



Managing Director

Patsy Everett
patsy.everett@smartcard.co.uk

Production and News Editor

Jason Smith
jason.smith@smartcard.co.uk

Technical Advisor

Dr David Everett
david.everett@microexpert.com

Sales and Subscription Administrator

Lesley Dann
lesley.dann@smartcard.co.uk

Editorial Consultants

Dr Kenneth Ayer
Peter Hawks
Simon Reed
Robin Townend

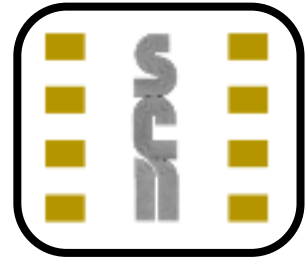
This Issues Guest Contributors

Jason Smith
Oliver Burke
Dr. David Everett
Paul Kocher
Kit Rogers
Andy Brown
Peter Thomlinson

Printed by

Hastings Printing Company
Limited

Smart Card News is published monthly by
Smart Card News Ltd
Columbia House, Columbia Drive, Worthing,
BN13 3HD England
Telephone : + 44 (0) 1903 691 779
Fax : + 44 (0) 1903 692 616
General Enquiries : info@smartcard.co.uk
ISSN 1745-7858



www.smartcard.co.uk

Dear Subscribers,

I hope you all had an enjoyable Christmas break and wish you all a very happy and prosperous New Year. The New Year kicked off with the UK's Financial Services Authority urging banks and businesses in the capitol to devise contingency plans to deal with a possible bird flu pandemic. The risk of bird flue with its attendant absenteeism is listed along side the risks of terrorism because it has emerged as a global risk. Now you can't help but turn your attention to the National Health Service's 11bn euros information technology programme which according to the Financial Times is the world's biggest civil technology project.

Ignoring one's healthy cynicism of such major government projects is it going to address some of the mundane problems like patient mis-identification? The Institute of Medicine in the US calculates that medical errors kill between 44,000 and 88,000 patients a year. In the UK it has been reported that at least 1200 people die from medical errors every year and that there is an 11% mis-identification failure of patients against tests and treatment. Isn't this just the place for RFID?

Last month we reported on the merger of Gemplus and Axalto. It now appears that Oberthur may ask the French financial regulator, Autorite des Marches Financiers to investigate the deal. Concerns have been voiced about the competition to supply digital security and bank cards. Some analysts have questioned whether Oberthur should be bidding for Gemplus but you might argue that this way they are better off.. This month Pay by Touch finally completed its acquisition of BioPay for 82million dollars in stock and cash. John Rogers, Pay By Touch CEO obviously see's this as the payment function of the future. I wonder!

The debate about the UK's Smart Card ID scheme lurches on with calls from the opposition party for the government to disclose the actual cost of the proposed scheme and suggesting that the ID cards should be for criminal and immigration use only. The House of Lords has sent the bill back insisting on knowing what its all going to cost. The government seems to have some strange idea that you need to keep all this a secret to improve competitive bidding, never heard that one before, it must be some code for saying we don't know either!

Patsy

Please Note

From time to time, Smart Card News may include industry forecast and forward looking statements made by the companies concerned. Readers should be advised that Smart Card News Ltd cannot be held responsible for decisions and/or actions taken by readers of our newsletter, based on the information provided including any errors therein nor are we responsible for the opinions of the individual authors.

Don't Forget!

Our Website containing daily News On-Line, and information about the full range of SCN services, can be found at the following address: www.smartcardgroup.com

Certain images featured in this issue obtained from IMSP's MasterPhotos™ Collection 1895 Francisco Blvd. East, San Rafael, CA 94901-5506, USA



China's First EMV Card Project



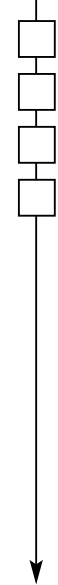
As Asia is scheduled to adopt a liability shift mechanism at the beginning of 2006, which stipulates that banks which have not yet adopted the Europay, MasterCard and Visa (EMV) standard be responsible for any loss from counterfeit cards, Chinese banks need to start moving faster in their efforts to upgrade card systems. "All the domestic banks will have to be prepared for that," said Xu Zhihong, president of the ICBC's Card Centre.

Europe and many of China's neighbours have completed their EMV changeover, herding many international card fraudsters to countries like China, where bank cards still use the older system. To guard against any migration of fraud from EMV card-using neighbours such as Malaysia, China's central bank, the PBOC, is encouraging local banks to evaluate EMV chip cards as an anti-fraud mechanism. This shift in transaction fraud from Asia means that Chinese banks are potentially facing the possibility of higher losses. "If China doesn't move fast, it may become the world's centre of bank card fraud," said Zhang Zhimin, a division chief with the PBOC's Technology Department. "Although the economic loss from card fraud is still not that high in China, the potential migration of card fraud to China cannot be underestimated," said Sharon Dickie, director of global marketing for software and security in NCR Financial Solutions Division, which has close ties with Chinese banks.

In October 2005, China's (mainly magnetic-stripe) bank card issuance exceeded 900 million yuan (\$111 million) but this total is set to increase when EMV chip embedded cards are issued. Replacing the current magstripe cards to EMV enabled chip cards is a process that will cost less than 50 yuan (US\$6.2) per card. At a recent ceremony in Beijing, the Industrial and Commercial Bank of China (ICBC) announced they are to become the first bank in China to fully implement EMV migration. ICBC has started to issue its customer's with the first domestic EMV chip credit card that comply's with the Chinese EMV debit/credit specification by People's Bank of China (PBOC). This is the world's first Chinese EMV card issuance project. "As the largest and leading bank in China, it was important for us to open the way for the migration to EMV across the country. said the EMV project leader of ICBC. Mr. Zhang Qu, Vice President of ICBC, stated in his speech, at the Beijing ceremony, that "being the largest commercial bank in China, we have always kept our technology and services at an advanced level. The EMV credit card we are launching has adopted a worldwide-unified standard. China cardholders can now have a product that is the most advanced and most secure in the world. There will be no more limitations in using the card to spend in China or abroad." Meanwhile, ICBC has also completed the EMV receipt acquiring system, so that foreign cardholders can also use EMV IC cards issued by overseas commercial banks at an ICBC point-of-sale (POS).

ICDC has selected three vendors for their first deployment of EMV credit cards. The first vendor is Gemplus who will manufacture cards for ICDC's EMV project locally by their Joint Venture with Goldpac Group in Zhuhai, who are already EMV certified by MasterCard International, VISA, DINER and China Union-Pay. Gemplus's cards will be based on the Java Card based GemXpresso Pro, and will be compliant with the latest specifications from MasterCard, MCHIP/4.0. With Dynamic Data Authentication (DDA) on board, the cards can provide the most advanced security available for securing payment transactions. The second vendor is Axalto who are providing ICBC with their multiapplication Palmera Smart Card. The Palmera card is able to support both Visa and Chinese EMV requirements on a single card. In August 2005, Axalto's Palmera product received the first EMV certification issued in China, based on PBOC specifications. The third vendor chosen was Oberthur Card Systems. In April 2005, Oberthur Card Systems took part in ICBC's EMV card pilot. During 8 months of detailed project work Oberthur provided intensive technical support and consultancy services to ICBC - essential requirements for an issuer and a country using EMV for the first time. The cards now being supplied to ICBC are based on the Oberthur MoneytIC Java Card platform supporting MasterCard's Mchip 4.0 specifications.

This EMV card issuance project by ICBC signifies the substantial progress of China's financial chip migration projects. ICBC will now be well positioned to enhance its leadership and further enrich the payment experience of its cardholders with this EMV chip card. ICDC will now be able to provide their customers with more personalised and differentiated multiapplication services, and in turn elevate their competency and competitiveness. With this in mind it will not be long until all the banks in China follow ICBC's lead.





Smart Cards

Oberthur Lobby Regulators

Jean-Pierre Savare, chairman of Oberthur Card Systems, has told a french newspaper Les Echos, that Oberthur may request that the Autorité des Marchés Financiers (AMF), the French markets regulator, examine the implications of the bid by rival Smart Card maker Axalto for Gemplus International. He said he would want the AMF to examine the implications for minority shareholders of Axalto's paper and cash bid for Gemplus. Oberthur hinted that they may also lobby the European Commission about the consequences for competition in the supply of digital security cards and bank payment and credit cards.

Axalto Selected by Carte Bleue

Axalto has been selected by Carte Bleue for the launch of the Gift Card, the first prepaid EMV (Europay MasterCard Visa) payment card for the consumer market. As part of this program, Axalto is also the only provider of the related personalisation services. The Gift Card is now available in France from LCL (Le Crédit Lyonnais), the first bank taking part in the pilot launch.

INSIDE Raises 9 Million Euros

INSIDE Contactless has closed a 9 million euros (\$10.6 million) financing round led by three new top tier investors: Sofinnova, Vertex Venture Capital (Israel) and Visa International. Prior round investors GIMV, Vertex Singapore and Siparex have also participated. INSIDE intends to use these funds for the expansion of its business in the key growth markets for contactless payments and mobile NFC (near field communication).

Philips Sells Semiconductor Division

Royal Philips Electronics has started the process to create a separate legal structure for its Semiconductor business. In early 2005 Philips introduced a Business Renewal program to improve the Semiconductor division's competitiveness and bring profitability through the cycle to between 5 and 15%, as well as to increase market share in the Semiconductors division. In 2005 the CEO announced 250 million euro worth of cuts to Philips's semiconductor business to improve operating margins.

This followed the fact that operating profits dropped in the third quarter to 90m euros from 179m euros compared with the same period the year before. With Philips semi-conductors failing to meet profitability expectations, the move to place its semiconductor business in a separate legal structure maybe the next step towards selling the entire division.

Gemplus' New Card Bodies

Gemplus has launched a new range of innovative card bodies, "Plastic Fantastic" for the financial services sector. This follows the unprecedented win of the ICMA award for the second year running. This launch is in recognition of an industry trend in which card issuers are changing the way they address the market. By using the card as a marketing tool, card issuers can target their image to specific market segments. The "Plastic Fantastic" range shows the possibilities that the card can offer, from transparent and perfumed cards, tactile cards, 3D and holographic effect cards, thermochromic, glow in the dark and even unusually shaped cards.

OTI Recieves MBTA Project Order

On Track Innovations Ltd, (OTI) are to provide Smart Card technology to Scheidt & Bachmann, a provider of management systems for mass transit, car parking, petrol stations and railway security, for their Massachusetts Bay Transportation Authority (MBTA) project. OTI's components will be used for the MBTA's new mass transit ticketing solution scheduled to go online in 2006. Under the new agreement, the system will be installed in all Boston subway stations, Commuter Rail lines and dedicated Retail Sales offices, with installations commencing this year.

NY Patient Smart Card Deployment

New York City's metropolitan area could soon benefit from a patient Smart Card technology program that will help make important health care information more accurate, more secure and more readily available. The new program is part of a strategic alliance by Siemens Communications Inc., The Mount Sinai Medical Center and Elmhurst Hospital Center. The Patient Health Smart Card initiative builds off the successful Smart Card pilot launched at Elmhurst Hospital in 2003, the first of its kind in New York City. Rollout of the Patient Health Smart Card will occur in phases, with initial deployments of 100,000 Smart Cards to include Mount Sinai Medical Center and eight affiliated hospitals.





Overall, there are 45 affiliated and related health care facilities in the New York Metro area to be linked by the Smart Card initiative. Together, Mount Sinai, Elmhurst and Siemens hope to expand Smart Card technology throughout the metropolitan area and create a regional health network for the benefit of their patients.

Major Contracts for Oberthur in Italy

Oberthur Card Systems has signed two major personalisation outsourcing contracts in Italy. A 5 year contract with, SSB, an Italian banking processing company, for the transfer to Oberthur Card Systems personalisation equipment and the personalisation of 3 million cards per year. Oberthur also now has a 3 year contract with BankAmericard (Deutsche Bank), a credit card Issuer, for Oberthur's personalisation equipment and the exclusive rights for the personalisation of all BankAmericard magnetic stripe and chip cards. Transfers of the corresponding personalisation activities have already been implemented and will reinforce Oberthur Card Systems' position in Italy.

Thai Smart ID Cards to Get Smarter

The government of Thailand is to begin issuing a new round of Smart ID Cards in 2006, dubbed as phase 2 electronic identity cards, with priority to be given to students, An adviser to Prime Minister Thaksin Shinawatra, Adisai Bodharamik, who was former education minister, said the government would use more advanced technology in issuing the phase 2 Smart Cards so that most updated information of card holders would be always open to access. The government issued the phase 1 Smart Cards earlier last year, giving priority to residents in the country's three troubled southernmost provinces of Yala, Narathiwat and Pattani. The cards were heavily criticised by security experts and privacy advocates, and cost 888 million baht (£12.8 million). A total of 12 million e-ID cards are to be issued in the first phase. In the phase 2, about 26 million Smart Cards would be issued, followed by another 26 million in the phase 3 in coming years, said Mr. Adisai.

PBS Acquires PBS International

PBS has announced they have acquired PBS International, a Danish card supplier, as of 1st January 2006. The acquisition and the merger of the two companies is to support a strategy of growth and provide the necessary strength to create a competitive player in the Northern European market.

Terminals Go Contactless in Taiwan

The Axalto MagIC 6100 terminal is being upgraded to accept TaiwanMoney Card purchases. This MasterCard M/Chip-powered card features a contact interface for traditional EMV (Europay MasterCard Visa) payments and the OneSmart MasterCard Pay-Pass functionality for EMV contactless payments for use in both transport and retail environments. This enhancement to Axalto terminals will allow consumers to benefit from the speed and efficiency of contactless at convenience store chains, movie theaters and retail merchants.

ACT Get AMS/HOPS Certification

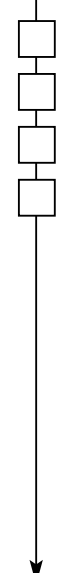
ACT (Applied Card Technologies Ltd) have been awarded AMS and Collection & Forwarding certification by ITSO, following testing at Integri the independent certification house in December last year. This latest ACT HOPS/AMS (Host Operator Processor System/Asset Management System) certification is further evidence of the significant progress ACT, in partnership with its customers has made towards making ITSO a reality; 2006 will see ACT drive forward its ITSO projects.

DoCoMo Selects Axalto USIM for 3G

Axalto has been selected by DoCoMo to supply advanced USIM cards for DoCoMo FOMA (Freedom Of Mobile Multimedia Access) 3G services. With these cards, subscribers of DoCoMo - Japan's largest mobile operator - will be able to enjoy connecting with PDC network when in Japan, as well as internationally with W-CDMA and GSM networks when overseas. Designed to ensure the continuity of service for DoCoMo's subscribers regardless of the network technologies, the Axalto USIM will also support DoCoMo's completion of its migration to the third generation environment. Uniquely designed to meet DoCoMo's rigorous security specifications and embedded with its PKI (Public key Infrastructure) feature, the Axalto USIM card integrates the operator's 3G technology to enable high-speed, large-capacity data transmission, as well as a variety of applications requiring secure digital signature, such as Internet access, web mail, remote log-in or mobile commerce.

3G Subscribers Top 20 Million Mark

The number of subscribers to NTT DoCoMo's 3G FOMA service has surpassed the 20 million mark, in just four years.





The company expects FOMA subscriptions to reach 23.5 million by the end of March 2006.

Smart Cards for US Parking Meters

Parcxmart Technologies, Inc and P.O.M. Incorporated have announced the completion of integration of single-space parking meters that can, upon installation, securely accept Parcxmart-compliant Smart Card transactions. Beginning early 2006, P.O.M. will begin manufacturing parking meters that incorporate Parcxmart Technologies' turnkey Smart Card payment platform. The Parcxmart card and patent-pending payment solution is America's first fully-functional parking and local merchant Smart Card payment system.

The GCC Gets Smart

MasterCard International has launched its global Gulf Cooperation Council (GCC) 'OneSmart Club' to help banks and other financial industry players active in the GCC market to develop new payment products and services using the latest Smart Card technology. The Club, which has already been successfully operating in other regions around the world, was launched at a day long inaugural event at the Park Hyatt hotel in Dubai where more than 50 delegates from the United Arab Emirates, Saudi Arabia, Kuwait, Bahrain, Qatar and Oman were present. The GCC OneSmart Club is designed to help MasterCard's bank customers leverage the fast growing EMV chip infrastructure through the deployment of added-value chip business propositions.

RFI-Smart Offer full Service Testing

RFI-Smart has achieved full approval from Visa, MasterCard and JCB to provide PCI PED security evaluations to terminal vendors. PCI PED (Payment Card Industry - Pin Entry Device) Security Evaluation is the series of tests for payment terminals ensuring the PIN (Personal Identification Number) cannot be leaked from the terminal. PEDs are evaluated against the PCI security requirements - online, offline or both. The test focuses on PIN security testing as well as triple DES capability compliance. The PED Testing and Approval Program ensures that the device meets a prescribed level of security, especially focusing on PIN compromise. Both simple PEDs (PIN entry devices) as used in POS terminals and ATMs, and EPPs (Encrypting Pinpads) can be tested. PCI (Payment Card Industry) has standardised security requirements for pinpads, or PIN Entry Devices.

Axalto and Atilim Partner

Axalto and Atilim, a Turkish integrated printing company, have agreed to join forces to support Turkish banks in their migration to the EMV (Europay MasterCard Visa) standard. Under the agreement, Axalto provides technical consultancy and support on Smart Cards, while Atilim brings its expertise in the fields of fulfilment, packaging and distribution. Additionally, Axalto and Atilim will jointly provide personalisation services.

Highly Secure Smart Card ICs

Infineon Technologies' 66PE family of advanced microcontroller ICs (integrated circuits) have successfully passed the world's most stringent security tests for chip card applications. This includes all eight contact-based 16-bit security microcontrollers in the 66PE family, used for secure payment transaction and identification applications, as well as the contactless interface security controller Infineon developed specifically for use in electronic passports. Infineon's security controllers were subjected to months of exhaustive assessment and testing by the German Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik, BSI), which is an independent and highly specialised national authority that controls and monitors the entire process and issues internationally recognised Common Criteria certificates in Germany.

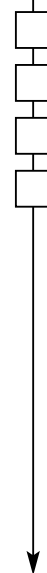
USIM Protects Broadband Internet

Inmarsat Communications has awarded Axalto an exclusive 3-year contract for the supply of USIM cards to enable secure access to their Broadband Global Area Network (BGAN) service. Axalto's high-end cards will be used in BGAN terminals, which can be connected to a laptop to provide communication services where access to the usual telephone network is difficult or impossible. The contract stipulates participation agreements with Inmarsat's distribution partners around the world.

Smart Cards for Indian Drivers

Mumbai drivers will now have Smart Cards instead of licence cards. Addressing the inauguration of the Road Safety Week programme, state Indian transport commissioner Shyam Sunder Shindhe said the city drivers would get the Smart Cards by the end of February 2006. The Smart Card will carry the registration number, licence number, and also record details of any registered offences.





New Solution for Islamic Banking

Bell ID's ANDiS4EMV solution now enables issuers to comply with the specific requirements of the Islamic banking system. Islamic law extends the requirements on contracts to ensure security and fairness in financial transactions. These restrictions have an impact on the launch of banking card products, IT infrastructures and joint initiatives such as EMV. The primary difference between an EMV payment process and transactions performed in line with Islamic banking principles is that the latter requires extensions to the current security model and message flow. Accordingly, ANDiS Key Management System is a crucial component ensuring management, generation, exchange and storage of the cryptographic keys.

MasterCard Prepaid in Europe

MasterCard Europe has announced they are celebrating a new milestone in the roll-out of its prepaid card technology, with the launch of a new electronic gift card in Norway with DnB NOR bank. This follows swiftly on the heels of a number of new prepaid programmes across Europe, including, most recently, the 'Cash2Go', 'Cashplus', Western Union and 'Bullring' cards in the UK and the 'MyCash' and 'Intesa Flash' cards in Italy. MasterCard has already seen significant growth in prepaid products internationally, with hundreds of programmes launched worldwide. The majority of these are in the U.S., where the gift card market has grown at between 20% and 25% per annum since 1995. However, card issuers, businesses and consumers across Europe are now tapping into the benefits offered by prepaid. Since the first prepaid cards appeared in the 1990s, MasterCard has developed a strong prepaid offering across multiple segments, including gift cards, travel cards, corporate cards, expense cards and government disbursements.

French Card Wash's Smarten Up

Axalto has been selected by Total France to provide rechargeable loyalty cards as part of a new business offering for car washes. Deployment will begin in January, and Total France is planning to distribute 500,000 units to 800 petrol stations by the end of 2006. Total France is the first oil group in France to have introduced Smart Cards into its car wash loyalty programs. This card gives users a clearer view of Total France's new offering, where amounts are expressed in euros and no longer in wash credits.

SuperCom Raises \$3m

SuperCom has completed a \$3 million private equity financing to US institutional and private investors. The investment round was led by micro-cap investment group Special Situation Funds, which invested \$2.5 million to become the company's largest investor. C.E. Unterberg, Towbin, LLC acted as the placement agent in the offering. SuperCom also issued 4,919,355 new shares at a price of \$0.62 per share

New ASK Contactless USB Reader

ASK has announced the launch of their RDR 400 series of contactless USB readers. RDR 400 readers have been designed for contactless logical/physical access control, identity, banking and PC-based applications. Based on CPL 400 couplers, the RDR 400 series has a powerful RF interface to help readers support all current ISO dual interface/contactless cards and contactless tickets. RDR 400 has successfully passed the e-passport Interfest interoperability tests which took place in November in Singapore. These tests involved 124 different passports complying with ISO14443 type A or B standards from 28 countries tested on 40 readers.

Qatar's ePassport Set for April

The Middle Eastern State of Qatar has indicated that it will launch a biometric-based electronic passport from April this year, upgrading its existing machine readable document. The details were revealed by Captain Mohamed Al Sulaiti during the inauguration of a new passport facility at the country's Nationality and Passport Office. According to reports, the new passport will have images of Qatari heritage sites. Al Sulaiti revealed that there were also plans to issue a Smart Card based ID card to nationals from April.

ePassports for Luxembourg

On behalf of Ministère des Affaires Etrangères, Luxembourg's Ministry of the Interior, Bundesdruckerei GmbH is developing the design and security elements for the new Luxembourg passport which includes biometric features. Bundesdruckerei, a Berlin-based company, will also supply the system for the optical and electrical personalisation of the passports. The first ePassports are scheduled to be issued to Luxembourg's citizens in the summer of 2006. The Luxembourg passport will contain a polycarbonate datapage card with an integrated chip.



Biometrics

Biometric Revenues to Grow to \$5.7B

Analysis by International Biometric Group shows that global biometric revenues are projected to grow from \$2.1 billion in 2006 to \$5.7 billion in 2010, driven by large-scale government programs and dynamic private-sector initiatives. Fingerprint is expected to gain 43.6% of the biometric market in 2006, followed by face recognition at 19.0%. Annual iris recognition revenues are projected to exceed \$250 million by 2008. Asia and North America are expected to be the largest global markets for biometric products and services. Multiple-biometric systems will emerge to comprise roughly 5% of the total market for biometrics.

Biometric ID Cards for Morocco

The Moroccan Minister of Interior, Al Mustapha Sahel, has announced that the first biometric identity card in Morocco will be printed in early 2007. The Minister said at the House of Representatives that the project will require about MAD 20 billion. He added that around 20 million contactless identity cards are expected to be printed during a period of four years. About 5 million identity cards will be printed every year. The project aims at generalising this technology in 2010. The new card will be supplied by the French company Thales.

Korea Introduces Biometric Passports

The Korean Foreign Ministry has said that Korea will introduce electronic passports in some regions on a trial basis during 2006 and replace all passports as early as 2007 to qualify for a U.S. visa waiver. The passport can store biometric data including fingerprints and DNA information. After the fifth Korea-U.S. working-group meeting on the matter, U.S. official Maura Harty said her government will try to improve visa-related services but did not comment on tangible plans or the possibility of Korea's inclusion in the visa waiver program.

Pay By Touch Acquire BioPay

Pay By Touch has acquired BioPay LLC for \$82 million. BioPay is a biometric services provider with 2 million enrolled consumers, 1,600 retail implementations and more than \$7 billion in transactions processed. Under the terms of the agreement, Pay By Touch expects to acquire all assets of BioPay.

Viisage and Identix to Merge

Viisage Technology, Inc and Identix Incorporated have entered into a definitive agreement to merge in an all stock transaction. The combination has been approved by the respective boards of directors of each company. The combined company, on a pro forma calendar 2006 basis, is expected to have revenues of approximately \$220 million and EBITDA of at least \$40 million, including synergies and operating efficiencies. The combined company's board of directors will consist of 12 directors, with seven of the members designated by Viisage and affiliates and five designated by Identix. The headquarters of the combined company will be in Stamford, Connecticut. In addition, certain affiliates of both Viisage and Identix have agreed to vote their shares in favour of the merger.

Play-Doh Out Smarts Biometrics

Using fake fingerprints, researchers in New York State have managed to break nearly all the biometric identification systems they tested. Headed by Clarkson University associate professor of Electrical and Computer Engineering Stephanie C Schuckers, they used fake fingers made by taking casts of live fingers and using the molds to create copies in Play-Doh.

The 60 fake fingers were then tested and were successfully authenticated by the combination of the fingerprint readers and their accompanying software in nine out of every ten attempts. 'Digits from cadavers and fake fingers molded from plastic, or even something as simple as Play-Doh or gelatin, can potentially be misread as authentic,' Schuckers explained. The team subsequently developed a technique for distinguishing live digits by detecting changing moisture patterns and reduced the false detection rate to less than 10%.

Precise Receives \$1/2 Million Order

Precise Biometrics has received an order from Athena Smartcard Solutions to implement a secure ID project with one of Israel's largest financial institutions. The order resulted from Athena Smartcard Solution becoming a new Precise Match-on-Card partner. The initial order for Precise 100 series fingerprint readers and Precise Match-on-Card licences to implement the first phase of the project is worth approximately SEK 4 million (\$520,000). Delivery of the first phase took place during the fourth quarter of 2005 and the first quarter of 2006.





Radio Frequency Identification

RFID Spending to Surpass \$3b

According to a recent report published by the Gartner Group, the adoption of RFID continues to gather momentum, and hardware and software spending will accelerate in late 2006 and 2007 as true benefits are documented. Gartner forecasts that worldwide RFID spending is expected to total \$504 million for 2005, up 39 percent from 2004. RFID will begin to experience broader industry adoption with business value-focused implementations toward the end of 2006 when new license revenue totals \$751 million. By 2010, Gartner forecasts worldwide RFID spending to surpass \$3 billion. Analysts say companies should not think of RFID tags as a replacement for bar codes. The two technologies will coexist with users applying the right data collection technology for the right process situation.

RFID for Viagra

In its latest initiative to promote patient safety by combating pharmaceutical counterfeiting, Pfizer Inc. has begun to ship its first product containing radio frequency identification (RFID) tags to its customers in the United States. RFID technology is being added to all Viagra (sildenafil citrate) sold in the U.S. to enable pharmacies and wholesalers to verify the unique electronic product code, or EPC, on Viagra packaging. Pfizer is the first pharmaceutical company to put in place a comprehensive program of this type focused on EPC authentication as a means of deterring counterfeiting. Viagra was selected for the RFID project because it has been a major target for counterfeiters.

RFID Tags for Hong Kong & China

UPM Rafsec has entered into an agreement with Supply Chain and Logistics Technology Holdings Limited (SCL), a joint-venture of The Hong Kong Polytechnic University (PolyU), to deliver UPM Rafsec Gen 2 RFID tags. UPM Rafsec together with SCL will supply tags to Novetex Spinners Limited (Novetex), the world's largest single site woollen spinner, for the project that will mark the first Gen 2 RFID initiative in Hong Kong and the South China region.

On the Move

LEGIC Opens New Office

LEGIC IdentSystems Ltd has opened its newest office in Dallas, Texas. Increases in worldwide adoption and licensing partnerships in North America have prompted LEGIC to increase sales staff and support offices in North America. LEGIC's newly appointed North American Sales and Business Development Manager, Brad Rollans, will be leading sales operations from the Dallas, Texas office.

Re-Elected Chair at GlobalPlatform

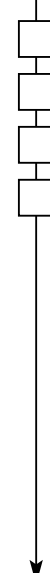
GlobalPlatform has re-elected Bob Beer, of Datacard Group as Chair. Bob will now serve a third consecutive term following this appointment. The Board also announced that Marc Kekicheff, from Visa International and former GlobalPlatform Technical Director, will take the role as Vice-Chair. Marc will succeed his colleague Jim Lee, who served on the Board for four years, and who has recently retired from Visa International. Shoji Miyamoto, of Hitachi, retained his position as GlobalPlatform Secretary / Treasurer for a third term. All three elected Board Officers will serve for one year, working closely together on GlobalPlatform's Executive Committee to progress GlobalPlatform business and technical activities.

New Board Members at First Data

First Data Corp has appointed David P. Bailis to oversee the company's Card Issuing Services unit. David will serve as president of Card Issuing and executive vice president, reporting directly to Ric Duques, chief executive officer. In his new role, Bailis will remain in Omaha, Nebraska. First Data has also elected David A. Coulter to the Company's Board of Directors. Mr. Coulter, 58, serves as Managing Director and Senior Advisor at Warburg Pincus, focusing on the firm's financial services practice.

APS Appoints New Director

Advanced Payment Solutions (APS) has appointed Philip Harrison as its new Business Development Director. The announcement coincides with APS' plans to aggressively grow the general purpose prepaid payment card market following APS' launch of the cashplus prepaid MasterCard in the UK in September 2005.





A Look Back Over 2005

By Jason Smith, Staff Reporter, Smart Card News Limited



Jason Smith

Growth in the Smart Card integrated circuit (IC) market has been very erratic over the last five years. The market has received a strong boost with the unexpected large growth rate in the subscriber identity module (SIM) segment in 2003 and 2004. From 2004, the uptake of Europay, MasterCard, and Visa (EMV) cards also helped drive the continued growth in the overall market. According to Eurosmart figures, by the end of 2005 1.8 billion Smart Cards have been sold, following sales of 831 million units in the first half of 2005. Smart Cards used in banking, telecommunications and identification had seen a growth of 23% at the end of 2005.

Olivier Piou, CEO of Axalto and chairman of Eurosmart reported at Carte in November 2005 that Smart Cards used for banking alone had grown by 18% to 330 million for all of 2005. He also went on to say that the global demand for payment Smart Cards had reached 158 million in the first six months of the 2005. In the first half of 2005, 21 million Smart Cards were shipped into the Government and health care sector and Eurosmart stated this figure reached 60 million by the end of 2005, representing a growth of 33% more than in 2004.

During 2005 the US Department of Homeland Security began protecting their borders using their new US-VISIT program. This program uses a new high-tech passport that incorporates biometric facial recognition technology. Fingerprints, digital photos and biographic information are collected from foreign visitors upon their arrival and departure from US air, sea and land border ports. This new form of secure travel documentation carry's a Radio Frequency Identification (RFID) contactless chip embedded within it which has the ability to store information related to the passport holder. The US State Department have produced and issued more than 1 million of these new electronic passports during the second quarter of 2005 with the aim of full deployment by early 2006. US-VISIT has installed biometric entry procedures at the 50 busiest land border ports along the US-Canada and US-Mexico land borders as of December 29, 2004; meeting the December 31, 2004 deadline. The deployment of biometric entry procedures to each of the remaining 104 land border ports of entry was also ahead of the congressional deadline of December 31, 2005. Since January 2004 to the end of 2005, US-VISIT has processed more than 44 million visitors, which makes the program the largest-scale application of biometrics in the world. Since this move by the US, many countries within the European Union have mandated the addition of contactless Smart Card chips to their passports. E-passports schemes are now rolling out in Belgium, Germany, Norway, Sweden, Thailand, Australia and New Zealand. Eurosmart believe that more nations will introduce electronic passports in 2006, but that volume production will not begin until 2007.

In the UK in 2005 the UK Government finally announced its plans for a compulsory national identity card scheme to tackle fraud and illegal immigration amid a wave of lobbying groups, campaigners and civil liberty organisations. Legislation was initially introduced to the House of Commons on November 29, 2004, to implement the scheme, in the form of the Identity Cards Bill. The bill fell victim to the legislative guillotine before the May 2005 general election. However, it was revived immediately afterwards and on 25 May 2005, the Identity Cards Bill was re-issued with UK Prime Minister Tony Blair determined to fast track it through Parliament. The scheme is planned to be phased in over a number of years and will include basic personal information and unique biometric identifiers (such as iris pattern or fingerprints).

The introduction of the first identity cards will, on current plans, start from 2008. The Identity Cards Scheme will be delivered by a new agency which will incorporate the functions of the UK Passport Service. It will work very closely with the Home Office Immigration and Nationality Directorate to ensure that the scheme has universal coverage for both British citizens and foreign nationals. To educate the British public about the technology behind the planned ID cards, the UK Home Office sent Ministers on a "charm offensive" biometric roadshow around the UK on a seven-date tour which started in September 2005. The roadshow was part of the UK Home Secretary Charles Clarke's attempt to convince an increasingly sceptical UK public that ID cards will safeguard their identities by raising awareness of biometric technology.





In China the shipment of IC cards in 2005 was about 766 million pieces, which is an increase of 36.1% compared to the previous year. This shows that in 2005, China's Smart Card IC market was still one of the fastest growing IC card markets in the world. China's actual shipment volume in 2005 reached 9.305 billion Yuan due to the increase of the percentage of high-cost identity cards (ID) cards used in China's issuance of their new national ID card. Currently the Chinese government have replaced the old ID cards (launched in 1984) with 50 million new contactless smart ID Cards, but their aim was to issue 100 million by the end of 2005. The Chinese authorities actually plan to deliver a grand total of one billion smart ID cards over the next five years. With this in mind and factors like the 2008 Beijing Olympic Games, it is forecasted that by 2008, China's IC card shipment will reach 1.91 billion pieces, 2.49 times of that of 2005; while the shipment volume will reach 24.73 billion yuan (\$2 billion), 2.66 times of that of 2005.

In January of 2005 Smart Card manufacturers Axalto, Gemplus International S.A., Giesecke & Devrient, and Oberthur Card Systems created the Smart Payment Alliance (SPA), a non-profit association dedicated to fostering and facilitating the usage of Smart Cards to make payments. The SPA has become committed to promoting chip card-based payment applications, improving value added application interoperability, establishing relevant specifications, and improving security and quality. The Alliance's main objective is to accelerate the transition from traditional magnetic stripe cards to chip-based cards. Also in this month we saw ActivCard acquire ASPACE to strengthen their position within the identity and access management market to take advantage of the growing trends in ID theft and phishing.

In February we saw the evolution of the SIM Card into the multi-MegaByte SIM. Branded GemXplore Generations and designed by Gemplus, this new SIM worked on a new modular high performance 32-bit operating system and Renesas Technology's chip packaging, high density Flash and secure micro-controller technology enabling the SIM market and services to expand in new directions. The GemXplore Generations Multimedia has now broken down the traditional barriers associated with SIM use by removing the limitations of memory size and offering high speed data transfer between the handset and the SIM. In the first half of 2005, SIM card sales reached 605 million, and Eurosmart states that the figure by the end of 2005 was 1.3 billion, a growth of 25%. In May 2005 Gemplus acquired 100% of Setec, which was a privately held company based in Finland with an annual turnover of 58.5 million euros and around 350 employees. Most of the company's activities were based in Nordic countries and the company supplied passports and e-passports to Finland, Sweden, Denmark, Norway and Lithuania. Setec cost Gemplus a base purchase price of 30 million euros and 19 million Gemplus shares.

Negotiations commenced in August 2005 on plans to develop a trial for an 'e-wallet' for London's Oyster Card. Under the plans, travellers across the City of London would be able to use their contactless travel Smart Card to pay for low-value items such as newspapers, milk, coffee, car parking tickets and fast food restaurants. This marked an important step forward for Transport for London's (TfL) aspiration to extend the use of the Oyster card and make it more like well established schemes such as those in Hong Kong and Japan. TfL had hoped to trial the technology and confirm its chosen partner by the end of 2005, however work on the development and delivery of e-money on Oyster cards will now hopefully start in January 2006. In September 2005 Sagem consolidated part of the Smart Card market by purchasing Orga from the Gunther Group for an undisclosed amount. Orga was ranked No. 5 in the industry in 2004 by analysts both in terms of revenue and shipments. It was predicted that this merger would create a unit aggregate of over 300 million euros for Segem in 2006. Also in this month Oberthur Card Systems acquired Africard (Pty) Ltd, a leading South African card manufacturer for around 2.5 million euros.

In our October issue of Smart Card News we asked the question "Is Consolidation a Possibility" where we questioned a cross licensing agreement made between Axalto and Gemplus in January 2005. This agreement granted each other broad rights under their respective patents in the areas of Smart Cards and related devices. This move raised a few eyebrows! Then in November's issue we compared both companies by analysing their financial year end results and played them off of each other like two prize fighters. But not even Smart Card News could predict what happened next on 7th December of 2005. An announcement that was undoubtedly the most surprising and unexpected event of the year. Gemplus and Axalto decided to merge. Shockingly the Smart Card industry's two biggest players did not pat themselves down, place their gum shields back in and get back up for another round of slugging it out to be number one. Oh no!, they did the complete opposite, they shook hands and joined forces to form - Gemalto.



This new company will have over 11,000 employees across the world, 21 production sites, 32 personalisation sites, 9 R&D centres and over 120 sales and marketing offices. Gemalto's sales will total approximately 1.8 billion euros. The move was called a "merger of equals" with Alex Mandl, the President and CEO of Gemplus, assuming the position of Executive Chairman and Olivier Piou, the CEO of Axalto, becoming the new CEO. Both Axalto and Gemplus will both keep operating as separate companies until the results of any anti-trust reviews which will be carried out. But once they have passed these, a global mammoth in digital security will truly be born.

2006 should show us the true effects of the Gemalto formation and their actions as the new head of the food chain. The question Smart Card News begs is: Who will they consume next? As Gemalto now has additional strength in its size and a lot of disposable cash available in its treasury. And what of the next 12 months? Well we have some interesting times ahead with some big projects coming up. According to Datamonitor the security/access sector of the Smart Card industry is set to experience the strongest growth in revenues, rising to a predicted \$137 million in 2006. This shows that with security concerns increasing by the day for many countries, applications such as national and corporate ID cards, healthcare, e-passports, driving licenses, and military and police cards, will see further growth and development.

The Chinese national ID card project has a target of 1 billion units to meet, the foundations of the UK ID scheme are now being laid for the UK's national ID card and the US's visa waiver program is making more nations around the world incorporate contactless chips into their passports. Not to mention, India who are currently setting up two new Smart Card projects. India's national smart identity card project hopes to reach a target of over 600 million units and India's new electronic driving licence scheme is aiming to issue 150 million units over the forthcoming years. According to analysis by Frost and Sullivan, between December 2004 and December 2008, NASA, the Defense Department, Department of Homeland Security (DHS), the Interior Department, and the Department of Veterans Affairs are all planning to make an aggregated purchase of approximately 40 million cards through a GSA contract.

So all these projects are going to offer tremendous growth potential to the Smart Card industry during 2006 and beyond and will change the traditional profile of the Smart Card industry in the future. Frost and Sullivan forecasts that the world Smart Card IC market's revenue could reach \$4,188.1 million by 2010. So let's sit back and prepare for another explosive year.

Events Diary

February 2006

- 13 - 16 3GSM World Congress - *Barcelona* - www.3gsmworldcongress.com
- 13 - 14 TechMecca 2006 - *The Woodlands, Texas* - www.techmecca.net
- 14 - 16 RSA Conference - *San Jose, USA*

March 2006

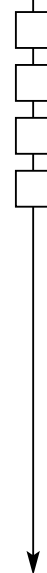
- 07 - 10 IC Card World - *Tokyo* - www.iccard.jp
- 14 - 15 Citizen Cards Conference - *London Marriott Kensington*
- 20 - 22 Prepaid Mobile - *Prague Czech Republic*
- 21 - 23 The 14th Convergence India 2006 - *New delhi, India* - www.convergenceindia.org
- 23 - 24 Smartcard ID Summit - *London* - www.informa.com

April 2006

- 25 - 27 SIM 2006 - *Corinthia Towers, Prague* - www.informamedia.com
- 25 - 27 The 3rd IMS World Forum 2006 - *Barcelona* - <http://click.cminteractive.com/?JMQ7hUxbJ=3976258>
- 25 - 27 Infosecurity Europe 2006 - *Grand Hall at Olympia, London* - www.infosec.co.uk
- 26 - 28 Payment World Asia 2006 - *Singapore* - www.worldofcards.biz/2006/pwa_SG

May 2006

- 2 - 4 CardTech/SecurTech 2006 - *San Francisco, USA*
- 6 - 8 The CardEx International Conference - *Cairo, Egypt* - www.egytec.com/home.htm
- 17 - 19 8th Smart Cards + Smart Label (RFID) Expo - *Beijing, China* - www.scfc.org.cn
- 22 - 23 Cards Middle East - *Al bustan Rotana, Dubai* - www.worldofcards.biz/2006/cme



Smart Card Solutions in Health ID Schemes

By Mr Oliver Burke, General Manager, Bell ID B.V.

bell^{id}



Oliver Burke

Large-scale Smart Card ID projects in the field of healthcare - such as Austria e-card, the Dutch Health Care Professional card (UZI) and the Taiwanese health ID system - have received a lot of attention in recent years. In Germany, for example, the government is planning to issue over 80 million healthcare cards in the next few years. The United States of America seem to be turning towards Smart Cards to enable them to comply with their HIPAA (Health Insurance Portability and Accountability Act) regulations, and many other countries (such as Canada) and regions such as the Middle East and Asia Pacific are following European developments closely while launching their own first pilots.

Nowadays, healthcare organisations around the world are aiming to reduce costs and improve service by promoting use of the Internet and implementing private networks. Patients' data, including benefits information and medical records, are increasingly being distributed over these secured networks. Whether a healthcare system is privatised or government-sponsored, the security, privacy and integrity of patient information remain crucial issues. To achieve this, a Smart Card, application and key management system is necessary as a central component to a healthcare Smart Card scheme. It will allow the loading of additional applications on a Smart Card including digital certificates or dynamically updating personal data on the card. Many industry leaders such as Bell ID consider Smart Cards to be the best platform to provide accurate personal identification in the physical and digital world. This creates a higher degree of transparency and data security, ensuring better acceptance by healthcare consumers. The main drivers to adopt Smart Card technology in the healthcare sector are the following: **1)** Secure storage of patient records; **2)** Simplification of complex processes and procedures and reduction of paperwork and human error; **3)** More convenience for cardholders/insurance parties; **4)** Reduced risk of misdiagnosis and accidental death due to inappropriate medication/treatment; **5)** Faster diagnosis at hospitals and doctors practices; **6)** Significantly reduced healthcare expenditure; **7)** Standardisation of healthcare cards to allow cross-border transactions.

The challenge: As with other smart ID card initiatives, migrating to a Smart Card-based healthcare system is a major IT infrastructure change for a nation. In such initiatives, several thousand pharmacies, innumerable doctor's and dentist's practices as well as thousands of hospitals and local insurance companies must all be linked together to form a new interoperable Smart Card IT infrastructure. Consequently, the performance, scalability and reliability expectations of the integrators and customers for healthcare ID projects are usually high, which makes healthcare projects particularly high-tech. Within a healthcard solution, multiple card types (such as healthcare professional cards, insurance membership cards, etc.) with multiple applications must usually be coordinated and linked together with a number of issuers (all of whom may have unique procedures). Several types of card applications are to be found operating in the healthcare market. Typically, these include data storage applets, e-keys, e-patient history files, medical documentation applets, emergency applets and in the future maybe even electronic medical reports.

Design choices: From both a commercial and technological point of view, the number of choices and decisions that need to be taken prior to the roll-out of a health ID system are enormous. Different parties with various interests and lobbies must all be taken into consideration. The element of communication to provide a comfortable level of acceptance in the public is of high importance. When making the decision as to what is best for a particular country, Bell ID suggests taking the following issues into consideration: **1)** Smart Cards have become more and more sophisticated over the years. Technology cycles are short, and therefore faster cards with more memory and additional features are regularly coming out on the market. Since the new infrastructure is expected to operate over a number of decades, the new health ID platform and surrounding infrastructure must be flexible enough to keep up with the technology developments. **2)** Card life-cycles can reach 10 years, the duration being largely determined by the durability of the plastic. Electronic updates to card content can be achieved with a post-issuance personalisation process, which allows the loading of additional data on cards already out in the field. Cost-effective replacement of an old card population through a new card is advisable after expiry or destruction of cards. In some cases, new card applications, which require new card technology or changes of legislation, may push the issuer to replace the cards earlier. **3)** Today, most existing healthcare functionality can easily be put on a Smart Card.

Opinion



To extend the existing system and provide additional value to different entities within the scheme, some applications will require a larger storage capacity on the card sooner or later. An emergency application that stores critical information, such as an allergic reaction to specific medications may be deemed a desirable piece of information on a card. This could definitely save the life of the cardholder in a situation where no online connectivity will be available. **4)** In the European Union as well as in other countries, a new health-care ID card will be introduced with the future goal to achieve cross-border interoperability. A card that was issued in Germany should be accepted in Spain.

The adoption of a sophisticated card management system like ANDiS considers these issues and provides a healthcare scheme with the required flexibility. This includes capabilities to update, replace and add applications onto cards that are already out in the field, capabilities to issue and manage different Smart Card types and applications. The adoption of a sophisticated Smart Card management system also represents a crucial element in achieving interoperability between different countries. Regardless of whether a health ID system will opt for a single or multi-application approach, the ANDiS card management system forms the basis of a robust and flexible healthcard solution that provides several flexible design options, such as: **1) Multi-application card** (applications are on the card) - this works offline and online, requires typically more chip space; **2) Multi-function card** (card functions as 'key' to access back office applications) - requires system to be online at all times; **3) Mix of both** - some applications are on the card, some applications only require a key on the card can be accessed with the card

Lessons learned: Bell ID's card management product, ANDiS, has been used in two European healthcare projects, one in Austria and one in The Netherlands. In the e-card project in Austria, where ANDiS is used as the central card management system, two different card types are issued; eight million insurance membership cards and over thirty thousand cards for medical staff in doctor's practices. The card will initially contain a cardholder ID application and several digital signatures. Signatures used are in accordance with Austrian signature law. This will form the basis for further using the healthcare ID card as a citizen card and allows e-government applications to communicate with the card. Post-issuance personalisation ensures additional applications can be added in the future and applications can be updated on the card without requiring re-issuance. In the Netherlands, ANDiS was chosen by the Dutch Information Centre for Health Care Practitioners (CIBG) as part of the so-called "UZI" (Unieke Zorgverlener Identificatie) project for the management of the digital credentials of medical staff and pharmacists, enabling secure exchange of confidential medical information.

Projects like the Austrian healthcare ID card (e-card) and the National Healthcare Professional System in The Netherlands are the first of their kind in Europe. In most cases, the card-issuing organisation experienced that a card and application management system part of the most sophisticated and flexible solutions helped them to overcome many challenges, which they may have underestimated at first instance. The decision to avoid using sophisticated card management systems - and opting instead for one of the many simple and quickly developed card management alternatives on the market - has often proven to be a much more expensive choice in the end. Nowadays, card, application and key management systems have become a key component for single and multi-application healthcare ID card projects, and help to reduce tremendously the implementation risks.

Just 2 Clicks Away



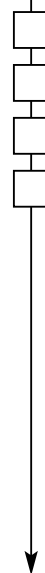
By David Everett, Chief Executive Officer, Smart Card Group Ltd



David Everett

I have often wondered why Israel seems to be such a gold mine for high technology generally and particularly security and cryptography. This month in the London Dungeon I had a chat with Ira Cohen (Vice President of Business Development) of M-Systems the successful entrepreneurs behind controllers for nand flash memory with their USB Disk-on-key and Disk-on-chip mobile products. He explained to me that in the Middle East people are just naturally more talkative and that in Israel everybody is just '2 clicks away'. The integration between people in industry, commerce, government and the military is just so much closer than other countries in the West.





Certainly in the UK I can think of organisations that don't even communicate between departments. In the West we often talk about 6 handshakes to get to anyone in the country although I think in the UK it's probably 7 or more. M-Systems has recently produced the MegaSIM a USIM Smart Card with flash memory of up to 1 Gbyte. In 2006 there will be about 1.8 bn SIM cards world-wide and over the next 5 years Ira believes that between 40% to 60% of SIMs produced will have large memories. So what is the business case behind these projections?

1) Need for Large Memory - the increasing interest in digital music and photos require large memories in the phone to store the data. While you could put it in the phone memory, upgrading phones would become a bigger nightmare than it is already. Don't forget the ringtones, screen savers and the general phone environment.

2) Content Delivery Service - here the requirement is not only for the size of the memory but also for the security necessary to manage the IPR of the content, particularly for music and video.

3) Lease the Space - Having a large memory USIM opens up new applications where effectively the USIM owner (the network operator) can lease out some of the memory to other application providers. Clearly adequate security is required to effect the necessary partitioning.

4) Enterprise Security - We talk about the problems of losing our laptop but more and more the same concerns should relate to the mobile phone. Just think about the scope of data that corporate employees are storing in their phone. The security offered by the SIM can outperform any standard PC, at least until (if ever) we go the Trusted Computing Platform route.

5) An ID Token - Arguably the SIM is already an ID token, against the network operators billing at least. But why not go further and use the SIM as a proper ID and authentication token. As the mobile and WiFi networks merge into a common handset the security comes for free.

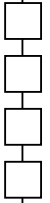
Convinced? Well there is just one more argument, the network operator. Does he want a large memory USIM? With out a doubt, because it's the only way he can hang onto the customer, Orange is already undertaking trials with the MegaSIM so watch this space!

EMV - The Main Tool in Fighting Card Fraud

EMV migration has been driving the world market towards a common payment standard and is the main tool to fight increasing fraud cases globally. Payment associations set EMV migration deadlines or liability shift time lines for all key regions. This is pushing banks and merchants to migrate to Smart Cards to avoid the risk of fraud passing on to them. Analyst's Frost & Sullivans reveals that losses to card fraud totaling \$7.9 billion in 2004 and estimates to reach \$15.5 billion in 2009. "However, many regions with low fraud levels like the US and Australia lack a valid business case to make the huge investment for upgrading their existing payment infrastructure to accept chip cards," says Frost & Sullivan Research Analyst V. Aravindh. "This situation could change as fraud migrates to these countries from neighboring regions who have secured themselves with EMV."

Last year, cross border fraud increased rapidly in countries like Germany and Italy since the UK and France started implementing EMV. Similarly, ATM fraud has seen a surge in the US in the last year with Canada and Latin America securing their debit cards by chip enabling them. The last few years have seen a phenomenal growth in the number of phishing sites globally. With the number of retailers who offer online purchasing services to their customers showing an exponential increase, it is a big challenge to retain consumer confidence in the face of mounting fraud through this medium.

"In 2004, card association MasterCard came up with a Stop Identity Theft campaign to combat this growing menace of online fraud and with the help of authorities in countries worldwide, shut down more than 1,500 phishing sites," says Aravindh. "The United States accounts for more than half the illegal sites on the Internet and losses to online fraud are greater than \$500 million annually." Card associations like Visa and MasterCard are taking preventive measures to win back consumer confidence in online payments. This includes putting systems in place like "SecureCode" by MasterCard and "Verified by Visa" authentication for Visa cards. Further, cardholders need to follow the best practices guidelines laid down by banks and card associations and be extremely wary while making payments through the Internet.



Citizen Service Smart Cards: Can Universal Schemes be Effective?



By Peter Tomlinson, Independent Consultant, Iosis



Peter Tomlinson

UK central government's interest in handing secure tokens to citizens (perhaps in return for lots of money) grows by the month. EU interest smoulders as well - on a CEN web page we see: The Barcelona Council stressed the role authentication systems could play in reducing barriers for citizens wishing to access services. The most recent Communication from the Commission (in 2003) , "The role of e.Government for Europe's Future", stresses the need for advancing Pan-European services that support the mobility of the European citizen. And "Governments need to cope with limited resources": face "the challenge to achieve productivity growth in the public sector in order to create more opportunity for service improvement at equal cost".

The reasons for UK government interest in issuing Smart Cards to citizens are many, and not always entirely altruistic, but the attraction of automating transactions is obvious: let the citizen do the work of form filling, when and where he or she wishes to. Automated transactions need a way of identifying the citizen on-line. Why not a spectrum of cards, and not just a dominant basic ID card? Thus can be automated a variety of functions for which the ID requirement varies from not needed (e.g. Oyster pre-pay at the point of use) to strongly verified (where identifying a person wrongly could cause damage to the real person's life, or where errors might cause government significant financial loss). Functions can be combined in a way that suits citizens - for example Oyster with Local Authority leisure services membership.

It is secure on-line use that gets difficult, particularly as schemes strive to be citizen friendly, secure and cost effective, so will simply putting a secure eID card in the pocket make things any better? The internet environment (where delivery is fundamental) and the secure token transaction environment (where precision and hopefully security are fundamental) clash. The internet goes for simplicity, defined by people who depend on universal delivery if their organisations are to move forward; secure token technology today goes for complexity and options, defined by people who want to differentiate their products and sell to closed groups. The European Commission understands the need to have the best of both worlds: universal delivery that at the same time is precise and secure. Thus they have for some time supported ICT projects aimed at delivering solutions - yet we still get just component specifications. The need is for modular and secure end-to-end transaction packages with interchangeable components.

In the electronic transaction field, citizen services in high volume are going to be (already are in some places) eTicketing (transport, plus venues such as leisure centres and libraries) and related information access, and more general purchasing (including payment). Payment we can discount (sic) for now, as the banks don't have a low cost transaction method. At the next level are both commercial and public sector transactions where the secure token provides mainly identification and authentication, and might provide electronic signature as well. Commercial organisations that could offer these secure functions are today not going to implement them in smart cards because of the cost of deploying the terminal infrastructure - but the public sector (particularly the ODPM: see Government Connect - www.govconnect.gov.uk) is eyeing up this area as a potential way to have a win-win situation: automation brings a better service at lower cost.

One of the projects supported with EC funds was SmartCities - a demonstrator developed during the period 1999 to 2002. It was an attempt at a universal solution for a citizen service card scheme hosted in the public sector, and it produced a few lessons. From it has eventually come a guidelines project (CEN/ISSS MMUSST), trying to set out guidelines for developing citizen service schemes. Under funded, MMUSST nevertheless has got to the stage where it has produced two documents for public consultation - to find them go to www.cenorm.be/iss and work your way through that site.

You can also contact the author of this article at pwt@iosis.co.uk for an introduction and copies of the link to the documents, or get them from via www.iosis.org .



SEPA Set to Transform Cards

By Andy Brown, Director of Product Marketing, ACI



Andy Brown

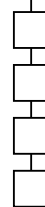
The Single Euro Payments Area could be seen as a card utopia where, regardless of which European country you are in, you can use your domestic card in the same way as if you were at home. You will not gasp at your bank balance when you see the overseas charges, and the merchants will not curse you when you pull out your card. With lighter pockets and a spring in your step you'll wonder why a Single Euro Payments Area was not established earlier, as you merrily spend away. If only the implementation of this mandate was so simple and didn't present quite the number of challenges it does for the card industry.

SEPA was driven by the EU's ambition to drive forward a flexible workforce, open up trade and ultimately become a far more competitive economy. The mandate originated in March 2000 when the European leaders set the European Union the objective of becoming "the most dynamic and competitive knowledge-based economy in the world." The aim was to achieve this by 2010. A Single Euro Payment Area was seen as being instrumental in this ambition to release the financial shackles currently holding back cross-border transactions within the EU. A reduction of the present prohibitive costs of cross border transfers, will certainly help encourage cross-border trade and investment. With a flexible European payment system there are clear benefits to businesses. Workers who were previously anchored in specific areas due to financial bureaucracy will be able to move around more freely. The UK at present is particularly bad for red tape, with workers from other EU countries coming into the UK sometimes finding it as complicated to open a bank account as getting a passport. The SEPA mandate will be implemented in the Euro zone countries by 2010. Not only does the mandate face opposition from countries that are concerned about how this affects their current domestic standards, but is also set to completely change the appearance and functionality of cards. It is also anticipated that SEPA may drive an increase in card transactions in the EU.

EMV adoption is a key requirement of SEPA. Judging by the reluctance of some countries to take this on board, we anticipate SEPA compliance will not be something that will be easy to implement. A number of issues have arisen from EMV roll-out, not least the liability issue. Spain is an example of a country reluctant to take up EMV. As the majority of card fraud happens in the Costa Del Sol area, largely populated by the British, Spain has so far chosen not to implement a widespread EMV migration. However, rising levels of fraud in the costal areas focused around British holidaymakers, has led to a targeted migration in those regions. With this increasing pressure from retailers to adopt EMV compliance, EMV migration in Europe continues to be a complicated area. There is no doubt that SEPA will transform the European card space as we know it. Countries will be forced to move towards one common structure. However it is very difficult to predict which of the several alternatives for meeting the SEPA requirements will actually get adopted. The only thing certain is that changes to structures and schemes will occur so banks need to be confident that they have a scalable and flexible strategy in place for SEPA compliance. It is far more cost effective to invest in a strategy that is flexible and can allow changes to cards once they have been rolled out rather than the costly re-issuing of cards. The early EMV implementations often included outsourcing much of the card delivery infrastructure, which lead to a loss of control over the data contained on the cards resulting in some costly recall and re-issuance processes. Ensuring the infrastructure can handle change is vital to SEPA compliance.

One area of certainty is that card products in 2010 will be more sophisticated products than those we use today. The card will certainly be a multi-application card with both debit and credit applications. It will also encompass an identification application for use in 'customer not present' environments such as ecommerce or internet banking. It will also be capable of operating in both a contact and contactless terminals. Products like MasterCard's OneSmart demonstrate that this is a practical technology proposition today. It is likely that this new level of functionality will be in the form of something other than a plastic card. Other chip bearing devices are likely to be carrying payment applications. With such a range of options it is inevitable that the card issuer will have to add or update these applications and their parameters without reissuing the chip card.

Ultimately SEPA is a positive directive for the card industry, however a lot of forward planning and strategy is needed to ensure compliance. With flexible, future-proofed systems in place, the card industry will be a key player in helping achieve the EU's ambitious goal set in 2000.





DPA Exposes Vulnerability in Smart Cards

By Jason Smith, Staff Reporter, Smart Card News Limited

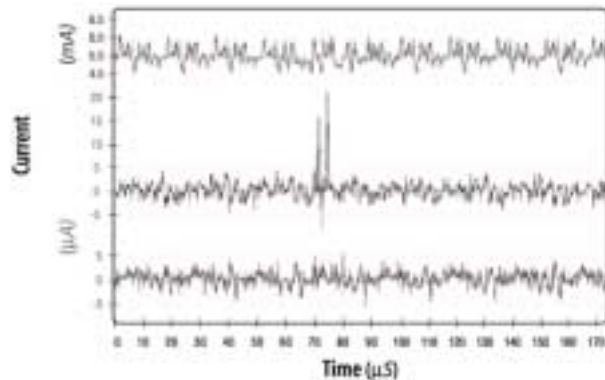


Jason Smith

Recently the Smart Card industry has enjoyed explosive growth with annual Smart Card shipments reaching more than 1.5 billion globally (source: Frost & Sullivan). Today's Smart Cards boast a compelling list of value-add applications for areas such as payment systems, mobile phones, secure ID, public transit, and pay TV systems. In addition, costs for deploying customised Smart Cards have dropped significantly in recent years. When combining these factors it is no wonder many industries have enthusiastically embraced Smart Card technology.

But what if all Smart Cards were actually discovered to be insecure? Even worse, what if attackers could unobtrusively defeat a Smart Card's security using inexpensive equipment? Would governments, businesses, and consumers continue to rely on them for critical transactions? This is the threat the industry has faced since the late 90s when scientists at Cryptography Research Inc., discovered a vulnerability called Differential Power Analysis (DPA). Founded in the early 1990's by internationally renowned cryptographer Paul Kocher, Cryptography Research, Inc (CRI) is a combination technology licensing and security services firm with its main headquarters in San Francisco, USA. CRI's business model seeks to anticipate fraud and piracy trends and then develop technologies that help solve those problems. The company has a broad and strong portfolio of patents covering DPA countermeasures and other vulnerabilities, and is committed to helping companies produce secure Smart Cards and other tamper resistant devices.

By discovering this DPA vulnerability early meant that CRI could focus on developing countermeasures before any other company. Differential Power Analysis actually involves measuring the electrical power consumption of Smart Cards and other cryptographic devices. DPA is an attack that involves eavesdropping on the fluctuating electrical power consumption of a target device and using advanced statistical methods to derive cryptographic keys and other secret information.



DPA Trace
(The middle trace is successful DPA attack)

Although DPA attacks typically require technical skill to implement, they are repeatable and inexpensive, meaning that a device can subsequently be broken into within a few minutes. DPA attacks are a significant concern for Smart Cards because the attacks are unfortunately very powerful and easy to replicate. In any applications a DPA attack has a significant business impact, as fraudulent misuse of mobile phones, transportation services and pay TV signals result in lost provider revenue. In applications such as banking and digital identity the consequences can be catastrophic. Copying or cloning of banking cards enables fraudulent credit and debit card transactions to be conducted; criminals possessing keys for prepaid cards or e-purse applications can create electronic money. But perhaps the most worrying scenarios involve the cloning or forgery of Smart Cards used for government-issued ID credentials.

To overcome this CRI developed the technology to help cryptographic device manufacturers, systems integrators, and Smart Card issuers develop secure, DPA-resistant implementations for use in financial, pay television, mass transit, secure identification and wireless industries. CRI's DPA-related patents provide the basis for implementing effective DPA countermeasures in Smart Cards and other devices, and a license is required to make, use or sell DPA-resistant products. The countermeasures include a broad suite of hardware, software, and protocol techniques required to thwart DPA attacks, such as methods for reducing the amount of information that leaks from devices, adding noise to power consumption measurements, maintaining security on platforms that leak information, and numerous other techniques.





Paul Kocher

"We are proud to have our work recognised by the United State Patent and Trademark Office," said Paul Kocher, President and Chief Scientist of Cryptography Research. "As a research-focused company, we rely on patents to help us commercialise our results and make our ongoing R&D efforts possible." While the Smart Card market is global with booming growth in some geographic regions the majority of the industry have their headquarters and design centres based in Europe. However CRI currently has limited representation in Europe and their core set of patents only cover the US, but this is set to change as CRI hope to establish DPA-related patents for the European market within the year.

Smart Card News recently spoke to Paul Kocher, President and Chief Scientist and Kit Rodgers, Vice President of Business Development & Licensing. Kit Rogers summed up CRI's current position for SCN. "We have been in detailed discussions over the last year with all the major Smart Card and silicon manufacturers" The general feeling from the discussion with CRI was that it was clear that a silicon manufacturer has/or is about to sign a deal with CRI. However they were not at liberty to discuss these matters further but Paul Kocher did say "This is an awkward time as we are in the heated finalisation stages of a couple of big arrangements, so any comments at the moment would be too sensitive". This was followed by Kit Rogers who then said "hopefully it will be a good year for us".

Kit went on to say "We are in the early adoptive phase. We have begun to get patent coverage in Europe and we are now bringing greater knowledge to the Smart Card market about this technology vulnerability in a professional and discreet way. We are in a position where we can offer the technology at a deeply discounted rate and various structures that work for companies. Some companies prefer a fee per card type of approach and some prefer a flat annual fee regardless of devices. So in this way we are willing to explore these structures and we are close to finalising a couple of agreements".



Kit Rogers

Paul then said "The way it will play out is that the Smart Card manufacturers are going to want to take an early license to help lock in their prices. But also the Smart Card manufacturers are going to lean heavily on silicon manufacturers to take the license." Kit added "the problem is companies are reluctant to be first, everyone wants to be second". Due to this the company is offering early adopter terms to provide competitive advantages to early licensees, including superior pricing, greater flexibility in licensing options, and forgiveness for infringement of CRI's countermeasure patents in already-deployed products with DPA countermeasures. Today, most Smart Card standards mandate DPA resistance as an important component of the system's overall security requirements. Smart Card customers need to know that the products they are purchasing are secure against DPA attacks. Currently all companies advertise that they have DPA countermeasures but there are a wide range of effective and non-effective countermeasures with contactless adding some additional complexities. While technologists in the security and Smart Card communities have been actively researching DPA over the last few years, their developments has actually been built upon CRI's foundational patent portfolio.



So it is only vendors which have successfully implemented and tested CRI licensed countermeasures in their devices who can officially display the 'DPA Lock' logo on their products and marketing literature. This new DPA Countermeasure Licensing Program was launched in November 2005 at CARTES and was designed to assist vendors in ensuring that countermeasures in their products are effectively implemented.

Going forward, the Smart Card industry will continue to evolve, building upon its outstanding growth in recent years. Smart Cards are widely viewed as one of the most secure and cost-effective technologies available in the consumer market benefiting commerce, governments and consumers. However no device can guarantee absolute security and Smart Cards are no exception so effective DPA countermeasures have become a vital component in protecting the Smart Card, and their future success. "We want the Smart Card Industry to continue to succeed wildly because if it succeeds, we succeed." concluded Paul Kocher. David Everett, CEO of Microexpert Ltd and Technical Advisor to Smart Card News said "Patents and Smart Cards are numerous and can be measured in their thousands over the years. The only one that has really stuck is Micheal Ugon's (Bull CP8 at the time) SPOM patents. Have CRI found its successor? The industry no doubt will be desperate to avoid a price per chip in what is already a commodity market."

