

MULTOS Case Study

Hong Kong residents get MULTOS-based Smart ID Card

The Hong Kong government is using a MULTOS-based secure, multi-application smart card in one of the largest and most innovative identity card replacement schemes in the world.



The four-year replacement programme started in August 2003 and involves almost seven million Hong Kong residents over the age of

11. Groups of people are being issued the new Hong Kong Smart ID cards according to the year in which they were born.

The main objective of the programme is to replace the existing paper ID card and to introduce multiple value-added applications such as e-Cert, which allows card-holders to perform electronic transactions securely over the internet, and a library application.

By 2004, card-holders will also be able to use automated passenger and vehicle clearance facilities at immigration control points, and, by 2006, the Smart ID card will also have the facility to double as a driving license. The chip in the card has capacity reserved for other value-added applications to be added later.

Security features

The Smart ID card programme goes back to 2001. At the peak period of its development, 14 government bureaux and departments were involved. The Immigration department of the Hong Kong government is responsible for the overall management of the programme, co-ordinating all cross agency issues and developing a cross-departmental IT infrastructure.

To ensure that the card is secure, a number of features have been introduced both on the card's surface and in the chip. A very secure base material (polycarbonate) is used as the card body, for example, while laser-engraving technology is used for printing the personal data including a digital photo on the card face, making it difficult to alter or remove.

To further safeguard the data in the chip – which is a replicate of the personal data on the card face together with digital thumbprint templates – authentication

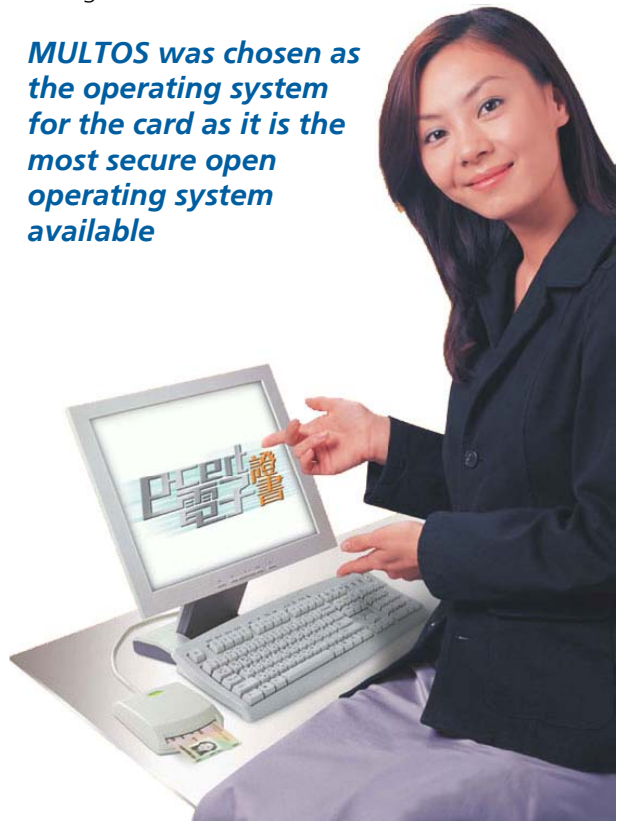
between the Smart ID card and the reading device is required every time the data in the chip is retrieved.

The chip is tamper-resistant. Data erasure will be activated if the chip is tampered with mechanically, electrically or electronically. Data in the chip cannot be read nor altered by unauthorised persons who do not have the necessary access keys.

MULTOS was chosen as the operating system for the card as it is the most secure open operating system available. MULTOS openness comes from the Consortium that controls the specification, ensuring multiple sources of supply are available to the Hong Kong Special Administrative Region (HKSAR). The technology carries the highest assurance rating of any IT product in the world, helping to protect citizens against identity theft and fraud. The ability to add new applications safely and securely allows the uses of the card to be extended over time.

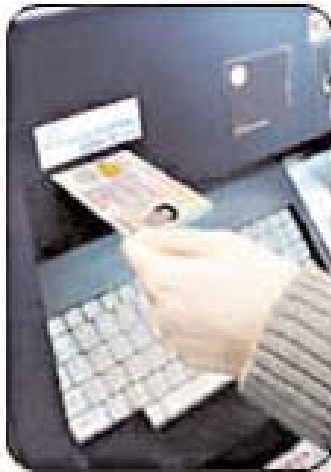
With advanced security features and sophisticated cryptographic technology, the personal data in the chip are well protected from unauthorised access. The data are protected with strong partitions and different access keys. The Smart ID card will authenticate the devices with which it interacts, thus prohibiting unauthorised parties from accessing the data.

MULTOS was chosen as the operating system for the card as it is the most secure open operating system available





The HKSAR has full sovereignty of its key management and processes thanks to a system developed by Mondex International. The HKSAR Key Management Authority is based on a similar system in the UK that manages keys for more than 20 million cards around the world.



e-Cert is widely seen as a boost to e-business development in Hong Kong

It is housed in a purpose-designed facility with sophisticated physical and electronic access controls and represents one of the most secure such civil facilities in the world.



Immigration applications

The Smart ID card continues to provide proof of identity but in a more secure form. With basic personal data and templates of two thumbprints stored in the chip, cardholders will be able to use their smart ID card for immigration clearance through self-service control points by the end of 2004.

If the card holders are not permanent residents of Hong Kong, their condition of stay and limit of stay in Hong Kong will also be stored on the chip.

e-Cert application

e-Cert is a digital certificate which enables card-holders to conduct e-business transactions securely anytime, anywhere. Issued by Hong Kong Post – and free for the first year – it is a voluntary option, but one which is widely seen as a boost to e-business development in Hong Kong.

e-Cert allows various e-business transactions to be carried out, including e-mail encryption, ESD services, online entertainment, stock trading, payment and e-banking. To initiate an e-business session, a card-holder inserts their Smart ID card into a card reader and inputs their e-Cert PIN to activate it.

To cater for the increasing number of Smart ID Cards and digital certificate holders, self-services kiosks have been installed at all Immigration Department offices to enable citizens to check the data on their ID cards.

In addition, more than 600 public kiosks and computers in MTR stations, shopping centres, post offices, public libraries, and community centres throughout Hong Kong have been enhanced with smart card readers for the convenience of citizens.

Benefits for card-holders

To the card-holders, the Smart ID card will give them the convenience of automated immigration clearance on their arrival and departure, instant access to public library facilities, secure electronic transactions over the internet, and other government services planned for the future. They will also have the assurance of knowing that no-one else is benefiting from these services on their behalf and that access to the information on the card is under their control.

The e-Cert application – and the free e-Cert offer – will generate a critical mass of Public Key Infrastructure (PKI) users, which in turn will encourage the development of more online applications and thus foster the widespread use of e-commerce in Hong Kong.

