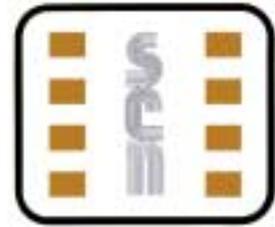




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Dear Subscribers,

A very happy New Year and may we all prosper. The last year, as far as the Smart Card industry was concerned, was a promising year. The major players like Gemplus and Axalto were reporting good figures for the third quarter and the year to date as whole. Their growth was based on an active Mobile communications market and of course EMV migration which is now in full swing. Probably the most interesting and dare I say exciting products to appear last year were the large 64K and above (particularly NEC) memory in chips designed to carry the biometric images for electronic passports. In the contactless world NFC (Near Field Communications) with a pilot from Philips, Nokia, and Visa for integrating mobile phones into this contactless world shows enormous potential.

As an industry reporter it would appear to me that governments were the drivers for the new Smart Cards of tomorrow. ICAO and its standards for ePassports, heavily supported by the US Government, is driving the memory requirements ever higher and of course its contactless. Many countries in Europe and Asia are issuing National Identity cards and even the UK government is well down this path, well they were until Blunket (UK Home Secretary) resigned at least. How much the citizen will benefit from the vast sums of public money that is being spent to supposedly improve the citizen's safety and live style, we can only wait and see.

In the UK we may start to see the benefits of the ITSO's specification's for interoperable transport ticketing. It seems along time coming but I can't wait for the moment when I need only one ticket to travel from Brighton to Aberdeen, which will include my bus journey to the railway station and, by the way, I also have a travel concession. Contactless, I'm sure, will be a big thing this year with lots of exciting new products as there will be in mobile telecoms.

I am looking forward to this new year and invite any reader who agrees or disagrees with my opinion's to write to me.

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Smart Card News



Smart Payment Alliance



The world's leading Smart Card manufacturers Axalto, Gemplus International S.A., Giesecke & Devrient, and Oberthur Card Systems announced on January 24th the creation of the Smart Payment Alliance (SPA), a non-profit association dedicated to fostering and facilitating the usage of Smart Cards to make payments. The SPA is committed to promoting chip card-based payment applications, improving value-added application interoperability, establishing relevant specifications, and improving security and quality.

The Smart Payment Alliance's main objective is to accelerate the transition from traditional magnetic stripe cards to chip-based cards by:

- 1) Promoting the benefits of Smart Cards for financial institutions
- 2) Ensuring optimal interoperability between all system components, for both payment and value-added applications
- 3) Establishing representation on standardisation committees and within payment associations
- 4) Describing use cases for value-added applications and, whenever necessary, establishing joint industry specifications for them

The strategy of the Alliance is to position itself as a partner of EMVCo and to bolster Visa and MasterCard actions on EMV specifications and their implementation. Aiming to establish consistent specifications, the Alliance members will be involved in very focused workgroups. Meeting regularly, they will carry out projects to advance interoperability as well as develop additional smart payment solutions, which would be difficult to achieve without the concentration of such industrial knowledge. Of the Major players only Orga seems to be missing but the Alliance is open to Smart Card vendors, POS Terminal vendors, Software and Solution providers and Payment Associations

The primary mission seems to be all about EMV migration but its not clear why the major card companies feel the need for yet another Association at the level at which you would normally expect them to be competing. Digging deeper into the deliverables of the Association we find Use cases and 'success stories for banks' (Ed: I'm sure they can't wait), specifications for non-payment use cases (cards, personalisation, POS, PC, etc) which includes test tools and suites for these specifications, cross testing of products, and marketing communications of the Alliance and its members.

Apart from being a 'partner' of EMVCo the Alliance will help Mastercard and Visa turn the EMV migration to a worldwide success now and in the future. It was accordingly a little disappointing to note that none of these organisations have yet found their way to join the Alliance. The aim is to be complementary to what Visa, Mastercard & JCB are doing. Visa & Mastercard are issuing EMV specs and the SPA alliance is to work on their implementation: common voice regarding the interpretation of the issued specs to ensure that the specs are stable.

Regarding value added non-payment applications: reference guides for the banks to ease the implementation of these value added non-payment applications to ensure better usage of EMV multiapplications opportunities (needs for card holders, business cases ...) In terms of a potential overlap with Global Platform the Alliance says, "The scope of Global Platform is to enable a universal platform for cards & application management, cross industry wide. Nothing specific to EMV applications is addressed in GP".

Regarding a potential overlap with EMVCo the Alliance says, " The joint body of Visa and Mastercard (are responsible) for the issuing of EMV specifications. The implementation part and associated field issues are not addressed by EMVCo". One cannot help but applaud such a level of inter industry cooperation from the top players but it is not clear at this stage exactly what the Alliance is going to deliver, could it be that this is the start of a relaunch for multi-application Smart Cards? Whatever - we look forward to seeing the specifications!





Are we Ready for Chip and PIN?

With the introduction of Chip and PIN on 1st January 2005, PA Consulting Group has re-released its survey findings from the summer of 2004 on consumers' readiness for Chip and PIN. The key findings of PA's survey of 500 consumers were that only one third of people (35%) knew the PIN number for all their cards - with consumers often only recalling the PIN numbers of cards that they use to withdraw cash. This was a particular issue for credit cards where the habit of avoiding incurring high interest rates and charges on cash withdrawals means that consumers have simply destroyed PIN numbers on receipt.

Also the survey found that consumers do not know which of their cards are Chip & PIN enabled. One quarter (24%) of respondents did not know whether their credit cards were enabled. Despite the recent advertising campaign, confusion persists. This survey found a 93% unprompted awareness rate for the term Chip & PIN. However, when questioned about when Chip & PIN takes effect, only 15% answered correctly and the qualitative answers highlighted confusion.

1 in 5 Still Not Using PIN

Research conducted by Visa suggests that less than one in five chip & PIN cardholders use their PIN to verify their purchases. According to the research, consumers are nervous to use their PIN because the technology was new to them. The research also found that although three out of five cardholders in the UK have a chip card they can't remember the PIN number. 24% or a quarter of respondents said retailer staff did not encourage the use of the PIN,

Smart Cards for World Cup Grounds

German Football team 1. FC Köln has implemented a multi-function contactless ticketing solution based on Philips MIFARE DESFire chip technology. Since the beginning of October, season ticket holders for the RheinEnergieStadion, Cologne - one of 12 venues due to host the 2006 FIFA World Cup - have been able to access the recently rebuilt 51,000 capacity arena using a contactless Smart Card.

Globally, a growing number of clubs have already implemented Philips' Smart Card solutions for access to their stadiums, including PSV Eindhoven in The Netherlands and Real Madrid C.F in Spain.

More than an access control system, the cards can also work as a loyalty card or electronic purse, enabling football clubs to design applications around their fans' needs. The initial implementation will be further enhanced with additional services, such as cashless payment for a variety of services, all of which can be incorporated into the same infrastructure - including smart cards already in the field.

Axalto Delivers Dual-Mode Card

Axalto has delivered dual-mode Simera Airflex cards to China Unicom in a bid to promote China Unicom's new service brand - World Wind. World Wind is the first dual mode service to be available globally, and Axalto's GSM/CDMA dual-mode Simera Airflex card delivery sets the record of the first commercial reference in the world. Apart from bringing a new level of mobility to end-users, Axalto's dual-mode Simera Airflex makes it possible for the dual-network MNOs to simplify their logistic of subscription management, as the same card will be able to address both the CDMA and/ or GSM accounts.

1 Million Smart Cards for UAE Banks

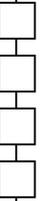
According to an official from the Emirates Bank Group, Network International, the UAE's largest payment card service provider and part of the Emirates Bank Group will produce one million Smart Cards for the UAE banks in 2005.

Biometric Documents for Serbia

Muhlbauer has been given the go ahead to produce Smart Card security documents, vehicle registrations, identity cards and drivers licenses which will include biometrics for the Serbian government. Serbia will be one of the first countries to produce security documents with biometrics.

Axalto and Intercede Collaborate

Axalto and Intercede have collaborated in the Smart Card and identity management market with a combined solution designed to enable businesses, government agencies and educational establishments to protect their PCs, networks, virtual private networks (VPNs), buildings and facilities. This partnership integrates Intercede's MyID Smart Card and identity management technology with Axalto's Card Management Toolkit technology, Smart Cards and middleware.





US DOL to use Mifare DESFire

The US Department of Interior (DoI) is to begin full-scale deployment of a physical access control system using Philips' MIFARE DESFire contactless chip technology, which complies with the US Government Smart Card Interoperability Specification (GSC-IS). The DoI will issue the Smart Card to its employees in an effort to improve secure access to its facilities across the USA. This is the same technology as used by NASA to ensure secure access facility.

By the end of 2004, the entire US DoI will have issued as many as 30,000 of the cards and, by late 2005, some 70,000 cards will have been issued for all its employees, encompassing up to 20 different locations and including 'first responders' such as affiliated fire-fighters, police and emergency personnel. "Contactless Smart Card technology is a logical next step for secure access within government facilities," noted Bob Donelson, Smart Card programme manager for DoI.

Biometric City Smart Card for Turkey

e-Smart Technologies, Inc has entered into a Cooperation Agreement with two companies with the goal of providing e-Smart's Biometric Verification Security System (BVS2) and Super Smart Card as a City Smart Card and government Smart Card in Turkey, including a National ID Card. The two companies are Olcan Cad, an information technology provider in Istanbul, and Daewoo International Corporation, a Korean multi-industry company.

QI Team with Osage

QI Systems Inc has entered into a landmark teaming agreement with the Osage Business Enterprise, the business component of the Osage Indian Tribe. Under the far-reaching agreement the Osage will partner with QI Systems to pursue government contracts and grants related to Smart Card technology for cashless payment transactions, security, identification and other applications.

New FeliCa Card Ticket Machines

Oki Electric Industry has delivered to Shochiku web ticket machines that support credit cards and FeliCa cards. The machine allows users to receive their reserved tickets by inserting their credit cards or FeliCa Smart Cards.

Shochiku has deployed Ticket Web SHOCHIKU machines at four locations in Tokyo, and the company is expected to install the machines at Shochiku theatres in Tokyo, Osaka, and Kyoto beginning in June 2005. Oki aims to step up its drive to sell the machines to other theatres and cinemas.

e-Currency Biometric Smart Card

Mybi Co., Ltd. has entered into an agreement with Samsung SDS, Ltd., a global leader in IT solutions, and e-Smart Korea, a wholly owned subsidiary of e-Smart Technologies, Inc., a provider of biometric Smart Card technology, to distribute a multi-application e-Currency biometric Smart Card. The agreement calls for the distribution of more than 1 million "Mybi-eSmart Cards" in 10 major Korean cities currently serviced by Mybi's e-Currency card.

The new card will integrate Mybi's e-Currency product into e-Smart's Super Smart Card. The "Mybi-eSmart Card" project also calls for e-Smart and Samsung to implement a medical portal site for 10 targeted hospitals in Busan City, Korea, by mid-2005 for payment of hospital, pharmacy, medical and insurance fees.

Boots Selects Fingerprint Sensors

Boots Group PLC has selected an authentication system featuring fingerprint sensors from AuthenTec to replace passwords - speeding user login and helping to identify operators at its Nottingham UK drug manufacturing plant. Boots Group chose Bioscrypt's V-Flex finger scan reader, which features the FingerLoc sensor from AuthenTec.

For more information visit ...



Muhlbauer

www.muhlbauer.com

Axalto

www.axalto.com

e-Smart Technologies

www.e-smarttechnologies.com

FeliCa Cards

www.sony.net/Products/felica/index.ht





20 million SIM Cards for MTS

Axalto has signed an agreement to provide 20 million SIM cards to MobileTeleSystems (MTS), the largest mobile phone operator in Russia. The deliveries started in fourth quarter of 2004.

INSIDE and Dexit Agree on RFID

INSIDE Contactless and Dexit Inc. have entered into a multi-year non-exclusive Master Supply Agreement for INSIDE's radio frequency identification (RFID) technology. Covering Dexit's range of contactless consumer form-factors and the RFID reader technology built within Dexit's point-of-sale (POS) terminals, the Agreement assures Dexit immediate access to at least 500,000 and as many as 1 Million contactless keyfobs at a preferred declining price.

JCB Acquires a Third in EMVCo

JCB has acquired one-third ownership in EMVCo, LLC (EMVCo), joining MasterCard International and Visa International, and giving all three members equal interests in the organisation. JCB will appoint representatives to the EMVCo board of managers and the executive committee, as well as its working groups. EMVCo manages and enhances EMV Integrated Circuit Card Specifications for Payment Systems in line with advances in technology and the implementation of chip card programs.

ActivCard Acquire ASPACE

ActivCard has acquired UK-based ASPACE Solutions. This fast growing segment is part of the over \$2 billion identity and access management market that is estimated to grow about 10% annually. With ASPACE's technology, developed over the last three years with major banks, the new set of ActivCard solutions will enable banks to authenticate customers and provide authorisation for banking services, delivering a combination of better customer service and enhanced protection against fraud such as identity theft and "phishing."

New LEGIC Licence Partner

LEGIC Identsystems Ltd has appointed Idesco Oy as its first licence partner in Finland. Idesco Oy develops, manufactures and markets readers, reader modules, tags and cards based on RFID (Radio Frequency Identification) technology.

VeriFone Vx forGaranti Bank

Garanti Bank has opted to deploy the newly announced Vx 510 payment system, one of the first models in the recently introduced VeriFone, Inc., Vx Solutions family. The bank's decision follows the successful release of 18,000 units of the VeriFone Omni 3750 to the bank's merchants in 2004. Garanti Bank's Bonus Card Program is one of the most widespread and sophisticated card programs in Turkey, offering co-branded loyalty, installment and EMV.

Gemplus Buy-Back Gets Approval

Gemplus has received the approval from the AMF (Autorité des Marchés Financiers) for its information memorandum regarding a buy-back program of up to 10% of Gemplus shares. This corresponds to up to 59.5 million shares and could amount to a maximum of 178 million Euros.

The objectives are the cancellation of shares, the allocation of shares to employees benefiting from a share allocation program such as the company stock option scheme, the sale or transfer of shares resulting from convertible debt instruments and the remittance of shares as payment or exchange in relation to possible external growth transactions.

Certification for MagIC 5100 in Italy

Axalto has announced that its MagIC 5100 POS terminal has been EMV certified by the Association of Italian Banks (ABI), in compliance with its Progetto Microcicuito specification. The ABI EMV application is the implementation of this standard for the Italian market, that is to be deployed in the near future on all terminals in the field.

Societe Generale Selects Oberthur

Oberthur Card Systems has been selected by Société Générale Group to manufacture and personalise more than half of its worldwide payment card portfolio together with Credit du Nord Group's card portfolio. The two year agreement governs France and Societe Generale's main branches in Eastern Europe and Africa.





New Subcontract for U.S TWIC

SAFLINK Corporation has been selected as a key technology provider to BearingPoint, Inc. for the U.S. Department of Homeland Security's Transportation Worker Identification Credential (TWIC) prototype phase contract awarded to BearingPoint. This is the third phase in a massive initiative designed to improve security at seaports, airports, rail, pipeline, trucking, and mass transit facilities by creating a nationwide credential to prevent unauthorized persons from gaining access to secure areas.

SAFLINK will provide biometric expertise and consulting services, biometric middleware for computer workstations, physical access control hardware and firmware for doorways and physical access points, and Smart Card middleware from Litronic, a SAFLINK company.

Additional ASEC Order for Terminals

On Track Innovations Ltd's subsidiary, ASEC S.A., has received a follow-on order for 1500 additional Verifone's Omni 3750 terminals with contactless reader solutions for micropayments to be located in one of the largest kiosk chains across Poland. The order follows an earlier announced initial order for 1000 terminals, and creates one of the largest infrastructure for contactless payments in the market, which can support additional applications to meet the needs of stores, hypermarkets, and other commercial enterprises.

Corex Changes its Name to CardScan

Corex Technologies Corporation announced that it has changed its name to CardScan, Inc. to leverage the success of its product, CardScan, and its reputation, to its entire organisation as well as to its family of products and associated services.

Contactless Solution for Toulouse

In Toulouse, in southern France, Ascom is going to outfit the city's public transport network with a new information and ticketing system. The current equipment will be replaced by new machines from Ascom that can read the existing tickets and communicate with the present system until the contactless ticketing system is introduced in September 2006. The contract is worth 24 million euros. In September 2006, the city will switch to a contactless solution on the whole network.

Parlex and Infineon to Form JV

Parlex Corporation and Infineon Technologies AG have agreed to establish a joint venture company to manufacture and sell advanced technology substrates for secure mobile electronic identification products. The joint venture will be headquartered in Hong Kong with manufacturing facilities in China. In addition to supplying substrates for the Infineon "Flip Chip on Substrate (FCOS)" program, the joint venture will offer its products to customers worldwide. It is anticipated that this new entity will be operational in April 2005.

Pallets with UHF tags for Nestlé

UPM Rafsec, has participated in METRO Group's RFID roll-out and in creating the first automatic pallet labeling device for UHF RFID tags for Nestlé. This innovative solution facilitated by Nestlé was created in collaboration with SATO Deutschland GmbH, a leading manufacturer of label and barcode printers and a specialist in data collection systems (DCS) and RFID.

Bell ID Joins Fargo Alliance

Bell ID, of Rotterdam has become the 35th member the Fargo Technology Alliance (FTA). The FTA is a world-wide technology group that unites industry-leading biometrics, smart cards, systems integration and software solution providers with Fargo's distribution partners to create advanced card identity solutions. Bell ID develop's Smart Card management software.

For more information visit ...



Inside Contactless
www.insidefr.com

ActivCard
www.activcard.com

VeriFone Payment Solutions
www.verifone.com

Bell ID
www.bellid.com

UPM Rafsec
www.rafsec.com





Sales of i-mode FeliCa Smart Card handsets exceeded one million units, some five months since the service's introduction on July 10, 2004. The service has grown faster than the i-mode service, which took five and a half months to reach one million subscribers after its launch on February 22, 1999.

E-gate App for Oman Smart Card

Col (Dr) Sulaiman bin Mohammed Al Harthy, the director-general of civil status, Royal Oman Police (ROP) has unveiled a new application for the Oman National Identity Smart Card. The new application will enable the National ID card users to utilise the electronic gates 'fast track' facility at the Seeb International Airport

China's Border Clearance a Success

China's Secretary for Security Ambrose Lee has announced the introduction of an automated passenger clearance system at Lo Wu border checkpoint, which uses China's new national smart ID cards has been a success. It has so far been estimated that about 72,000 passengers have made use of this system since its launch last month.

The number of so-called 'e-channels' will be increased to nine from three during Chinese New Year. Mr Lee said when the replacement exercise of smart ID cards is finished in 2007, the bureau will consider expanding the e-channels to cover card holders of residents who have spent less than seven years in Hong Kong.

Biometric Visa System for European

SuperCom, Ltd has signed an agreement with a European government to deploy a cutting-edge biometric visa issuance system in its Embassies throughout the world. The project's first stage, valued at approximately \$500,000, has begun and involves installations in several of the government's Embassies.

Innova Card Raises \square 3.5 million

Innova Card has achieved 3.5 million euros capital increase in investment. Historical shareholders and three new financial investors, Innovacom, LC Capital and Siparex Ventures, have participated in this equity subscription.

Founded in 2002 by former ST and Gemplus executives, Innova Card offers hardware and software

solutions, EMV and FINREAD compatible, based on USIP Professional IC (Universal Secure Integrated Platform). This capital increase will allow Innova Card to launch the production of its first product USIP and massively deploy its sales worldwide.

SCS Wins UK Transport Contract

Smart Card Solutions (SCS) has won a tender from the UK Department for Transport to provide technical support to AILO, the Association of ITSO Licensed Operators. Under the contract, awarded by the DfT to Smartex Limited, SCS is responsible for all technical support required by AILO. This includes the production of Codes of Practice and User Guides to facilitate the establishment and management of transport schemes complying with the ITSO Smart Card specification.

First High Speed 3G SIM Download

Gemplus has carried out the world's first high speed Java SIM card applet download over the live 3G infrastructure of 3 Hong Kong. Using a faster and more powerful communication channel based on USIM and OTA technology for 3G, Gemplus was able to download a data applet over 3 HK's live network onto a 3G video mobile phone at a speed of 384 kbit/s. This represents a significant improvement over SMS bearer technology which is currently used for SIM OTA in 2G.

Smart System for Washington Metro

Cubic Transportation Systems, Inc has completed expansion of SmartTrip, the nation's first Smart Card based fare collection system, on the new 3.1-mile extension of the Washington Metro's Blue Line that opened December 18.

Bell ID Joins Multos Consortium

Bell ID and MAOSCO, has announced an agreement for Bell ID to join the MULTOS Consortium. As a result Bell ID will gain an influential seat on the Systems Forum and Business Advisory Group of the MULTOS standards body.





On the Move

Gemplus Appoints New VP in Asia



Gemplus has appointed Frédéric Vasnier as Vice President, Sales & Marketing, Telecom Business Unit, Asia Pacific, based in Singapore.

Asia presents remarkable opportunities in the telecom sector due to diverse factors such as the ramp up of 3G in Japan and Korea, the importance of China, exponential growth in India and the uptake of value added services in South East Asia. He will take up this new position as of 1st January 2005.

New Chairman at GD



Giesecke & Devrient (G&D) have appointed Dr. Karsten Ottenberg as their new Chairman of the Board of Directors. Dr. Ottenberg is to take up his new position on April 1, 2005.

The 43-year-old doctor of physics joins G&D from Philips Electronics of the Netherlands. Dr. Ottenberg is currently globally responsible for marketing in Philips' semiconductors business, and for sales in the consumer and multimedia segment, covering the consumer electronics, computer equipment and automotive electronics markets.

From 1999 to 2002, he headed Philips' international business in semiconductors for Smart Card and RFID applications.

New Appointment at Wayfarer



Alan Hardy has been appointed Head of Export Sales at Wayfarer Transit Systems. In his new role, Alan will be devising and implementing the company's future strategy for overseas sales across all areas of the company's business.

Alan joined the Poole-based company, which is the UK market leader in public transport revenue collection systems, earlier this year on the back of major contract gains in Australia and Ireland.

Changes at LogicaCMG

LogicaCMG has announced the following appointments, effective 1st January 2005, the start of their new financial year. Jim McKenna (49) becomes Chief Operating Officer.

Guy Warren (45) will join the Executive Committee as Chief Executive, UK. Reinoud Drenth (41) will join the Executive Committee as Chief Executive for the Group's operations in France, Belgium, Central & Eastern Europe, Nordics and Baltics. Reinoud, a Dutch national, has been responsible for managing the Group's outsourcing operations in the Netherlands. Nick Caplan (45) will join the Executive Committee in his current role of Managing Director, Global Financial Services.

New Board Member for BIO-Key

BIO-key International Inc has announced that John Schoenherr, Vice President, Analytic Solutions, Oracle Corporation has joined BIO-Key's Board of Directors. With over 25 years experience in the area of business intelligence, he is a regular speaker at Oracle conferences on the topic of CPM and analytic applications.

VeriFone Appoints New Director

VeriFone, Inc has announced the appointment of Dr. James C. Castle and Dr. Leslie G. Denend to the board of directors. VeriFone has also pledged \$100,000 to the Tsunami disaster relief efforts under way in Southeast Asia.

Checkpoint Appoints New Director

Checkpoint Systems, Inc. has announced the appointment of Harald Einsmann, Ph.D. to its Board of Directors. This appointment expands the number of Checkpoint Systems directors to eleven, comprised of eight outside independent directors and three inside directors.

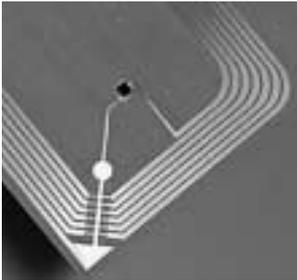
LaserCard Appoints New Director

LaserCard Corporation has announced the appointment of Mr. A.J. "Bert" Moyer to the company's board of directors.





"Slap and Ship" for RFID is Less Common than Many Believe



The ARC Advisory Group conducted a Best Practices study in which ARC talked to 24 companies that were actively investing in EPC RFID (Electronic Product Code Radio Frequency Identification). RFID tags can be applied at the packaging line or the Distribution Center (DC). According to Steve Banker, Service Director for Supply Chain Management at ARC Advisory Group, "in our sample, 85% of the facilities where tags were applied were DCs.

However, even when tags are applied at the DC's, the term 'slap and ship' does not fairly reflect what is going on at many DCs. There is both more automation, and more process variation, than has been generally recognised." Wal-Mart has mandated that by January 2005 its top 100 suppliers must apply passive RFID tags based on EPC-global standards to cases and pallets headed toward three specific DC's in Texas. Virtually all manufacturers of consumer goods will eventually be impacted by this because Wal-Mart's moves in RFID are being copied by other retailers. "Slap & stick" is the term that has been used for the process of applying RFID tags in the DC. "Slap and stick" reflects the idea that applying tags in the Distribution Center will be a more manual, labor intensive processes than applying tags at the factory.

The general process for applying RFID tags at the DC would be to identify the orders that need RFID tags, divert those pallets to a special Value Added Service (VAS) station where shrink wrap is removed from the pallet, cases are taken off, tags applied to cases, the tags are verified to be good, cases are reloaded onto the pallet, shrink wrap is reapplied to the pallet, a pallet tag is applied and verified, and the pallet is sent to the appropriate loading dock. Tagging cases in the DC wastes labor because previously assembled pallets have to be broken down and reassembled. Broadly speaking, there are three methodologies that suppliers can use to apply tags in a DC. The first method, the manual "slap and ship" methodology, has already been described. The second method involves the use of conveyors either to move pallets or cases to the VAS tag application station, or from the RFID tag application station to a palletization station, or from a palletization station to the appropriate shipping dock.

Conveyor lines may also contain start and stop gates and diverts. "Start and stop gates" are necessary when tags cannot be encoded or applied at high speed. These gates stop the line and allow tag application to proceed. A "divert" allows cases whose tags cannot be verified to be diverted off to a side station for reapplication of the tag. The third methodology is to preprint encoded RFID labels and then apply these labels to the cases upon picking the cases. Typically this would be pick-to-cart for mixed pallet orders.

Finally, these methodologies are not mutually exclusive. A company may chose to do this in more than one way in the same DC. There are valid reasons for all these approaches. Even the "slap and ship" methodology can be more variable than many recognize. For example, while RFID tags will usually be applied at a pre-existing RFID VAS station, in some cases, depending upon staffing and capacity issues, it may make more sense to apply these tags at an ad hoc station set up on the receiving dock.

www.arcweb.com





Digital Tachograph Becomes a Reality

From August 2005, all newly registered trucks and buses will have to be fitted with the electronic monitoring devices, which replace the analog tachographs currently in use. Operating together with a Smart Card, the digital device will reliably monitor whether drivers are taking breaks according to regulations and complying with speed limits.

As part of the changeover, the Munich-based technology group Giesecke & Devrient (G&D) has supplied the German Federal Motor Transport Authority (KBA) with the technological infrastructure needed for personalisation and mailing of the Smart Cards required for the system. Installation of the equipment in Flensburg has now been completed, so that personalisation of the cards can begin.



Flensburg, Germany

Four different Smart Cards play a part in the new system: truck and bus drivers will insert a driver card into the digital tachograph to identify themselves and allow their driving and rest times to be recorded. Organisations such as fleet operators or forwarding agencies will be required to download and store the recorded data on a regular basis. This means that the data from complete fleets can be checked when the vehicles are already on the road. The organisations are issued with company cards for this purpose. Workshops will use their own cards to check and calibrate the digital tachographs. And regulatory authorities such as the police, or trade inspectorates, will need a control card that allows them to read the stored data from the tachograph and the driver card.

The KBA will issue and personalise all the cards. A laser system is to be used, for instance, to engrave driver's names, signatures and photographs onto the driver cards. In addition, all personal details and the necessary security keys will be loaded in encrypted form onto the microprocessor chips embedded in the card. In this way, the Smart Cards will be optimally protected against counterfeiting and tampering. G&D created the necessary technical and organisational infrastructure for personalisation and issue of the tachograph cards, and has now handed the system over to the KBA. The scope of supply comprised installing two personalisation machines, implementing the personalisation software and setting up the mailing system in the KBA's high-security area. G&D not only put the necessary card personalisation, logistics and quality assurance processes in place, but also devised the security concept for the KBA's personalisation operation, covering all security requirements.

Gemplus Awarded EMV Contract In Thailand

Gemplus has been awarded an EMV consulting contract from Bangkok Bank. EMV worldwide migration is an important development in the banking industry and this is the first EMV consultancy project involving a leading bank in Thailand. Bangkok Bank's decision to choose Gemplus reflects the importance of Smart Card consulting and project management expertise necessary for EMV migration roll-out in the Asia Pacific region.

The consultancy phase of any EMV migration project is the most crucial stage and Gemplus' experience in technical consultation will help Bangkok Bank minimise risk when implementing this complex EMV migration of magnetic stripe cards to EMV chip cards, which will be a huge benefit to customers. Under the terms of the project, Gemplus will advise Bangkok Bank on the migration path to EMV and the upgrade of the card payment system. Additionally, Gemplus will deliver the functional specifications of the system components and provide project management and technical co-ordination throughout the EMV pilot project.





A Phishing Expedition

By Peter Tomlinson, Independent Consultant, Iosis



Peter Tomlinson

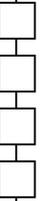
A number of items in the eID area are coming together, and they impinge on not just citizen identification but also on identification of organisations who contact citizens. I believe that we now need to move quickly to develop mutual identification and authentication methods in the e-environment, so that both sides of an e-transaction (citizen and service provider) are securely identified and strongly authenticated - and traceable. This should be deployed in citizen to government, citizen to business, and citizen to banking environments - and should use a globally interoperable methodology.

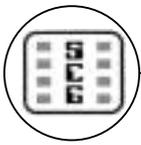
My primary reason for putting this forward now is the extremely rapid growth in spoof and often criminal e-services: the 'phishing' phenomenon, this month spreading to the appearance of spoof web sites claiming to be charitable organisations raising money for relief following the Indian Ocean tsunami tragedy. Quite a while ago I started to look at the distinction between on-line and off-line use of electronic forms of identification, and later added another distinction: between attended and unattended operation of the equipment being used by the person being identified. eID is primarily for use on-line and in an unattended environment; eID ignores geographic boundaries. Present methods of eID are under massive threat; the problem is global.

Amex were early into chip payment methods. Realising the security risks with the basic EMV technology, they added to the card a certificate in order to get ahead in fraud reduction. One of their people admitted that it was just a stop-gap - but that is all today's security method always is, so one up to Amex for that understanding. Chip & PIN is what we have now in banking, often only with the authentication method known as SDA (Static Data Authentication), but it is nowhere near good enough. DDA (Dynamic DA) comes next, but again is not enough. End to end methods are needed: card holder and e-service mutually authenticated - and that needs an on-line environment, which the French spotted over 5 years ago, but they were squashed.

The current approach of creating an electronic add-on to a plastic ID card or to a paper passport is not delivering eID, because using it does not create an authenticated status for use with an unattended e-service: it is there merely to inform the police officer or immigration officer that the person carrying the card is who that person claims to be. We have to use the humble PC as the interface between citizen and e-service, and that system on its own cannot securely transfer the authenticated status to the e-transaction. Nor do the developing ID card or passport systems include any concept of authenticating an e-service so as to protect the citizen or, indeed, protect the state. Technically, the set of documents known as the European GIF, from the e-Europe Smart Cards work (now consolidated in the CEN Workshop Agreement eAuthentication), led the way, but its call for interoperability across the boundaries of security domains has so far been ignored. eESC participants also set up an ad hoc collaboration of European, American and Japanese technologists known as the Global Collaboration Forum, but it is still assumed that the boundaries of individual states could contain the 'e' phenomenon.

Northern European countries, united in the Smart Card Charter and getting into electronic ID cards, set up the Porvoo group, which was really a mutual support group (and a good one) for countries learning about Smart Cards for ID. Now it is envisioned to bring these groups together as the Global eID Steering Committee - but still they look at interchangeable methods, not yet at a universal electronic ID - and the coordination work is today largely privately funded when, because the citizen and ultimately the numerous states are under threat, it should be supported by public funds. And the bankers? They have (indeed, have had for centuries) a global trust network, based on bankers having the network while their customers are restricted to their own localities. Phishing expeditions confound that: they, like the banks, are a global phenomenon. It turns out that the technology required for the first generation of global eID is not rocket science - indeed most of it is already developed. What is needed is some system integration, and a global commitment to interoperability and trans-national regulatory collaboration.





Smart Card Technology Briefing - Part 1

By Dr David Everett, CEO, Smart Card Group



Dr David Everett

Welcome to the start of a new series of technology briefings on Smart Cards and associated devices. A lot has happened over the last 15 years where the Smart Card has moved from a relatively simple memory device to a sophisticated computer on a chip stored in a number of form factors including the GSM SIM (Subscriber Identity Module) card, USB Tokens and of course the ubiquitous ISO ID-1 card.

What is a Smart Card?

- A chip or Integrated Circuit (IC) in a piece of plastic governed by ISO Standards



- Contact cards
- ISO 7816
- Contactless cards
- ISO 14443
- ISO 15693



The term Smart Card has been variously used over the years, originally it referred to a plastic card containing a chip with a microprocessor but then it was even applied to a dumb memory chip, i.e. a chip with no processing capability. But as we shall see this doesn't meet the basic requirements and at the very least the chip will contain some logic to help with the security processes. Today the term has fused and the word smart card is usually applied to all technologies where an integrated circuit chip is contained within a plastic card defined by ISO standards. In the GSM world most of the ISO 7816 standards apply but the SIM card form factor is defined by the 3GPP (originally ETSI) standards.

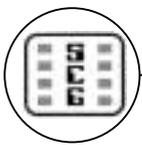
The card may communicate with the outside world in different ways, either by using metal galvanic contacts (contact card) or in a contactless mode using Radio Frequency fields typically at 13.56 MHz (e.g. ISO 14443 and ISO 15693). Some cards offer a dual interface and can operate in either mode.

What Is It For?



- A
- SECURE Portable
- Store and Processor
- of
- DATA!





We cannot start our briefings without a clear idea of why we need to use a Smart Card at all, the form factor is a secondary consideration. As we shall see the smart card is a relatively expensive way of storing data so the words above are critical. Security is the key word and in all our briefings we will find it underwrites the fundamental basis of the technology. If security is not an issue then there are far more effective ways of storing data in a portable form, a USB memory stick or an SD card can easily store a gigabyte of data while even the more advanced smart card chips struggle at around 64 Kbytes of non-volatile memory usually EEPROM (Electrically Erasable Programmable Read Only Memory).

Secure processing is actually implied if you want secure storage. You have to get the data in and out of the memory and while it may be resistant to attack while stored in the chip the hacker can attack the data across the interface with the terminal. This means the data must be cryptographically protected to prevent unauthorised reading of the data and must provide means by which you can be assured the data has not been altered. The only way you can achieve this is for the smart card chip to provide these cryptographic processes.

The key point of our definition is that the Smart Card is a secure device for storing data with cryptographic capability. In fact the primary role of a Smart Card is an identification and authentication token. The card can store attributes that identify the holder and can apply cryptographic mechanisms that provide adequate assurance that the card is authentic. We note here that this in itself doesn't say anything about the authenticity of the card holder, this requires some binding of the user with the card by means of say a PIN number or a biometric characteristic.

Over the coming months we will examine the technology of Smart Cards to show how they can meet our requirements, not only will this give you a better understanding about how to choose the right Smart Card for your application but you will also be better equipped to operate a Smart Card scheme.

www.smartcardgroup.com

Events Diary

February 2005

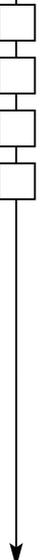
- 14 - 16 GSM World Congress - Cannes, France - <http://www.3gsmworldcongress.com>
- 14 - 18 RSA - San Francisco, USA
- 17 - 18 The International Association of Public Transport (UITP) - Barcelona, Spain - www.uitp.com
- 18 - 19 GSM India 2005 - Goa, India
- 22 - 23 Bankcard Sector 2005 - Budapest, Hungary
- 22 Embedded World - Nurnberg, Germany

March 2005

- 1 - 4 IC Card World 2005 Tokyo, Japan <http://www.shopbiz.jp/pages/>, machi@ics-inc.co.jp
- 1 - 3 3rd Annual RFID World - Texas, USA - www.rfid-world.com - m.keller@scievents.com
- 9 - 11 Smart Cards in eGovernment - Washington, D.C., USA - www.smartcardalliance.org
- 10 - 16 CeBIT - Hanover, Germany
- 15 - 17 2005 Electronic Transactions Association (ETA) Annual Meeting - Nevada, USA

April 2005

- 11 - 13 The 3rd Middle East & Africa Card Technology Exhibition & Conference - Cairo, Egypt
- 10 - 13 Payments 2005 (by NACHA) - Texas, USA - www.nacha.org/conferences
- 12 - 14 SCA Card Technology Workshops at CTST 2005 - Nevada, USA - www.smartcardalliance.org
- 17 - 20 ASIS 51st International - Copenhagen, Denmark - www.asisonline.org/education
- 19 - 20 SIM 2005 - Amsterdam
- 20 - 21 AIM Knowledge & Networking Forum - Wiesbaden, Germany - www.aimglobal.org/aimforum
- 25 - 26 7th eyefortransport North American Technology Forum - Illinois, USA





Outlook on e-Passport and e-visa Projects

Interview with Rainer Rettig, Director of ACG Secure ID



Rainer Rettig

The first electronic passports are soon to be released, the catalyst for fast implementation being compliance with the U.S. Visa Waiver Program (VWP). In 2005 we can expect e-passports to start passing through the hands of customs officers and personnel at airports, paving the road to the broad adoption of advanced, biometrics enabled citizen ID cards throughout the world. However, compressed time lines and implementation hurdles need to be addressed so that governments and security printing houses involved in the deployment of these projects can successfully face the challenge of bringing new state-of-the-art biometrics enabled passports to the market. The latest evolution of modern citizen IDs involves indeed a significant shift in technology.

ACG Identification Technologies has inaugurated its new business unit focused on the emerging field of e-passport and e-visa projects. The new division called ACG Secure ID, will act as a competence center and solution provider supporting the security industry in deploying government driven programs in the field of personal identity authentication. Rainer Rettig, the director of ACG's new business unit, explains today's scenario and the outlook of advanced citizen programs.

Going to and from the U.S. has become a real issue for a vast population of travelers. Similarly, travel from and to the Schengen area will also become a driver. But sooner or later, every country that faces security threats will implement an e-passport scheme. The e-passport initiative is one of the largest projects in the history of the Smart Card business. It is also one of the most difficult timetables I've ever seen in this industry. Suppliers and system integrators around the world are all rushing to respond in the most appropriate way to the emerging demands expressed by the governments. The challenge is such that we could say we are touching the limits of what the industry can do.

Today, there are some four or five e-passport pilots taking place, involving tens of thousands of users. A lot of this work is being done in parallel, with various pieces of the program being defined and tested concurrently. The results are promising and we will see fast implementation based on it. Of course, some countries won't have e-passports for many years to come. When will the first electronic documents be available to the citizens? Issuance in various countries will begin towards the end of 2005. I think we can expect 2 to 5 million units worldwide next year. But real volumes will begin the following year.

With its broad product portfolio, ACG responds to the demands of card manufacturers and system integrators of RFID chips and components, and has established its role within the industry as a hub of information and products dedicated to the deployment of advanced auto ID solutions. This gives us an opportunity also in the area of e-passports to observe how fast the industry is actually reacting to an emerging need. ACG's Secure ID division will begin shipment of production volumes of e-passport components in the second quarter of 2005.

Are e-passports going to integrate RFID functionality? There definitely has to be an RFID tag inside e-passports. It's the only interface enabling a way around the multitude of passport form-factors. To use a contact technology, there would have to be a much tighter international standard for passport shapes and sizes in order to be consistently readable. RFID makes this unnecessary. E-passports will use high frequency RFID technology based on a 13.56 MHz contactless Smart Card RFID interface that is compliant with the ISO 14443 specification, allowing A and B communications. This is good because it means everyone can join in, but the technology is not yet 100% defined. The major technical hurdle that the industry is facing today is interoperability between the variety of transponders and readers. In fact, most current trials around the world are focused on testing this. The readers are the most complex part of interoperability, as they must deal with all of these integrated circuits, multiple versions of software and some 20 to 30 operating systems.





The International Civil Aviation Organization (ICAO) has the mandate to test interoperability and other e-passport related issues. They are probably the best positioned to ensure this in a neutral way. Their next test will be in Baltimore in November, with another meeting following in Japan. Initially, we did interoperability testing with transponders and a few readers to see if the readers could recognize the transponder. We then went on to test whether the readers and transponders could talk to each other, and eventually whether they could read and write data and at what speed this was performed. As far as integrated circuits are concerned, there is strong competition between the silicon makers as well as with the operating systems.

Only recently has it become possible to test systems with real silicon. Before now, beta testing was done with prototypes. There are also some competing algorithms to compare, although these are all applied in similar ways on the card. So far, the most compliant ICs seem to be from Philips, Sharp, ST Microelectronics and from Infineon. E-passports also offer some unique challenges, such as durability. Today, the life of a typical identification document is five to ten years. This requires a durability that is unique for an RFID product. I believe, however, that the 'everlasting' passport will change. It's fair to say that such an electronic document may have a five-year lifespan, but no longer will it be 10 years.

What are the main implementation hurdles of biometrics-enabled documents? The technology is complex, as I pointed out earlier. But the weakest link in any national e-passport program will be the issuance. Consider that seven of the September 11th hijackers had legitimate travel documents that they obtained thanks to fake ID credentials. But this is very much an issue for national authorities and not technologists. One of the most focused e-passport trials taking place today is in the Netherlands, where the state printer is running a trial with 15,000 passports in six communities inside a virtual world.

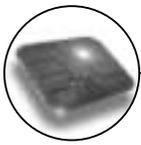
This trial is primarily concentrated on the process of managing e-passports. Issuance, for instance, is simulated. In general, I think e-passports will be a challenge because the issuing of passports becomes much more onerous. The amount of data is much greater and passport authorities will also need to manage the PKI infrastructure, such as keys for signature and encryption. Added to this is the fact that in some countries, decentralized passport issuance creates additional complexity within the system. Germany, for example, administers passports at roughly 3,600 issuing stations in its town halls.

Will e-passports feature similar characteristics all over the world? Not necessarily. E-passports will vary greatly just as the paper based ones do today. ICAO has defined the minimum data set and requirements for passports. They insist on a facial biometric and suggest the option of an additional biometric, either fingerprint or iris scan. The fingerprint is the dominant biometric being considered. The U.S. government, for instance, prefers fingerprinting.

How is ACG addressing this market? ACG Secure ID will develop business with a strictly vertical approach. Customized readers and e-passports, which are the most visible forms of electronic identity today, will be our first products. Today, ACG Secure ID already offers state-of-the-art reader components as well as our HF Dual ISO Reader, which demonstrated excellent results during recent e-passport evaluation tests conducted by the National Biometric Security Project (NBSP) from the U.S. and the Department of Foreign Affairs and Trade (DFAT) from Australia. Our reader was the most interoperable solution among the 11 different readers examined.

How does the end-user, the citizen feel about the e-passport concept in general? Privacy concerns are of course a major issue. This is the first time that biometrics crosses from crime management to citizen management. How serious of an issue privacy becomes will depend upon the design of the database behind the biometric system. In most cases in Europe, I expect that the actual biometric data will be stored only on the card and not in a database. The U.S. government, on the contrary, favors strong biometric databases with no security provided by strong encryption so far. We will need to wait and see how e-passports are accepted by populations and how much influence the privacy discussion will have on the final system design.





Unifying Physical and Logical Access - Part 2

By Jochi Fuchs, Athena Smartcard Solutions



Public key authentication is much more powerful than simple passwords. In a public key system, each user has two keys: a private key and a public key. Only the user knows the private key, and the public key is available to anyone (e.g. a web site) that wishes to do business with the user. The user prepares "digitally signed" messages with his private key and the web site checks the validity of these signatures with the user's public key. In this manner the web site can check that the signature was produced by the user, yet the web site does not have the private key that was used to generate the signature. This is very different from password systems where both the user and the web site have the password. In a public key system, the user can and must keep the private key secret -- no one else knows the value of the private key, yet any merchant or partner can check the validity of digital signature by knowing the user's public key.

Two major benefits of using public key systems: First there is no secret information at the web server, so the user is not required to trust the server's administrator. A user can use the same private/public key pair for all of her e-commerce, since the private key is always a secret no matter how many partners know the public key. Second, only the user knows the private key. This allows the merchant or business partner to use the digital signature in a court of law to prove that the user and only the user could have generated the digital signature. This feature is called non-repudiation: the signer cannot repudiate the message he signed. In this manner the digital signature plays a similar role to the handwritten signature on a contract -- it provides a mechanism for the user to commit, which is an absolute necessity for e-commerce.

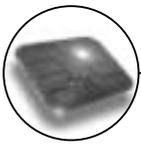
Because the Smart Card carries your private key, if someone steals your Smart Card they essentially steal your electronic identity. Most Smart Card systems solve this problem by requiring a personal identification number, PIN, to activate the Smart Card: a thief must steal your Smart Card and PIN in order to impersonate you. Designing a secure access system includes considerations beyond the choice of credential and reader. Appropriate system design requires a full definition of system requirements, including required functionality and security policy, and must take into account factors such as cost, requirements to integrate with and migrate from legacy systems, and the effect of implementation on the users and the organization.

In recent years, the security industry has begun to awaken to the problem of uncoordinated physical and IT security. Consultants are studying the problematic connection between physical and logical security. IT security people and physical security people pursuing different goals. Individual companies have taken up the cause. Athena Smartcard Solutions, succeeded to link physical and IT security with ASECard Unified Badge, a card that combines the ASECard Crypto CPU contact chip with a ISO 14443 (Type A, B or C) contactless chip embedded in a magnetic stripe.

Using Smart Cards for Secure Physical and Logical Access: The choice of an access credential must address the concerns of a variety of functional areas in an organisation. Executive management needs to secure both physical and logical access. Badges for employees can support a range of security profiles depending on the level of access required by the employee. For example, some badges may provide only limited facility and network access while other badges provide special access to restricted areas and use contactless or contact smart card chips to support: biometric templates that authenticate the user to the card; secure challenge-response algorithms that authenticate the card and reader to each other.

Linking the physical access and IT databases provides the potential for suspicious activities to be identified immediately. For example, if a computer is accessed by an employee who has left the building, the IT department can be notified immediately and investigate the activity. Similarly, security can be notified if a computer in a restricted area is accessed by an employee who is not authorised to be in that area. Joint communication between the physical and logical access systems enables companies to protect confidential data and identify security issues.





Access control systems must address employer and employee needs and meet legal requirements. An employee's information is consequently only available to parties to whom the employer has authorised access. An organization may want to use a single process to manage an employee's authorisations, accesses, and privileges. Linking the CMS, IT, and physical access databases means that an employee can make one trip to one department to receive a badge containing all required information. The CMS database may indicate what access privileges need to be assigned. The IT software can check the CMS database and assign the required passwords and certificates. A digital photo can be taken. With this information, a blank card can then be inserted into the badge printer, all required information can be downloaded onto the card, and the card can be initialized and printed. The employee receives the badge within minutes and starts working with it immediately.

According to research, forgotten passwords cost the typical IT department \$200 per user per year. 11 percent of users experience an access rights problem every month. In a survey of help desk professionals, the data indicates that 45% of calls to a typical help desk are for password reset assistance. These statistics suggest that having a common mechanism to manage credentials, via an identity management system; can go a long way to alleviate this problem.

The ASECard Unified Badge is designed to provide what has become known in the industry as "global roaming" where a single card is used to access all the facilities worldwide depending on the authorisations granted. Combining multiple physical access systems results in significant cost savings. A good testament to this trend improving efficiencies is yet another factor driving this alliance. By managing the entire credential life cycle of the employee, the enterprise can control when the employee was badged, what facilities they have access to, what systems they can access and most important what happens when an employee is terminated, leaves or is transferred.

Most organisations already have a physical badge issuance process in place. Typically the employee must present himself or herself to obtain a new badge. This is the ideal place to add logical identity enrollment, because it is a face-to-face meeting, which makes it easy to collect data (such as photo, fingerprint, signature, or similar), to securely deliver the badge to the subject, and to instruct the subject in selection of the PIN and secrecy of credentials. Combining the enrollment processes results in only a slight cost increase over physical badge issuance alone.

The synergy is strongest when logical credentials (e.g., PKI keys) are issued and stored on the ASECard Unified Badge at the same time. In order to make this convergence happen, security management must be integrated with existing business processes for managing facilities, personnel and IT systems. This requires clear organisational ownership and accountability across a number of critical management processes. To bridge the gap between IT and Physical security, a common token is needed. A multipurpose Smart Card, featuring embedded micro-controller silicon is the logical choice. The chip card hardware platform is both secure and mature. It is difficult to clone or tamper with and offers versatility needed for this association.

Conclusion: Security concerns, cost control objectives, corporate efficiencies, and advances in security technology have all been significant factors in the integration of logical and physical access systems. The synergies and benefits of creating such a union are great. Clearly, Smart Cards are the right choice to bring about the convergence for access to buildings, networks and PCs. They provide the versatility and security needed for large enterprises. Successful deployment requires extensive planning combined with senior corporate sponsorship and buy-in from executive management. Securing access to confidential data and information is a continuing challenge for most organisations.

Both private enterprises and government agencies are increasingly implementing Smart Card-based access control systems. A Smart Card-based system provides benefits throughout an organisation, improving security and user convenience, while lowering overall management and administration costs. Smart Card technology provides a flexible, cost-effective platform not only for physical access control, but also for new applications and processes that can benefit the entire organisation.





The Business Case for Low-Cost RFID Travel

By Trevor Crotch-Harvey, Sales and Marketing Director,
Innovision Research & Technology plc



Trevor Crotch-Harvey

The advantages of Smart Card based ticketing are well documented - reductions in cash handling costs and fraud; the collection of valuable data for traffic management purposes; and, being contactless, reduced operating costs - and few transport operators today need convincing that adoption is a priority. But policy-makers' ambitions for the technology are even wider reaching, certainly for the UK. When the Department for Transport (DfT) published its 10-Year Plan in 2000, it recognised Smart Cards as instrumental in providing a better public transport infrastructure.

A key part of this strategy is the development of 'seamless ticketing' - i.e. total interoperability of Smart Cards throughout the country. Ideally, mass transit passengers would eventually use a Smart Card that could be purchased from any operator and used to pay for any public transportation. Using this Smart Card, a passenger would be able to travel between any two points in the country without having to buy separate tickets for each leg of the journey. However, existing local Smart Card schemes have largely been using proprietary systems, implemented without the adoption of common national standards. And for Smart Cards to deliver their promise of allowing passengers national seamless travel, reduced costs and the development of standards is essential, together with the expansion of these standards to cover limited-use ticket types such as day, weekly or single journey passes. While transport operators are moving from existing magnetic-stripe ticketing to contactless Smart Card systems, the cost of the Radio Frequency Identification (RFID) technology underlying smart ticketing applications has historically limited Smart Cards' viability to high-value ticket types such as season passes.



Of course, not all passengers are regular commuters. Disposable, limited-use Smart Cards will always be necessary to provide the benefits of Smart Card ticketing to occasional public transport users. However, low-cost Smart Cards were not included in the original remit of the Integrated Transport Smart Card Organisation (ITSO), set up in 1998 to establish standards for interoperable Smart Card ticketing. New production techniques and higher volumes are now reducing the cost of RFID chips, making low-cost, disposable Smart Card tickets a realistic option.

This year, Innovision Research & Technology plc launched its Jewel RFID chip for smart ticketing applications. Jewel is the smallest and lowest-cost RFID chip in the world that is compatible with ISO 14443A and included in the UK national standard, ITSO. It is also expected to be compatible with the emerging national standard (UTFS) in the US. Jewel was designed to meet criteria that have been under development since 2001, when a working group of the Transport Card Forum (TCF) - a DfT-sponsored group of experts on Smart Cards from local government, transit authorities, operators and technology companies - began examining limited-use Smart Cards.



Using real passenger data from members of the TCF Working Group, it was able to show that a solid business case could be made for limited-use Smart Cards, albeit one that was highly sensitive to the cost of the ticket media. The business case begins to work when the cost of limited-use Smart Cards falls below 20p and yields a significant positive return when cost of the media falls to 10p. A traditional, high-value Smart-Card is made of plastic, contains a microprocessor, handles encrypted data, and costs around £1 to produce.





A limited-use Smart Card, by contrast, currently costs around 25p and this is starting to encourage operators to begin deployment. To achieve these savings, limited-use Smart Cards are made of paper, and dispense with an on-board microprocessor and some encryption capabilities. When the transport industry is ready to order higher volumes and the manufacturing investment is in place, the price of producing such cards should be reduced even further, to around 15p or less.



Substantial challenges remain before we see a national, seamless ticketing system. Not least is the integration of existing proprietary Smart Card schemes into the emerging national network. Significant investment in Smart Cards was made before the first ITSO standards were drafted in 1998, and integrating these projects - including London's Oyster Card - will be a major hurdle before the vision of a seamless national transport network becomes a reality.

Having shown that there is a business case for low-cost Smart Cards, the TCF Working Group has achieved the development of an extension to the ITSO standard for limited-use Smart Cards, setting the groundwork for trials at three locations. The first ITSO-enabled Smart Card system operating in the UK is now under way with the NoWcard, an initiative undertaken by a group of county councils in the North-West. Several other schemes are in the process of planning or deploying ITSO systems, and limited-use Smart Cards are expected to play a role in many of these.

Korean Delegation Visit Smart Card News



Smart Card News were at home last month to a Korean Delegation from the Ministry of Labour. The delegates have been touring Europe to learn about current Smart Card applications in Central and Local Government. The team were assisted by their Consultants LG CNS, originally a joint venture between LG and EDS but now just an affiliate of LG.

The team were particularly interested in the roll out of Citizen's cards in the UK and the application areas being covered. The Ministry is interested in the potential roll out of Smart Cards to contract labourers as a form of ID card offering a better way of managing the employment process.



Who Controls the Keys, Controls the Scheme



The Smart Card Group, parent company to Smart Card News, will be carrying out Smart Card training courses each month over 2005 in a select venue in Brighton, UK. The group is offering a 1 day primary course for the price of £495 which will be refunded should a candidate decide to continue with the full training course schedule.



This will be a great opportunity to network with other companies within your industry and gain a vast range of knowledge about Smart Cards including the business case for using Smart Cards, the technology, the terminology and you will also receive hands-on experience of building a Smart Card scheme.

"A Smart Card is a mobile, secure processor of data. If this statement does not fit your business model, you do not need a Smart Card."

If you would like to find out more about prices or availability of these Smart Card training sessions then please contact Maxine Laker on +44 (0) 1903 691 779 or at maxine.laker@smartcard.co.uk

