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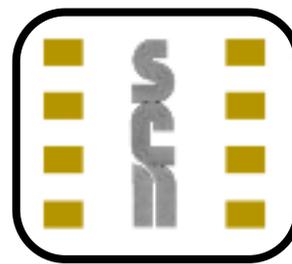
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Dear Subscribers

This month you may have noticed a change in our title to 'Smart Card and Identity News'. This is the recognition that what you readers most want to hear about is the business application of Smart Cards and in our view that is Identity Management.

We have continuously maintained that the role of the Smart Card in a business system is as the identity instrument. It is the means by which users can be authenticated to a system and authorise their actions.

This doesn't mean that the technology of Smart Cards can be ignored in fact it is our industry view that many developers of identity management systems are not using the optimum card in their solution and are often making heavy weather of the middleware that drives these cards. I preferred the word plumbing but apparently its all the same sort of thing.

Over the coming months we are going to look at Identity management systems, everywhere from Citizen Cards to National Identity Cards including driving licences which are already used as an identity token in many countries. Keeping close to our history we are also going to keep you briefed on the underlying technology. What are CSPs and PKCS#11, please don't ask me but I know a man that does even if he hasn't got a yellow van!

Even I know that public key cryptography is a part of this world, the names may keep changing but the core elements of digital signatures and certificates are something we all need to understand as well as card management systems, who is doing what and how are they doing it, its all part of the Smart Card and identity world.

Keep me posted on your views,

Patsy

Please Note

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Smart Card & Identity News



UK Banks Roll Out Contactless Cards

The UK banking industry has confirmed plans for the national introduction of contactless technology on UK credit and debit cards. APACS, the UK's payments association, has revealed that contactless technology will be trialled in London in September 2007, ahead of a national rollout in the new year led by Visa Europe and MasterCard. APACS says the contactless technology, to be used in conjunction with participating businesses and vending machines, will be a fast, effective, easy to use alternative to cash, building on the same highly secure technology of chip and PIN cards. This Contactless technology will be available for transactions of £10 or under, where customers will simply hold their upgraded card up to a secure reader to make their payment at participating retailers, outlets and vending machines.

The rollout will start with a London launch focused on seven postcodes between The City and Canary Wharf. The initial launch will involve a mix of retailers and selected cardholders who regularly use their cards in these postcodes either to buy goods or take cash out of cash machines. The card schemes, Visa Europe and MasterCard, who are leading the rollout, will provide more detail over the next few months. After the initial launch the upgrade will expand across London, followed by a gradual national upgrade in 2008. This will involve card issuers replacing debit and credit cards to their own timescales, and those card-accepting businesses who decide to offer contactless transactions increasingly upgrading.

The new contactless system is designed to make it more cost effective for small value purchases to be made on plastic cards and transactions will become faster as the consumer does not need to enter their PIN for purchases. However although making a contactless payment does not routinely require a PIN to be entered, the chip on your card will track activity and as a security feature will request a PIN from time to time. Due to this APACs are emphatic that the new payment system is secure. Mastercard and Visa say buying a sandwich, paying for a pint, or even settling a taxi fare will be possible and the time taken to use cards slashed as customers use them in a similar 'tap-and-go' fashion to the Oyster cards used to pay fares on London's public transport system. This development is expected to see a further move away from cash by British shoppers who have already embraced card payments and a move closer to becoming a "cashless society". Experts say it is another move towards a world where plastic cards are "king", turning cash into a relic from the past.

Major banks and credit card companies including Bank of Scotland, Barclaycard, Halifax, HSBC, Lloyds TSB, Citi, Euroconex and Royal Bank of Scotland will take part in the initial launch. Industry estimates suggest that over 5 million contactless cards will be issued by the end of 2008, and that they will be accepted by at least 100,000 merchants. There are currently in excess of 20 billion payments under £10 in the UK with a value of approximately £200 billion per year. Contactless technology will increase the likelihood of a card being used for small value transactions and increase the places where they are accepted. This new contactless technology being introduced in the UK has been developed by the card schemes to a global standard, which means that UK customers will be able to use their contactless-enabled debit or credit card in any other country that has adopted this technology. Contactless technology has already been successfully introduced in the USA, and many countries across the world.

"Today we are giving Londoners a completely new way to pay for low-value items with the launch of contactless payments. Our experience testing MasterCard and Maestro PayPass among staff at Royal Bank of Scotland's offices in Edinburgh and London has shown us that consumers love the convenience, simplicity and security of being able to 'tap and go' when paying for everyday things such as newspapers, sandwiches and drinks." said John Bushby General Manager, UK, Republic of Ireland, Nordic and Baltic Countries, MasterCard Europe. "We are confident that consumers in the United Kingdom will be quick to adopt contactless payments as they are faster and more convenient than cash increasing both the number of cards in issue and, as retailers benefit too, places where they can be used."

Visa UK Managing Director Jose San Juan said "I am pleased that the industry has united on standards for cards and terminals that will provide a highly convenient and quick way to pay for low value items. By the autumn the first UK cardholders will be buying a coffee or a sandwich in a split second, and retailers will enjoy quicker transactions, the security of the payment guarantee an end to the high costs associated with handling cash."



Smart Cards

Contactless Cards Will Reach 109m

With 582 million banking and payment Smart Cards in circulation worldwide, it is a wonder that the technologically savvy US lags far behind much of the developed world. Yet according to Smart Cards in the US: Contactless Payment Cards, a new Packaged Facts report, only 27 million contactless payment cards were in circulation in the United States in 2006. This scenario will quickly change, however, as the report estimates that total contactless credit and debit cards in US circulation will reach 109 million by 2011. With the fast-paced American lifestyle continuing to put pressure on retailers to serve customers more efficiently, and card brands such as MasterCard and Visa pushing for bigger slices of the small-ticket payments pie traditionally reserved for cash, the time is finally right for large-scale penetration of Smart Cards in the payments market.

Total purchase volume in the US via cards with a contactless feature neared an estimated \$15 billion in 2006, registering a 700% CAGR from 2004 to 2006. That figure should increase significantly as the number of contactless transactions—nearly 777 million in 2006—are expected to reach 2.2 billion by 2011. "Card issuers are rapidly expanding their market presence in contactless payments and the percentage of retailers having contactless payment systems is expected to nearly triple within two years," notes Tatjana Meerman, the Managing Editor of Packaged Facts. "Increasing consumer awareness of the technological, safety, and convenience factors inherent in smart cards will only serve to make penetrating the consumer market much easier in the coming years."

Contactless Access for Reebok Clubs

Reebok Sports Club 'La Finca' in Madrid, Spain has opted for Legic technology at its sports facilities. At the moment numerous applications are in use at Reebok Sports Club 'La Finca', mostly concerning access control. The club has over 6000 contactless credentials in use. These allow members and employees to access the facilities easily and secured. The main forms of credential are a fabric and plastic bracelet, a watch, and a card. There are four access turnstiles at the club each containing two readers (one for entry and one for exit). But the services provided by the all-in-one-card go well beyond mere access control.

Members can use their contactless Smart Card to reserve the locker they want, and they can purchase minutes in the sun cabin by using their Smart Card. The club is about to install a new Legic based application on the all-in-one-card so that members do not need to worry about having small change and notes on them if they want to purchase food and drink in the club's cafeteria, because they will be able to pay for it using their card or bracelet with an integrated chip.

Oyster and Barclaycard Complete Trial

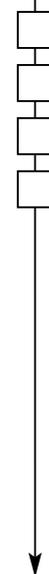
Transport for London (TfL) and TranSys, the consortium which delivers the Oyster Smart Card on behalf of TfL, has successfully completed the technical trial of its new combined Oyster and Barclaycard. In December 2006 TranSys and Barclaycard revealed plans to combine Oyster and Barclaycard on one piece of plastic. The card also includes Visa contactless technology. The Barclaycard partnership is TranSys' first agreement to licence Oyster to selected third parties, in order to improve the access and convenience that Oyster offers to travellers in London. The trial is aimed towards passengers being able to make quick and contactless payments and travel around the capital using one card. Oyster has been a huge success with more than 10 million cards issued, making passenger journeys cheaper, easier and quicker.

Gemalto is Top e-Passport Supplier

Gemalto has been positioned as the number 1 supplier in the Annual Report E-passports 2006-2007 of Keesing Journal of Documents & Identity. While the estimate at the end of last year predicted 40 countries (including 27 VWP nations) would be deploying electronic passport programs, that number has now almost doubled to 70 nations. The report also indicates that last year's estimate of the volume of e-passports to be issued by the VWP nations would be around 30 millions on an annual basis, while overall annual volume in a couple of year's time is estimated at around 100 million. The Keesing report states that Gemalto supplies at least 30% of VWP nations and also the US, and is the leading vendor in the market.

Nampost Get Smart Card System

Close to 170000 Namibian Post (Nampost) clients in Africa have converted to the Smart Card system introduced recently with a view to improving customer care, service efficiency and reducing transaction costs.





Nampost announced that its clients, whose membership stands at over 200,000, should have converted from the old Savings Book to a Smart Card 16 months ago.

EDS Wins \$66m HSPD-12 ID Project

EDS has announced it has been selected by the US General Services Administration to provide identity management services to federal government civilian agencies. These services will allow agencies to comply with Homeland Security Presidential Directive 12 (HSPD-12). The single award GSA Federal Supply Schedule task order is worth \$66 million and will run through September 2011 if all options are exercised. HSPD-12 requires federal agencies to use a standard process to establish and manage an individual's identity and then issue that individual with an interoperable Smart Card that can be used for both physical and logical access to federal government facilities and information systems. This policy is intended to enhance security, increase efficiency, reduce identity fraud and protect personal privacy. Under this contract, the EDS team will support GSA in issuing identity credentials to approximately 420,000 employees at 42 federal civilian agencies.

Oberthur Gets EAL4+ Certification

Oberthur Card Systems has received the EAL4+ certification¹ for its native electronic passport, ID-One ePass. With this mandatory certification, European Union members now have a commercial source of electronic passports, which meet Basic Access Control requirements.

Integrated Systems for Cairo's Metro

Thales has been chosen to supply a contactless fare collection system as well as an integrated supervision and communication system for the new line 3 of Cairo's metro network. The first section of the new line is due to become operational in 2010. After the rollout is completed, the new line will transport five million passengers per day by 2020. Thales will supply a ticketing system based on contactless technology for the new line.

Gemalto Supports Barclays Banks

Gemalto has announced it is providing Barclays Bank plc with a tailor-made product supporting Barclays project to offer stronger authentication for online banking customers.

The Gemalto solution includes the authentication devices and a full service encompassing design of the readers, fulfillment and distribution to Barclays customers. In addition, Gemalto produced a unique looking device, customised with the bank's visual corporate identity. The contract calls for the delivery of over half a million units by the end of this year and includes options for additional deliveries into 2008.

MediSmart Medical Card for Kenya

On Track Innovations Ltd, (OTT) has announced that Smart Applications International Ltd. (SMART), a Kenyan company committed to delivering technology driven secure healthcare solutions, has placed an order for 100,000 cards, which are to be issued by multiple medical scheme managers. SMART has commissioned close to 200 SMART device points of service at hospitals, pharmacies and general practitioner sites across Kenya, enabling patient authentication, verification of benefits and claims processing in a seamless process. Contactless Smart Cards have already been issued by a number of medical scheme managers as part of the program.

SuperCom Becomes Vuance

SuperCom Ltd, has announced that at an extraordinary general meeting that the company plans to change its name to Vuance Ltd. The Company is shifting its strategic focus from its legacy e-ID business to the potentially more lucrative business of real time location and credentialing of people, assets and objects.

First Data Takes Stake in ViVOtech

First Data Corp has announced they have made a strategic investment in ViVOtech Inc. Denver-based First Data did not disclose details of the agreement with Santa Clara-based ViVOtech, but said it would be a lead investor in the company's third round of financing. First Data also said it will use ViVOtech's collection of emerging technologies that include Near Field Communication (NFC) terminals and mobile commerce enablement.

Turkish Bank Shifts To VeriFone

VeriFone Holdings has been awarded a contract for 20,000 payment systems and PINpads by Türkiye Finans Katılım Bankasi, A.S., replacing a long-term incumbent competitor. Türkiye Finans is the leader and pioneer of Turkey's interest-free banking sector, which provides financial products and services.





VeriFone will supply approximately 20,000 payment systems, including the NURIT 8400 and NURIT 8210 countertop models, the NURIT 8010 wireless model, and the PINpad 1000SE.

Growth in UK Access Control Market

In 2006, the UK access-control market was worth £290m at current end-user prices, including the cost of installation, with growth of 7.4% in current value terms from 2005, according to research report by Reportlinker.com. The access-control market is concerned with physical access control. The main factors driving the access-control market are investment in new buildings and refurbishment of existing premises, and the need to protect vulnerable locations against the threat of terrorism. In 2006, construction output in the private commercial sector showed growth, even with its previously high level of output. Annual housing construction output increased by a total of nearly 37% in 4 years between 2002 and 2006.

The rising popularity of proximity systems, since 2000, has been encouraged by falling prices of proximity hardware. In 2005 and 2006, the continued success of proximity technology was helped by its accessibility for some disabled people. However, the sector appears to have reached its peak, and there is growing competition from hands-free systems and contactless Smart Cards. The sector for Smart Card systems is also showing growth, while biometrics remains a relatively small sector, with potential for substantial growth in the future. The trend towards integration of security systems with building-management and fire-protection systems continues.

Access-control companies are offering products based on open architecture, which can be controlled over local-area networks (LANs), or over the Internet, and which can be integrated with systems from other manufacturers. The possibility of transmitting security data over the Internet has, in turn, led to a demand for enhanced security in the form of data encryption. The report also forecasts that the access-control market will grow in excess of 7% per year, in current price terms, between 2007 and 2011. Growth is likely to be steepest for Smart Card technology, although proximity and hands-free technologies will continue to take a large proportion of the market. Looking further into the future, there is huge potential for the adoption of biometric technology and for the greater use of access control by the residential sector.

ID Data Acquire CredEcard

ID Data Group Plc has agreed to acquire the business and assets of CredEcard plc, the pre paid card service provider, for a total consideration of up to £725,000 in cash and shares subject to achieving specified performance objectives over the next two years.

Oberthur Receive Best Vendor Award

Oberthur Card Systems has received from Santander México the 2006 Best Vendor Award for its contribution in service and quality for manufacturing over a million Smart Cards within its EMV migration process. Oberthur Card Systems has provided Santander México with card solutions since 2004, participating in all of the bank's Smart Card projects within its credit card portfolio.

ERG Plan to Outsource to India

ERG, an Australian Smart Card developer, has announced their decision to outsource their software development to India. This move potentially could be a major blow to the local Australian industry. Currently ERG's software is developed in Perth but staff have been informed by ERG management recently that they now plan to outsource this work to India's Tata Consultancy Services (TCS). ERG employs around 900 staff in 11 countries, but they have been informed that their jobs are safe. ERG holds several high-profile contracts around the world, including Sydney's public transport Smart Card project.

Biometrics

Biometric ID Cards for Portugal

Precise Biometrics has won a procurement contract for national ID cards in Portugal. The "Citizen Card" will replace several ID documents and will become the official ID document for all Portuguese citizens. The card will include functions for secure interaction with government administrations, civil identification, tax payment, social security, health, and in the future, elections. A first pilot phase has started in the Azores region. After the initial rollout more than 2 million cards will be given yearly. Precise Biometrics will supply 14 million licenses over a seven-year contract period. The project also includes delivery of the Precise 250 MC fingerprint readers.





US-VISIT to Pilot Biometric Exit

The US Department of Homeland Security (DHS) intends to integrate biometric exit procedures into the existing international visitor departure process. The change will make the process of departing the United States more convenient and accessible for international visitors. DHS will take a number of steps in the next year toward full implementation of biometric exit procedures at airports.

The first step will be the completion of the three-year pilot program that required international visitors to biometrically check out at select airports and seaports. Effective May 6, 2007, international visitors will no longer be required to use the US-VISIT exit kiosks when they leave the United States. International visitors who received a US Customs and Border Protection (CBP) Form I-94, Arrival-Departure Record, upon arrival must still return the form to an airline or ship representative when departing the United States.

Biometric Passports For Indians

Shri E.Ahmed, Indian Minister of State in the Ministry of External Affairs, has announced that the Indian Government has decided to introduce e-passports. At first these passports will be issued for diplomats and officials as a pilot project by the end of 2007. Based on the experience gained from this pilot project, it is proposed to start issuance of e-passports in the ordinary category by the end of 2008. A Technical Committee has been constituted to finalise the technical specifications of the e-passports and this matter is under examination.

Fingerprints for Korean e-Passports

The South Korean government has decided to include fingerprints in new electronic passports, a key requirement for entry into the US visa waiver program, along with images of passport holders' faces, a Foreign Ministry official said. "Including fingerprints will significantly help" confirm the holder's identity, Kim Bong-hyun, director of the Overseas Korean and Consular Affairs Bureau at the Foreign Ministry, told reporters. "The government plans to start issuing electronic passports in December on a trial run," the official said, adding the official issuing of the new passports with personal biometric data will begin early next year. South Korea has been seeking to benefit from the US program that would allow South Korean travellers to make short-term visits to the United States without a visa.

New Products/Services

Visa Launches Visa payWave

Visa Europe plans to launch Visa payWave contactless card payments in the UK capital starting in autumn 2007 in partnership with its member banks including HSBC, HBOS, Lloyds TSB, and Barclays. With Visa payWave a payment card only needs to be waved in front of terminals with no need for it to be physically swiped or inserted into point-of-sale device. September will see the commercial roll out of the new Barclaycard Visa credit card, developed with Transport for London and Transys and featuring contactless payWave technology combined on the same card with the Oyster transit function. Visa payWave cards will also be issued by other Visa banks.

Visa's next step will be to introduce contactless payWave facilities at retailers around several of London's busiest transport hubs: Canary Wharf, Liverpool Street, Moorgate, Fenchurch Street, London Bridge, Charing Cross and Waterloo Stations. Further Visa payWave launches are expected throughout Europe, and the next one has just been announced in Turkey. Denizbank's Sea&Miles cards will feature payWave that can be used on Istanbul Seabuses and a number of retailers. Other Visa payWave plans are already well developed in France, Spain and Switzerland.

Samsung Chips Get Certified

Samsung Electronics Co., Ltd has announced that two chips designed for combination (contact and non-contact) Smart Cards, in 72KB and 144KB capacities with embedded EEPROM, have been given Common Criteria (CC) certification and an Evaluation Assurance Level (EAL) 4+ rating. Samsung now satisfies the product standards used in such Smart Card applications as electronic passports and electronic identification, which require an extremely high level of data security.

First Watch Equipped with PayPass

MasterCard Worldwide has launched Europe's first watch equipped with MasterCard PayPass contactless technology, in partnership with Garanti Bank in Turkey. This contemporary form factor for PayPass - which heralds a new era for credit payments in Europe - will make paying for small-value items quicker and more convenient than fumbling for coins.



Consumers can simply tap their new watches on the PayPass reader to make the equivalent of a credit card purchase at more than 600 merchant locations in Turkey, including major names such as Burger King, Starbucks, Cinebonus, TAV (Istanbul Atatürk Airport Otopark), and the Istanbul Ferry Corporation. The PayPass watch allows users to make purchases under 15 euros, with no signature or PIN required. Larger purchases will still require a signature.

Go Maui Card is Launched

Smart Destinations has announced an expanded presence in the Hawaii travel market with the launch of the Go Maui Card. Following the success of the Go Oahu Card, the Go Maui Card is a premium attraction travel pass offering fully pre-paid access to 21 attractions and activities with significant discounts on shopping, dining, and more. Travellers can purchase the Go Maui Card in 2, 3, 5 or 7 calendar day increments. Once activated, the card grants unlimited access to the included attractions and activities for the number of days purchased. Visitors can use their days any time over a two week period.

MasterCard Certifies OTI/ST Chip

STMicroelectronics (ST) and On Track Innovations Ltd, (OTI) have announced that their secure contactless microcontroller solution has received full certification from MasterCard. The certification includes level 1, level 2 and CAST (Chip Assessment Security Testing) certification from MasterCard for use as a dual application card, supporting both MasterCard PayPass and Visa PayWave applications making it the first fully certified solution to support both MasterCard and Visa contactless applications on a single chip.

New Testing Suite for e-Passports

GALITT has produced a new KaNest-ICC Test Suite dedicated to test electronic passports. The KaNest-ICC e-Passport Test Suite is implementing the official International Civil Aviation Organization (ICAO) Tests For Application Protocol and Logical Data Structure, Version: 1.0 of Dec 18, 2006. The Test Suite simulates a passport reader device and thoroughly covers all Test Cases defined by ICAO. It enables to test the compliance of an e-Passport with ICAO specifications, through any PC/SC contactless card reader. An optional optical reader can also be interfaced for easing the MRZ reading phase.

Smart ID Card Approved for US Govt

Gemalto has announced it is the first company with a smart identity credential for US federal employees and contractors that works with both existing HID physical access control systems as well the new ones being planned to comply with the latest federal requirements. Gemalto's credential makes it easier for federal agencies and departments to move to the new Personal Identity Verification (PIV) cards required by a Presidential directive.

Edinburgh Child Pass is Launched

Edinburgh Pass has launched the Edinburgh Child Pass; a new initiative to encourage children and their families to visit Edinburgh and make the most of their stay. ACT destination management technology provides and powers the Edinburgh Pass, enabling visitors to load a 1,2 or 3-day pass onto the Smart Card.

Financial

Gemalto's First Quarter Figures

Gemalto has announced its revenue for the quarter ended March 31, 2007. Their total revenue for the first quarter of 2007 was down by 7% at constant exchange rates (and by 11% at historical exchange rates). The decrease reflects mainly lower revenue in Mobile Communication and Public Telephony. Secure Transactions posted solid growth on the back of higher microprocessor card volumes delivered for payment and pay-TV applications. In their mobile communication segment Gemalto's revenue profile was in line with the usual pattern for a first quarter. SIM card delivery volumes continued to increase, though at a lower pace than in previous quarters, and were up by 9% compared with the first quarter of 2006.

In their Secure Transactions segment their revenue growth reflects strong activity in pay-TV and continued development in microprocessor payment solutions, including cards and associated services. Deliveries of microprocessor cards were up by 16%, driven by on-going EMV deployment, primarily in Europe and certain Latin America countries. In their ID and Security segment Gemalto's revenue from Identity solutions grew 22% driven by e-passports, as most projects in EMEA are now operational, as well as Government ID and healthcare.



Oberthur's First Quarter Figures

Oberthur Card Systems has reported first quarter 2007 revenue of 133.8 million euros, 10% above Q1 2006 record. During the first three months of the year, Oberthur Card Systems delivered 80.4 million microprocessor cards, a 44.5% increase compared to Q1 2006. The SIM market demand continued to show robust growth with 44.6 million cards delivered, a 32% increase in volume, on a year-on-year basis. This is the second best performance ever for the company, after Q4 2006. Oberthur Card Systems registered a 48.5% growth in value in the payment Smart Card segment year-on-year, reaching 37.6 million euros, due to a 70% growth in volume compared to Q12006.

This is the company's best performance ever with 27.5 million units delivered. The UK, French, Italian and Asian markets contributed to this momentum. Revenue for this product line for the quarter was 14.8 million euros, up 27.9% compared to the previous year. Volumes for the Identity and Security segment reached 8.3 million units, a 47% growth pushed by strong demand in the Pay TV sector, a Banking ID card program for the Ivory Coast, US administration card deliveries and Moroccan ID card shipments.

SCM First Quarter Results

SCM Microsystems, Inc has announced the results for their first quarter ended March 31, 2007. the figures show a year over year revenue growth of 56% in SCM's PC Security business, based on strong sales of Smart Card readers for HSPD-12 and contactless applications. Their Gross margin was above 40% for the second quarter in a row and their income from continuing operations was \$134,000. Revenues from continuing operations in the first quarter of 2007 were \$8.5 million, up 14% from revenues of \$7.4 million in the first quarter of 2006.

By product segment, first quarter 2007 revenues included \$7.1 million from sales of Smart Card readers and other products for secure network and physical access, compared with sales of \$4.6 million in the first quarter of 2006; and \$1.4 million from sales of OEM digital media reader technology, compared with sales of \$2.9 million in the year ago quarter. Gross margin in the first quarter of 2007 was 44%, compared with gross margin of 36% in the first quarter of 2006.

ActivIdentity's 2nd Quarter Figures

ActivIdentity revenues for the quarter ended March 31, 2007 were \$14.9 million, compared to \$11.1 million for the quarter ended March 31, 2006, representing annual revenue growth of 34%. Revenues for the quarter ended December 31, 2006 were \$14.6 million. Net loss for the quarter ended March 31, 2007, decreased to \$3.4 million compared to a net loss of \$8.3 million for the three months ended March 31, 2006.

Ingenico's First Quarter Figures

Ingenico Group posted first quarter 2007 consolidated revenue (unaudited) of 118.9 million euros, down slightly on last year's 120 million euros for the same period.

Vasco's First Quarter Figures

Vasco Data Security International, Inc. has reported revenues for the first quarter of 2007 increased 93% to \$26.4 million from \$13.7 million in the first quarter of 2006. Net income for the first quarter 2007 increased 324% to \$5.0 million from \$1.2 million in the first quarter of 2006. Gross profit was \$17.5 million or 66% of revenue for the first quarter of 2007 and compares to gross profit of \$9.5 million or 69% of revenue in the first quarter of 2006.

On The Move

New Director at Inside Contactless

Inside Contactless has announced that it has appointed Mr. Rajesh Sharma to its North America Operations, to help address the growing demand for its contactless payment technology. Rajesh Sharma joins INSIDE as Technical Services Director for the company's Professional Services organisation.

CRI Expands Digital Content Team

Cryptography Research, Inc. (CRI) has announced the addition of Peter Cossack and John-Mark Gurney to its digital content security development and authoring team. Cossack and Gurney will help CRI continue to develop and implement Self-Protecting Digital Content (SPDC), the company's solution for securing digital content.



NFC in the Real World - Part 1



By Innovision Research & Technology Plc

Now that international standards have been agreed and published for Near Field Communication (NFC), the market is set for widespread adoption of the technology in a whole range of applications. Innovision sees three key areas of application for NFC: service initiation, where the technology is used to 'unlock' another service (such as opening another communication link for data transfer); peer-to-peer, where NFC is used to enable communication between two devices; and payment & ticketing, where NFC will build on the emerging smart ticketing and electronic payment infrastructures. The initial mass-market applications of NFC are likely to build on existing communications infrastructure and user behaviour, where the user benefits are most compelling, the business case is strongest, and the commercial risks are lowest. This implies a need for low-cost NFC integrated circuits (ICs) that can be applied to a broad range of uses cost-effectively in a way that is compatible with the broadest range of devices and reader infrastructure.

Section 1: Technology and standards in line - The technology that NFC is based on - Radio Frequency Identification RFID - is nothing new. However, it is only recently that the technology and standards have reached a point where a whole host of real-world applications are now not only technically feasible but also commercially viable. Now the opportunity is here to develop and roll out profitable applications for NFC that enhance users' everyday lives, based on technology that is cost-effective enough for the mass market and that meets internationally-agreed standards. What is it about NFC that will open up these new applications and what are the latest industry developments that are making this possible?

❑ **An application enabler** - The real beauty of NFC lies in its role as an enabling technology that opens up various forms of communication and transaction in a very comfortable, user-friendly way. In the same way that people use a straightforward switch to light a room, or turn a handle to open a door, NFC allows people to use the simple act of touching or placing their device close to something to initiate the desired service. This makes using any form of electronic 'service' and other interactions more accessible to more people, whatever their age or ability. In simple terms, NFC does this by performing a 'handshake' between two devices that are brought close together (typically within a few centimetres). While the initiation of this handshake is always under user control, NFC removes the need for the user to perform complex manual configurations. Once the connection is established - within milliseconds - information can be exchanged between the two devices using either NFC directly or via another wireless technology like WiFi, Bluetooth, UWB or ZigBee. One example of the simplicity brought by NFC is when two people wish to exchange electronic business cards using a Bluetooth wireless connection between their mobile phones. With NFC, setting up the connection is simply a matter of touching their phones together - there's no need for the users to get their phones to scan the local area to locate and then identify the other's phone, no need to enter passcodes or other settings, and no risk that they establish a connection with the wrong device. These capabilities will not just be available to the 'lucky few' either: according to ABI Research, half of all mobile handsets will support NFC by 2010.

❑ **Commercial drivers** - While NFC, like so many other technologies, has been the victim of some degree of over-hyping, it is clear that it offers real commercial benefits for service providers and device manufacturers. First and foremost, NFC makes new revenue-generating interactive and content-rich services easier and more convenient to use. NFC-enabled devices will simplify the process of becoming aware of, purchasing, storing, playing and sharing rich media content, for example. Convenience is a strong differentiator, and consumers will tend to adopt the most convenient way to access and pay for goods and services. In areas such as ticketing particularly, NFC will help reduce the cost of issuing tickets and of maintaining the ticketing infrastructure - as has already been proved in mass transport and airline ticketing. Furthermore, NFC is based on existing contactless infrastructure that is already in daily use by millions of people around the world. At a more strategic level, NFC enables product and service providers to establish a new communication channel with their customers. When consumers elect to ask for further information or participate in a promotion by touching an NFC tag, they could be asked if they would like to participate in other information or promotional programmes.





❑ **How NFC works** - NFC is a short-range, standards-based wireless connectivity technology, based on RFID technology that uses magnetic field induction to enable communication between electronic devices in close proximity. It provides a seamless medium for the identification protocols that validate secure data transfer. This enables users to perform intuitive, safe, contactless transactions, access digital content and connect electronic devices simply by touching or bringing devices into close proximity. NFC operates in the standard unlicensed 13.56MHz frequency band over a distance of up to around 20 centimetres. Currently it offers data transfer rates of 106kbit/s, 212kbit/s and 424kbit/s, and higher rates are expected in the future. For two devices to communicate using NFC, one device must have an NFC reader/writer and one must have an NFC tag. The tag is essentially an integrated circuit containing data, connected to an antenna, that can be read and written by the reader. There are two modes of operation covered by the NFC protocol: active and passive. In active mode, both devices generate their own radio field to transmit data. In passive mode, only one device generates a radio field, while the other uses load modulation to transfer data. The NFC protocol specified that the initiating device is responsible for generating the radio field in this case. The passive mode of communication is very important for battery-powered devices like mobile phones and PDAs that need to prioritise energy use. The NFC protocol enables such devices to be used in power-saving mode, so that energy can be conserved for other operations.

❑ **International standards and co-operation** - NFC is supported by the leading mobile device, infrastructure and technology manufacturers, and by all major payment providers. In 2004, leading mobile communications, semiconductor and consumer electronics companies formed the non-profit industry association, the NFC Forum, to advance the use of NFC technology through standard specifications that ensure interoperability. The Forum now has over 80 member organisations worldwide (as at the end of June 2006). The underlying layers of NFC technology are ISO, ECMA and ETSI standards. Because NFC is compliant with the main international standard for Smart Card interoperability, ISO 14443, it is compatible with the millions of contactless Smart Cards and readers already in use worldwide. In June 2006, the NFC Forum introduced standardized technology architecture, initial specifications and tag formats for NFC-compliant devices. These include Data Exchange Format (NDEF), and three initial Record Type Definition (RTD) specifications for smart poster, text and Internet resource reading applications.

In addition, the NFC Forum announced the initial set of four tag formats that all NFC Forum-compliant devices must support. These are based on ISO 14443 Types A and B (the international standards for contactless Smart Cards) and FeliCa (derived from the ISO 18092, passive communication mode, standard). Tags compatible with these mandatory formats are available initially from Innovision, Philips, Sony and other vendors, and more than one billion tags are already deployed globally. The NFC Forum chose the initial tag formats to cater for the broadest possible range of applications and device capabilities. Types 1 and 2, based on ISO 14443 A, have small memory capacity (1 and 2 kilobytes), which means they are low cost and suitable for single-use applications. They operate at relatively low speed (106KB per second), and are driven by specific command sets. Type 3 is based on FeliCa, and has larger memory (up to 1MB) and higher transfer speed (212KB per second). This means it is suitable for more complex applications, but also more costly. Type 4 is based on ISO 14443 and specifies memory of up to 64KB, with transfer speeds of between 106 and 424KB per second - making it suitable for multiple applications.

Section 2: Touching people's lives in new ways - NFC makes people's lives easier and more convenient by building on existing systems and human behaviour. It will make accessing new media and content services more intuitive, make it easier to pay for things, easier to discover, synchronize and share information, and easier to use transport and other public services. A study by ABI Research says that by 2007, higher-volume NFC deployments will be common - initially in mobile handsets, then in other kinds of consumer electronic devices, including PCs, set-top boxes, cameras and printers. Other devices and equipment likely to become NFC-enabled in the near future include: cash registers and other point-of-sale equipment; cash machines; posters, street signs, bus stops and points of interest; vending machines and parking meters; turnstiles, entry systems and door openers; and product packaging. An important point to make here is that NFC is not enabling 'ubiquitous computing', where everything is connected to a network, but rather 'ubiquitous communication', where people have the choice to establish ad hoc connections appropriate to their needs at the time. Potential NFC-enabled applications are endless, but Innovision has identified several that can be delivered profitably today, or in the near future. These fall into three categories: service initiation, peer-to-peer, and payment & ticketing.



❑ **Service initiation** - In the service initiation scenario, the user touches an NFC-enabled device - such as a mobile phone - against a specially located NFC tag, which then typically provides a small amount of information to the device. This could be some lines of text, a web address (URL), phone number or other simple piece of data, which the user has decided to obtain. One example of this type of application is the smart poster. This poster could be promoting some kind of new product or service, or an event, and by touching his or her device against an NFC tag embedded in the poster, the user receives the URL for a web site where the user can get further information or book tickets. This type of application could also be useful for obtaining further information about a product in store, or for downloading information about medication, simply by touching the NFC-reading device against the packaging.

There could also be applications in room climate control, where the user touches a particular point on a table to initiate control of the air conditioning, for example. Lone workers such as security guards could use NFC-enabled devices to 'check in' as they move around a building. NFC tags have already reached a price point where it is feasible to print off batches of NFC stickers that enable users to create special 'short cuts' that make their lives easier. For example, when a child gets home from school, he or she could touch an NFC sticker just inside the door that sends an 'I'm home from school' message to a parent. Older people with poor sight or suffering from arthritis could have NFC stickers containing friends' and family members' phone numbers saved on them - these could be stuck to the corners of photographs of these people and, when touched with an NFC-enabled phone, would initiate a phone call to the right person, without the need to look up phone numbers or use the keypad.

❑ **Peer-to-peer** - In the peer-to-peer scenario, NFC is used to enable communication between two devices so that data can be transmitted locally between the two. If the amount of information is relatively small (up to one kilobyte), it is possible to use NFC to transmit the data itself. However, a more common peer-to-peer scenario is likely to be when NFC is used to establish another wireless connection method (such as Bluetooth or WiFi) to carry the information to be shared. One example of this kind of application is when a user has taken a series of photos using a camera mobile or digital camera, and wants to print them out. The user simply touches the device against the NFC-enabled printer, and a Bluetooth connection is established to transmit the digital photos from the device to be printed out on the printer. Peer-to-peer NFC communication could also be used in an Internet café to obtain the correct WiFi settings, without having to key them in manually. The user would touch his or her mobile phone on a spot on a table to download the settings, and then touch the mobile phone against his or her laptop so that the WiFi connection can be established automatically.

❑ **Payment & ticketing** - Payment and ticketing applications were one of the drivers for the creation of the NFC standard. Banks and mobile network operators are very interested in putting payment and ticketing applications on NFC-enabled mobile phones. Research conducted by Visa International found that 89% of those who tried phone-based transactions preferred its convenience to alternative payment methods. Device manufacturers realised they needed a short-range communication standard that was compatible with the Smart Card readers and other systems being rolled out by the transport industry. NFC enables Smart Card payment and smart ticketing scenarios to be developed further by enabling any NFC-enabled device to be used as a payment and ticketing device - an 'electronic wallet'. Ultimately this would replace the myriad credit, debit, loyalty, pre-paid and other cards that people carry around in their wallets today. Initially, however, NFC-enabled cards and devices are likely to be used for small payment situations, like vending machines and parking meters. In smart ticketing schemes, NFC-enabled mobile phones could be used to check how much credit is left on a multi-use smart ticket, without the user having to visit a ticket machine. Ultimately, when all the NFC reader infrastructure, transaction handling and security checking routines are in place, NFC-enabled devices could be used in any payment situation, just as credit cards are today. NFC-enabled payment and ticketing are much easier and less costly to handle than cash and other traditional payment methods. In addition, users will have a record of even the smallest payments, which they do not with cash today.

Section 3: Chips in everything? - Key to the commercial viability of NFC-enabled devices and applications is the capability and cost of NFC integrated circuitry, which could be applied to anything from low-value product packaging to high-value tickets. Critical to meeting this mass-market need will be platform-independent, memory-efficient and low-power NFC tags and other IC implementations.



Innovision believes the first mass-market applications for NFC will be in relatively low-financial value applications - with low risk of fraud - that do not require large investment in new back-end infrastructure. For example, low-cost NFC/RFID tags will be used in smart ticketing applications. Here, one benefit of having standardized NFC read/write protocols is that consumers can use their NFC-enabled phones to check how much credit they have left on a multiple-use ticket, without having to find a ticket machine. Only the existing smart ticketing infrastructure is needed for this to happen. Ultimately, once the phone-based payment infrastructure has been put in place, people will be able to use their phones as the 'tickets'. Likewise, in smart poster applications, people only need a standardized way to use their NFC-enabled phones to read the NFC/RFID tags in order to get the information they are looking for (typically a web URL or other piece of text).

Section 4: Small, and inexpensive, is beautiful - An initial NFC mass market driven by low-cost, low-risk applications will drive the need for low-cost, low-power passive NFC tags. It will also demand the low-cost integration of NFC read-write capabilities into mobile phones and other devices. To meet the need for a small, low-cost NFC IC that can be used in multiple applications, Innovision R&T introduced its Topaz NFC/RFID read/write IC family in 2006. The initial Topaz implementation measures approximately 0.59mm x 0.59mm and is designed to be compatible with ISO 14443 parts 2 and 3 - as well as being targeted for operation with NFC devices that work to ISO 18092 (NFCIP-1) and/or ISO 21481 - making it suitable for a wide range of NFC applications. Topaz is suitable for use in NFC devices in reader/writer mode. An initial 'request and answer' communication cycle is set up between the device and the tag, which follows ISO 14443 and ISO 18092 standards, after which data can be read and written to (or cancelled on) the tag.

The first Topaz implementation is a two-terminal integrated circuit designed for connection to a loop antenna to produce a passive NFC/RFID tag operating in the 13.56MHz frequency band. It is based on a physical EEPROM array size of 120 bytes, with the 96-byte user read/write memory area organized as 12 blocks of 8 bytes, which can be individually locked to be read-only or to prevent further modification of data. In addition there are 7 bytes of unique ID data - programmed and locked during manufacture - for use in data authentication or anti-cloning, and 6 bytes of One-Time Programmable memory, which can be used as single-use tokens. Memory capacity has been deliberately kept relatively low, so as to keep the cost of the tag as low as possible. In most mass-market NFC applications, there is no need for large memory capacity on the tag, and any excess would simply be wasted. For systems working on 16-byte blocks, the pairs of 8-byte blocks can be written to and locked together by the reader. There is also a command for reading all memory content in one go, rather than having to read each block separately to assemble the complete piece of data. One key advantage of the Topaz NFC IC is that it has the storage capacity to hold up to 80 characters of text, which could be useful when storing the potentially long URLs needed on smart posters or on product packaging, for example. Topaz has been designed to be customisable for a very broad range of applications, whether in stand-alone NFC tags or as an enabling IP block for System on a Chip (SoC) implementations.

Part 2 will be published in our June issue

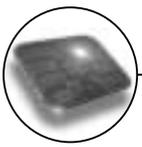
Events Diary

June 2007

- 05 - 07 Austalian Smart Card Summit - *Sydney, Australia* - www.acevents.com.au/cards2007
- 25 - 26 Contactless Cards Conference - *London* - www.smi-online.co.uk
- 14 - 15 Hi-Tech Financial Crimes & Fraud - *Kuala Lumpur* - www.marcusevans.com

July 2007

- 10 - 11 Cardex Asia & RFID Expo Asia - *Bangkok, Thailand*
- 15 - 16 Near Field Communication Australia - *Sydney, Australia* - www.terrapinn.com/2007/nfc_au



New EMV Initiatives: Will EMV Issuers Be Able To Cope?



By ACI Worldwide Inc

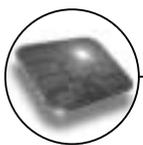
When chip cards were introduced 10 years ago, many believed that an immediate and major change would occur in the payment landscape. Some industry analysts expected chip cards to house multiple applications, which cardholders would be able to download post-issuance. Transactions would be offline, secure and fast. Issuers would receive and analyse mountains of data from chip transactions and make precise parameter changes to the card application to guard against undesired use. Cash transactions would be vastly reduced; cardholders would need only one card to hold all their applications, and new form factors would appear, enabling them to house the chip in a key fob, watch, mobile telephone or even their fingers, if so desired. "When EMV started, there was a lot of hype around multiapplication; then banks who invested in EMV had to concentrate and deliver the main application, which was the payment," said Guido Mangiagalli, head of the new channels unit at Visa Europe.

What has actually happened to EMV payment card issuance is not a story of large-scale innovation. The rush to combat fraud, comply with card scheme mandates and meet liability shifts meant there was no time to consider value-added solutions. Some payment card issuers are issuing EMV cards, but almost all are single-application, low functionality cards. Chip manufacturers have increased security, but at the expense of more imaginative uses of chips. Issuers have, therefore, used relatively simple systems to manage this issuance. Generally, they have either added data preparation systems to their issuing environments or enhanced their in-house systems to add chip data to the card embossing file. A number of issuers have implemented smart card management systems, but they are in the minority. Recently, though, some of the original EMV ideas have matured and become more affordable. Some of these business initiatives are pushing issuers to expand card functionality and explore the chip card's unexploited potential.

Card Scheme Initiatives - The card schemes have developed several initiatives to make better use of the EMV infrastructure, first, in card-not-present (CNP) environments and second, for contactless payments.

■ **Two-Factor Authentication** - As more bank customers use Internet banking and debit and credit cards for Internet purchases, fraudsters are becoming increasingly clever, creating the need for stronger authentication. Traditional methods, such as static passwords, are proving vulnerable to fraud. Led by MasterCard and Visa, the card industry has introduced standards to bring two-factor authentication to the virtual world of Internet banking and shopping. The programme is based on EMV payment card technology. MasterCard originally created the chip authentication programme (CAP), which has been sublicensed by Visa to create its dynamic password authentication programme. CAP uses the chip card's ability to validate a customer's EMV PIN. If the PIN is valid, then the chip generates an application cryptogram that acts as a dynamic, single-use password. A personal card reader is required to perform the operation and displays the dynamic password, which is then entered at the Internet banking or shopping site to authenticate both the card and the customer.

The method is called two-factor authentication because it is based on two key points: something the customer has (the EMV payment card) and something the customer knows (the PIN). In the United Kingdom, APACS has produced implementation guidelines that direct issuers to add the CAP application separately. This ensures that CAP will be issued on multiapplication cards. Other countries are following this lead. CAP also marks the beginning of wide-scale use of EMV debit cards for functions outside payment, e.g. authentication. "It is a tricky process [for issuers] to add new functionality," said Gijs Schreuder, head of consumer payments at Netherlands-based ABN AMRO Bank N.V. "Consumers have to adopt and understand [new applications]. Once they understand the functionality, they are ready for new ones." The more cardholders trust and accept their cards for use in different environments, the more valuable the card becomes to both the cardholder and the issuer alike.



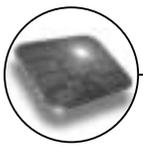
■ **Contactless Cards** - In the United States, contactless cards have proven extremely popular, with more than 20 million cards already issued. Contactless EMV payments will be launched soon, and the card schemes are using them in their so-called "war against cash." MasterCard estimates that 180 billion European cash transactions take place annually and suggests that a great number of those could be efficiently processed as contactless payments. Outside the United States, the card schemes have decided to make use of the offline EMV infrastructure to implement contactless payments. Contactless cards interface with a card reader without requiring a card swipe or dip. Cardholders can use contactless cards to pay for goods by simply waving a card within 10 centimetres of a contactless reader. Transactions are mainly authorised at the point-of-sale (POS) terminal against limits held on the chip. Transactions below a certain value threshold, typically £10, may be made without requiring cardholder verification. Early indications from pilots carried out in the United Kingdom and France show that issuers and merchants alike are impressed at the potential of contactless cards and expect a successful mass rollout.

In the United Kingdom, a number of major banks have announced a joint launch of contactless cards beginning in the London region this year. A minimum of half a million cards are expected to be issued initially, and 1,000 merchants will be involved. Barclaycard has also announced a partnership deal to house Transport for London's Oyster contactless ticketing application on its payment cards. "Putting Oyster and Barclaycard together makes life even easier for Londoners and takes our customers an important step closer to fully contactless card payments elsewhere," said Antony Jenkins, chief executive at Barclaycard. Further pilots and rollouts of EMV contactless cards are continually appearing. LaSer Cofinoga, a French issuer of mainly private-label store cards, has launched a trial of contactless cards. In Turkey, Garanti Bank has already issued 50,000 EMV-compliant MasterCard contactless cards since rollout began in summer 2006.

Contactless EMV card payments are ready for takeoff, but the impacts to issuers are unknown. Payments made with these cards will take place in offline environments, without PINs, by a technology that is not widely understood. Initially, transaction values will be relatively low, and this will prevent issuers from becoming overly worried about levels of fraud or bad debt. The maximum transaction value is to be £10 with a possible £30 purse before a transaction is put online. However, pressure from merchants to raise transaction limits and from cardholders to raise purse limits will eventually leave issuers with a problem: They will have to manage the risk of issuing cards that can perform, for example, transactions for £25 with a purse of £250 in offline environments without needing to check the cardholder's identity. Issuers will need to refocus on offline risk management around the EMV profiles and parameters that up until today have been set up as standardised values. The ability to change these profiles and parameters post-issuance will also become more important as demand grows to issue contactless cards to wider groups of cardholders.

Smart Card vendors agree that contactless payments will boost chip cards and inspire issuers to adopt them. The Smart Payment Association, comprised of the four major suppliers of banking smart cards worldwide, has announced a new initiative to promote contactless, multiapplication payment cards. The association has defined an interoperable data format for contactless applications, from loyalty programmes to transit to cinema ticketing. "Thanks to our specifications, a system will work with any card from any vendor instead of only one card," said Jérôme Ajdenbaum, president of the Smart Payment Association. Developments in Near Field Communications (NFC) are related to contactless payments; NFC is likely to make some issuers reconsider the form factor for the contactless application. Recently, many pilots have used mobile telephones to house the contactless chip. If mobile telephones were to take over some of the payment market, this would lead to new challenges for issuers - such as how to personalise the payment application over the air. "We see clearly a new source of revenue for us [in mobile contactless payments]," said Mung-ki Woo, head of payment and contactless at France Telecom. A revised business model would also be required that might include the network operator, handset operator, etc. Clearly, the impacts for card issuers who do not make plans for contactless applications residing in mobile telephones could be very significant.

The Single Euro Payments Area (SEPA) - The introduction of SEPA for payment cards is targeted for 2008. SEPA will force Eurozone banks to reform the patchwork of debit card networks that currently exists across Europe. These networks are anticompetitive and prevent European banks from acquiring cardholders across the Eurozone. One of the most important elements of the new European card framework is EMV compliance; however, the most generous estimates of migration in Europe indicate that only 40% of the task is complete.



EMV plays a key role in preventing and fighting card fraud. Fraud rates are typically low at the national level and high at the cross-border level. SEPA is intended to significantly increase card payments across the Eurozone, and it is vital that measures be implemented to prevent an increase in fraud. Therefore, the European Payments Council (EPC) has mandated that all cards issued in 2008 be EMV-compliant, with the aim that EMV will be fully implemented by 2010. Observers believe the deadline for EMV compliance is achievable subject to retailer agreement to terminal changes.

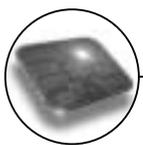
Hence, pressure exists for EMV card issuers to achieve EMV compliance in addition to the pressure from the card schemes via liability shifts. "EMV is the key way; we gave a clear deadline of 2010 on that," said Alfred Schmauss, chairman of the cards working group of the EPC. Furthermore, SEPA's drive to increase competition for electronic payments will put card revenues under pressure; therefore, card issuers are more likely to try to extract added value from EMV, instead of simply issuing single-application payment cards. Issuers forced to begin EMV issuance now will find that higher-specification cards are cheaper than a few years ago, and some of the initiatives are better defined. Both of these things should make it easier for issuers to implement value-added services. Initiatives such as contactless cards are based on a fully implemented EMV infrastructure. Pressure from SEPA will lead to this happening by 2010 at the latest. Datamonitor's "Contactless Payment 2006" report states, "As the contactless payment programmes outside the United States require an EMV-compliant infrastructure, it is the level of migration that appears to be determining the future development of contactless in the region."

The EPC also believes that contactless technology will benefit the Eurozone. The EPC has expressed a goal to reduce the cost of cash handling, which currently costs the EU around 50 billion euros a year. The cost of cash handling should be reduced by persuading more banks to implement contactless cards, thus targeting low-payment transactions. A number of European countries within the SEPA region have also expressed fear that the emergence of a Visa and MasterCard duopoly across the Eurozone could restrict competition. For this reason, some countries are planning to maintain their domestic debit card schemes in the short term, alongside an international debit card application. This will demand that some issuers in these countries issue multiapplication payment cards and implement the supporting infrastructure. Further impact to issuers will derive from SEPA's drive to open domestic markets to allow more cross-border acquiring. Once implemented, consumers will be able to use EMV debit cards anywhere in the Eurozone. This could impact the business case for joint retailer and card issuer loyalty schemes. A vastly expanded market in which the loyalty schemes operate will help drive these schemes forward. The general acceptance of an EMV debit card across the Eurozone could accelerate the use of the card in areas such as identification and transit.

EMVCo Initiatives - In addition to market changes, EMVCo has led technical developments designed to make EMV issuance more cost-effective. To prevent issuers from having to employ distinct processing for each card scheme implementation, the card schemes investigated an EMV implementation that could be common, regardless of the scheme. EMVCo has produced common core definitions (CCD), which provide the basic EMV data definitions and the common payment application (CPA) that define the behaviour of the EMV application.

❑ **Common Core Definitions (CCD)** - CCD addresses the external data flowing between the chip card and the issuer. With these definitions, issuers receive and return chip data in one common format from Visa, MasterCard and other card brands. CCD also specifies a minimum common set of card application implementation options and card application behaviours.

❑ **Common Payment Application (CPA)** - CPA takes CCD a step further. Whereas CCD focuses on the external interface of the card to issuer data and some processes, CPA provides common functionality for the entire payment application. This allows issuers to use the same mask for cards from all payment schemes that support the CPA specifications. CPA enables a single application implementation to be personalised with the same data elements and tags, including common risk management controls. EMVCo, which owns and maintains the CPA specification, has additionally established certification procedures to streamline CPA testing. CPA also allows more data items to be changed with EMV issuer scripts. For instance, issuer scripts can be used to maintain the value of various new accumulators and counters, as well as to control the use of risk management profiles.



CPA has the same objectives as CCD in that issuers should realise the benefits of a single back-office processing system for personalisation and card management, and ultimately a single card platform for Visa, MasterCard and other payment brands. "CPA also enables issuers to enjoy the benefits of multiple vendors for chip cards and improved interoperability," said Gaylon Howe, chairman of the EMVCo executive committee. "Thanks to these many benefits, CPA ultimately has the potential to lead to significant cost savings for issuers migrating to or already deploying EMV."

❑ **Offline Authentication** - Another impact to EMV issuers concerns the type of offline authentication supported by EMV cards. With scares over static data authentication (SDA) security appearing regularly in the media, card issuers are gradually favouring the use of dynamic data authentication (DDA). Initiatives like contactless cards that make offline transactions more prevalent will push issuers in the same direction. Most importantly, the fall in the price of DDA chips makes the decision to move to DDA easier. The impact to EMV card issuers is that more cryptographic keys will be involved in the issuance process, and the personalisation process will become more complex.

Section 5: Requirements of the New Initiatives - The majority of current EMV card issuer systems have not been designed to address these complexities. As previously discussed, issuers have implemented either in-house developments or data preparation software to chip-enable their issuing systems. These in-house systems have not been future-proofed for potential developments and will require further development to support each new initiative. Furthermore, data preparation systems are designed to add payment chip data to embossing files and enable EMV payment cards to be issued quickly. They do this well because it is their focus. Therefore, if issuer systems do not currently support these initiatives, when will EMV card issuers implement smart chip management systems that do? The main problem could be that many issuers do not understand the extent of the chip card issuing system's requirements. If issuers were to try to tackle SEPA, contactless cards and CAP requirements simultaneously while also upgrading to DDA and trying to make use of CCD and CPA, it would become obvious that their current issuance systems would not be able to cope.

Most issuers will approach these initiatives one at a time. This could result in issuers attempting to prolong the life of their current systems, whether data preparation or in-house systems. They may try to expand the current functionality piecemeal by attaching additional systems and processes, focusing on one requirement at a time. This type of development will often occur with in-house systems, as it enables the in-house IT department to demonstrate its flexibility. On the data preparation side, piecemeal expansion is probably more difficult to achieve since data preparation systems are designed for a specific function. Unless they can be interfaced to a larger system, they may become redundant.

Conclusion - EMV cards are beginning to migrate from their basic, functional origins and head in the direction that some first envisaged. Surprisingly, this change has occurred slowly. Originally, it was assumed that everything would happen overnight, in a sort of "big bang" migration. Instead, expediency has meant that EMV cards have been rolled out as secure, single-application payment cards. In a few years, issuers will find that EMV cards have turned into multi-application, highly complex chip cards. Furthermore, sophisticated risk management systems will perform post-issuance changes to contactless card parameters and applications.

Questions remain: Will issuers get there by piecing together various issuance systems, as the latest EMV initiative dictated, or will they take a more strategic view and implement a future-proof chip card issuing system that can take on new challenges? Will issuers have the foresight to see changes coming and make the necessary and difficult decisions to prepare their companies for the future? Do issuers think chips are their future, or just a necessary evil to fight fraud? Financial institutions that embrace chip functionality and exploit the potential to offer cardholders greater levels of service are surely the banks that will succeed and profit from the large-scale investment that EMV requires.



Rumours From the Front Line

By "The Squeaker" (*a source who wishes to remain anonymous*)



The UK National ID Card project has been back in the news this month with the publication on May 10th of the second section 37 cost report by the Home Office. This process is to allow Parliament to monitor the scheme's progress and take action if necessary. In the report the estimated costs have increased from £5.1Bn in the first s37 report to £5.13Bn. This is accounted for by removing £510M of operational costs that should have been accounted to the Foreign and Commonwealth Office with an underestimate of Staffing costs of £460M over the ten years.

The Strategic Action Plan released in December 2006 shows a major revision of the scheme in at least two ways,

- 1) The initial plan envisaged a single new database for the Identity Register but this has now been modified to use existing government databases as the core data repository for the scheme. That means that these databases will need to be upgraded to take account of the more severe security considerations for the stored data. In essence the biometric data will be stored on the Department of Works and Pensions (DWP) database and the PKI data will be stored on the UKIPS systems.
- 2) It would appear that the Iris scan biometric has been dropped from the scheme. The option still exists but it seems to have gone out into the never never land. Biometrics is one of the fundamental problems of the ID card scheme, as everyone would agree there is no universal biometric, they all have some problems with some part of the population.

Now the London School of Economics (LSE) may have a field day attacking the costs of the scheme and its technical problems but the truth is that these problems can be fixed. You can make the system adequately secure as I am assured by my more knowledgeable experts and you can develop a policy for the use of biometrics that would be 'fit for purpose'. The real problems are elsewhere. The major integrators and service providers such as EDS, IBM, Siemens Business Systems, BT, Accenture and Fujitsu have already invested significant costs in the programme. Their resource allocations I'm told keep going up and down but they seem convinced that it's only a matter of time. This may well be true but in what form?

The Identity card itself is an emotive issue, a significant sector of the population is in open revolt although frankly it's difficult to see why. We already have identity documents, passport and driving licences. If it's not one it's the other although I don't know what happens to people that haven't got either. Does anybody seriously believe you can go through life without providing some form of identity credential? However the noise is high enough that the Home Office would probably like to quietly drop the concept of an ID card, and remember in its last incarnation it was called an Entitlement card (for government services). John Reid is not going to be at the Home Office much longer and the new entrant has more than enough problems without an ID card. Gordon Brown the Prime Minister designate has not openly come out against the ID card but there is absolutely no sign that he is a strong advocate either.

From government's point of view it is actually the identity register that is more important whether in one or more databases. Curiously the UK population doesn't seem to object to personal databases such as fingerprints and DNAs, they see it as more attached to solving crime and it fits alongside closed circuit TV cameras. So where are the winners in all this? Well the DVLA must be in pole position for the identity card - whoops, I meant driving licence card and remember Smart Cards are about to start taking over in this area once the EEC has agreed the standards which are now not that far off.

Biometric passports are a given, that will carry on regardless and I guess Siemens Business Systems is in the right place but will they manage to stay in the game? There are some pretty hungry tigers out there. And then there are those existing data bases like DWP, I'll bet everybody is after that!

Squeak squeak!



Worldwide Smart Card Shipments 2006

By Jason Smith, Staff Reporter, Smart Card News Ltd



Jason Smith

Eurosmart have officially released their figures for Smart Card Shipments worldwide throughout 2006 and have forecast the figure they expect the industry will achieve in 2007. Eurosmart is an international association that aims to develop standards and improve quality and security applications. The figures they publish give the Smart Card industry an overall picture of the different markets and they try to predict future trends. According to Eurosmart the total worldwide shipments of all types of Smart Cards was 3580 million units.

This equates to 925 million units of memory cards and a massive 2655 million units of microprocessor cards. The global Smart Card shipment figure for 2005 was 2626 million units and this figure rose by 36% in 2006 to 3580. However these two figures cannot be used as a comparison because the 2005 figure does not take into account the introduction of the figures for the Chinese National ID project which occurred in 2006. The microprocessor shipments for 2006 are divided as follows: North and South America - 13,7%, Europe/Middle East/ Africa - 40,9% and Asia - 45,5%.

Looking at these shipment figures per segment we see that in the mobile telecommunications segment there has been another year of growth. This segment has seen a 46% increase in microprocessors since 2005 so the figure in 2006 was 2040 millions of units. This growth has been driven by almost all regions and emerging countries such as India in Asia, Middle East and Colombia in South America. The Chinese market is also growing again in 2006 after a stable year in 2005, which has helped this growth. Looking forward in this segment Eurosmart disclose that 2.4 billion SIM cards are expected in 2007, which would represent an increase in volume of 18% vs. 2006.

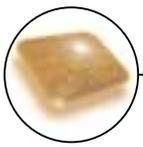


In the Financial services segment EMV roll out in Asia and renewal in Europe have continue to generate strong volumes in 2006 helping this segment achieve 410 million microprocessor units, which is a steady growth of 21% from 2005. EMV should still continue to generate strong volumes throughout 2007 and Eurosmart figures show that this growth in 2007 could reach a further 20% with the main driver being Asia. Contactless payments have now been deployed in the US and Eurosmart believe this trend will continue in 2007 with a further 40 million contactless payment devices being deployed. In the Government segment we can see a large shipment increase in 2006. This is due to the introduction of 200 million units of memory cards which where shipped to the Chinese national ID project in 2006. Even though these cards are not technically Smart Cards they do hold a contactless function on them. This figure will increase further as more than 300 Million ID cards will be shipped in China in 2007, with a target of 900 million to be deployed before the 2008 Olympic games.



In terms of microprocessor cards, 90 million units where shipped in 2006 but Eurosmart predict this figure will grow to 140 million units in 2007 which is a staggering growth of 56%. One main driver for this increase is the introduction of new ID Card projects in Portugal, Qatar and Morocco and the ongoing deployment of ID cards such as those already in Belgium, Thailand, Hong-Kong, Estonia, Finland, Sweden and Oman to name a few.

The deployment of e-Passports in 2006 is also another driver of this growth and these should be effectively deployed in 40 countries by 2007 including all visa-waiver countries. Also in this segment the ramping up second-generation e-Health card projects in France (SESAM-Vitale) and Germany (eGK) have aided the growth rate in 2006. Other segments in the Smart Card Industry all saw their shipment figures grow in 2006 as well. Transport shipped 30 million units fuelled by Scandinavia, Mexico, New York, Seoul, Benelux (Bruxelles) and India joining the already many large cities like Paris and London in the world that use Smart Card related transport services.



Pay TV shipped 65 million units and corporate security (which are Smart Cards with logical access or multi-application features) shipped 15 million units. Following a global Smart Card shipment worldwide volume of above 3.1 billion in 2006, Eurosmart predict that the activity of the Smart Card industry should continue its growth in 2007 at a rate of 16%. This will mean that the total Smart Card shipment volume will go beyond 4 billion in 2007, of which close to 600 million will be contactless devices. Eurosmart have also looked further into the future in their "Vision paper 2020" and have predicted that Smart Cards will pioneer the way for a new wave of smart secure devices. They believe that these new smart secure devices will amount to 20 billion units by 2020. Eurosmart Chairman Jacques Seneca summed up their future forecast by saying "In 2020, smart objects will become totally integrated into our everyday lives as our digital proxies, bringing simplicity and convenience in the way services are delivered to us. Smart Cards will get diversified into Smart Security Devices leveraging on biometrics, contactless, nanotechnologies as well as software".

Smart Cards Gain Popularity in Asia

By Frost & Sullivan



Although the Smart Card market in Asia has faced considerable challenges, there is rich potential for this market in the region. While tier one countries such as Malaysia and South Korea have overcome initial issues to have a competent Smart Cards market, the segment is only emerging in countries such as Sri Lanka and Vietnam. In these untapped markets, the idea of Smart Cards is steadily gaining prominence and they have the added advantage of being able to learn from the errors and successes of their neighbours.

In many Asian countries, contactless payment is gaining popularity, despite the fact that less than a quarter of the population has banking accounts. Governments are now looking beyond the security aspect and recognising the convenience of contactless cards for automatic fare collection (AFC) as well as small-value payments. The markets in these countries are ripe for the next big entry of Smart Cards and the large user base, coupled with low manufacturing costs, can only add to the attraction of these potential markets.

National ID projects are becoming common in many Asian countries and these, along with the EuroPay, MasterCard, Visa (EMV) migration, top the list of the various newly initiated Smart Card projects in the emerging Asian market. Banks are looking at Smart Cards as a 'differential' product offering to their customers. Moreover, industry participants have raised their views on the migration process and are looking at solutions to implement EMV at the earliest. Some of the governments have also recognised the need for infrastructure development and are providing support such as concessions to various companies for the development and deployment of projects. As users realise the benefits of technology, contactless payments are gaining popularity. However, poor payment infrastructure poses a challenge and the Smart Card industry should set up efficient Smart Card systems from scratch instead of being deterred by this challenge.

Further analysis - by F&S - of the Asian market has revealed that an explosive growth of the Smart Card market in Asia Pacific had resulted in an emerging pool of local vendors. These included silicon vendors, Smart Card and reader manufacturers and system integrators. A large proportion of these vendors were serving the regional market effectively, and further driving the growth in the region. In addition, the increasing use of Smart Cards in government projects has driving market growth, enabling Smart Card vendors in Asia to notch up higher profits. Manufacturers in Asia were fairly protected by the local economic policies that allowed them to operate and profit in a relatively sheltered environment. Subsequently, Smart Card vendors in Asia are less motivated to invest in R&D and innovative high-end products as compared with their European competitors.

However, since Asian companies in that continent lacked brand recognition globally, the competition from international vendors was proving to be a credible threat, forcing them to invest more in upgrading their R&D facilities and delivering higher end products. Further, expansions in mobile communications, contactless payments as well as the mass deployment of EMV in the Chinese and other Asian markets are likely to help Asian Smart Card manufacturers and integrators gain significant revenues.