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The Pentagon, headquarters of the Department of Defense

Featured Companies

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Sampling The Value Chain

by Dr David B Everett, Technical Advisor, Smart Cards Now

This month we have seen un-audited end of year results issued by different players in the value chain. Gemplus, whose business is very much at the sharp end of the spectrum being a major provider of the Smart Card platform technology; ActivCard, who are probably the leading supplier of Identity and Authentication solutions for access control based on the use of Smart Cards; and nCipher who are probably the leading supplier of cryptographic hardware to support e/m-commerce and web services generally.

Gemplus' operations fall into two market areas: financial services and telecoms. Of the €787.434M sales, telecoms accounts for €544.5M with the remaining €242.9M due to financial services. Both areas are down about 20% in 2002 compared with the previous year. Gemplus ascribe these figures to weak sales in the financial services area and pricing pressure in the wireless market. The sales of SIM cards increased by 14.3% whilst the average price dropped by 32.2%. In the finance/retail market the US sales were down by 25.9%.

The problem facing Gemplus is that Smart Cards are becoming ever more a commodity, and that includes the more sophisticated multi-application cards such as Javacards. This problem is not likely to go away and whilst the volume of shipments in both the financial services and telecoms markets is likely to increase it seems almost certain that the pricing of these products will become even more aggressive. The banking world is slowly moving into the EMV arena, with 2005 the VISA/Mastercard liability transfer date moving ever closer. However at the current time, and probably for the foreseeable future, they are focusing on the smallest chips possible: single application chips, with one or two thousand bytes of EEPROM being the norm. There is little margin in this business. By comparison the wireless world is adopting Javacard in reasonable volumes in part to try and reduce their dependence on the SIM card manufacturers; this is just going to make pricing even more cut throat. Software and service income now accounts for about 5% of the company's revenue which was a 12% increase on the previous year. Management would probably like to add a '0' to these figures but that will need an extensive shift in the company's culture.

In our more security sensitive world one would expect to see companies such as ActivCard reaping the benefit, and of course they are. Revenues for 2002 were up by 34%. In the fourth quarter of 2002 revenues were up by 79% over the same period in 2001. This success is based largely on the company's pole position in access control with the US government. Apart from the 1.4 million copies of ActivCard Gold supplied to the Defense Manpower data Center under the Common Access Card (CAC) scheme the company has new contracts with seven US Department of Defense (DoD) agencies and six US Federal Government civilian agencies. So, what about those losses? Well $16.8M are due to discontinued operations leaving $28.7M from continuing operations. Sales and marketing costs are down by 16% whilst R&D is up by 7%. If you take out all the extraordinary charges — the (pro-forma) net loss for the fourth quarter 2002 was $1.4M compared with $6.2M in same quarter for the previous year — then things start to look interesting. Clearly management is working hard to improve the balance sheet and in today's environment with its strong product position 2003 could be promising.

nCipher is really at the end of the value chain. Its business is very dependant on the overall future in e/m-commerce. The company specialises in the production of cryptographic equipment that is used by the host systems supporting e-business. Cryptographic protocols are processing intensive operations, and for a busy site handling 100s of concurrent sessions this would put an unacceptable load on the servers. nCipher manufactures modules that act as a co-processor for such intensive cryptographic operations. Secure Sockets Layer (SSL) is the underlying security framework that protects e-business undertaken through the client's web browser. This is not a burden at the client end but at the host with lots of concurrent operations a hardware cryptographic accelerator is an essential component. Public key algorithms used in both SSL and Public Key Infrastructures (PKI) are particularly heavy on processing resources. So given that e-business is on the up why aren't nCipher reaping the benefits?

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Progress in Promoting Smart Card Technology in the US Government

Eighteen US federal government agencies have initiated 62 Smart Card projects (as of November 2002), according to a new study by the US General Accounting Office (GAO), the investigative arm of Congress. These projects have provided a range of benefits and services ranging from verifying the identity of people accessing buildings and computer systems to tracking immunisation records, says the report but a number of substantial challenges remain.

GAO recommendations include:

☐ Office of Management and Budget (OMB) establish policy on adoption of Smart Cards for secure access to physical and logical assets.

☐ The National Institute of Standards and Technology (NIST) continue to improve and update the government Smart Card interoperability specification with standards for additional technologies such as contactless cards, biometrics and optical stripe media as well as integration with PKI (Public Key Infrastructure).

☐ The General Services Administration (GSA) — the federal government's designated promoter of Smart Card technology — establish guidelines for federal building security that address the role of Smart Card technology.

Among government projects, the Department of Defense (DoD) Smart Common Access Card (CAC) program has seen 1.4 million cards issued with plans to distribute around 4 million by 2003. This is a 32K bytes card but plans to add biometrics such as fingerprints, palm prints, iris scans or facial features will require a card with 64K byes of memory. It is also planned to add a contactless chip.

The Federal Aviation Administration (FAA) plans to issue a 32K bytes Java-based contact and contactless Smart identity cards to up to 15 million "transportation workers" defined as persons who require unescorted access to a secure area in any transportation venue. The pilot will be focused on major airports, seaports and railroad terminals and is likely to be implemented within the next three years.

The border crossing cards project by the Immigration and Naturalisation Service (INS) involves Permanent Resident Cards and Border Crossing Cards (also known as Laser Visas) which store biographical information, a photograph of the cardholder and fingerprints. At June 2002, more than five million Laser Visas and some six million Permanent Resident cards had been issued. Both cards use optical stripe technology with storage capacity ranging from 1.1 megabyte to 2.8 megabytes, but do not contain integrated circuit chips to process data.

The report says that INS considered Smart Cards but decided that the 8K bytes cards available at the time of the analysis in 1999, did not have enough memory to store the fingerprint data required by law. The study points out that Smart Cards now have a storage capacity of up to 64K bytes and are capable of storing colour photo images of individuals as well as full fingerprint images.

Lead Story

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Belgium Launching ID Card

Belgium is launching the Belgian Personal Identity Card (BelPIC) in the first large-scale deployment of Smart ID cards in Europe. It will start rolling out around 11 million cards in the second quarter of this year in a five-year programme.

Zetes, a Belgian group specialising in integrated solutions for the automatic identification of property and personal authentication has been selected by the Belgian government to handle the co-ordination and physical integration of cards as well as their customisation and distribution.

SchlumbergerSema will provide its ICitizen Crystal operating system and secure modules for the project and supply EAL5+ microprocessor cards which will be used with a PIN code. Using the cards over the Internet, at public kiosks or at home computers, citizens will be able to access numerous e-government services such as electronic voting.

eToken to Store Entrust IDs

Aladdin has announced that its eToken PRO USB Smart Card solution has achieved Entrust Ready status from Entrust, which recognises eToken's interoperability with Entrust Authority Security Manager 6.0 and Entrust Entelligence 5.02 and 6.1. The compatibility will allow Entrust digital IDs, which could include users' certificates and keys, to be stored in a encrypted form on the personal eToken.

Sagem and Gemplus Team on ID

Sagem and Gemplus are to jointly pursue development and activities in the field of biometrics and Smart Card technology for secure identity solutions.

The announcement follows the award of a national identity contract in the Sultanate of Oman involving both companies in the issue of 1.5 million biometric-enabled Smart Cards by the end of 2003.

Football Loyalty Cards

English football clubs Everton and Ipswich Town are to pilot loyalty schemes from the Sports Loyalty Card company at the start of the 2003/04 football season which begins in August. The cards will enable fans to earn points at over 150 UK retailers and services which would be able to be redeemed against match tickets and club merchandise.

However, the new card will compete with a similar Smart Card based football scheme operated by Team-Card which launched at the start of this season with Chelsea, Bolton and Millwall football clubs all involved. Among other football club schemes, Liverpool and Manchester City selected Smart ticketing solutions from Fortress GB.

Rugby Fans to Carry Smart Cards

Teamcard have designed and developed a Smart Card for the newly formed England Rugby Supporters Club (ERSC) and expects to issue 25,000 cards this year. The card will also be accepted in retail outlets such as Safeway, Allders and Moto. Fans will accumulate reward points that can be redeemed against official Rugby Football Union (RFU) products, match tickets or ERSC membership renewal.

Incard do Brasil Starts Operations

Incard, the Italian Smart Card manufacturer and Interprint, Brazilian security printing and IT solutions provider, announced the start of their new joint venture Incard do Brasil last month.

Based in São Bernando do Campo, São Paolo, the new plant will produce Smart Cards, particularly, SIM cards for the Brazilian GSM Operators.

Multi-application Card for Finland

LogicaCMG has been selected by Luottokunta, the leading payment card service company in Finland, to provide the first national implementation of a new end-to-end card processing solution, enabling the issuance of multi-application Smart Cards and compliance with the global EMV (Europay, MasterCard and Visa) specifications. It will also enable other chip applications such as ID, advanced loyalty, travel and other applications to be integrated onto a single Smart Card. LogicaCMG's product partners in the multi-million euro contract include Oasis Technology and Datacard Group.

New French Banking Cards

Sagem has been selected to develop a new generation of French bank cards by Groupement des Cartes Bancaires CB following an international tender. The new card will comply with the EMV (Europay/ MasterCard/Visa) specifications and also allow other applications such as loyalty, electronic signature and electronic purse on the same card.

The new chip will contain a cryptoprocessor, which uses Dynamic Data Authentication to make every transaction unique and increase the security of the card payment system. Currently there are more than

45 million CB cards in circulation and the CB banking community plans to begin issuing the new CB/EMV/DDA cards by 2004.

ZKA Certifies SECCOS

Gemplus has announced that its new Smart Card operating system SECCOS (SEcure Chip Card Operating System) has received both the obligatory certification of the ZKA (Zentraler Kreditausschuss) — a consortium of all German banks — and the international Common Criteria Evaluation EAL 4+, which is required to meet signature law compliancy. The company said that the SECCOS Smart Card is the ideal platform for enabling migration towards multi-functional Smart Cards.

Dr Juergen Kutruff, General Manager of Security and Secure Mobile Communications at Infineon, said: "The private keys can be generated on the card itself, therefore preventing the highly sensitive information on the keys to leave the card, which is a definite security advantage for digital signature applications where the keys have to remain secure."

ID Data $2.5m Contract in Oman

ID Data has won a US $2.5 million contract to supply memory cards to Oman Telecommunications Company (Omantel), one of the Middle East's largest telecoms operators. Under a two-year agreement, ID Data will provide design, production and personalisation of memory cards for use payphones in Oman's fixed line network.

ERG $20m Washington Contract

Australia-based ERG Group and Northrop Grumman Information Technology have been selected by the Washington Metropolitan Area Transit Authority (WMATA) to install and operate a new Regional Customer Service Centre for its SmarTrip Smart Card based fare collection system. The deal is expected to be worth $20 million over the five-year contract.

The new system will allow passengers to use a single Smart Card to pay fares across 17 transit systems. ERG will be responsible for the management of Smart Cards and operation of the data processing system incorporating clearing, settlement and financial management. Northrop Grumman IT will handle Smart Card distribution and operation of the customer service centre in the Washington DC area.

Automatic Vehicle ID Reader

HID and leading Dutch RFID technology manufac-turer NEDAP have unveiled a proximity card-enabled Automatic Vehicle Identification (AVI) reader solution which extends the read range of a proximity card to 33 feet (10 metres) and can record vehicles travelling at speeds of up to 125 miles per hour (200 Km/h). The new system integrates HID proximity cards with an in-vehicle mounted "Combi-Booster" which transmits the driver's proximity serial ID number and an embedded vehicle ID simultaneously.

DeXa.Badge Security for Nissan

Nissan Motor Company has selected Schlumberger's DeXa.Badge security solution to reinforce physical and logical security at all Nissan's facilities worldwide. DeXa.Badge consists of multi-application SchumbergerSema Cyberflex Access Smart Cards and readers. Each employee's unique identification is stored on a contactless chip, and logical security information used for functions such as login authentication, on a contact chip.

Contactless I-Ticket Launched

Paragon Identification, a European manufacturer of magnetic tickets, has launched the I-Ticket, a disposable contactless card which allows direct communication with a reader using induction technology. The card uses a contactless chip made by ST Microelectronics, which is compatible with the ISO 14443-B standard, commonly used by the urban transport sector. The card is the same thickness as a paper ticket, and can be customised according to the customer's needs, including four colour printing and chip personalisation.

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EMV — No Second Chance

A new survey from Finextra says that 48% of banks across the EMEA region are still at the "planning stage" for EMV (Europay/MasterCard/Visa) chip card migration despite only two years away from the compliance deadline of January 2005. However, nearly 90% of them expect to go live in time.

Martin Macmillan CEO of Level Four Software, providers of ATM test and development software to retail banks and ATM manufacturers (and sponsor of the Finextra Research report) said: "This research proves that with only two years to go to deadline, many banks still do not understand the complexity of EMV. Close to 40% of respondents cited lack of information as one of the main hurdles to achieving compliance, with a further 40% identifying a lack of technical skills and knowledge."

Macmillan warned that there would be no "second chance" for the banks. "They cannot afford a situation where consumers test the technology after the deadline. In today's competitive and media-fuelled society, the embarrassment factor would be huge. There is no second chance, they must get it right the first time."

The Smart Card Revolution — Is The Market Ready For EMV? by Finextra Research is available by e-mail jenny@write-image.co.uk; or www.finextra.com/emv

Latvian Bank Pilots EMV

Gemplus has been selected by Latvia's Parex Bank for its EMV (Europay/MasterCard/Visa) pilot project starting next month. The French card manufacturer will deliver 10,000 GemVision chip-based bank cards for the pilot which will eventually expand to 100,000 as the bank migrates from magnetic stripe cards to EMV Smart Cards. Gemplus will handle card issuance and card personalisation in-house for the bank.

The multi-application cards will enable Parex Bank to add applications to its payment cards such as loyalty schemes, e-purse, home banking, and other secure applications.

EMV Certificate for Trintech

Trintech Group has received EMV Level 2 certification of its Smart Card-enabled POS terminal and PINPad solutions from EMVCo. The certification covers the software aspect of processing the card transaction.

SSP Wins $4.8m DoD Contract

SSP Solutions has won a $4.8 million contract from the US Department of Defense (DoD) for its digital identity authentication, administration, and authorisation software and firmware.

The software includes SSP Profile Manager, a life-cycle management tool for controlling digital credentials and tokens.

The firmware will be delivered on SSP's Universal Secure Access (USA) Smart Card, a high speed USB interface product based on Forte, SSP's "System on a Chip."

Kris Shah, SSP's co-Chairman and co-CEO, said: "The Forte chip design used in our USA Smart Card enables both ISO and USB interfaces and provides key management random number generation performed in a tamper proof and anti-cloning environment to further strengthen our ability to protect the rights of consumers while protecting our nation."

Fighting Software Piracy

SchlumbergerSema has partnered with Sospita to provide the software industry with a high security Smart Card license protection solution.

It is planned to combine the Sospita security hardware license protection solution with the SchlumbergerSema e-gate token to decrypt parts of the hard disk, making the task of hacking the software extremely difficult.

Although initially aimed at the software industry, the two companies say the product is equally capable of protecting online media such as music or video.

China Telecom $500m Contract

Calypso Wireless, of Florida, USA, has signed a three-year $500 million contract with China Telecom for mobile cellular broadband video phones and network systems.

DoD Order for Identix

Identix has received an order from Telos Corporation, a supplier to the federal government and industry, to supply the US Department of Defense (DoD) with 1,600 DFR 2080 single fingerprint readers.

Kenneth C Scheflen, Defense Manpower Data Center Director, said: "Identix hardware and software has been used by DMDC since we began to

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capture automated fingerprints in 1996. This purchase allows us to refresh our equipment suite with the most current, state-of-the-art biometric fingerprint technology."

The Identix DFR 2080 fingerprint reader delivers NIST compliant 500 dpi resolution and provides a digital USB output.

SAFLINK Wins Third DoD Order

SAFLINK Corporation has been selected to participate in the third phase of the US Department of Defense (DoD) Smart Card-based Common Access Card (CAC) project where it will act as the sole supplier of biometric security application software.

Matt Shannon, Director of Government Sales at SAFLINK, said: "To date, we are the only biometric security application software company to have been selected to participate in all three of the initial CAC proof-of-concept segments. We expect the production pilot will likely be comprised of the 'best of breed' applications from the first three phases."

SAFLINK will work with the DoD Biometrics Fusion Center in North Central West Virginia to evaluate the potential use of contactless Smart Card and biometric technologies with the department's Common Access Card (CAC) in a physical access environment.

Datacard Unveils ID Works 4.0

Datacard Group has launched version 4.0 of ID Works, its identity software platform which can incorporate fingerprints and other biometrics for improving security and functionality of employee badges, government IDs, student IDs, membership cards and other identification cards.

According to Martin Kearsley, Senior Vice President and General Manager of Datacard's software and solutions division: "Our customers are demanding greater security, especially involving seamless biometric integration, without adding unnecessary complexity. We designed ID Works 4.0 to simplify capturing identity information, designing cards and managing identity databases."

BioProtect 2.0 Enhancements

Biometric Security Card has announced BioProtect 2.0 its fingerprint device with enhancements to the biometric algorithm to accommodate a wider range of finger positioning scenarios on the sensor and improve verification performance.

Biometric Time and Attendance

Sense Holdings (SENSE), a provider of biometrically secured authentication and identification systems, has announced the installation of its BioClock terminals and CheckPrint time and attendance software at Signature Companies, Fort Mill, SC corporate headquarters.

Secure Sign-on Solution

ActivCard has announced Trinity, its new secure sign-on software solution that integrates advanced authentication techniques including Smart Cards, fingerprint biometrics, hardware tokens, passwords, or combinations of these methods.

Trinity manages all user authentication policies across all supported platforms and applications from a single point of administration. Authentication can be enforced at the initial sign-on only or on an application-by-application basis, giving administrators the flexibility to easily comply with their organisation's authentication policy.

"The safest password is the one that nobody knows," said Ed MacBeth, Senior Vice President of Marketing, ActivCard. "Trinity allows IT managers to roll out maximum-length passwords — such as randomly generated 17 character passwords — for their key applications and automatically change them continuously. The beauty of this solution is that users do not have to remember any passwords, since they only have to lay down a biometric or insert a Smart Card and enter a PIN to log in."

News in Brief

IBiometric Security for NY Airports

Diversified Security Solutions Inc has signed an agreement with the Port Authority to provide electronic security and systems integration services for New York's John F Kennedy International, Newark Liberty International and LaGuardia airports.

They plan to incorporate iris-scanning and thumb print recognition into their current security systems, which include photo identification, and install a server that will govern all security and communications applications and assist in streamlining operations between each airport.

SmartGate at Sydney Airport

Sydney International Airport in Australia last month introduced automatic photo-matching identity verification technology.

Called SmartGate, the system was developed by the Australian Customs Service, Qantas and other border agencies and uses photo-matching technology to compare a live image taken at the Customs control point against a stored image of the passport holder.

The new system will be in wider use later this year when passports will be issued with the photo-matching technology embedded.

Intelli-Check and Bioscrypt Team

Intelli-Check and Bioscrypt are partnering to integrate Bioscrypt's fingerprint verification algorithm with Intelli-Check's ID-CHECK document verification technology. The solution is aimed at preventing fraud in cheque-cashing and credit cards using fake identification and to provide an enhanced security system for access control at airports, seaports, bus and rail terminals and other high profile areas. The fingerprint template will be stored in a 2D bar-code.

Datakey Model 330J Java Card

Datakey has introduced its Model 330J JavaCard which it says meets the highest levels of multi-application card security and efficiency and supports US government Smart Card initiatives.

The card has a single cryptographic and management applet stored in ROM, leaving more of its 32K EEP-ROM available for other applications and data storage. The 330J supports the usual cryptographic algo-rithms, including RSA, DES and 3DES, adheres to the OpenPlatform v2.0 standard, and meets US government Smart Card interoperability specifications.

"More and more, our customers want to leverage their Smart Card investment by adding other applications that may or may not be security-related," said Tim Russell, Vice President and General Manager, Datakey. "The Model 330J allows them to plan for and support these future applications without sacrificing security."

Digital Payments Forecast

Until Smart Card readers are incorporated into home computer keyboards, consumers will continue to resist readers as too much trouble and move toward server-based online security systems for online payments such as Verified by Visa, says a new report from SRI Consulting Business Intelligence.

However, once built-in card readers reach critical mass on home PCs, Web users may very well take to them as the preferred authentication method because the card-and-PIN setup will be similar to the typical point-of-sale experience.

The report, Digital Payments: Players, Alliances, and Emerging Standards, says that both Dell and Compaq have begun to offer Smart Card reader keyboards with some of their desktops.

In the online-bill-payments arena, the report says that the banks will not win the race against individual online billers until their consolidation services are convenient, universal (making it possible to pay almost any bill), and virtually free. That set of requirements is difficult to meet, so we should not expect a win soon.

The report says that Smart Cards, in their payment role as electronic purses, have yet to prove themselves in non-transit sales. However, a much better picture of their potential will emerge in 2003 as we see the take up of Sony's Edy card in Japan. If this proves to be a success, we should look for Sony to develop the card actively as a virtual global currency.

Combi Card for Mobile Payment

Gemplus has announced GemCombiXplore, the world's first contactless Combi Card designed for mobile handsets.

GemCombiXplore works in handsets with an embedded RFID antenna and drives combined applica-

tions, meaning that users can top-up their e-purse, purchase tickets over-the-air and pay tolls using their cell phone and a contactless interface.

The new product has been designed by Gemplus in conjunction with Gemplus applications development partner Smart Card Laboratory and is being pilot tested with operators throughout Europe.

Korean CDMA operator KT Freetel (KTF) is working with a local bank and transit operators to deploy GemCombiXplore cards to its customers, offering e-purse, debit/credit and loyalty applications as part of a new service package.

In Korea, transport operators are already using contactless Smart Cards and readers to replace conventional paper tickets. GemCombiXplore users use their cell phones as tickets, passing through electronic turnstiles equipped with contactless readers.

G&D Launch SIM Card Browser

Giesecke & Devrient (G&D) has announced Wireless Internet Browser (WIB) version 1.3, its latest micro-browser technology for SIM cards based on SmartTrust specifications.

Based on a client-gateway-server approach, the new version now enables mobile operators to offer an improved dynamic update and download mechanism for both applications and plug-ins onto the SIM card and is being offered on all G&D SIM cards, both Java and non-Java based. As the browser resides in the ROM, available EEPROM space is maximised and fully usable for the mobile operator.

GSM Mobile Network in Russia

Sweden's telecommunications company Tele2 has contracted with Siemens Information and Communication Mobile Group to build its GSM 1800 network throughout the Russian Federation.

Bolivia Selects GAIT SIM

Oberthur Card Systems has deployed the first GAIT Smart Card in Latin America on the Entel Móvil wireless network in Bolivia. The operator is to use Oberthur's SIMphonIC TDMA (Time Division Multiple Access) card.

The SIMphonIC TDMA Access allows access to both GSM and AMPS or TDMA networks (Americas, Eastern Asia and Australia) and is able to hold a range of security parameters and personal infor-

mation such as subscription details and phone book.

Juan Carlos Porro, Marketing Manager at Entel, said: "We are investing in the future for our clients in combining the advantages of the GSM technology with our solid TDMA coverage in Bolivia. The GAIT offer will facilitate the acceptance of GSM for our new and existing customers in Bolivia and will allow a smooth migration of our TDMA customers."

Based on the TIA/EIA/IS-136 and ETSI/GSM 11.11 standards, the SIMphonIC TDMA Access has been developed following the GAIT specification (GSM/ANSI-136 Interoperability Team).

Customer Care SIM for O_2

Gemplus is to supply 32K SIM Smart Cards to mobile operator O_2 Ireland for the first integrated customer care menu with roaming management in Ireland.

The customer care package is available through a SIM Toolkit menu in the SIM which provides access to account management functions enabling the subscriber to self-manage the phone.

T-Mobile/Lucent 3G UMTS Pilot

Lucent Technologies and T-Mobile have launched a joint pilot in the Nuremberg region of Germany to evaluate secure high-speed data services using 3G Universal Mobile Telecommunications System (UMTS) technology.

The system is designed to enable business customers to use their laptop PCs or PDAs to access, from any location, all the applications they normally use.

News in Brief

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EMV: A Revolution In Your Wallet

by Bev Stevens, Head of Consulting, Aconite

Credit and debit cardholders are going to see a lot of changes associated with these three letters in the future. Over the next decade, card issuers will replace the traditional card with a new Smart Card incorporating a computer chip.

Bev Stevens

The chip will make the payment process more secure and combat counterfeit card fraud. Many issuers have already started this replacement process.

What Does It Mean?

Debit and credit cards are now ubiquitous and schemes are generally interoperable throughout the world. A series of standards allow this to happen. They define:

☐ the card's physical attributes
☐ the format of its magnetic stripe
☐ the way terminals interact with the card
☐ how the payment is authorised by the card issuer
☐ how the transaction is captured for settlement

These elements are governed by card scheme rules and national and international standards. The rules and standards enable global interoperability of payment cards bearing the Visa and MasterCard logos.

Changing from magnetic stripe to Smart Card technology requires major changes to card specifications, issuance and the acceptance infrastructure — point of sales (POS) devices and ATMs. In addition, the chip enables much more sophisticated approaches to reduce fraud.

Throughout this change, it is essential to preserve the existing global interoperability of payment cards. To do this, EuroPay, MasterCard and Visa worked together to define the EMV standard for Smart Card payment cards. The standard is managed and maintained through EMVCo, an organisation set up by the three card schemes. The standard is 'open' and available to relevant organisations. Several other card schemes including American Express and JCB have adopted EMV.

What Will EMV Deliver?

Increasingly sophisticated counterfeiting operations

and other fraud demand more secure cards, which cannot be delivered through ageing magnetic stripe technology. The Smart Card provides a way to achieve this — and much more. *Table 1* shows some of the advantages of EMV.

The Business Case

Whilst the card schemes have issued the mandates, each individual card issuer, acquirer and merchant must determine their own business cases for EMV migration. *Table 2* shows how the costs will hit different players in different ways.

Smart Cards are significantly more expensive than magnetic stripe cards and upgrades to the issuance and acceptance infrastructures are also costly. However, as card issuers purchase card in increasing quantities, volume discounts for chips from silicon manufacturers will see Smart Card costs fall dramatically.

Benefits

The key benefits associated with EMV are:

☐ Reduced losses from counterfeiting
☐ Reduction in bad debt through improved risk controls
☐ Lower networking costs from the use of offline PIN and more effective 'floor levels'. Payments can be authorised by the card itself, without communicating with the issuer's authorisation system.
☐ Lower card replacement costs due to longer-life Smart Cards
☐ Fewer cards in your wallet as each physical card holds multiple card applications
☐ Branded lifestyle applications on multi-application cards to deliver richer propositions to the customer and increase loyalty
☐ More secure payment and cardholder authentication for e- and m-commerce

What Changes Will EMV Cardholders See?

Cardholders will see new credit cards containing a chip — identified as a gold rectangle on the front of the card. Many chip cards have already been issued in the UK and France. Cards will retain their magnetic stripes for compatibility during the changeover phase, which will not happen at the same speed everywhere. There is unlikely to be a mass re-issuance of

Feature	EMV Advantage
Anti-counterfeiting measures	☐ Smart Cards much harder to copy than magnetic stripe cards ☐ Sophisticated checks are implemented to ensure the authenticity of the card - the Card Authentication Method (CAM)
Post issuance risk controls	☐ Parametric changes to transaction limits
Improved Cardholder Verification Method (CMV)	☐ PIN verification of cardholder at POS ☐ Offline verification of PIN
Multiple application Capability	☐ More than one payment product on the same card ☐ Fewer cards in your wallet
Application other than payment applications on the same card	☐ Loyalty ☐ Ticketing ☐ Brand-specific applications

Table 1: EMV features and benefits

Cost Element	Issuer	Bank	Acquirer	Merchant
Smart Cards	✓			
Card Protection Systems	✓	✓		
ATM Smart Card Readers		✓		
ATM Software	✓	✓		
Modifications to Authorisation Systems		✓		
Standalone POS			✓	
Modifications to Acquisition Systems		✓	✓	
Modifications to Integrated Merchant Host Systems				✓

Table 2: EMV migration cost impact on payment scheme participants
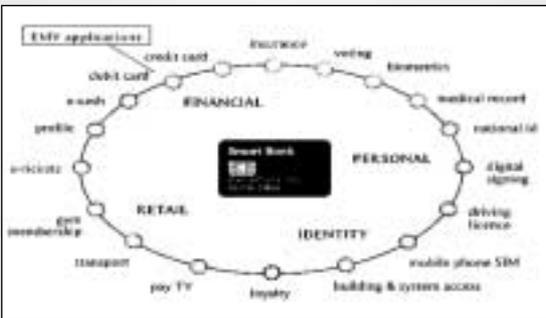

Figure 1: Multi-application lifestyle card applications

cards - most issuers will introduce chip cards as part of their normal replacement cycle.

At the POS, the merchant will insert the customer's smart credit or debit card into a slot in the terminal instead of 'swiping' the card. Some countries including the UK will implement PIN input at POS for cardholder verification - cardholders will key in their PIN on a 'PIN pad' at the terminal instead of signing the credit card receipt. This is quicker and less

open to fraud, but a major change to card payments. Issuers need to ensure that customers fully understand the impact of the changes. The need to remember a PIN is very important, as eventually, falling back to a signature will not be allowed — if the cardholder forgets the PIN, he or she will not be able to complete the transaction with that card.

The move to EMV has benefits for cardholders, but it is not without difficulties.

Downside

☐ **Cost**. Banks and merchants will have to make major investments in their infrastructure to enable the move to Smart Cards.
☐ **Change**. The changes will attract adverse comment from customers, who are unlikely to welcome the introduction of PIN at POS for cardholder verification.
☐ During the migration, there will be both old and new payment processes in use across the world, causing confusion.

Upside

☐ Fraud reduction.
☐ Merchants will benefit from PIN at POS, which offers more reliable identification than a signature. This reduces the impact of fraud on them — currently they are financially liable.
☐ Smart Cards are less attractive to fraudsters. The extension of Smart Cards for use over the internet will provide greater confidence than today for online purchases
☐ Everyone benefits from greater security and the enhanced functionality of the Smart Card.

Conclusion

EMV means great changes in the way we use payment cards. Whilst many of the benefits are in favour of the banks and merchants — reducing fraud — cardholders will see an upside too. EMV is having an impact now, but more importantly, it makes Smart Card technology mainstream. The rollout of Smart Cards, readers and other compatible devices helps to pave the way for exciting new lifestyle applications. We're all going to see a lot more of Smart Cards — EMV is just the beginning.

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Gains and Reduced Losses

Many of the major players in the industry are struggling to return to profitability in the general downturn in the world economy, weaker demand in some sectors like telecommunications and increased price pressure.

While still reporting losses, several companies who reported financial results recently are seeing the effects of employee lay-offs and cutbacks coupled with the determination to succeed in their fight back.

Semiconductor manufacturer **STMicroelectronics** brought welcome news for the industry as it reported year 2002 net revenues of $6.32 billion and a gross profit of $2.3 billion. Net income totalled $429.4 million.

In Q4, gross profit was $660.6 million, an 8.5% sequential increase from the prior quarter's $609.1 million, and 43.8% above last year's fourth quarter gross profit of $459.5 million.

Net income equalled $160.6 million in Q4, a sequential increase of 22.4% over the $131.2 million earned in the 2002 third quarter and significantly above the net income of $45.0 million reported in last year's fourth quarter.

Pasquale Pistorio, President and Chief Executive Officer, said: "We were pleased with ST's strong revenue performance, which exceeded the guidance provided in our 2002 third quarter earnings release." One of the key factors had been a spurt in demand for memory products.

Infineon Technologies reported a strong improvement with revenues of €1.52 billion, an increase of 10% sequentially and 47% year-on-year, for its first quarter in fiscal year 2003, ended 31 December, 2002.

The revenue increase was mainly driven by higher demand for memory products and semiconductors used in mobile phones, and the continued strong performance of the automotive & industrial segment.

Quarterly EBIT (earnings before interest and taxes) was a loss of €31 million, a strong improvement from a loss of €292 million in the previous quarter, which included exceptional effects of €119 million, and from a loss of €564 million in the first quarter of the last fiscal year.

Schlumberger's Q4 and full year 2002 financial results showed both operating revenues and income drop off from the previous year.

Despite disappointing results for the group overall, **SchlumbergerSema** (the division of the company concerned with Smart Cards) saw revenues improve 9% to $813 million sequentially and 7% year-on-year.

Gemplus, the French Smart Card group, said that it expects its operating loss for 2002 to be down to €94.7 million, from €125.2 million the previous year. It expects to record turnover of €787.4 million for the year compared with the €1.02 billion posted for 2001.

The French group, which was forced to abandon hopes of breaking even before the end of last year, said operating losses before restructuring charges would reach €16.6 million in Q4 and €94.7 million in the full year.

Gemplus blamed the shortfall on the general downturn in the world economy, weaker demand in the Asian telecommunications sector and the financial and security markets and increased price pressure.

Oberthur reported sales of €440.1 million for the year 2002 — in line with the company expectations.

Sales for the fourth quarter 2002 were €119.3 million, an increase of 15.5% on the previous quarter. Sales of mobile communication cards increased by 41% due to the opening of new markets in northern and eastern Europe. Chip migration programs by banks in the UK, France and the Benelux countries increased sales of microprocessor cards by 3.7% with 11 million cards being delivered in Q4.

Pay-TV cards decreased as well as authentication and network security cards by 25.5%, but over the same period sales of other card services and solutions increased by 11.3% and 22.3%. Full year sales declined by 9.1%.

Websites
- **STMicroelectronics**
  - www.st.com
- **Infinion**
  - www.infineon.com
- **SchlumbergerSema**
  - www.slb.com
- **Gemplus**
  - www.gemplus.com
- **Oberthur**
  - www.oberthurcs.com

Travelling Chips

by Matt Ablott, Assistant Editor, Smart Cards Now

Christophe Duverne

Smart Cards Now talks to Christophe Duverne, Vice President & General Manager, Global Identification Market Segment, Philips.

Philips is better known for its activities in the consumer world but the company maintains an equally strong presence in the semiconductor and Smart Card industries. The latest figures by Frost & Sullivan (2001) saw the Dutch giant lead the semiconductor industry with a 20% market share.

This quarter will see the launch of Philips' new 8 bit product family called Smart MX which will integrate the company's two existing 8 bit families — the MIFARE ProX dual interface controller and the WE contact family which includes its security and PKI product ranges.

Christophe Duverne highlights the banking sector as the key market segment for the company and he is quick to play down suggestions that developments in the financial world have been hampered by many banks' decision to go for a primitive contact EMV card to keep costs to a minimum. "There is a trend for going low-end but there are examples such as Cartes Bancaires in France where people are seriously considering PKI deployments within banking," he says. "The most important thing is taking the first step so I am not overly concerned at the specs that many of the banks are going for as the improvement in security levels is already significant. Once the infrastructure is there you can do a lot of things."

However, Duverne is critical of the way that the high-end multi-application concept is being presented to the banks: "The way it has been presented has been quite vague and fluffy," he says. "I don't believe in the multi-application concept that says you can have just one chip that can replace your whole purse. This may happen one day but is a much too big step at the moment, though we will see dual application schemes happening soon."

The other key area for Philips is the contactless sector where its MIFARE family enjoys an 80% slice of the market. The major application area for contactless has undoubtedly been in automated fare collection systems where, according to Duverne, there are currently 250-300m contactless transit cards in the field. Philips strength in the sector is based upon its large presence in the Asia-Pacific market where it runs schemes in over 30 cities in China, South Korea and other key areas in the region. Even in the US, which has always lagged behind Europe and Asia in the Smart Card space, contactless schemes are taking off. According to Duverne, there is not one metropolitan area in the US that does have a contactless transit project underway.

Duverne: "The reason these things are happening is that the business case for the operators is very strong — when you have a contactless infrastructure you have barely any mechanical parts so maintenance costs are very competitive."

Despite the fact that new schemes are cropping up seemingly everyday there is still no high level industry standard for transport and Duverne is reluctant to position MIFARE as a dominating standard. "We don't like the word 'dominating' but it is a very strong player," he says. "We are trying to establish a wide range of products — from MIFARE standard to ultra-lite to ProX. In a transport scheme this allows us to cover all needs of an operator from disposable tickets all the way through to a multi-application card."

As in the financial community, it is the cost of the cards that is often the problem area with the concept of a 'disposable ticket' rarely seen as cost-effective. Duverne: "Given significant volumes we can reduce prices and we have partners that are working on this right now."

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Corporate Spotlight

33
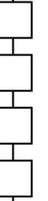
India Poised for Smart Card Boom ~ Part 2

by Uday Lal Pai, Business Journalist and Market/Industry Analyst

Uday Lal Pai

While talking about Smart Cards in India there are some salient aspects to be noted. Gujarat State Smart Card driving license: the biggest project of its kind in the world. Rajasthan milk card project: the world's first milk collection point based on Smart Card technology in India run exclusively by women. Indian government and UNICEF have launched the village Watsan information system, which ensures the construction and maintenance of the wells.

Incidentally, India has joined the Asia Pacific PKI forum, which would allow inter-operability to its digital certifying authority licensees with their counterparts in the member counterparts of that region. The forum allows the entire licensee (Certifying Authorities) of member countries of inter-operability among each other, by which the digital certificate of one licensee CA would be acceptable to its counterparts of the member countries, official sources said.

Floodgates are open

Yes, Smart Card companies are gung-ho about the Indian market. Companies such as SchlumbergerSema, Gemplus, Infineon, Hitachi, ST Microelectronics and Sony are believed to be keen to establish operations in India, even as domestic companies like Smart Chip Ltd are contemplating beefing up facilities in anticipation of the huge demand, industry experts say. Enthused by the spurt in cellular telephony in India, French Smart Card manufacturer SchlumbergerSema has decided to invest between $10-15 million by next year-end to scale up its operations in the country. The French company, which claims a 45% share of the Smart Card market worldwide and over 60% in India, plans to set up a SIM card manufacturing facility to churn out an estimated 20 million cards a month, SchlumbergerSema sales and marketing director (south Asia) Claus Hansen said. "Looking at the growth of the cellular mobile market, to keep pace with the growth, we will set up a manufacturing plant here." However, no timeframe had been decided for the setting up of the facility. It will be located most likely in Noida or Bangalore, Hansen said.

US-based Function International Corporation is in talks with "all the leading basic telecom players" to sell its Smart Card -based stand-alone payphones which can be remotely managed. The firm plans to tap the Indian market with Godrej Telecom Ltd. "Depending on the size of the market that evolves, Godrej could become our manufacturing partner, rather than just a distribution partner," marketing consultant at Function International, Donald R Woodwell said.

Paragon Converters from Malaysia are already setting up their manufacturing base for Smart Cards in Hyderabad. Card manufacturing companies Jiangsu Hengbao Co, China, and Intercard Ltd, Hong Kong are looking for Indian distributors. e-Cube Technologies from Vadodara is planning to invest in R&D and infrastructure for m-commerce and for developing terminals as they foresee a huge growth in these sectors.

DEI Ltd, the New Delhi-based plastic card processor, has struck a strategic alliance with the Germany-based ORGA to introduce Smart Card solutions in India. The alliance is expected to lead to the setting up of a Smart Card manufacturing venture in two or three years' time.

Germany-based smart label manufacturer X-ident is planning to set up a manufacturing facility in India soon. This facility will partly take care of the global requirement for its products that includes radio frequency ID technology-based Smart Card /label/ticket and reader gates.

The company already has a manufacturing facility in Germany and is about to set up another in Korea. "There is a growing need for our products and in order to meet the market demand, we have three countries in mind — India, China and Korea — where we can set up manufacturing bases," X-ident sales manager for Asia Vijay Kumar said.

Domestic firm Smart Chip hopes to double its capacities in the next 12-18 months and is considering an equity offer to raise $5-10 million for investments. Smart Chip Ltd and Syscom Corporation have announced that they have formed partnerships with global technology companies such as IBM, ACG, Veridicom, Watchdata and Rajpurohit GMP, to capture a lion's share of India's growing Smart Card market.

The government-owned Semiconductor Complex Limited (SCL) is planning to venture into Smart Card

manufacturing to utilise its idle capacity. The company has earmarked funds for installation of an automated Smart Card assembly line at its factory and is looking for a strategic partner for incremental technology support for chip fabrication.

On the flip side

Although India is currently one of the most significant card markets, it is nowhere on the 'Smart Card' map of the major card companies such as MasterCard and Visa. Why is it that India continues swiping the magnetic stripe-based card, while other countries migrate to the more sophisticated Smart Card systems?

Industry majors claim that card fraud in India is not alarming, which implies that there is no urgency to introduce high-on-security chip-based cards. The card volume in India is still low, thereby suggesting that the transition from magnetic stripe to chip-based system would be a very expensive proposition.

So, card issuers have not set themselves any strict deadline for introducing Smart Cards in the Indian market. For instance, MasterCard International, which is actively pursuing the Smart Card projects/pilot programs in over fifty countries, has not specified a clear timeframe for introducing the product in India. According to Sameer Vakil, Vice President & Country Manager, South Asia, MasterCard International, no credit/debit cards have been launched on a chip platform in India as yet. "The payment services industry in India is at an evolutionary stage and MasterCard will introduce Smart Cards at an appropriate time," he said.

Visa International executive vice-president (south east Asia) James Murray, who was in the country recently, said that Smart Cards would be introduced in India sometime around the "middle to the end of the decade. The main driver for chip-based Smart Cards is fraud," Murray said. And in India, card fraud is minimal, he added. Another reason which is stopping companies from a national roll-out of chip-based cards in India is that the volumes here are comparatively much lower than other markets. "The Indian market should be at least five to ten times the present size for Smart Cards to be a reality here," said Murray.
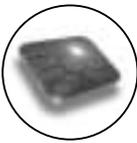
Standardising

New Year brings cheer to the Smart Card industry in India. The government of India has established a committee under the Chairmanship of Secretary, Ministry of Information Technology (MIT) to examine issues related to deployment of Smart Cards, identity applications, infrastructure requirements including banking and payment infrastructure and evolve standards to ensure interoperability. The Committee would examine international best practices and define the standards for the terminals and the security requirements to eliminate risks of frauds, as far as possible and thereby ensure widespread adoption of Smart Cards in all sectors of the economy. The Committee would also deliberate on the issue of type approval and identify areas where the local industry can play a major role. It was decided to set-up two sub-committees to evolve a comprehensive framework to facilitate deployment and manufacture of multi-application Smart Cards in India.

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Events Diary

March

4 - 7   Meeting 57 of the Asia Pacific Smart Card Association, IC CARD WORLD 2003, Japan's leading Smart Card exhibition, at the Tokyo International Exhibition Centre

         Website: www.apsca.org

11 - 13 2nd Smart Card Tech India 2003 International Exhibition and Conference, Pragati Maidan, New Delhi, India

         Tel: +91 11 463 8680-84
         Email: exhibitionsindia@vsnl.com
         Website: www.exhibitionsindia.org

April

1   Captive Audience Networks Digital Broadcast Media Solutions 4 Retailers, SAS Radisson Portman Square London, UK

         Retail Events Ltd
         Tel: +44 (0) 20-7430 0077
         Email: mark@retailevents.co.uk
         Website: www.retailevents.co.uk

1 - 2   SIM 2003 Conference, The Annual Meeting Place of the SIM Community, Amsterdam, The Netherlands

         Tel: +44 (0) 20 7017 5619
         Website: www.ibctelecoms.com/sim?src=CR1654-sce

2 - 3   Voice World Europe, Olympia Conference Centre, London, UK

         Email: jaimie.brook@terrapinn.com
         Website: www.terrapinn.com

3 - 4   Cards & Payments 2003 Conference & Expo 'Sharing the Rewards', Amsterdam, The Netherlands

         Website: www.cardsandpayments.com

Cartes 2002 ~ Trip Report

by Kevin Shorter and Bryony Pomeroy, QinetiQ Trusted Information Management

Kevin Shorter

Bryony Pomeroy

Cartes 2002 — the 17th international forum for card technologies and techniques — took place on the 5th, 6th, and 7th November 2002 at the Paris-Nord Villepinte Exhibition Centre (France). Kevin Shorter and Bryony Pomeroy of QinetiQ Trusted Information Management attended the conference. The following is a brief summary of the presentations they attended.

Speakers from NIST and DCSSI gave a brief summary of the Common Criteria and their relevance to Smart Cards. The talk began with an outline of the history of evaluation criteria. The first formal evaluation guide was the 'Orange Book', published in the mid 1980s. This was followed in 1990 by MSFR (NIST), and the Federal Criteria in 1992. The European ITSEC was produced in 1991, and the Canadians published their TCPEC in 1993. The Common Criteria were developed between 1993 and 1998, and are under continual review (the current version of the CC is v2.1).

The CC do not contain security 'requirements' — instead they use the concept of protection profiles, which may be used as a statement of requirements. Accredited laboratories evaluate products by testing conformance to the required protection profile. The number of these laboratories has been growing steadily over the past few years. In 2000 there were 25, there were 27 in 2001, and at present there are 33. The number of products gaining CC certification has also been growing in recent years, with 27 in 2000, 30 in 2001, and 68 in 2002.

It was noted that a CC certificate does not imply that the product is secure. In the ensuing debate, the speaker conceded that CC gives some measure of confidence that an evaluated product is secure, but cannot give a guarantee. It was also noted that the CC does not provide for the assessment of cryptography, although it is hoped that this will be addressed in the future.

There are two international agreements in place: the CCRA (the scope of which is capped at EAL4) and the SOG-IS (which covers up to EAL7).

As far as Smart Cards are concerned, evaluations are carried out in two phases. The first step is to evaluate the microcontroller, and the second step is to test the Smart Card together with the applications on it (using the results from the first step).

ST22 spoke about what they perceive to be the future for the JavaCard platform. The presenter pointed out that today's Smart Cards consist of 70% memory and 30% logical parts. He envisaged that by 2008, Smart Cards would contain around 90% memory and 10% logic. He stated that 32-bit CPUs are now mainstream, although 8 and 32 bit architectures will co-exist for the next three years. In his opinion, JavaCard 3.0 (the next version of JavaCard) will be "closer to Java". He thinks it will incorporate enhanced hardware features (eg: changing the memory model) and will include greater backward compatibility. He also thinks that there will be a protocol independent architecture, improving card management and resulting in better platform interoperability.

Over the three-day conference, a great deal of emphasis was placed on real-world implementations of Smart Cards. ASK spoke about a contactless paper ticket. Many ticket-based systems use magnetic stripe tickets, but these are old technology — there is a need for an alternative that is more secure/harder to forge; faster; lower maintenance; and capable of holding more information. The most important factor, however, is low cost. The C.ticket is basically a contactless Smart Card with a paper body and printing for the antenna. The C.tickets can be produced at a rate of ten per second, and are designed to be disposable and completely biodegradable. The tickets conform to ISO TFC.1 and follow ISO 14443. Already, four million tickets have been delivered (some to be used on the French train network). The tickets cost from 30-40 cents each, although more secure chips increase the cost per unit. Along the same lines, the speaker also discussed the C.label, a contactless smart label.

Xiring gave a presentation on access control with strong authentication. The talk concentrated on Xi-Sign, a handheld mobile authentication device that works in conjunction with a Smart Card. Authentication is achieved using challenge-response. A challenge is sent to the user via the web. The user inserts their Smart Card into the Xi-Sign device, and then types in the challenge on the keypad. The Smart Card generates a response, which is displayed on the screen. The user then copies this response to the server. The challenge is
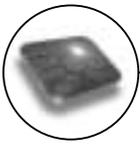
typically eight characters, and the response is usually three groups of four or six characters. Thus, the user is required to do quite a lot of copying of characters in order to use the scheme. Having said that, it is fairly easy to deploy, and there is no need to purchase and install card readers.

ALSTOM deal mainly in the fields of energy and transport. Their presentation concentrated on CASPA (Common ALSTOM Security Policy and Architecture). The aim is to promote security (protecting company assets) whilst reducing costs and making the IT as 'user friendly' as possible. CASPA has taken the approach of defining confidentiality, integrity and availability throughout the seven OSI layers, setting out the policy and then 'injecting' it into the architecture. CASPA includes the following components: smart token; single sign on; disk encryption; PKI; personal firewalls; a 'secrets' manager for storing passwords; windows logon; VPN; and LDAP.

A speaker from OmniTek gave a presentation on Prox cards. 'Prox' is a term used in the US to describe an RFID technology used in the access control market. This presentation concerned a new version of Prox card that overcomes several of the security weaknesses of its predecessor. With the old cards, the RF interface is publicly available, making it very easy for people to sniff the signal and then program a blank card to replay the same signal. The new card also benefits from encrypted communication and mutual authentication.

For access control, contactless cards are preferable to contact cards for at least two reasons. Firstly, they can transfer data at higher rates than contact cards, so that access decision is reached quicker. Secondly, the readers can be buried in walls of buildings, so are far less susceptible to vandalism. The speaker then outlined the types of contactless Smart Card available. In addition to the standard card there is the Hybrid card (aka Combi card), which is a contactless card with an extra contact chip (and no connection between the chips), and a dual interface card, which has two interfaces to a single chip.

A speaker from BMS introduced the Moneo contact e-purse, which is currently being developed in France. The e-purse will be included in renewed and future credit cards for consumers (there are 40 million credit cards currently in France). It will cost the consumer between €5 and €12 per year to use the e-purse, and consumers will need to register (it is not mandatory). The e-purse can be used to pay for small-value items. In an attempt to mimic the paper cash world, use of the e-purse is anonymous — there will simply be an item on the statement. The e-purse can be used for parking, at cafes, bakeries, newsagents, chain stores and banks, as well as for the SNCF. In the future they are planning for a multi-application card, and are currently looking for clear business cases to satisfy this within the next three years.

A presentation from the North East Regional Smart Card Consortium discussed current UK ID card plans and Smart Card initiatives underway in the UK. This included the Department of Work & Pensions and Department of Education (16-19 year olds) schemes. The speaker posed the question "Will there ever be an ID card in the UK?" The north-east region (including Northumberland, Tyne and Wear, Durham, Tees Valley) has 26 local councils and a population of 2.7 million. They are working with the major transport operators (bus, train, metro), Newcastle University and the regional development agency to roll out Smart Cards throughout the region. The emphasis is on citizen-centric (putting people first) and multi-application (transport — purse, incentives — retail and local Government services). The region is currently undergoing pilots including 30,000 GemSafe cards used for transport (hybrid contact/contactless card), school meals, leisure, rewards/incentives and authentication. The major lesson learnt from this rollout to children was that they did not like the colour scheme of the card — hence the citizen-centric approach! Future aims are to integrate with other UK Government initiatives such as the Connexions scheme and across Europe. The region is planning to set up authentication for e-Government services, corporate access (physical and logical) and for 'data consent management'. They are using the UK Government framework, which defines four levels of authentication for Government transactions (0 - informal, 1 - personal, 2 - financial/statutory consequence, 3 - sustantialfinancial/statutory or safety consequence). For example, with level 1 a citizen can log on to a website and view councillor information, whereas level 3 is required to examine account information. They are planning to set up a PKI and biometrics, and expect to receive enough funding from the UK Government to cover this.

To be continued...

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Smart Card News On Line: Round-Up

Smart Card Group's *Smart Card News On Line* service is emailed to subscribers every working day, reporting on industry events as they happen. This service is available FREE to *Smart Cards Now* subscribers (£100 per year for non-subscribers). For further details and to sign up please contact Amanda Pearce — amanda.pearce@smartcard.co.uk; tel: +44 1273 515651 (further contact details are available on page 23). Here's a selection of the headlines we covered in January:

Corporate

- Sincock Joins CTS
- New Chairman at GSM Association
- Smart Card Alliance Mid-Winter Conference
- Smart Card Pioneer Dies
- ACT Employees Prepare to Take on Bull
- 360 Degree and SchlumbergerSema Form Reseller Alliance
- Neometrix Acquires Kinetic Group
- Infineon First Quarter Results
- Gemplus Plan Still Under Wraps
- Schlumberger Posts Q4 and Full Year 2002 Results
- ST Reports Full Year and Q4 2002 Results
- ORGA Forms EEC Alliance
- Valicert and Momentum Systems Form Alliance

Banking

- Proton Selected For Eastern Europe Smart Card Project
- VeriFone Terminal Joins Visa Smart Programme
- Lithuanian Bank Reaches Payment Card Milestone
- RFI Start Visa Risk Testing
- First Data Adopt Arcot Merchant Solution
- TietoEnator Starts Latvian EMV Roll-Out
- CardSoft Launches Smart Financial Platform
- Smart Cards Look Forward to Bright Future in APAC
- Intellect Wins Payment Contract With CBA Bank
- Trintech Prepares for EMV Trial Roll Out
- Sagem To Develop New French Banking Cards
- Banks In EMV Race Against Time
- Amex Launch Blue Smart Card Internet Facility
- Malaysian Banks Plan Smart ATM Overhaul

Government

- Petaling Jaya Government Getting Tough
- Gemplus Deliver Smart Cards to Oman Police
- SSP Win DoD Smart Card Security Contract
- SAFLINK Wins Third DoD Order
- E-Voting On The E-Cards For The E-Government

ID & Authentication

- U.S. Department of Defence Places Order for 450 Fingerprint Readers

- Datacard to Resell Datakey Smart Card Portfolio
- INTI Launches Malaysian Campus Card
- IEI Launches Smart Card Access Biometric
- Macau Smart ID Cards Hit the Streets
- Datacard Upgrades ID Platform
- Biometric Security Card Launch BioProtect 2.0
- UK Smart ID Card Still Under Review
- Contactless Mexico/US Border System Underway
- SchlumbergerSema to Power Belgian ID Card
- UK Proof of Age on the Cards
- BioClock Makes Time for Better Security
- Smart Card Alliance Meeting to Address Identity Theft
- UK Smart ID Card Costs to hit £2.6bn
- ActivCard Launch New Sign On Solution
- Intelli-Check and Bioscrypt in Authentication Alliance
- Microsoft Forced Into Privacy U-Turn

Telecoms

- Mobile Electronic Purse and Event Ticketing
- Telia Mobile Finland Picks Nokia
- Gemplus Supplies O2 Ireland With Customer Care SIM
- T-Mobile and Lucent Technologies Launch 3G UMTS Pilot Project
- G&D Launches SIM Card Browser
- Bolivian Operator Selects Oberthur SIM

Technical

- Aladdin Drivers Awarded WHQL Cert
- New Wireless POS Service Launched in US
- EuroConex Launch European Chip Enabled Terminals
- PTSC Launches Smart Card Validation Suite
- Novell to Use Aladdin eToken
- JCC Rolls Out Card Tech Solution in Cyprus
- SmartRight Launch New Content Protection System
- Aladdin eToken to Store Entrust IDs
- Malaysian Smart ID Card to Vet Security Staff
- Secure Flash From AMD
- Emosyn To Integrate M-Systems Flash Products
- Atmel Launch USB Processor
- Wireless Watches Open Doors
- Trintech Launches Worlds Fastest Smart Terminal
- Strutus and Mosaic Launch Chip and PIN Solution
- Gemplus Card Receives German Electronic Signature Certification

- SAGEM Installs Eurodac System
- TDK Launch Smart Card Terminal Controller
- Sharp Develop New JavaCard OS
- Finland To Get Multi-Application Smart Card

Retail

- TranStar and NCR Showcase Smart Card Retail Solution
- Proton to Power Malaysian e-Purse Scheme

Transport

- Continental Airlines Expand Smart Card Processing
- Indian Car Company Launches Smart Card
- Smart Card Transit System for Pittsburgh
- New Automatic Vehicle ID Reader
- Australia Trial Biometric Airport System

Healthcare

- New US Smart Card Healthcare Pilot Underway
- US Nutrition Program Voices Doubts Over Smart Cards

Leisure

- 19 Year Old Stole DirectTV Secrets
- New Football Loyalty Card in the UK
- ERG Wins $20m Washington Transit Contract

Misc

- £65 Million Scottish Investment
- DSP Group License ARM Core
- Keycorp Win $30m Contract in Turkey
- Catuity Receives Notice of Allowance on Loyalty Patents
- Inside and FreedomPay Launch Loyalty Smart Card
- Thales Not Alone
- ABN AMRO Choose Oberthur Identrus Solution
- Incard Launch Brazilian Joint Venture
- GeoTrust Integrates Arcot Solution
- LogicaCMG Implements New Card System In Finland
- Smart Cards to Power Malaysian Conference
- UK Post Office To Do More With Smart Cards - It Just Doesn't Know What
- Four-To-One Majority In Favour of Entitlement Card

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Credit Card

Number

Expiry Date

Signature

Name

Company

Address

Telephone

Email

	Year End Dec 31st 2002	Year End Dec 31st 2001
Sales	787,434	1,022,986
Cost of Sales	(587,722)	(715,516)
Gross Profit	199,712	307,470
Operating Expenses	(294,363)	(432,629)
Operating Loss Before Restructuring	(94,651)	(125,159)
Operating Loss	(184,654)	(153,625)
Net Loss	(320,891)	(100,220)

Table 1
Gemplus International SA Condensed Unaudited Consolidated Statement of Income (€Thousands)

	Year End Dec 31st 2002	Year End Dec 31st 2001
Sales	41,840	31,176
Cost of Sales	13,452	9,578
Gross Profit	28,388	21,598
Operating Expenses	61,718	54.535
Operating Loss	(33,330)	(32,937)
Net Loss	(45,493)	(16,709)

Table 2
ActivCard Unaudited Condensed Consolidated Statement of Operations US GAAP ($(US) Thousands)

	Year End Dec 31st 2002	Year End Dec 31st 2001
Sales	11,922	14,367
Cost of Sales	2,609	3,599
Gross Profit	9,313	10,768
Operating Expenses	16,971	19,911
Operating Loss	(7,658)	(9,143)
Net Loss	(3,771)	(3,956)

Table 3
nCipher Unaudited Consolidated Profit and Loss Account US GAAP (£Thousands)

nCipher cite the market downturn as the source of their problems so the question remains concerning what is going up and what is going down. The number of e-business transactions is almost certainly on the increase, but in 2002 there was a downturn in the provision of infrastructure. PKI is certainly one of those areas which have been hit, not because you don't need digital signatures but more because people are seeing the underlying infrastructure in a different way. SSL is probably still the dominating cryptographic underlay and many sites are still able to manage without the specialist hardware. When times are hard you are going to hold back on non-essential investments, but if you believe in e-business it's only a matter of time before the spending will return. All that will matter to nCipher is 'do we have the right product at the right price?' Management has been taking the hard decisions on overheads including staff as can be seen in the reduction of overheads whilst R&D is holding its own. In their area nCipher are a leader so it's hopefully just a waiting game!