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SMART CARD NEWS

August 2001

Volume 10
Number 8

*Subscribers will receive Oberthur's **CosmopolIC Card** free with this issue of Smart Card News.*

Malaysian Govt Rolls-Out Multi-Purpose Smart Card

Roll-out of the Malaysian Government Multi-Purpose Card (GMPC) began in Kuala Lumpur last month with the hand-over of the first batch of cards from IRIS to YAB Dato Seri Dr Mahathir bin Mohammed, the Prime Minister of Malaysia.

The GMPC, which includes the Proton technology, is the first nationwide government-sponsored multi-application Smart Card roll-out in the world. It will function primarily as a national identity card with other key applications such as driving licence, passport information, healthcare and non-government applications such as an electronic purse.

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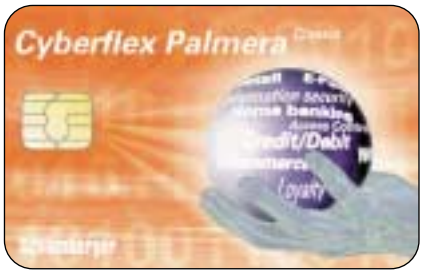

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Malaysian Multi-purpose Card

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Proton World's representative in Malaysia, Triumphant Launch Sdn. Bhd., (its joint-venture with ERG Group) co-ordinated the contribution of the Proton application to the GMPC with Malaysian Electronic Payment Systems (MEPS) the Proton licensee in Malaysia, and IRIS technologies, the GMPC consortium member responsible for providing the Smart Card system.

The GMPC replaces the Malaysian national identity card and driving licence. The third application on the card is passport information, allowing Malaysian citizens the option of using automatic gates at Kuala Lumpur airport when departing from and returning to Malaysia. The fourth government application is a national health application, which identifies Malaysian citizens entitled to free or subsidised healthcare provided by the government. The non-government applications on the GMPC are: a Proton e-purse that is branded locally as "MEPS Cash"; an ATM cash withdrawal application and a digital signature application based on the Public Key Infrastructure (PKI). In addition, the GMPC also contains two biometrics; a digitised colour photo of the cardholder's face and two digitised thumbprints.

As the primary use of the GMPC is as a national identity card, the Malaysian government insisted that all the security personalisation of the card be done on government premises. The result is that the government's National Registration Department now operates what is one of the most advanced and diverse Smart Card personalisation centres in the world, capable of personalising 12,000 cards a day.

This centre combines the Proton application personalisation with the personalisation of the government applications as well as the card surface printing, and is the first Proton World-certified personalisation centre in Asia.

To overcome the anticipated difficulties of introducing such a technologically-sophisticated card to the Malaysian public, the government has intervened directly, for example: charging the same fees for GMPCs as previously charged for paper documents; paying for a comprehensive publicity campaign to introduce the GMPC to the public; prioritising the identification of new uses for the GMPC and deploying them as soon as possible and equipping all government offices that will use the GMPC with card readers and other devices as required.

No further paper identity cards will be issued after 31 July 2001: the entire system will migrate to the GMPC, and it is anticipated that 600,000 GMPCs will be in circulation by the end of 2001, rising to 19 million GMPCs by the end of 2008. A government amendment to the National Registration Act formally recognised the GMPC as the national identity card of Malaysia in June 2001.

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Cashless Britain in Ten Years

A new survey has shown Britain will become a cashless society dominated by multi-purpose Smart Cards within ten years, according to a report from *The Scotsman* newspaper.

The study, by market researcher Mintel, claims 35 million Smart Cards will be in circulation in Britain by 2002, despite the fact many people are uncomfortable with the idea of having so much information stored on one card, says the newspaper.

The Scotsman reports almost half (48 per cent) of those surveyed said they would only use one if security was improved.

Graham Collett of Mintel told the paper the only real problem was between banks and retailers. Updating cash machines and tills would cost billions of pounds.

Welcome Acquires Axiomatique

Welcome Real-time has acquired Singapore-based Axiomatique International to form what it says will be the largest supplier of loyalty software for Smart Cards in the world.

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Important Information For Smart Card News Subscribers

Smart Card News has announced that the username and password which grants access to the Daily News Archives at www.smartcard.co.uk has changed. The username "openup" and password "scnread" are no longer valid. If you are a subscriber to our Daily News On Line service or Monthly Newsletter you are entitled to access restricted pages on our website news archive.

Contact SCN's new Office Manager Sheena Stenning if you would like the new username and password.

Please note that access to the website news archive is not available to customers taking out a free ten day trial to our Daily News On Line.

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UK Banks to Use PIN Protection

At a meeting in London chaired by the Home Office last month it was agreed that over the next four years retail and banking communities will be working together to put in place the infrastructure to use PIN at the point of sale.

In the UK card issuing banks pick up the bill for card fraud, but an EMV (Europay/MasterCard/Visa) mandate that is expected to pass liability for fraud losses to the least secure member of the card processing chain from 2005, may provide the impetus for banks and retailers to press ahead with the introduction of PIN quickly.

Europay, MasterCard's European partner welcomed the support from the British Retail Consortium, for its initiatives to reduce card fraud in the UK by the introduction of PIN at the point of sale with chip cards. Paul Lucraft, Europay's Deputy General Manager, said: "Card fraud in the UK currently stands at £300 million. Of this £100 million relates to counterfeit card fraud. That is projected to exceed £700 million by 2005. The introduction of PIN at the point of sale with chip cards will radically reduce the growth in fraud levels."

Graham Wright, Ingenico Fortronic's Marketing Manager, said: "Upgrading systems quickly is vital to fight the steeply-rising rate of sophisticated fraud. PIN at the point of sale will provide customers with safer payments and ultimately ensure that the fraudster is the weakest link."

As part of a French-owned Group, Ingenico has been involved in successful implementation of PIN in countries such as France (where card fraud has been cut by 80%) and Holland.

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UltraCard Contract with China

Upgrade International Corp has announced that UltraCard, developers of high-capacity portable data storage technology, has reached an agreement to supply two million UltraCards and 10,000 Ultra Drives to the Chinese government for the "one card/one person" program that China has adopted to replace its existing paper cards.

Under the agreement the UltraCard will be used as the second generation 20 megabyte ID card that will contain security data on an embedded microchip and encrypted information.

Currently, the Chinese National ID Cards consist of a laminated paper card with the person's name, photo, birth date and ID number.

Jai Ping Liu, President of the Shanghai Caohejing Hi-Tech Park, said: "This pilot program with the Chinese government will serve as a launching pad for what we hope to be the national implementation of the UltraCard technology throughout all Chinese provinces, such that the 'one card/one person' vision of our government can be realised."

Upgrade says the business opportunity represents up to a 1.2 billion cards through a Shanghai-based joint venture that is being set up to manufacture and distribute the UltraCard and the UltraDrive throughout China. The pilot program is planned to start in Quarter 4 of 2001.

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Infineon to Cut 5,000 Jobs

In light of continued weakness in the technology sector worldwide, Infineon is planning to further reduce costs by introducing short-time working and cutting the size of its workforce worldwide by 5,000 jobs. The overall program named "Impact" should save roughly Euro 1 billion over the next 12 to 18 months and make a significant improvement in the company's cash position and earnings.

The planned workforce reductions are to be as socially compatible as possible, and specific plans are currently being prepared. The reduction of workforce and short-time work are to be implemented on a business-dependent basis and will differ in scope at individual locations and business units. Employees' representative bodies will be involved in the process in accordance with the prevailing requirements in their respective countries.

"Due to the fact that there are still no clear signs of a recovery in the global semiconductor market, we have informed our supervisory board on July 25th that additional, more extensive steps are now necessary on top of the cost-cutting program we already initiated," explained Dr Ulrich Schumacher, President and CEO of Infineon Technologies. "Regrettably, a cost-saving program on this scale inevitably means reduction of the workforce worldwide. But the dramatic developments in the market and our business situation leave us no choice."

Infineon had already announced an initial round of cost-cutting measures comprising the following: a reduction in investments over the current fiscal year by Euro 500 million to Euro 2.3 billion; a reduction of more than Euro 1 billion to Euro 1.5 billion in investments planned for the coming fiscal year; an almost complete hiring freeze; and no replacing of personnel lost through attrition.

Earlier this month, Infineon announced an EBIT loss of Euro 598 million for the third quarter and a 30 per cent drop in sales compared to the same quarter last year. Infineon also expects to report negative earnings for both the fourth quarter and fiscal year 2001 (ending September 30th).

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Oberthur Smart Card Consultancy

Oberthur Card Systems has launched a consulting arm called Oberthur Advise to assist companies in their Smart Card projects. It will operate out of its Paris base with a view to opening up more branches.

Martine Guignard, Director of Oberthur Advise, explained: "The fear of lagging behind, the competitive threat from Internet start-ups and the sheer ease of global information exchange, has altered the commercial landscape forever. Oberthur Advise has been created to provide sound advice, guidance, and project management to companies wanting to leverage the power of Smart technology to benefit their business."

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Visa Level 3 Approval for Palmera

SchlumbergerSema has announced that Palmera Protect, its leading Java Smart payment card, has received Level 3 approval from Visa International.

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Datakey Smart Card Contract

Datakey has announced a $3 million contract to supply cryptographic Smart Card systems to EXOCOM Group, a Canadian-based value-added reseller (VAR). Under a contract with the Canadian Department of National Defence, EXOCOM will deploy 53,000 user seats and additional Datakey Smart Cards to support more than 80,000 users.

VSDC Chip Card Testing

Radio Frequency Investigation has been recognised by Visa to provide functional testing of the Visa Smart Debit/Credit (VSDC) chip card application.

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Northumbria University Contract

Bell Group's recently acquired multi-application Smart campus card contract with Northumbria University is its first UK contract in this sector and involves developing a 35,000 staff and student library and Smart ID card scheme.

Cards will initially combine library rights via a barcode, with photo ID and access control capability through contactless MIFARE and magnetic stripe technologies. In addition, the system will cater for future potential Smart Card applications including e-purse payments for library fines, refectory charges, university fees, photocopying and IT printer charging as well as access to protected databases and electronic voting.

The scheme combines Bell ID's ANDiS card life-cycle management and multi-application management software (incorporating photo ID) with local support provided by Bell Security Scotland and ultimately the provision of a network-based, Pacom access control management package. The project is exploiting the university's wide area data network and covers three sites in the Newcastle area and a campus in Carlisle.

The scheme specifies potential interoperability with the University of Newcastle and with any future "City Card" scheme intended to embrace all Newcastle residents.

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New Release of BASE24 Software

ACI Worldwide has announced general availability of BASE24 6.0 - the latest release of its software for processing electronic payment transactions. BASE 24 6.0 represents the culmination of a project lasting more than two years and includes key enhancements that support the processing of transactions involving Europay, MasterCard and Visa (EMV) compliant Smart Cards, multi-currency, and architectural enhancements to support the continued evolution of e-payment technology.

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Card Lamination Advance

Melzer, specialists in the design and supply of modular systems for fully automatic narrow web production of tickets, tags, labels and plastic cards, has developed a new and worldwide patented technology for card lamination.

Pre-printed sheets are automatically converted into a continuous web. In connection with a transparent overlay web and with RFID inlays a pre-registered sandwich is formed and passes through 12 steps of lamination (hydraulically operated heating and cooling section). Guided by a patented register hole system, the cards are finally punched out of the web.

To complete the cards, finishing processes are available as off-line options for milling, chip implanting, hologram application, signature panel application, scratch-off panel application, card counting and personalisation, visual card inspection, RFID inlay production, IC-control and encoding.

For the production of GSM or other Smart Cards MELZER also offers machines of the recently developed offline combi-machine MI-5000 (Milling and Chip Implanting) working from magazine to magazine. The MI-5000 is a high speed machine able to process up to 6,000 cards/hour.

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RSA Security Support for DoD

RSA Security has announced that its RSA SecurID Passage Smart Card software now supports the US Department of Defense (DoD) Common Access Card (CAC), which provides digital signing, user authentication and certificate-based log-on to networks and computer systems.

The DoD is implementing the CAC as a standard identification card for more than four million military personnel, DoD civilian employees and eligible contractor personnel. The card will be the principal card to enable physical access to buildings and controlled spaces, and to control logical access to computer networks and systems.

Website

www.rsasecurity.com

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Tel Aviv Expands EasyPark

EasyPark Ltd., a subsidiary of OTI, has announced an agreement with Ahuzat Hahof, which manages the parking solution on behalf of the City of Tel Aviv, Israel, to expand the EasyPark program to include parking payment at parking lots and to implement a complementary system utilising a SmartID Sticker to manage vehicle registration and parking permits.

As a part of the agreement, further space on the multi-application EasyPark Smart Card has been allocated for additional municipal services.

Jacob Meir, General Manager of Ahuzat Hahof, said: "We expect to distribute SmartID Stickers for 100,000 vehicles and at least 50,000 EasyPark cards by the end of the year."

EasyPark utilises OTI's contactless Smart Cards. Drivers need only to turn the card on, indicate the correct city and zone codes, and display it within their vehicle. Turning the card off upon returning to the car, the driver is charged only for the actual parking time.

The same e-cash value used for on-street parking payment will now be accepted at private parking lots. The card is simply presented at the gate. An entry time stamp recorded on the card is compared with the exit time automatically debiting the card for the parking period.

SmartID Stickers are permanently attached to the windshield of the vehicle, containing an OTI Smart Card chip with the vehicle's current registration information as well as specific parking permits.

As an example, a Tel Aviv resident with a neighbourhood parking pass is exempt from parking payment in that area, which can be verified by the use of a hand-held contactless Smart Card reader issued to all parking enforcement officers.

EasyPark is currently used in 27 cities with over 30,000 vehicles equipped, and are purchased at a price of $25 each at malls, gasoline stations and post offices. Further expansions proposed include road toll payment and other municipal payment options.

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Lead-free Technologies

Three top European semiconductor manufacturers have announced an initiative to eliminate lead from semiconductor products.

To accelerate the use of 'lead-free' packages and stimulating further development, the companies - Infineon Technologies, Philips Semiconductors and STMicroelectronics - have unveiled their proposal for the world's first standard for defining and evaluating 'lead-free' semiconductor devices.

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Lifestream $5m Private Placement

Lifestream Technologies, developer of the first Smart Card-enabled home cholesterol monitor, has completed a private placement offering with $5 million gross proceeds to the company. Based on demands from the investment community, the board of directors has extended the offering to July 31st and capped the offering at $7 million.

"In the present financial climate, to raise more money than we had expected is a testament to the demand for the Lifestream Cholesterol Monitor and the confidence in our management team," said Lifestream CEO Christopher Maus.

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Vision Loyalty Scheme

Office Club, a leading UK dealer group for independent office supplies resellers, has launched its new Vision Smart Card customer loyalty scheme to its members who operate 400 retail outlets.

The system was designed by Focus International and BCS and the card is used to store and communicate purchasing information and collect loyalty points.

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Cost and Damages Inquiry

Justice Peter Heerey of the Federal Court of Australia has made orders to implement the judgment he handed down on May 17th in favour of Welcome Real-time against Catuity Inc in a Smart Card loyalty system patent infringement case.

The Court ordered Catuity to provide Welcome with an affidavit by September 17th setting out an estimate of sums received arising from making or selling, or offering to make or sell, point of sale terminals, chip cards or software for use in the Catuity system. Welcome then has the option to pursue either a damages claim or an account of Catuity's profits arising from the infringements.

If Welcome elects to pursue a damages claim, it has foreshadowed to Catuity that it will seek significant damages in respect of harm suffered by Welcome outside Australia as a foreseeable consequence of the promotion of the Catuity system from within Australia. The Court also ordered that Catuity pay Welcome's legal costs to date in this action.

The court also ordered wide injunctions preventing Catuity from infringing Welcome's patent in any way by whatever means. Welcome acknowledged that immediate implementation of the injunctions for the CIT/Transcard system could inconvenience Aus-tralian merchants and customers using that specific system and therefore agreed to Catuity winding down that system over a period of three months; however, no such delay was ordered for the operation of the injunctions against the Catuity system. Finally, Catuity has also been ordered to hand over to its solicitors by September 17th, for safekeeping and destruction, all CIT/Transcard and Catuity devices in its possession in Australia.

Catuity's operations in Australia have related to the development and testing of the Catuity system which has been promoted in Australia and elsewhere. Given the injunction prohibiting infringement of the patent, Catuity must take action to ensure that the manu-facture, installation, operation (including testing), and promotion of the system do not offend these orders.

Welcome Real-time commenced legal action in the Federal Court of Australia last year against the US Company, Catuity Inc and its Australian subsidiaries, Chip Application Technologies and CIT Cards (Australia).

In his judgment on May 17th, Justice Heerey found that Welcomes patent had been infringed by the US and Australian companies. Welcome's patented technology covers the operation of customer loyalty and incentive schemes using IC cards.

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ACG Subsidiary Wins Nullity Suit

In a patent lawsuit between Cubit Electronics GmbH headquartered in Erfurt and a subsidiary of ACG AG, and AmaTech Automotion GmbH based in Pfronten, the 2nd Nullity Senate of the German Federal Patent Court in Munich last month declared the nullity of Patent No. DE 44 10 732 of AmaTech Automotion. The patented article was a manufacturing process to produce inlets (a pre-product) for contactless Smart Cards.

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Readers for Bus Pass Scheme

Bus ticket inspectors in Hertfordshire, UK, are to be equipped with handheld PayCell Smart Card readers from Thyron Technologies for the operation of the County Council's concessionary pass schemes. The project, developed by Prepayment Cards Ltd (PCL) was launched in 1997 and over 20,000 free or half-fare contactless Smart Card permits are now in use.

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Collector's Corner

This month's Collector's Corner card is the Cosmo-polIC Card from Oberthur.

Website

www.oberthur.com

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Digital Village Take-over

Digital Village World Technologies (DVWT) has announced that Tianjin Teda Yu Cheng Group Co. Ltd. (Yu Cheng), the company's present controlling shareholder, has joined forces with one of China's more successful technology companies Tianjin Global Magnetic Card Co. (TGM) whereby TGM will become the Company's new controlling shareholder following their subscription of 10,000,000 common shares @ $1.00/ share.

Yu Cheng will also increase their holding in the company by investing a further $2,000,000 through their subscribing of two million additional common shares.

TGM is one of the largest credit and Smart Card manufacturers in the Asia-Pacific Region and was the first card manufacturer in China to be accredited by MasterCard International and Visa International.

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QUALCOMM Keeping IC Business

QUALCOMM, a pioneer of Code Division Multiple Access (CDMA) digital wireless technology, has announced that it no longer plans to spin off its integrated circuits and system software business (QUALCOMM CDMA Technologies or QCT).

The spin-off was intended to allow QCT, through patent cross-license agreements, to gain reasonable access as a separate company to third party intellectual property through cross-license agreements that may be necessary for the supply of multi-mode (including WCDMA and GSM) integrated circuits.

Since announcing the spin-off in July 2000, QUALCOMM has entered into approximately 40 license agreements or extensions and others covering third-generation CDMA systems with rights to supply multi-mode integrated circuits and system software.

"Last year we viewed the spin-off as necessary, among other things, to minimise potential patent litigation that could arise as a result of QUALCOMM selling multi-mode chip sets, including WCDMA and GSM technology," said Dr. Irwin Jacobs, Chairman and CEO of QUALCOMM.

"Since that time, we have entered into agreements that provide us considerable freedom to support the global expansion of the wireless industry by supplying integrated circuits and software that support one or more modes of CDMA as well as GSM. Although we are withdrawing our plan to spin off our semiconductor business, we would reconsider if conflicts arise that adversely affect our ability to operate each business in the best interests of our shareholders."

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Oberthur Acquires Rapsodia

Oberthur Card Systems has acquired the remaining 50% of Rapsodia Software from French Customer Relationship Management specialist, Prosodie for EUR 3,6 M. Rapsodia Software, set up in May 1999 in a joint venture between the two companies, is to be integrated as a full business division of Oberthur Card Systems and will continue to operate as a separate business division under the management of Oliver Leroux, its current Managing Director.

Headquartered in Boulogne Billancourt, Rapsodia provides software platforms for mobile value-added services.

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Hypercom Terminals for Wakefern

Wakefern Food Corporation, the distribution arm for ShopRite Supermarkets, is installing more than 4,000 Smart Card-enabled Hypercom ICE 6000 card payment terminals across the ShopRite chain. The terminals are already installed and operating in more than 170 supermarkets. When the installation is completed, the ICE terminals will handle up to four million consumer transactions every week.

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China Part 2 - The China Difference

The market in China has some unique characteristics that differentiate it sharply from the development path seen in Europe and the United States. In Europe, Smart Cards have grown organically on the back of speciality applications and semi-centralised projects. Examples of this can be seen in transportation cards, recreational use cards and credit and banking card applications.

The word "semi-centralised" refers to larger systems, which may have government involvement (French bank cards), but this definition stops short of the kind of massive government engagement that is evident in China.

Unlike the United States, where mature technologies have market dominance (magnetic stripe cards) and Smart Cards have been slow to penetrate, China has very little pre-existing technology or usage. This means that China can skip the predecessor technology. It also makes it likely that China will miss out on the next technology (i.e. Smart Cards with retinal or hand scan combinations) as the invested technology will be what is available - and easily (cheaply, simply) usable in the next two or three years.

Thus we are likely to see China's Smart Card market remain "out-of-sync" in the primary applications with the markets in Europe and the United States for the foreseeable future.

Participants in the market

The segmentation of participants is in four main parts. The chip suppliers and card manufacturers compose the card supply side. The hardware manufacturers and system integrators are the other supply parties in this market, without them the card will remain a piece of plastic.

Investment required for domestic companies is quite variable, from $100,000 to several million dollars. This depends upon what a company does. A card maker, for example, really needs at least one production line to make it in this market, and this will cost at least $500,000.

System integrators (that do not make cards) do not need this capital, but they must have the technical expertise and/or relationships to get projects, which likewise require investment. On the high end, the large domestic companies and foreign companies in this market have invested considerable funds. To be competitive in this market, it is important to have domestic manufacturing.

The foreign companies

In China, there are six types of foreign companies in this market:

Total solutions providers
These are the card makers, all of which can also do system integration and offer total Smart Card solutions. Most also make their own semiconductors (Example: Bull)

System integrators
These companies do not make cards, but may otherwise provide total solutions. (Example: BIT)

Hardware manufactures
These companies make the various hardware equipment, as outlined below. (Example: Omron)

Chip manufacturers
These companies in particular make chips engineered for Smart Cards. (example: Infineon)

Production equipment
There are a few companies that have sold quite a few production lines in China. Most are represented by agents. (Example: Melzer)

Others
This includes, for example, Visa International and MasterCard International, which are trying to establish their Smart Card payments systems in China, and consult the government (PBOC) on these matters.

This also includes software companies such as Microsoft, which is developing Smart Card software.

Applications

Numerous applications in Smart Card ID exist in China and the best known are telephone and SIM, public transportation, banking, national and temporary ID, driver management, taxation affairs and metering.

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Application segmentation by type of cards

Type of Cards	Application
Memory	Commercial Insurance, Customs, Driver Penalty, Healthcare, Industrial & Commercial Administration, Internal Management, Loyalty, Metering, Organisation Code, Pay TV, Phone, Taxation Affairs, Temporary Residence ID, Vehicle Management
CPU	Banking, Commercial Insurance, Customs, Driver Penalty, Healthcare, Healthcare/Social Security, Internal Management, Metering, Pay TV, SIM
Contactless	Internal Management, National ID, Public Transportation
Dual Interface	Public Transportation

Among all applications in China, the National ID card is expected to store personal information for identification of residence. This application is largely defined by a single project. Although this kind of card has not been issued so far, the government plans to carry out pilot projects in a small area of several cities. Contactless cards will be used in this application. If the pilot projects are successful then a large number of national ID cards could be issued in the near future.

Temporary Residence ID card is issued for management of the floating population by Local Public Security Bureaus. This kind of card is different to the national ID card because it is only valid in a city and not nationwide. When the floating people move to another city, they should apply for a new temporary ID for the new city.

The Driver Penalty card is issued by the Traffic Management Bureaus for driver management, mainly for penalties. Drivers will be compelled by the government to purchase these cards, which will contain information on their driving history.

A memory security card is used in most of the projects although in some a CPU card may also be used.

Besides the applications described above, there are numerous other applications such as transportation, identification, e-commerce card, tourism card, woman maternity management card, etc.

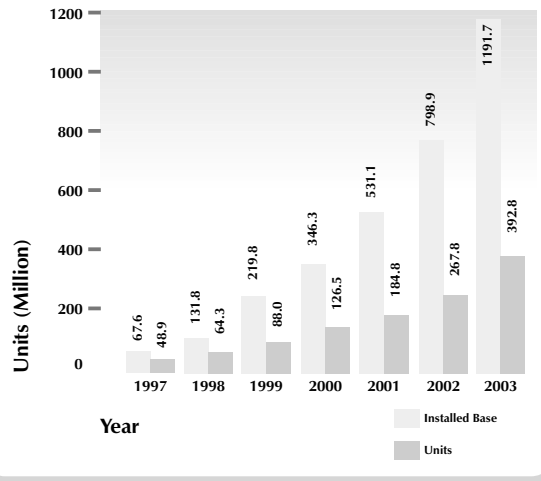
Market growth factors

The China Smart Card market will grow well and has a strong future, though will not grow as fast as many inside and outside the industry believe.

Total Smart Card market revenues

Year	Units Millions	Card Revenues RMB mil	Card Revenues $ mil	Total Revenues $ mil
1997	48.9	565.12	68.09	214.38
1998	64.3	742.61	89.47	284.52
1999	88.0	1,007.69	121.41	398.02
2000	126.5	1,435.17	172.91	590.05
2001	184.8	2,024.55	243.92	857.83
2002	267.8	2,815.77	339.25	1,221.75
2003	392.8	3,956.83	476.73	1,759.08
Compound Annual Growth Rate (Tot. Rev.):				**41.67%**

Total Smart Card unit figures



A number of reasons for this limitation are summarised here:

The paramount reason this market will stay strong, and even exists is the support of the Chinese government. This support comes in the form of official approval, cheerleading and money.

Considering the role the government plays in the Chinese economy, this is a very potent combination. For this reason, this market will continue to perform well.

In 2001, support by the Chinese government for this market is nothing new. What is new is the successful completion of several projects in various applications, showing end-users and potential end-users throughout various levels of government that Smart Card technology can work for them, and that it can be done affordably.

This has spread to all levels of government (national, provincial, municipal) even when the implication of the national level is less than at the beginning, to numerous provinces (now in such provinces as Shaanxi and Inner Mongolia Autonomous Region), and numerous departments This, in fact, was the intention of the Golden Card Project, though not all has gone according to plan.

In summary, to use an analogy, the technology and the industry have taken root.

by Christian-Jacques Heyer - cheyer@gcis.com.cn
China Business Development Manager
GCiS Information Technology Market Research

GCiS Information Technology Market Research has published The China Smart Card Market Report 2001. For further information on how to purchase this report please contact Amanda Pearce at amanda.pearce@smartcard.co.uk or telephone +44 (0)1273 515651 .

Less Than a Dollar Smart Card

Visa International and STMicroelectronics are launching a new Smart Card that will cost less than one US dollar. The new card is expected to accelerate the migration to chip and encourage others in the payment services marketplace to follow suit.

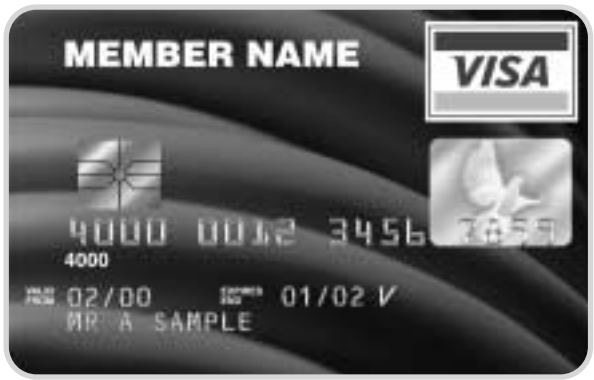
The card will be compliant with the international EMV specification and support the Visa Smart Debit/Credit application. It will provide a significant boost to banks looking for a cost effective way to introduce single application Smart Cards and to reduce fraud.

Gaylon Howe, executive vice president, Consumer Product Platforms at Visa International, said: "The number of Visa Smart Cards being issued by banks worldwide has been increasing significantly. However, there are still many banks that would like to issue Smart Cards but are concerned about the cost compared to traditional magnetic stripe cards.

"While the cost of multi-application Smart Cards has been reduced significantly in recent months we have also wanted to reduce the cost of simple, single application cards. This new card product does just that. It will allow Visa member banks to enter the market at a low cost and to benefit from the increased security and functionality provided by chip technology."

Being developed in partnership with IBM, the sub-one dollar Smart Card is part of a major Visa program to reduce the cost of issuing Smart Cards and will be the first in a family of low cost products from STMicroelectronics. The new card will be manufactured by ORGA, although other manufacturers are currently negotiating with Visa to join the program.

Last year, Visa introduced a multi-application Open Platform card costing less than three US dollars and, in May, announced two new Open Platform card products, one with enhanced data authentication capability for less than four US dollars and one with a contact/contactless dual interface capability for less than five US dollars.



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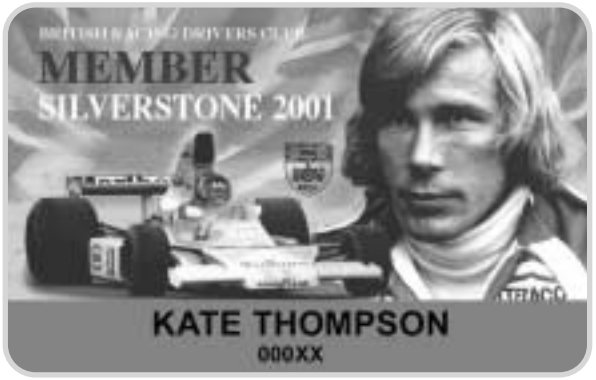
British Grand Prix Access Cards



Databac Group provided access cards for the British Grand Prix at the Silverstone Circuit, Northants, UK, on 15-16 July. The British Racing Drivers' Club (BRDC) commissioned Databac to design, supply, personalise, test and encode 5,000 proximity cards for Life Members, VIPs, their guests and all people granted access to the BRDC facilities.

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Italian National ID Card

Drexler Technology Corporation has received purchase orders for 95 LaserCard encoder drives for the Government of Italy, that are expected to be used for issuing LaserCard-based national ID/social services cards at dozens of Italian locations.

Under the Italian Electronic Identity Card (IEIC) national ID program, the central and municipal public administrations in Italy can select the types of services they will offer with the IEIC card. The Italian government indicates that the national services offered may include healthcare, voting and social security, while municipal local services may include transportation and education. Used only at card issuing stations, the read/write encoder drives personalise each card by recording the cardholders name, photo, and other issuance data onto the blank LaserCard in computer-readable and eye-readable form. The Drexler cards contain a 1 megabyte, 16mm-wide optical memory stripe and provide a designated space for a computer microchip to be inserted. Shipments of these "microchip ready" optical memory cards began earlier this year for the initial phase of the IEIC program.

The Italian government will arrange to have microchips inserted into the optical memory cards, thereby creating a combination Smart Card and optical memory card. The microchip will be used to provide electronic identification, authentication, and communication security for network transactions. The combination card also can be used to provide digital signatures and a variety of e-services.

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Bulk Issuance of DCs

Baltimore Technologies has released a specification that enables the bulk issuance of digital certificates on devices such as Smart Cards, cable modems and next-generation wireless SIM cards. Called the X-BULK specification, it extends the capability of the XML Key Management Specification (XKMS) to accommodate for bulk or batch Public Key Infrastructure (PKI) operations.

In developing this interface, Baltimore co-operated with leading companies involved in XKMS and PKI, including fellow W3C member, VeriSign, and Smart Card and Smart Card management solution providers, including CardBASE Technologies, Cards etc, Gemplus, Giesecke & Devrient, Oberthur Card Systems and SchlumbergerSema and Setec.

The X-BULK specification is available at http://www.baltimore.com/devzone/x-bulk.

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Australian Defence Network

Baltimore Technologies has announced that it is a key member of the consortium selected to upgrade the Australian Defence communications network through the multi-million dollar e-Defence project.

The company was chosen as part of the CSC-led consortium, to provide secure communications and e-business solutions to the 90,000 Australian Defence personnel. Baltimore will provide e-security services in a deal valued at over A$ 1 million.

Contact

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Scotiabank All-in-one Chip Card

Scotiabank and the six partners of the Solstice Alliance have announced a one card that allows Canadians to access and choose credit, electronic purse, loyalty programs and other services.

Albert Wahbe, Chairman and CEO of e-Scotia and Executive Vice-President, Electronic Banking, Scotiabank, said: "Customers are demanding Smart Cards that are capable of meeting many of their lifestyle needs. The Scotiabank solution will give customers greater control by allowing them to add and delete card services at their discretion."

The pilot program will be launched early next year in the region around Barrie, Ontario and more than 12,000 Scotiabank customers will participate.

Stores to Sell Cholesterol Monitor

Lifestream Technologies' home cholesterol monitor is now available over the counter at more than 2,800 Eckerd drug stores in the US.

Eckerd is the first national chain to place orders for the hand-held testing device with embedded Smart Card reader. The monitor has a suggested retail price of $129.95.

Contact

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People on the Move

Oberthur Card Systems of America has appointed **Creighton Grenoble** as Senior Vice President of Development and Systems.

BIO-key International has promoted **Jeffry Brown** to Chief Executive Officer to replace **Barry Wendt** who resigned from the company, but will continue as a Board member. Brown joined BIO-key as a Board Member in October 1999 and became President in November 2000.

Rainer Neumann has joined the executive management at ORGA Kartensysteme. He has been with ORGA since its beginning and played a major role in its success. He was the head of ORGA's systems business for the past three years.

Smart Card Help

Q ***We are designing a new health and fitness suite and want to use Smart Card technology - what should we be using and where do we go to find it?***

A *The technology can differ depending on what you actually want to achieve and there are a variety of products available. Think of what you want to do, what levels of security you need and the ease of use for your clients. Contactless cards/wrist tags/key fobs can be useful in this environment to gain access into the centre and permissible areas without too much effort. They can also be used at point of sale for purchases/booking treatment etc. If you are looking to buy a membership system also, there are a number of companies who specialise in a total Smart Card solution. If you already have your membership system in place, the components can be purchased separately and software written bespoke to your application.*

Q ***We are developing a system for use with an Apple Mac. Are there any manufacturers who have Smart Card readers applicable?***

A *We are aware of a company in Holland - SCM Microsystems who have a product available. www.scmmicrosystems.com*

Q ***I have a current application that uses the Delphic D192 chip, which is now obsolete. Do I now have to change my software?***

A *You will be pleased to hear that you do not have to modify your software. The D192 cards use a ST1305 module, which is still available. Alternatively Siemens= SLE4406 module will work in most applications. You may also be able to use the SLE4436 (Eurochip).*

Smartcardhelp! will try and assist with any Smart Card enquiries whether of a commercial or technical nature.

Should you require further information or a confidential response to an enquiry, you can e-mail Alison Culpeck direct on: scn@pavilion.co.uk

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Satellite Signal Processor

Boeing Satellite Systems and IBM have announced they have created the world's most powerful satellite-based digital signal processor, designed to make space-borne wireless communications available to a wide audience of users.

This digital signal processor is the heart of the Thuraya satellite, a powerful Boeing-built GEO-Mobile (GEM) spacecraft that was launched in October 2000 for Thuraya Satellite Telecommunications Co. Ltd., based in the United Arab Emirates. The digital signal processor provides the satellite with more computing power than 3,000 Pentium III-based computers, enabling the spacecraft to handle up to tens of thousands of phone calls simultaneously.

Space-based wireless systems offer a new means of connectivity for areas of the world where telephone lines and other infrastructure for traditional communications are less developed or do not exist.

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Mobilink Chips for GSM Phones

Mobilink Telecom has recently shipped its ML2000B single baseband chips in volume for cell phones manufactured by Arima Communications to be sold in Latin American countries.

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Mobile Authentication Server

Utimaco Safeware has announced its Mobile Authentication Server (MAS), a new type of authentication service for mobile network operators and end users. MAS technology presents business and travelling users with the advantage of on-request, secure, one-way password protected access to restricted network applications from any worldwide location, at any time.

Website

💻 www.utimaco.com

Securing M-Commerce

ACI Worldwide has announced a partnership agreement with Sonera SmartTrust to enable secure mobile e-services and jointly market and promote their software to telecom and financial institutions.

SmartTrust's solutions enable secure m-commerce services. The solutions provide service and device management tools and allow consumers to store their digital identity on a mobile phone to generate binding digital signatures from their handsets - public key infrastructure (PKI) technology.

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First GPRS Phone for US

Motorola has announced the availability of its Timeport 7382i, the first General Packet Radio Service (GPRS) handset in North America. Motorola's Timeport 7382i and AT&T Wireless' new GSM/GPRS network, will be made available to Seattle businesses and will enable users to experience a faster, "always on" connection to the Internet for the first time.

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$275m Network Contract

Alcatel has signed a US $275 million contract with Telemar, the largest telecommunications operator in Brazil, to provide a turnkey GSM 1800/GPRS network. The network will be deployed in Brazil's northern region, covering more than 70 cities in the states of Piaui, Ceara, Maranhao, Para, Amazonas, Amapa and Roraima.

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Growth for Biometric Markets

A new report by Frost & Sullivan, World Biometric Technologies Markets, indicates the total market generated $66 million in 2000 and is expected to reach $900 million by 2006. As the demand for privacy safeguards grows, the biometrics segments, which can offer high levels of protection against information and identity fraud, are expected to show impressive gains.

"The emergence of new standards could demolish a long-standing obstacle to industry growth," said Frost & Sullivan Analyst Prianka Chopra. "The biometrics industry, once plagued with interoperability issues, has combined forces and agreed on a common platform."

Previously, biometrics relied on proprietary methods to store and exchange data, locking users into one specific technology. The Biometric API standard (BioAPI) should facilitate communication between applications. Nevertheless, there still remains work to do on standards. Manufacturers of PKI and Smart Cards, for example, must strive to integrate their technologies with biometrics.

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ST Acquisition of Veridicom IP

STMicroelectronics has completed the acquisition and licensing of IP from Veridicom for fingerprint biometric security technologies and products. All the IP, rights and developments of the Protector Suite line of PC security software have been acquired by ST which has also secured the related know-how by employing Veridicom's full Protector Suite software development team based in Prague, Czech Republic.

ST has also acquired the assets and exclusive rights to manufacture PC peripherals based on the mechanical designs of the Veridicom biometric reader and biometric Smart Card reader products designed to provide security in network and Internet environments. They will be adapted to make use of ST's TouchChip silicon fingerprint sensor.

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Chile Bank Adopts Fingerprint ID

Chile-based Banco Falabella has installed Identix's BioLogon software and 150 MT Digit fingerprint readers, which incorporate optical fingerprint reading technology, at teller windows in many of its banks. Customers are required to verify their identity via the fingerprint readers prior to performing a transaction.

The bank has also installed BioLogon and 50 MT Digit fingerprint readers at its credit card centres to tackle fraud. Identix's fingerprint technology has been integrated in five Diebold ATM machines at select locations throughout Chile to allow customers to withdraw money without using PIN numbers.

Biometric Sign-on for Healthcare

HealthCast LLC and Keyware are to provide advanced biometric single sign-on solutions for healthcare in a partnership utilising HealthCast's eXactACCESS single sign-on access control solution and Keyware's biometric authentication expertise to offer healthcare organisations a new level of patient privacy protection, data security, convenience and new functionality.

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- **Elizabeth Marshall** Keyware
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BioNetrix Authentication

BioNetrix has announced the integration of its authentication management platform, the BioNetrix Authentication Suite, with the full line of proximity cards from HID Corporation. Organisations using HID proximity cards or keyfobs for physical access security can now use BioNetrix's software management platform to use these same credentials for authenticating into IT systems. Users simply present their existing HID proximity card to the desktop reader. The software verifies their identity and access rights and allows them to use their computer.

Website

💻 www.bionetrix.com

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Briefing Notes on Multi-Application Smart Cards - Part 16

Loading an Application with the Schlumberger Toolkit

This week we will load a simple application onto the Schlumberger java card using the Schlumberger toolkit. In past articles we have seen that creating an application on a java card consists of 2 steps. The first step consists of loading the data that makes up the application onto the card as a file. The second step consists of telling the card that a program should be registered using the contents of the file as the executable. The second step is referred to as instantiating the program.

The program we will load is one that is provided as an example with the Schlumberger toolkit – the wallet program. This program is essentially a counter that illustrates some basics about java card programming. Schlumberger thoughtfully provide the source code (wallet.java) and the final binary to load onto the card (wallet.bin). This week we will just look at loading it onto the card – the steps beforehand will be covered in a later article.

Creating a Program Container File

Follow the directions below to create a program container file for the wallet.bin file.

1. If not already running, start the Cyberflex Toolkit.
2. Choose the **Card Select** button from the Toolkit toolbar.
3. Choose **Cyberflex Access** from the pull-down list, and click OK.
4. Verify that your card is inserted in the reader (the reader should blink briefly when the card is inserted), and select the **Power** button from the Toolkit toolbar. The Card Manager should display the root directory, 3F00.
5. Before creating the Cardlet container, you must verify yourself to the card. Select the **Key Manager** button from the Toolkit tool-bar.
6. Select the AUT0 Identity from the **Verify Key** button.
7. Choose the default **AUT0** key, using **Select Key** (AUT 0), and select **Verify**. A pop-up window will appear with the message, "Key Verified". You have now established yourself as AUT0 identity in the Cyberflex Access card (this is the highest level of authenticated identity within the card).
8. Either right-click the 3F00 folder in the Card Manager window, or bring up the **Cardlet Manager** and right click in the main window.
9. From the pop-up menu, select **New>Program File** from the options.
10. Enter your file path and name, or use the browser button (…) to choose wallet.bin file. This will be somewhere like **C:\Program Files\schlumberger\Smart Cards and Terminals\Cyberflex Access SDK\Samples\wallet\cardlet**. The size of your file is automatically calculated and displayed.
11. Next, enter a file ID for the Card Class File (Program) container, i.e. 7777.
12. Now select a key to use to digitally sign the program when it is downloaded. Select the **default signed applet** key from the keys provided with this Toolkit as the card has already been loaded with the same Signing key for checking the Signature of an program file.
13. When all information is supplied, click **Create**. The program container will be created, and Cardlet Manager must be refreshed to show a Program container and the state of the program that should be 'Loaded'. The program container appears as a file with the File ID you assigned in the Card Manager and also appears as a loaded program in the Cardlet Manager.

Instantiating Your Cardlet

Once you have created a program container and downloaded your program, you must instantiate it before it can be selected and executed.

1. If not already running, start the Cyberflex Toolkit.
2. Verify that your card is inserted in the reader and select the **Power** button from the Toolkit toolbar. The Card Manager should display the root directory, 3F00.
3. Select the **Cardlet Manager** button from the Toolkit toolbar.

4. With the Cardlet Manager window open, select the program container file from which you wish to create a new Cardlet instance. Next, right click and select **New>Instance**. Enter an Application ID (AID) of 5 to 16 bytes to identify your Cardlet – in this case use 'wallet'. The length of the AID will also be generated and displayed.
5. Enter the Cardlet Instance Directory ID in Hexadecimal format that will contain everything associated with this particular instance, i.e. 7778. Then enter the Cardlet Instance Directory size – allow for the Cardlet's Java data object requirements, (for Wallet, allow a directory of 200). Next, enter the size of the Java Object Data container for the Cardlet that will be created in the Instance directory (For Wallet, allow a size of 100). Note that this data container is not visible to the file system. Select **applet** to signify an applet is to be instantiated. Finally select Create and the instance is created and the Cardlet Manager is automatically refreshed indicating the newly created Cardlet with the associated AID.
6. Select the Cardlet by clicking on the left-hand side of the row in the Cardlet Manager.
7. Your Cardlet is now ready to begin receiving APDU commands.

Sending APDU Commands to the Wallet Cardlet

1. If not already running, start the Cyberflex Toolkit.
2. Verify that Cyberflex Access is chosen as your card.
3. Verify that your card is inserted in the reader, and select the **Power** button from the Toolkit toolbar. The **Card Manager** should display the root directory, 3F00.
4. Select the Cardlet Manager button from the toolbar.
5. With the Cardlet Manager window open, select the Cardlet Instance container file of the AID of the Cardlet instance you wish to send APDUs too for processing.
6. Select the **APDU Manager** button from the toolbar of the Card Manager window.
7 Select the **Load List** button from the **APDU Manager** and load the file called wallet.fcn from the same directory as the wallet.bin file. A list of commands is now available to send to the card.

A more in-depth explanation of the process is covered in chapter 11 of the Cyberflex Access Programmer's Guide, which is installed as a PDF file with the toolkit.

Jon Barber

New Card for Bingo

Gala Group has introduced a Smart Card system, called the Buzzcard, to its Banbury Bingo Club in the UK enabling members to store money and save their winnings directly onto their membership card.

Since April, 7,500 members have been issued with the card which can be loaded with electronic cash for use throughout the club to pay for bingo books and refreshments from the bar and restaurant via Paycell hand-held point of sale terminals supplied by Thryon.

Additional clubs will join the scheme later in the year and a further 50,000 card order has been placed with ACG of Germany in preparation. The success of this trial will demonstrate the possibility of smart card applications revolutionising the service industry, said Alison Culpeck who has been working with Gala on the project for three years.

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Passenger Processing Trial in UK

EyeTicket Corporation, in partnership with the UK regional group of the International Air Transport Association (IATA) Simplifying Passenger Travel Interest Group (SPTIG), comprising BAA, British Airways, HM Customs & Excise, UK Immigration Service and Virgin Atlantic Airways, have announced a passenger processing trial at Heathrow Airport using iris recognition technology.

The program is intended to speed the arrivals process (passport control) at Heathrow by using EyeTicket Corporation's JetStream Passenger Processing system.

JetStream will enable passengers who have been enrolled and pre-cleared by the UK Immigration Service simply to look into a video camera when arriving at Heathrow's passport control and, in less than two seconds, have their identity verified and their admission to the UK granted based solely on their iris pattern and real time verification of their status.

The initial trial involves up to 2,000 North American citizens who are customers of Virgin Atlantic and British Airways and travel frequently to the UK. While passengers will still be required to carry their passport in case they are requested to produce it, the UK trial is the first large-scale passenger processing trial in the world to rely entirely on biometric identification.

Thomas Windmuller, Director of the SPT Initiative., said: "These trials will demonstrate that it is indeed possible to streamline passenger processing, reduce waiting times and significantly enhance the travel experience while saving money for everyone involved."

JetStream uses iris recognition technology to identify passengers at all steps in the travel process. Powerful software translates the iris pattern into a frequent flier number or passport number, then communicates with airport and airline computers to simplify and expedite the movement of passengers through check-in, baggage check, boarding and passport control.

Iris recognition technology identifies people by the unique patterns of the iris - the coloured ring around the pupil of the eye. It was pioneered by John Daugman, PhD of Cambridge University, England.

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Smart Card Handbook

2nd Edition

W. Rankl and W. Effing, both of Giesecke & Devrient GmbH, Munich, Germany; Translated by Kenneth Cox, Wassenaar, The Netherlands; First edition translated by Chanterelle Translations, London, UK

Established as the definitive guide to every aspect of smart card technology, the second edition of the Smart Card Handbook is fully revised to incorporate the latest industry developments.

"Indispensable! ....an invaluable reference to all facets of smart card technology from system architecture to security methods and from manufacturing to testing and quality control."

HANS H. HUBER, EDITOR-IN-CHIEF, CARD-FORUM AND CARD FORUM INTERNATIONAL

- Vastly updated coverage of applications design including digital signatures and the new Microsoft PC smart card application interface, PC/SC.
- Features the architecture and development of smart card operating systems, including Java Card.
- Includes new sections on the manufacture and design of smart card components, contactless technology and data encryption techniques, including hacker defence mechanisms.

0471 98875 8 August 2001 774pp Hbk
£70.00 Special price £59.00

RFID Handbook

Radio-Frequency Identification Fundamentals and Applications

Klaus Finkenzeller, Giesecke & Devrient GmbH, Munich, Germany. Translated by Rachel Waddington, Swadlincote, UK

Finkenzeller's comprehensive handbook brings together the disparate information on this developing technology.

Features include:

- Introduction to the essential operating criteria and physical principles of RFID systems.
- The latest information on the standards requirements, manufacture and applications of contactless smart cards.
- Coverage of the practical challenges to be considered in real-world applications of RFID from public transport to electronic immobilisation.
- Description of coding and modulation, the differentiation features of RFID systems and international standards.
- Examination of radio frequency ranges used and international licensing controls including the US-FCC radio regulation standards.

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