all overseas passport applications received via Taiwan's 121 foreign missions are forwarded to Taipei for centralised production (with the notable exception of priority applications). Here, the objective is to expedite the replacement of Taiwan's MRP, thus establishing greater passport homogeneity.

As far as workflow design is concerned, BOCA has added image normalization and chip personalization stations to the MRP process, retaining existing levels of efficiency. To minimise equipment and staff replacement costs, BOCA also decided to retain its automatic printing and laminating equipment. In addition to the above changes, BOCA has introduced a two-stage quality check, which must be successfully completed before a document is issued to an applicant. The passport issuance centres have managed to maintain passport quality and issuance efficiency without needing to overhaul the original process. BOCA expects to issue around 1.2 million passports in 2009.

On receipt of their passports, citizens are welcome to check the information stored on the contactless chip at one of the kiosks located at every centre (figure 1). While optional, this check has been introduced for two reasons: to reconfirm that the chip is accessible/active and to reassure citizens that the information stored on the chip (biographical data and a facial image) is identical to the data on the biographical data page.

### E-passport design and security features

The e-passport manufacturing process is obviously more complicated than the process used for MRPs. To meet ICAO standards while simultaneously improving passport quality, the Central Engraving and Printing Plant (CEPP) - manufacturer of Taiwan's e-passport and BOCA's long-term partner - cooperated with several

