

Information paper on  
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**Panel on Security of the Legislative Council  
Experience of Using Smart Identity Cards in Other Countries**

**INTRODUCTION**

At the LegCo Panel on Security Special Meeting held on 11 November 2000, Members noted the experience of Finland, Malaysia and Taiwan relating to their smart identity card (ID card) projects. Some members wanted to know more about the experience of other countries and the usage of smart cards for other purposes. This paper provides the relevant information.

**NATIONAL ID CARD**

***Smart ID Card of Brunei***

2. The new Brunei national multi-purpose smart identity card (SIC) was officially launched on 29 July 2000. The scheme is initiated by the Department of Immigration and National Registration (INR) of Brunei. It started first with national registration and immigration functions and will be expanded to include pension and other government services with a view to working towards e-government and e-commerce.

3. All Brunei citizens, permanent residents and temporary residents are required to register with INR for the issue of a SIC at the age of 12. The whole population is estimated to be some 400,000. The SIC will also be issued to frequent visitors.

4. The SIC is an 8K RSA contact smart card with biometrics (fingerprints). The card chip contains the template of two thumbprints, one digital photograph, general personal data and immigration specific data.

Partitions are available for other government agency data.

5. The Brunei Government would also want other government agencies to take advantage of the smart card in their public or office administration so as to streamline process and save resources. INR welcomes any form of initiative towards full utilization of the smart card. In fact, automated immigration counters have been established to facilitate immigration clearance of citizens and to shorten the processing time. Through the Automated Clearance System and the use of fingerprint biometrics technology, citizens can use the SIC in lieu of national passport for gaining entry and exit at control points. In addition, temporary residents and frequent visitors can travel on the SIC without the need to acquire multiple visa endorsements on their passports from the immigration authorities.

6. The registration and re-registration process is being implemented by stages according to the identity card numbers. The first batch of registrants with ID card number from 1 to 13801 commenced their registration in August 2000. The whole process is expected to complete by the end of October in 2001.

## **SMART CARD AS IDENTIFICATION DOCUMENT**

### ***Smart Social Security Card of Spain***

7. Spain's Ministry of Labour and Social Affairs is replacing its current paper-based Social Security Card, designed in the 1940s, by a new technically sophisticated form of identification. The project, named TASS (Tarjeta de Afiliaci a la Seguridad Socia, means "social security affiliation card") and piloted in 1996, is now under nation wide implementation and is expected to complete in about 4 to 5 years.

8. The card, which is a contact type smart card, contains both a microchip and a magnetic strip. The magnetic strip is for maintaining compatibility with the currently used healthcare cards. Apart from personal data and specific data required for accessing different government services, the card also stores fingerprint biometrics of the card holder for one-to-one comparison to establish the true identity of the card holder before access is granted.

9. A security mechanism is in place to enable each related institution to access only to the common data and institution-owned data on the card. The system uses a security access module to access to the writing of data on partitions on the card.

10. The whole project will involve the issuance of 40 million cards. Implementation was first started in Andalusia with 7 million cards issued, making up 17% of the Spanish population. Service kiosks are installed to provide citizens with numerous information, both on a local and nation-wide level, as well as access to information on their rights, obligations, etc. Through a kiosk, a card holder can gain access to his entire work history, request certificates and benefits, etc. Within the scope of employment, the card holder can also request certificates, renew employment requests, and comply with presence control requisites that allow him to prove that he is unemployed and that, therefore, he is eligible for unemployment benefits. In the healthcare area, the card holder can inquire which doctor is assigned to him, request for an appointment or change doctor, etc. The kiosk makes request for all kind of services at one single location possible.

11. Taking the advantage of today's smart card technology, this new Social Security Card protects individual privacy, yet allows increased access to government services and use between different agencies providing social benefits and healthcare facilities.

### ***Smart Citizen Card of Aberdeen, UK***

12. A smart card-based citizens card called Accord is being implemented in Aberdeen, Scotland. Contact memory cards were launched in one school and at some leisure centres in Kincorth area in March 1999. The scheme is piloted at Kincorth Academy where pupils can use the card to buy school lunches, take out library books or take part in leisure activities.

13. The system is expected to roll out to other schools, car parks and possible bus company. Aberdeen's entire 230,000 population could have a smart card within three years, with applications being added over a period of five years. Applications will include the payment of school meals, access to leisure facilities, buying bus tickets, library membership and loyalty. The

city council also plans to use the cards as part of the administration system for subsidies and charges for services from all sections of the council. The ability to add extra functions to the cards is seen an important part of the system's design.

14. The card is also intended to encourage people to take advantage of the benefits to which they, especially those with low incomes, are entitled. With the card, youngsters will feel more confident about their option for a free meal or to use clothing grants as no one will be able to tell whose meals or clothing are free if everybody pays using their Accord Card. The wider objectives in the future include everything from promoting public transport to healthy eating. For instance, pupils using the card to pick healthy options from the menu are awarded bonus points and may obtain rewards when the points accumulated to a certain level.

### ***Smart Health and Welfare Card of Belgium***

15. The Social Information System (SIS), one of Europe's largest smart card projects involving the issue of 10.5 million cards to all Belgium citizens eligible for social security, was launched in February 1998. The project is being masterminded by a co-operative organization owned by some 2,000 Belgium social security institutions. The SIS card provides each person with a unique social security identification number, the INSS, for both health and social security entitlements. The card carries data on the cardholder's sickness fund, their insured status and social security benefits to which they may be entitled. The SIS card, which is physically renewable every five years, will now accompany every Belgian citizen from cradle to grave and will bring the INSS number into the system of healthcare provision and insurance.

### ***General Services Administration, USA***

16. The General Services Administration (GSA) of the US Government is planning to issue a Government-wide Smart Access Common ID card. The card will be used as an identity card and access to computers/buildings. It will also be used for authentication and purchasing purposes.

### *Department of Defense, USA*

17. The Department of Defense has started issuing a common access card to its employees in November 2000. This is a standard identification card for military, civilian and contractor employees. This is a multi-application card and the card holders can use it to gain access to buildings, to department's computer networks and systems. The other value-added applications are unique to each service branch. This card has a strong security architecture and the ability to add applications after deployment. Over 4.5 million cards will be issued.

### **RELATED INFORMATION ON SMART CARD USAGE WORLDWIDE**

18. In general, smart card applications can be grouped under two major categories: (a) as a payment medium; or (b) as an aid to achieve operational efficiency.

19. Smart cards function as a payment medium when used as credit and debit cards, e-purse, telephone cards, transport ticketing, etc. In government sector, smart cards often function as aids to achieve operational efficiency in the applications of national ID, driving licence, health care, welfare, and road tolls. Applications in private sectors in this aspect include employee cards, campus cards, schools ID cards, customer loyalty, etc.

20. According to a recent industry analysis published by a well-known smart card company, the total consumption of smart cards in the whole industry in 1999 was 1,400 million cards, with an increase of 17% comparing to the figure in 1998. In the year of 2000, the consumption is forecasted to be 1,750 million cards, representing an overall year-on-year growth rate of 25%. The table below shows the breakdown of consumption by market.

<b>By market</b>	<b>World smart card consumption (in million)</b>	
	<b>1999</b>	<b>2000 (Forecasted)</b>
<i>Payphone</i>	920	1,080
<i>Mobile communications</i>	160	250
<i>Banking</i>	135	180
<i>Healthcare</i>	60	80
<i>Transport</i>	25	30
<i>Others (ID, Pay TV etc)</i>	100	130
<b>Total</b>	<b>1,400</b>	<b>1,750</b>

## **SUMMARY OBSERVATIONS**

21. Smart card applications are getting well accepted worldwide. Smart card consumptions are expected to grow significantly in the near future

22. Many countries/regions are issuing or planning to issue smart ID cards, and the direction is to aim for multi-applications. A summary list of the countries/regions known to have issued or are planning to issue smart ID card or smart card as identification documents is set out at Annex.

## List of Smart Card Identification Document Around the World

Item No.	Country/ Region	Launch	Type of Identification *					Brief Description
			ID	DL	EID	SS	HC	
1.	<b>Argentina</b>	1996		●				Mendoza Province.
2.	<b>Australia</b>	Under planning	●					ACT Government Multiple Application Smart Card – Request for Proposal was closed on 30-5-2000. Tentative applications include a public transport ticketing application, library card, E-purse, a concession eligibility application and an identification and authentication application.
3.	<b>Austria</b>	2001				●		Austria Social Security Card – 10 million planned for 2001.
4.	<b>Belgium</b>	1998				●		Social Information System (SIS) Card – involving the issue of 10.5 million cards to all Belgian citizens eligible for health and social security benefits.
5.	<b>Brunei</b>	29-7-2000	●					National Multi-purpose Smart Identity Card with biometrics (fingerprints). Started with national registration and immigration functions. Will include pension and other government services, working towards e-government and e-commerce.  Automated immigration counter is scheduled to be operational in November 2000.
6.	<b>Canada</b>	1993  Under planning	●				●	Quebec Health Smart Card.  Multi-application smart card as citizen card
7.	<b>China</b>	Under planning	●					Contactless smart ID card
8.	<b>El Salvador</b>	January 1999		●				A smart card (Gemplus card) based drivers licence and vehicle registration document, originally launched as a loyalty card. In the first 4 months, 40,000 drivers' fingerprint templates have been captured and authenticated and 400,000 drivers are expected to be enrolled over the next 2 years.
9.	<b>European Union</b>	2003	●					Multi-application smart ID card for EU citizen
10.	<b>Finland</b>	December 1999	●					Finnish Electronic ID Card (FINEID) – 1 million per annum 16K crypto-controller, the multi-application smart card acts as national ID, bank card and credit card.

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11.	<b>France</b>	1989-97  1990-99	●					<p>Town cards in 8 cities (e.g. Canbpuce, Meudon, Plaisir, etc.)</p> <p>Several health card systems –</p> <ul style="list-style-type: none"> <li>▪ France Sesam Vital Phase II – 60 million 16K micro-controllers to replace Phase I cards.</li> <li>▪ Hippocarte of medical authority.</li> <li>▪ Santo of health department.</li> </ul>
12.	<b>German</b>	1993					●	German Health Card – 150 million memory cards since 1993, micro-controller version planned.
13.	<b>India</b>	1999		●				Driver Licence Project in Gujarat. The smart card will store the driver's fingerprint as well as demographic information. An estimated 10 million licenses will be issued. The cards will be read by traffic police at mobile terminals, which will read and verify personal details and previous offences. Fresh traffic offences will be written direct to the cards. Details of on-the-road transactions will be uploaded to terminals at police stations.
14.	<b>Indonesia</b>	Under planning	●					Multi-application smart ID card to be issued in a province in Indonesia
15.	<b>Israel</b>	Late 2000	●					<p>Governmental Multi-application Card includes ID, driving license, voter card, medical card and reserve duty card.</p> <p>Holds the card carrier's demographic data as well as biometrics templates for the hand and face as a mean of identification.</p>
16.	<b>Italy</b>	Late 2001  1996	●				●	<p>National identification card will provide citizenship authentication and automate access to government services.</p> <p>Personal Health Card issued by Health Ministry.</p>
17.	<b>Japan</b>	1996  1990-96  Under planning		●			●	<p>Driving Licence Scheme. Card issued by the National Police Agency.</p> <p>Regional health cards were issued in several cities, such as Goshikimachi, Takigawa and etc.</p> <p>National multi-application smart ID card</p>
18.	<b>Malaysia</b>	31-8-2000	●					Multi-application smart card will act as national ID, a driving license and a medical record. Non-compulsory application.



Item No.	Country/Region	Launch	Type of Identification *					Brief Description
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19.	<b>Macau SAR</b>	Late 2001	●					Macau SAR smart identity cards for around 380,000 permanent residents and 50,000 non-permanent residents.
20.	<b>Netherlands</b>	Under Planning					●	Netherlands Health Insurance Card – 1 million memory cards, nation-wide rollout planned.
21.	<b>Nigeria</b>	Under planning	●					Multi-application smart ID card
22.	<b>Panama</b>	2001		●				A multi-purpose chip card (including identification , driver's licence, social security and perhaps money functions) that will use fingerprint technology as a prime identifier. A feasibility study is taking place in 2000 with implementation planned for 2001.
23.	<b>Poland</b>	Under Planning					●	Poland Insurance Cards – 800,000 memory cards, nation-wide rollout planned.
24.	<b>Portugal</b>	-					●	Portugal Clinic Card – 10,000 8K micro-controllers
25.	<b>Singapore</b>	-			●			Internet Identity Card (Net IC) allowing the owner to access a password-protected digital signature through a card reader. The card will be issued to all citizens and residents enabling them to tap government services and conduct business on-line.
					●			Access card issued by Immigration Department using smart card and fingerprint for border crossing
26.	<b>Slovenia</b>	1998					●	Slovenia Health Insurance Card – 2 million 16K micro-controllers
27.	<b>Spain</b>	1996					●	TASS project could lead to the whole population in Spain (40 million) being issued with a smart social security ID card that uses fingerprint verification. Supported by automated social security and healthcare management functions, the card offers the possibility to make inquiries and transactions automatically with multiple organizations from one location.
28.	<b>Sweden</b>	-			●			An e-commerce fingerprint/smart card solution to be piloted. A representation of the card holder's fingerprint is to be stored on the smart card for verifying his user-identity at key points in a transaction against his live-scanned fingerprint.

Item No.	Country/Region	Launch	Type of Identification *					Brief Description
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29.	<b>South Africa</b>	Late 2002 or in 2003	●					<p>Planned non-smart national ID card project (target population is 45 million) will be upgraded to smart card ID under a separate tender.</p> <p>Multi-application smart card will act as national ID initially but will subsequently allow access to the functionalities by other government departments including pensioner service. Smart card implementation will be one to two years after the implementation of the non-smart national ID card in the second half of 2001.</p>
30.	<b>Taiwan</b>	-					●	Taiwan Health Insurance IC Card – 24 million controllers and 0.3 million crypto-controllers.
31.	<b>UAE</b>	Early 2002 (18 months from September 2000)	●					Smart card-based ID cards containing fingerprint information along with the holder's photo and other identification data.
32.	<b>U.K.</b>	1999 1999	●				●	<p>Aberdeen Citizen's Card issued by City council</p> <p>Patientline Smart Cards issued by UK Hospitals</p>
33.	<b>U.S.A.</b>	- Nov 2000	● ●					<p>General Services Admin. (GSA) SmartPay Program by GSA</p> <p>The Department of Defense is issuing a common access card which is a standard multi-application identification card for military, civilian and contractor employees</p>

\* **ID = ID Card**                                      **DL = Driver's/Driving Licence**                      **EID = Electronic ID Card**  
**SS = Social Security Card**                      **HC = Health Card**

Note :      1. Source of information is from the industry.  
              2. The list is not exhaustive.