June 2004

Volume 13 • Number 6

# Smart Card News

Smart Cards, SIM, Biometrics and RFID

www.smartcardgroup.com


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## This Month's Lead Story

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### World News In Brief



### Featured Articles


www.valista.com

## Valista

Valista is a payments software provider for wireless and fixed line operators. The first thing that jumps out on their home page is the GSM award for best wireless application developer, awarded to them earlier this year.

An unusual site in as much that not only is there a good navigable tool bar at the top of the page but the rest of the page is made up of frames with links to the same information, from a sales and marketing view point, as can be accessed from the tool bar. Not the most exciting site.

**Navigation**
**Content**
**Appearance**


www.simpay.com

## Simpay

A UK mobile payments site whose home page is full of energy in bright blue and pink which should appeal to the young in mind. There is a very good demo, which requires a Flash download, that explains the simple process of purchasing games and ring-tones with the mobile phone.

There is a good explanation of who Simpay are and what they do, a FAQ and a good, clear jobs and contacts page. Overall a clean, simply site, easy to navigate and all the relevant information within a click.

**Navigation**
**Content**
**Appearance**


www.encorus.com

## Encorus

Encorus is a provider of mobile payment solutions and a major competitor to Valista. Their home page tool bar cluttered with novel monochrome icon's which turn to colour as the mouse passes over. Easy to navigate but the products page is very text based using a font size not recommended for the visually impaired.

The search facility worked but did not pick up Simpay who have recently selected them to do their mobile payments. Overall an interesting site that has not decided whether to be serious or funky.

**Navigation**
**Content**
**Appearance**

# Bank Branches Can Now Issue EMV Smart Cards

For many banks customer convenience and market responsiveness is driving the demand for issuing bank cards within the branch, close to the customer interface. Many customers prefer to collect their bank cards rather than trust the low security of the general postal service. To date technical limitations have prevented EMV Smart Cards from being issued in this way, with data preparation and card manufacture having to take place at a central secure site.

At the Cards Middle East exhibition in Dubai, ACI Worldwide, Keycorp, MasterCard International, Thales e-Security, The MULTOS Consortium, Verisoft and Matica showed the most cost effective way of providing instant "in-branch" issuance of EMV payment cards. Using MULTOS security features, evaluated to the highest level of security assurance (ITSEC E6 High), a bank can deploy centralised Smart Card management and Smart Card data preparation alongside distributed low-cost Smart Card issuance equipment, within the individual branch. Banks that currently issue magnetic stripe payment cards in-branch can upgrade to the security of EMV without changing the service response to their customers.

**How Its Works:** The "ACI Smart Chip Manager" Card Management and Personalisation platform from ACI Worldwide integrates with the "P3 Server" EMV data preparation system from Thales located at a central data centre, with Verisoft's personalisation software and Matica card embosser in the branch office. "ACI Smart Chip Manager" also provides a branch office card request facility. The "P3 Server" performs all the cryptographic functions centrally including the creation of a secure data payload containing "MasterCard Pre-Authorised" and "MasterCard SecureCode Chip Authentication Programme (CAP)", M/Chip 4 for MULTOS applications. The open architecture of P3 enables data to be prepared and loaded onto a variety of Smart Card technologies. P3 is currently being used to prepare data for the Hong Kong Smart Identification Card system (SMARTICS). SMARTICS is being rolled out with the MULTOS operating system. MULTOS has the highest levels of data security of all Smart Card technologies and Thales has prepared the data for approximately 50% of all MULTOS cards issued worldwide.

These packages can communicate between the central data centre and the individual branch personalisation equipment over any insecure network. The packages are loaded into the Keycorp/Infineon I4D 32k MULTOS chip and decrypted inside the chip ensuring that sensitive bank and cardholder information, such as cryptographic keys and account information, remain fully protected throughout the process. This architecture and the use of the asymmetric key security features of MULTOS remove the need for expensive security equipment to be deployed in each branch. The process places minimal requirements on the communications link further reducing deployment costs and even enabling mobile branch services to be considered in some markets. ACI's Smart Card management system also enables in-branch post-issuance loading of future applications to MULTOS-based MasterCard OneSmart cards, such as "MasterCard Open Data Storage", using the same level of security.

*Smart Card News* **is published monthly by Smart Card News Ltd Columbia House, Columbia Drive, Worthing, BN13 3HD England**
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**Printed by DAP (Sussex) Ltd. Telephone : +44 (0) 1273 430430**

## Hypercom Wins Large Baltic Order

Lithuanian bank Mokejimo Korteliu Sistemos (MKS) has ordered 5,000 ICE 5500Plus and S9 EMV-certified card payment devices from Hypercom Corporation . This new contract marks the largest one-time order ever for Hypercom Russia whose territory includes the Baltic States.

## Portugal Migrates to EMV

Gemplus has signed a contract for Portugal's EMV migration with Sociedade Interbancária de Serviços (SIBS), the Portuguese Company, owned by the Portuguese banks responsible for the development and introduction of technological solutions for the national payment system. Under the terms of the contract, SIBS will deliver and personalise Gemplus' GemValue EMV cards to Portuguese banks. This deal reinforces Gemplus' position in the Iberian banking market

## Contactless Travel for Euro 2004 Fans

Portugal is bustling to the thrill of Euro 2004 and is expecting over 4 million visitors for the event. Football fans from all around the world will be weaving their way in and out of the maze of public transport to go and support their favourite teams and celebrate winners in the streets of the town. To do so, visitors will have the choice of a one day or a three day pass to go to stadiums. Porto has already implemented ASK contactless technology for its urban transport. ASK will supply contactless tickets to both facilitate circulation and make it more secure. These tickets are available on 85 bus lines, 3 train lines as well as the Porto subway. 300.000 tickets should be validated during Euro 2004.

## Smart Card Alliance adds 21 Members

Twenty one new members have joined the Smart Card Alliance's multi-industry organisation, which works to accelerate the acceptance of Smart Card technology. Joining the ranks of the organisation at the Leadership Council level, the highest level of membership, are VeriSign and Lockheed Martin. Lockheed Martin, a systems integrator for defense, information technology and homeland security, brings to the Alliance their knowledge of large-scale integration and partnering with industry suppliers to integrate Smart Card technology into federal government credentialing programs.

Security industry companies continue to make up the fastest-growing category of new members. End user organisations are drawn to the Alliance to establish industry contacts who can teach them how to pilot and run their own successful smart card programs. An increasing number of companies with international roots are seeking to establish a presence in the U.S. and have become members in the last year. For the full list of memeber go to www.smartcardalliance.org

## New US Federal Smart Card Initiative

More than 18,000 Smart Cards will be issued to the US General Services Administration (GSA) associates and contractors in GSA owned and leased facilities as part of the federal Smart Card initiative. GSA is a centralised federal procurement and property management agency created by Congress to improve government efficiency and help federal agencies better serve the public.

## Oberthur Wins First GSA Contract

The General Services Administration (GSA) has selected Oberthur Card Systems to manufacture and issue its secure identity cards. Oberthur has started to issue the hybrid contact and contactless cards on behalf of the GSA to associates, contractors and visitors to government facilities across the country.

This agreement further increases Oberthur's share of public sector ID card programs, which on completion could see cards issued to as many as 28 million government employees. The contract was awarded to Oberthur via its partnership with XTec, a provider of interoperable authentication and verifications systems.

## 3rd Leadership Award for Infineon

Infineon Technologies AG was awarded the 2004 Frost & Sullivan Market Engineering Leadership Award for the third time running, for its continued leadership in the global Smart Card IC market. In 2003, apart from battling through a difficult market, Infineon maintained its lead in the market. Infineon led the total Smart Card IC market with a 47.3% share in terms of units and 37.1% in terms of revenues generated in 2003.

Considering product types also, Infineon was the leader in both the memory and micro-controller markets, accounting for 66.5% in the memory market and 30% in the micro-controller market in terms of unit shipments. It created a significant distance from its competitors, pulling ahead of its nearest rival in terms of global unit shipments by 34.2%.

## Smart Card Pass for Philadelphia

Applied Card Technologies (ACT) has strengthened its foothold in America by winning the contract to implement and manage the Smart Card based city pass for Philadelphia. Philadelphia is keen to attract more visitors to the city and the Philadelphia Pass will be the first electronic card that gives free and discounted access to the city's top attractions, shops, and entertainment venues. This is ACT's second US contract with Leisure Pass North America LLC, having successfully implemented the New York Pass, which was used by over 40,000 people in 2003. The Philadelphia Pass will go on sale in May 2004.

## eToken for Chicago Bears

The Chicago Bears, the founding team of the National Football League (NFL) are set to use Aladdin Knowledge Systems' eToken authentication key to protect their highly sensitive electronic play books, player contracts and scouting information. The Bears are the first NFL team to use such powerful authentication technology as a strong defence against unauthorised access to proprietary information. More than 125 members of the Bears staff are being given eToken in order to access team data inside workstations and remote offices.

## ITSO Smart Card for Manchester

The Greater Manchester Passenger Transport Executive (GMPTE) has announced that they plan to introduce an ITSO compliant multi-operator travel Smart Card to be used on buses, trains and trams within the Manchester region of the UK. The scheme is estimated to cost £20 million and will be implemented by Prepayment Cards Limited (PCL).

This new travel Card, known as the "Readycard", will initially be used for concessionary travel amongst pensioners, students and children from October 2005. When fully operational, the GMPTE scheme will be one of the largest multi-operator Smart Card schemes in UK.

It will cover ten Metropolitan Borough Councils and represent a population base of approximately 2.5 million people. A card-reading infrastructure will be provided for more than 45 bus operators and over 500,000 Smart Cards will be issued. The project is expected to be rolled out during October 2005.

## Leadership Award for Gemplus

Gemplus has been presented with the 2004 Frost & Sullivan Competitive Strategy Leadership Award to recognise their gain of substantial market share in the financial and loyalty Smart Card market over the last four years. This is the first occasion that such an award has been granted exclusively to the banking division of an organisation. In 2003, Gemplus won EMV contracts in all of the continents for the supply of cards and personalisation services. A major contract with the United Kingdom's leading banks to replace the magnetic stripe system on debit cards with Smart Cards means that Gemplus will deliver around 40 million EMV cards within the next two years. Gemplus also deployed the first EMV cards in France with Societe Generale.

The delivery of 400,000 Java Cards to Banco do Brasil and a deal for multi-application EMV cards -- in partnership with Toppan -- with JCB International Co. Ltd., (Japan's largest card issuer), have further underlined Gemplus' global credentials. The company also recently signed similar contracts with leading banks in Eastern Europe.

## New Postbank Order for ORGA

Postbank has awarded a follow-up order to ORGA Kartensysteme GmbH for the delivery of Smart Cards with GeldKarten functionality, including lettershop services. As part of the order, ORGA will handle the complete service for Postbank.

**For more information visit ...**

**Applied Card Technology**
www.card.co.uk

**Aladdin**
www.ealaddin.com

**Infineon**
www.infineon.com

The personalised Smart Cards will be affixed to customer mailings and sent securely to Postbank branches or directly to end customers.

## Caesars Palace Bets on HandReaders

Caesars Palace in Las Vegas, USA has saved more than $170,000 in key management and replacement costs by integrating six HandReaders into its security operations according to IR Recognition Systems, the biometric component of Ingersoll-Rand's (IR) Security & Safety Group's Electronic Access Control Division (EACD).

The HandReaders used automatically take a three-dimensional reading of the size and shape of an employee's hand and verify the user's identity in less than one second.

## Personnel Change at Infineon

With effect from June 1, 2004, Thomas Seifert (40) will assume global responsibility for the Memory Products Business Group at Infineon Technologies AG. Seifert succeeds the previous Group CEO, Dr. Harald Eggers (54), who is leaving the company at his own request after more than 25 years' of service to devote more time to his private life.

Until the appointment of a successor, Peter Gruber (43), CFO of the Wireline Communications Business Group, will preliminary assume responsibility for the Group headed until now by Seifert. A successor will be appointed shortly. Dr. Eggers will head various corporate projects until the end of December 2004.

## ActivCard Appoints New CEO

ActivCard Corp., a provider of strong authentication and trusted digital identity solutions, has announced the appointment of Ben C. Barnes as Chief Executive Officer, commencing May 31, 2004 . Mr. Barnes was also elected to serve on the Company's Board of Directors. Most recently, Mr. Barnes served as President and CEO of Intraspect Software

## Datacard Wins Card Printer Award

Datacard Group has announced it has been selected by Thailand's Ministry of Interior as the sole source provider of card printers and related supplies for the country's national ID card program.

Datacard has deployed more than 1,330 Datacard Magna Series card printers over the last three months under the agreement. Thailand officials expect to issue approximately eight million ID cards annually with the new Datacard printers.

## Quarter of UK Retailers still undecided on Chip & PIN

Despite being just six months from the January 1st fraud liability shift, 26% of UK retailers remain unconvinced of the benefit of moving to EMV Chip & PIN for plastic card transactions. The first phase of the Retail Bulletin / Retail Logic Chip & PIN survey also shows that over 20% of retailers have decided to put off the upgrade until their next scheduled PoS hardware refresh, meaning it could be 2010 or even later before all UK retailers can accept the new cards.

Responses were received from retailers operating fewer than 10 stores to those with over 250. An alarming 56% said the complexity of the accreditation process and a lack of clear guidance from the banks were major obstacles to migration. Despite this, over half the respondents claimed they would be ready before the January deadline, with an additional 26% expecting to go live no more than six months later.

The majority of those surveyed (79%) hope to be ready within the next 12 months. 34% remain undecided or are planning to wait until their next scheduled hardware upgrade. The majority of respondents (52%) estimate the cost of migration to be between £100,000 and £500,000, with 18% planning to spend less than £100,000 and 10% more than £1 million.

## Puerto Rico Expands Health Card

Puerto Rico's Popular Democratic Party (PDP) representative Francisco Zayas Seijo has announced that the Government healthcare benefits recipients in the southwest region of Puerto Rico will be eligible in October for the new Smart Card system. Zayas Seijo, who is also the PDP's candidate for mayor of Ponce, said that 170,893 government healthcare plan recipients will receive the new Smart Card, which is currently being used in Isabela. "The Smart Card represents a leap in the quality of Healthcare in Puerto Rico, I want my constituents to have access to this new project that will correct some of deficiencies to our healthcare reform," said Zayas Seijo who heads the House Treasury Committee.

## ACI Wins Banker Technology Award

ACI Worldwide has been awarded the 2004 technology award for Smart Card Services Provider of the year by The Banker magazine, part of The Financial Times Group, ACI won the award for its ACI Smart Chip Manager software, a Smart Card management solution that encourages the rapid uptake of intelligent chip cards.

## Renesas Closes its Manufacturing in Germany

Renesas Technology Corp. has decided to close a manufacturing subsidiary company, Renesas Semiconductor Europe (Alsdorf) GmbH (RSEA) in Germany. Renesas Technology plans to stop manufacturing activities at RSEA within 2004 and to transfer micro-controller (MCU), SRAM, and NOR Flash memory products to manufacturing sites in Japan. The semiconductor market is showing signs of expansion in the long term, and a competitive global strategy is required in such market environment. In response to the market demand, Renesas Technology is aiming to optimise its business structure in order to meet the needs of our customers.

## Infineon Expands in Portugal

Infineon Technologies is expanding its existing memory chip assembly and test (backend) facility in Portugal. The company is investing a total of 230 million euros in the second module. Work on expanding the facility kicked off in fall 2003 and full capacity will be reached by mid-2006. It is planned to create about 500 new jobs in the process, increasing the workforce in Porto to around 1,500. The new module will be formally opened on June 16, 2004, in the presence of Portuguese Prime Minister Jose Manuel Durao Barroso and the first products are already rolling off the production line in the new manufacturing facility.

## Latest Contactless Solution Trial

JCB has launched a 2 month site trial of its new wristwatch Offica corporate solution. The 'Offica Watch', in cooperation with Casio, contains employee ID, access control and cashless payment functions. 25 JCB employees will use the Offica Watch instead of the current Offica card to access the JCB tower in Tokyo, make purchases at company restaurants and stores, and carry out a variety of administrative functions.

## Biometric System for UK Airports

The UK Home Office has announced a test run of a biometric system that will be installed at Uk Airports - Heathrow, Gatwick, Stansted, Manchester and Birmingham airports by mid-2005. This is to help increase security and speed immigration controls. The system, installed by Sagem SA, will scan the irises of vetted participants and allow them to pass through a dedicated immigration channel at the airports.

The government said this system will remain voluntary but that it hopes 1 million people will sign up within five years. Foreign students, work permit holders and nationals from outside the European Union who are residing in Britain are initially being invited to sign up for the test. The British government, along with other countries, hopes to introduce biometric data, including iris scans, on visas and passports within the next few years, and eventually on a proposed national identity card.

## i-mode FeliCa for Mobile Wallets

NTT DoCoMo, Inc. and its eight regional subsidiaries have announced the July 2004 launch of the i-mode FeliCa Service for mobile wallet applications, which will be used in combination with the company's first four i-mode Smart Card handsets-three 2G mova 506iC series handsets and the 3G FOMA F900iC handset-which also will be launched in early July. DoCoMo's new service and Smart Card handsets can be used for a variety of unprecedented functions, including train pass, debit card (electronic money), credit card and personal identification card, applications previously possible only with IC-equipped cards.

**For more information visit ...**

**ACI Worldwide**
www.aciworldwide.com

**Renesas Technology Corp**
www.renesas.com

**JCB**
www.jcb-global.com

**UK Home Office**
www.homeoffice.gov.uk

**NTT DoCoMo**
www.nttdocomo.com

# Under Construction: ID Data Continues Growth Strategy

**By Jason Smith, Production Editor, Smart Card News**

*Jason Smith*

Formed in 1988 ID Data plc, now sells directly to customers in over 100 countries. The company is a significant supplier of secure-transaction systems and Smart Card services to the international telephony, banking, retail, and secure-access sectors. The Company is organised into three separate divisions:

- **ChipPort** - set up to enable independent card providers around the world to compete effec tively in their local markets by using the technology, skills and support provided by the group.
- **ID Data Technology** - set up to ensure that the group has access to new and emerging tec nolgies and is responsible for the group's Smart Card development and intellectual property.
- **ID Data Systems** - a division set up with core expertise in the manufacture of card prod ucts and services to the banking, security, telecommunications and retail sectors.

ID Data's major shareholders are Peter Cox (20.3%), Even Flow Holdings Limited (24.34%), New Opportunities Investment Trust PLC (18.84%) and Framlington Investment Management Ltd (9.28%). The Company's clients include EDS, Barclaycard, Lloyds TSB, Vodafone, Nectar, Tesco, the Automobile Association, Esso / ExxonMobil and, in Poland, the Premium Club loyalty card scheme. The Company has formed agreements with major global corporations to facilitate rapid market development including partnerships with the Japanese companies Toshiba and Toppan. They have delivered in excess of 17 million chip cards to the banking market in the UK and in October 2000 the company was listed on the London Stock Exchange and on Wednesday 16th June 2004 their share price was valued at 5.50 per share.

In their interim results for the 6 months ended 30 September 2003, ID Data showed a turnover of £5.4 million which was a 48% reduction compared with the corresponding period last year due to the one-off increase from the Nectar Loyalty card launch in 2002. They made a loss of £1.7 million compared to £1.3 million last year but growing demand for bank Chip and PIN cards is expected to add significantly to sales and profit opportunities during the next financial year.

The Company's recent strategy to move from commodity products to value-added services and solutions has created a solid platform on which they aim to build further growth.One reflection of this new strategy is ID Data's acquition of Mids & Horsey Ltd, a card producer and personalisation bureau with accreditations from Visa and MasterCard, for an initial consideration of £3,324,689. More recently ID Data also acquire CardBASE Technologies Limited for 3.42 million euros (£2.28 million). This is being financed by the issue of 32,639,973 million shares in ID Data plc priced at 7p for the entire share capital of CardBASE. CardBASE Technologies, Dublin supplies prestigious customers with software to mass issue smart cards in banking, retail and security environments. One of Europe's leading central banks uses CardBASE's Smart Card management solution MASCOT to issue Smart Cards with digital certificates as part of a public key infrastructure (PKI).

Peter Cox, Chief Executive of ID Data plc, said: "This important acquisition strengthens our position as a provider of complete Smart Card solutions, enabling us to compete with the largest providers in the market. It better equips us to supply not only banks, but also the UK and other governments that are either considering the introduction of identity cards or reviewing their requirements in that area". This newly establish foundation of strength has helped ID Data win several new contracts. Recently published on our news service was ID Data's exclusive win of a contract to design, develop and personalise Citibank chip-and-pin cards for the UK market, enabling Citibank, the world's largest card issuer, to generate additional revenues for ID Data of between £2 million to £3 million over the initial two years of the contract.

ID Data plc has also strengthened its position in the key retail market by also supplying GE Capital, the UK's biggest store card supplier and one of the world's leading financial services company's. ID Data now supplies, personalises and distributes GE Capital store cards within the UK. The agreement is for an initial period of two years and generates additional annual revenues for ID Data of up to £2 million a year. Having purchased the processing equipment previously used by the earlier supplier, ID Data has commenced production of cards and mailing them to GE clients. Another recent contract won by ID Data was an extension of their contract with Electronic Data Systems (EDS) to supply chip cards for the Post Office Card Account ("POCA"). This contract extension will now run until April 2010 and will generate an additional £8 million of revenue. POCA has gained approximately 4 million users since its launch in April 2003 and has grown in acceptance as recipients of Government benefits adopt Smart Cards offering banking type services to a wider audience. It is estimated that over the life of the contract, there could be up to 19 million POCA cards in use to manage benefits and pension payments.

Mr Cox said: "Citibank is a world leader in credit, store and debit cards and this win strengthens our objective of becoming a leader in card supply to European financial services. With Citibank and GE Capital as clients, we will now be servicing the two world leaders in retail credit. Mr Cox concluded by saying "These contracts, together with ID Data software solutions currently being implemented by Capital One and Abbey for their chip-card deliveries, shows we are gaining recognition as a supplier to the global banking sector, to which we have delivered more than 17 million chip cards to date.

# What is ISO/IEC Standard 7816 - 4?

**By Dr.David Everett, CEO, Microexpert Limited**

Many people often comment on how difficult they find it to understand a particular standard and in the smart card world ISO 7816-4 seems to be one of the favourites. It is of course a critical standard which specifies how a Smart Card interacts with its commanding terminal and in the smart card world that is a master slave relationship. The interface terminal sends commands to the card which then responds accordingly. In the first place we need to appreciate that it is not the job of a standard to explain the reasons behind the various clauses. Its main purpose is to specify what must be achieved in a complete and unambiguous manner. Adding explanatory text could lead to confusion and ambiguity. What follows here is a high level look at what the standard covers and what needs to be achieved, the standard itself is the final statement and is what must be obeyed by the implementers. Part 4 is entitled 'Interindustry Commands for Interchange', in fact it covers much more and its real scope is defined to cover,

- The content and structure of the commands transmitted by the interface device to the card (the commands are not mandatory for 7816-4 compliance but the structure is)
- The responses sent from the card to the interface device in reply to these commands
- The structure of the files and data
- The access methods to the files and data in the card
- A security architecture defining the access rights to files and data in the card.
- The structure and content of the historical bytes

An Application Protocol Data Unit (APDU) is the packet that is sent as a stream of serial binary data to and from the card. They are constructed in the following way:

## Command APDU

| Header | | | | Body | | |
|---|---|---|---|---|---|---|
| CLA | INS | P1 | P2 | Lc | Data Field | Le |

It should be noted that in Part 3 of the standard there is a TPDU (Transport Protocol Data Unit), this looks a little different and describes how the command is transported by the two common communications protocols T = 0 (byte protocol) and T = 1 (block protocol). The detail behind this is usually taken care of by the smart card reader.

**CLA =** The Class byte which for an ISO compliant card command is '00' (in hexadecimal notation)
**INS =** The Instruction byte which is defined for each of the commands specified in Part 4 of the standard
**P1 =** A qualifying parameter byte specified for the commands defined in part 4
**P2 =** A second parameter byte also defined for the part 4 commands
**Lc =** Is the length of the Command Data Field (only)
**Le =** Is the length of the expected response data field (only)

**There are four possible types of Command:**

**Case 1** Where there is only a command header, no data is sent or received (neither Lc or Le are sent)
**Case 2** Where no data is sent to the card but data is received in the response (only Le is sent)
**Case3** Where data is sent to the card but there is no response data (and Le is absent)
**Case 4** Where data is sent in the command and data is received in the response (both Lc and Le are sent.

It should be noted that Case 4 is not supported by the T = 0 protocol (the interface does a Case 3 command and then issues a 'Get Response' Command to collect the response data). Although not supported by the standard there are T = 0 cards in the field that will support a Case 4 command. The Response APDU looks like this,

## Response APDU

| Data Field | Status Bytes | |
|---|---|---|
| Data (length as defined by Le) | SW1 | SW2 |

A normal response will give SW1 = '90' and SW2 = '00' in hexadecimal notation. There are lots of other combinations of which the other normal response is commonly encountered, SW1 = '61' and SW2= 'xx' this is when extra response data is available to a Case 2 or Case 4 command and xx defines the length of data still available. A 'Get Response' with an Le value of 'xx' should be immediately issued to collect this data. It is clear that in the case of T = 0 communications for a Case 4 type command that this 'xx' is the total length of the data and is the only way you can collect the response data after having issued a Case 3 command initially.

*To be continued next month (ISO 7816-4 File Structures).*

# Valista: A Payments Platform for e & m Payments

**By Patsy Everett, Managing Director Smart Card News Ltd**

*Patsy Everett*

I met John Hurley over a delightful lunch in London where he enthused about Valista. John has had a most interesting career, as brand manager at British Airways, Account Director The Walt Disney Company, VP Business Development at Demandline.com, VP Marketing at Network365 and now VP Marketing at Valista. Valista is a new player in the area of payments but is already attracting a lot of interest. Established in 2003 following a merger with Network 365, a mobile macro-payments company with a strong market in Asia and iPIN, a micro-payment solutions company best known in the US and Europe.

*John Hurley*

Valista now has a subscriber base of over 150 million with over 1000 blue chip merchants, utilizing their merchant integration technology. Valista's product range enables wireless and fixed line operators, ISPs and financial institutions the ability to offer to their customers a secure route to purchase and deliver digital content, goods and services wherever the customer wants to make the transaction and by what ever method of payment they choose.

Being the sceptical person that I am, I only want to make calls with my phone, I was interested to hear John extol the virtues of buying ring tones, theatre tickets, lottery tickets, hotel reservations or a round of golf- from a PIN protected browser on the phone. In Asia a subscriber can be alerted by SMS that their utility bill is due to be paid. In Japan customers can shop on the train over the Internet using their phone. I could even transfer funds to my daughters phone, it all sounded to good to be true


But it is happening. Last month Gemplus and Valista launched Gem-eCash in the Czech Republic. All you have to do is purchase a pre-paid card that has a scratch off panel which contains a unique number then make your purchase over the Internet.

The number authenticates the pre-paid card and its value. This means that people who do not want to use their credit card over the Internet or do not have a credit card can shop with confidence. So now my phone becomes my wallet. Good idea, I can throw away all my credit cards!! My phone will be able to send me an SMS alert that I am short of funds so I can top up by sending an SMS text back. It will also enable the operator to send me information about products and services, electronic junk. I will be able to top up via any mobile or fixed internet browser which has registered my payment instructions. I can top-up by a voice channel using a personalised voice menu, at any store with a special POS terminal or an ATM using my ATM card to authenticate myself or I can have electronic or physical vouchers.

I asked John what he thought of Simpay, he expressed the view that they would be the future standard for mobile payments and that Encorus was his major competitor.

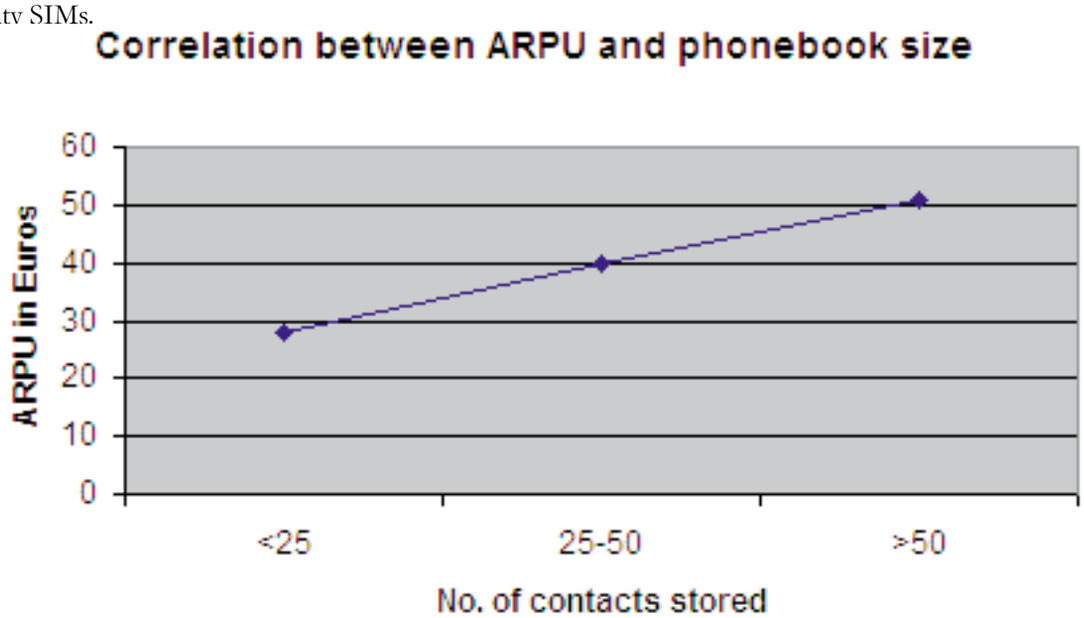
**www.valista.com**

# How to Make the Move to New SIM Services

**By Caroline Guillaume, Director, Distribution Solutions and Services, Gemplus**

Before, if I'd been asked to write an article about the SIM, I would have extolled the ways in which mobile network operators can maximize their existing infrastructures by using this key part of their network when looking to deploy value added mobile services cost-effectively. I won't be doing that today, as this is something that operators are already keenly aware of. However, what I will be doing is examining why operators, armed with this knowledge, are putting more and more control into the hands of the end-user.

Two things we know for a fact are that there is a strong correlation between high average revenue per user-ARPU and higher value SIMs, e.g. those with more memory space, and that the oldest, most loyal customers tend to be those with the least capable SIM. These two points alone provide a convincing argument that operators need to re-equip this valuable section of the subscriber base with new, more powerful and higher capacitv SIMs.




(Source: Gemplus market analysis 2003)

In this context, Gemplus commissioned an end-user survey examining mobile user attitudes to new services, SIM copying and preferred communication channels, such as voice and SMS. The results were astounding. 70% of mobile users interviewed are willing to change their SIM card to benefit from new services, with even higher scores in Russia, the Philippines and Sweden. Over 50% of these users would rather change their SIM themselves.

What was not evident was how they were going to change SIMs while ensuring continuity of service. A previous survey by TNS Sofres showed that the fear of loss of personal data is a considerable barrier in migrating to a new SIM, with 75% of European heavy mobile users put off by the idea that they will need to re-enter their phone numbers and lose their treasured SMS.

To answer this issue, we tested the concept of a SIM back-up pack by giving one to each user. Consisting of a SIM copy device (see photo), a blank smart card and a user guide, they were left to their own devices to figure out how to use it. Within seconds, most users had made a perfect copy of their SIM (phonebook and SMS data) with no re-tapping of information. Everyone went home that night with a copy of their SIM to keep in their sock drawer. The survey showed that when confronted with a device that copies across phonebook and SMS information into the new SIM, 84% were more than willing to upgrade.

In parallel, many operators have started to adopt this approach and are sending SIM migration packs in the post to specific customer segments. This consists of the new SIM, ready for activation, alongside a SIM copying device. The general reaction has been highly positive as on one hand, it is a really cool little gadget to receive, and on the other, it breaks down the barrier that many feel about moving to a new SIM card.

Focusing on end-user usability and ease of use will ultimately enable operators to increase loyalty through VIP offers and to make SIM management fast and simple. With this in mind, SIM suppliers have developed new tools and software for copying, backing-up, editing and managing SIM data, designed for use both by the end-user in the comfort of their own home, or by retailers in the phone shop.

**SIM management solutions using the PC interface**

Copying the SIM is one thing, but even with the best phone in the world, managing your SIM contents is never going to be as user-friendly as via the PC interface. The TNS Sofres survey showed that 65% of users interviewed would be interested in editing and managing SIM contents in this way. MySIMeditor is a software solution from Gemplus that lets the user visualize their card contents via the USB.

Once installed, the user can upload, download, delete, drag contents from MS Outlook, internationalize their numbers (put the +44 for the UK in front, for example) and draft SMS to their heart's content. They can even set up templates of frequently sent SMS, such as directions to their house, to be downloaded and sent off to all the guests for that night's party. Then all they need to do is download the new data to the SIM, put it back in their phone and off they go, safe in the knowledge that even if they lose their mobile, all the info is backed up on their hard disc. This sort of solution is ideal for companies managing large fleets of mobile phones in the work force. As with email, fleet managers will be able to manage all arrivals, departures and changes in the work force and give the new account manager a professional mobile with their colleague's phone numbers already pre-loaded on.

One thing is clear. In mature markets, SIM renewal has become a key part of every operator's strategy. As a way of encouraging loyalty, targeting high-end users with a new SIM and equipping them with the means to make the copy themselves is second to none. Another thing we know is that users with more phonebook space make more calls. So in the bun fight for increased ARPU, what are operators waiting for to launch their SIM migration campaigns?

## Events Diary 2004

**July**

| | |
|---|---|
| 29th June - 1 - | Credit Card World 2004 - *London, UK - www.worldofcards.biz* |
| *7 - 9* | CardTech Korea - *Korea* |
| *8 - 9* | CardEx Asia 2004 - *Kuala Lumpur - www.egytec.com* |

**August**

| | |
|---|---|
| *5 - 6* | Cards Australia - *Australia - www.worldofcards.biz/2004/cards_au* |
| *4 - 6* | Prepaid Markets Expo 2004 - *New York City, USA - www.prepaidmarketsexpo.com* |
| *17 - 19* | Banking Technology Africa 2004 - *South Africa - www.terrapinn.com* |

**September**

| | |
|---|---|
| *2 -4* | SmartCards Expo 2004/e-Security 2004. - *New Delhi, India -www.electronicstoday.org* |
| *15 - 16* | 3rd Asian High Security Printing Conference - *Jakarta, Indonesia - www.cross-conferences.com* |
| *22 - 23* | e-Smart 2004 - *Sophia Antipolis French Riviera - www.worldofcards.biz/2004/cards_AU* |

# Through the Looking Glass

**By Nick Holland, Director of Emerging Technology Research, Mercator Advisory Group**

*Nick Holland*

The Japanese have long caused feelings of 'gadget-envy' in me, coming up with inventions that we didn't know we needed until they appeared on our shores and then can't live without. Think of the walkman, the VCR, the digital camera. It's always seemed to me though that we get the clunky models designed for big fingers and they keep the truly beautiful examples of the synthesis of art and technology for themselves.

And the current Japanese cellphone is a classic example of this; a compact, sleek device with an interface offering true wireless internet, secure banking, contactless payments and biometric activation. The word 'cellphone' doesn't do the device justice; it has morphed into a personal payment terminal, a PDA and then some. Sadly I live in the US, a country just awakening to the 'cutting edge' potential offered by GSM, SMS and SIMs.

**So how did the Japanese develop to where they are and what would it take for the US to get there?**

Quite simply, the Japanese payment system took a divergent evolutionary path to the one we are familiar with in the states. Japan has been slow to make the transition to consumer credit. In fact, credit cards were barred from issue by Japanese banks until 1982, and it wasn't until 1992 that these could facilitate revolving credit. To fill the gap, different models developed for credit payment, such as 'Ikkai Barai', a system not dissimilar to charge cards in the US.

There is debate as to whether the late adoption of revolving consumer credit led to the present differences between American and Japanese payment systems, or whether there a more fundamental cultural difference with the comfort level for personal debt per region. Either way the net effect is the same - Japanese consumers are less comfortable with credit than regions such as Europe and North America

Japan had also very different structural foundations for a payment system to those in the US. Real-time authentication of a cardholder requires access to cheap telecommunications networks and in the US this has been a luxury we've had for many years. For Japan, the opposite is true - they've been hamstrung by one of the most expensive telecommunication networks in the world. To work round this, payment systems have developed in Japan that allow for authentication without the requirement for telecommunications using Smart Cards. And with Smart Cards come not only the potential for offline authentication, but also for stored value, multiple applications in a single environment, contactless payments and the ability to do away with a card form factor altogether.

The cost of telecommunications also had implications for the development of the Internet and e-commerce. Japan's route to Internet adoption wasn't via the PC as in the US, but through cellphones offering the NTT DoCoMo iMode service. From the outset, the Japanese cellular system was designed to carry data as well as voice and their handsets have evolved accordingly to facilitate not just conversations but web browsing and m-commerce. Conversely, only in the last couple of years have US cellphone carriers made the shift towards data-centric handsets and networks. True, US networks are evolving fast, but there's still a long way to go.

The flipside to Japan's evolutionary path towards Smart Cards and cellphones is seen in the US. Cheap telecommunications meant growth in PC based Internet services and no real reason to evolve away from magnetic stripe cards. If card fraud can be kept at a tolerable level by real-time authentication, then there really isn't a compelling reason to shift to chip based authentication. If it works, don't fix it. And that's exactly what's happened. The problem arises when we take a peak through the looking glass… we've glimpsed a parallel universe and ours looks primitive by comparison. Smart Cards and high powered handsets have opened up a world of possibilities for Japanese consumers that we are far from realising.

Phenomenally successful programs such as the Octopus Card in Hong Kong (based on the Japanese Sony FeliCa card) and the aforementioned iMode have not missed our attention. So what would it take to develop a system comparable to the JCB / NTT DoCoMo handset in the US, one that allows for POS payment and wireless reloading direct from your bank account?

- Contactless cards are going to be plain magnetic stripe substitutes to start with, but may well be the back door to more powerful Smart Cards in the US once economies of scale come into play and the benefits of added security and multiple applications on a single card become realisable. MasterCard's PayPass contactless card which is being launched this summer might be the start of the process of weaning us off the mag stripe and once this is done, we can consider alternative form factors for POS payments including cellphones.

- Should contactless catch light in the US (and there's every indication that it will), then the cellphone would be the logical resting place for the chip given the way that the cellphone has crept into our lives. Cellphone manufacturers such as Nokia and Motorola are already developing handsets with chips operating on the standard for contactless POS payments in the US; ISO 14443. In the case of GSM cellphones, there is already a Smart Card in the handset; the SIM card - it's not a great imagi nary leap to consider bank issued Smart Cards SIM cards that could be inserted into phones.

- Carriers in the US are shifting to GSM as a common platform and from this there are development paths via GPRS and EDGE to squeeze the most out of current networks. This gets us to maximum data transfer speeds of around 400Kbps, which would probably be good enough for handheld web applications and the necessary security algorithms.

So within the next few years we'll be able to discard our wallets in favor of a cellphone. Maybe. And the Japanese will be how far ahead by then? The grass is always greener, that's for sure. Who knows, perhaps there are neo-luddites in Japan who are tired of the next big thing and quietly pining for retro-chic in the form of magnetic stripe cards. If any are reading this, I'd be happy to do an exchange visit…

# The American Scene

**by Peter Tomlinson, Independent Consultant, Iosis Associates**

*Peter Thomlinson*

Last month's article was an overview of a week spent in Washington DC at the end of April, attending the CardTech/SecurTech convention, and also joining the small European presence at the USA/Europe/Japan informal group known as the Global Collaboration Forum.

This month the topic is the dominant USA Smart Card project - the military Common Access Card (CAC) - and its civil offspring the GSC-IS V2.1 specification. Readers should note that the material presented here has been gathered from several people attending CTST.

The CAC is an ID card for US military personnel, capable of holding a short-form personnel file of core data about the cardholder. The scheme development process was a classic of US methodology: potential suppliers were invited to join a working group defining an interoperable technology, and the US government supplied in-house technical resources to write the resulting specification.

The result was a contact card technology, compliant with ISO/IEC 7816, adopting Global Platform's card management methodology, and supporting Javacard, Multos, and potentially Microsoft's WfSC offering. On the systems side, a network of card issuing bureaus has been established, but to a great extent it was left to the various military units to procure their own operational systems. Several million CAC cards have already been deployed or ordered, with a small but growing proportion using a biometric for authentication.

Deployment already extends to several overseas theatres. In practice most of the cards use Javacard methods, and in using them it is believed that there have been a considerable number of interoperability problems and some difficulty handling the ever-growing list of revoked cards. The project started well before the 9/11 events, and those events have caused a major re-appraisal of assumptions about identifying individuals. Information assurance is now a key component of good practice, and a structured approach to personal identity protection has been developed:

- Strong authentication of the individual (face to face interaction between the individual and a trusted agent; and a business process that provides sufficient evidence of identity - public records checks, background investigations, examination of primary documents).
- Binding the identity to a management system (a credential is the best linkage to the person al identity protection system).
- Binding the credential to the individual (biometric and PINs bind the credential to an indi vidual; the credential then becomes a proxy for digital/physical access where technology is used).
- Authentication of the credential at all access points (logical and physical).
- Safeguarding identity information from unwarranted disclosure.

Behind that, the USA Dept of Defense (DoD) has strengthened its internal processes for vetting both recruits to the military and also employees who operate the above approach to registration and information assurance. Much of the CAC spec has been incorporated into the current round of USA civil developments, and the material is now going forward to the new ISO/IEC SC17 WG4 Task Force 9 mentioned last month.

It must be noted that the civil deployment of personal Smart Cards in the USA will be for US Government employees and related personnel - it is not an ID card for the population at large. It is interesting to see here the clash between USA and European policies on ID cards and attitudes to protection of personal data. In Europe we wish to see as little personal information as possible held in the Identity data on the civil ID card, whereas the civil USA deployment of cards will allow a large file of data - just as with the CAC.

Not a problem if you work for the government, you might think, but now a similar attitude is moving into the travel document arena in the USA: if you travel to the USA, its government wants all the data on you, and expects to read your biometric data (in image form, not templates) out of your travel visa or passport.

# Foreigners Play Key Role in China ID Project

**By Andrew Batson, Dow Jones Newswires**

China is at a turning point in its massive experiment with electronic identification cards, a project that has long been shrouded in secrecy and nationalist rhetoric. Just as the government begins handing them out to the general public, it is becoming clear that these new symbols of Chinese identity are in fact surprisingly international products.

Over a billion of the new plastic IDs, with their embedded microchips, are expected to be issued in coming years, as they replace the paper cards now carried by adult Chinese citizens. Only a few are now in circulation, after trial distribution began in recent months in some major cities, including Shanghai and Shenzhen. Yet the complex chain of companies involved in making the new cards extends well beyond those places, and ultimately to developed countries such as France and Japan.

Foreign companies' participation in the project isn't widely known inside China, perhaps because it is at odds with the government's stated intention to rely on domestic industry. "This doesn't fit the script of what the Chinese normally do," said Dorothy Lai, an analyst at the research firm Gartner. Indeed, the key roles played by foreign and foreign-invested companies in producing the new ID cards show how China is still making use of technologies developed abroad for even its most sensitive government projects, despite continued efforts to boost the country's own technical capabilities.

Start with the core of the new cards: a chip that stores an individual's personal information, allowing it to be read electronically and checked with databases kept by China's security authorities. The government has decreed that these chips must be made in China - but it's nearly impossible to find a chipmaker in the country that wasn't set up with foreign capital and outside expertise.

Shanghai Hua Hong NEC Electronics Co., one of the companies selected to make the chips, is majority-owned by Chinese interests. However, Japan's NEC Corp.(6701.TO) owns 20% of the company, and California-based Jazz Semiconductor Inc. holds an 11% stake. And it is seeking to sell shares to more foreign investors, probably through a listing on the Hong Kong stock exchange. Of course, there are several purely domestic companies involved in supplying various parts of the new ID cards. But for some key elements of the new ID cards, China has in fact drawn on the technology of companies that have designed and produced similar - if much smaller - systems in other countries.

Ohad Bashan, head of marketing and strategy at Israel's On Track Innovations Ltd. (OTIV), said the new ID cards in the current trials incorporate some of his company's techniques for "contactless" cards - which can be mechanically read from a short distance away. "It's a great testimonial to our technology," Bashan said, though he declined to speculate why China had chosen a foreign supplier for such a sensitive project. "The current ID card will no longer be produced in 2005. All regions will have to have equipment to produce the new cards by the end of this year," Maciejowski said in a telephone interview from Paris. Mass production of the new cards will likely start in July in the current trial areas, he added.

Though proposals for similar high-tech ID cards have proved controversial in countries such as Australia, the U.S. and the U.K., there hasn't been much public resistance in China - perhaps because the new cards are essentially just a technical upgrade to the compulsory national ID system that is already in place. The main justification government officials have given for the switch is to make it more difficult to forge IDs; security experts do say the new cards could help curb some of China's rampant fraud and financial crime. Fear of terrorism has also made other governments converts to the technology: the U.K. last month began voluntary trials of its new electronic ID cards.

# A Number of Firsts for Cheshire's Travelcard Scheme

**by Patsy Everett, Managing Director, Smart Card News Ltd**

*Patsy Everett*

Launched back in 2002,initially to over come the inefficiencies and inconvenience of cross-city journeys that entailed a change of bus company services, the Cheshire County Council Travelcard has been hailed a success and won a number of awards. In January this year the Cheshire based travel card was awarded £428,919 of Government money to help it create a national standard for travel cards. My understanding, and it becomes more difficult to understand the more people one talks too, is that the equipment is ITSO compatible and should be certified as compliant in the first quarter of next year.

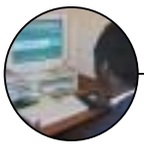

Chester City Transport, First, Arriva North Wales and West and Arrowebrook Coaches all have special scanning equipment to enable passengers to load money electronically onto their Travelcard. There are two versions of the card, one allows the purchaser a 10% discount each time money is loaded onto the card in amounts of £5 and £10, the other version allows "seamless" and unlimited travel for a week or a month around two different zones involving a combination of four different companies.


This implementation means that the Cheshire Travelcard is the first local authority led scheme of its kind, under the 2000 Transport Act to join together four different commercial operators and various electronic ticketing suppliers, the first and only card to have money loaded onto it which has been certified by the Finances Services Authority and still the only commercial interoperable UK transport Smart Card scheme

Currently more than 2000 commuters use the service daily on around 250 buses over 75 routes. Cheshire County Council acts as the scheme administrator and promoter and carries out the fundamental role of financially reconciling transactions between the participating bus companies. It also looks after card issuing, monitors customer satisfaction and provides a helpline. The Travelcard was the winner of the BP "Innovation" category at the 2003 Bus Industry Awards.

The other commercial partners involved in the scheme include Wayfarer Transit Systems, Almex Information Systems and ESP Systex.The total population of Cheshire is 673,781 and half of Cheshire's manufacturing GVA comes from the chemical industry, with construction a close second followed by the Automotive and food and drink industries.

**www.cheshire.gov.uk**



# SIMple Managment of SIMS - A Review of MySIMeditor

**By Jason Smith, Production Editor, Smart Card News Ltd**

I'm hoping I am not the only one who has continually said I was going to write down all the Phone numbers in my mobile phone just in case I lost it. A task of intention rather than reality. But I have failed on two occasions and lost some very important numbers in the process. So when I was given the MySIMeditor kit to test, I thought great, the answer to prays.

The GemConnect MySIMeditor kit is made up of, one card reader, a SIM Holder, and a software disk. MySIMeditor contains software that enables the user to manage their SIM content through a computer interface. The SIM is inserted into the cardholder that connects to a PC via the USB portal. Then Data can be uploaded and downloaded. Functions of the software include notably phone book and SMS back-up, number internationalisation and data editing

When I first started to use the Editor I thought I had done somehting wrong, not installed it properally or something as it was not registering my telephone numbers, until I realised it was me at fault. I had saved all my numbers to the phones memory instead of the chip. So after a little playing with my phone and some default changes I was ready to start again. One downside straight away, I discovered there was no instruction manual and I was pretty reluctant to start messing with my SIM's security features and management without actually knowing exactly what I was doing. However once I established what I was doing through trial and error I found MySIMEditor to be simple and easy-to-use.

In Caroline Guillaumes article published in this issue of Smart Card News (pages 11 - 12) she stated that in a recent survey conducted by TNS Sofres, 67% of those questioned did find the MySIMeditor a useful solution. I agree with this result, the MySIMeditor is usful , it allows me to change and edit my numbers and help me set up international calls with the number internationalisation function. Another fuction I found very efficient and useful was that I could draft SMS using my computer keyboard and then download them into the SIM for sending, but this function is not unique, most phones have their own built in facilities to allow you to do this function, without the need of additional hardware or cost.

The biggest benefit I found with the MySIMeditor was its ability to allow me to back-up my phonebook, something which would help me, especially on a commercial level. As you may be able to get all the numbers of your friends and relatives again easily but what about the guy you meet at the buisness show last year. An old saying says "its not what you know, its who you know" so a backup system for your SIM is important for that reason alone - not losing those important contact numbers. .

Gemplus is only going to sell the GemConnect MySIMeditor to telecom operators. Currently this solution has been delivered to 5 European operators, including Mobistar, part of the Orange Group. Which in terms of volume is around 10k units. But how much does it cost, was the biggest questions on my mind and still I'm unaware. Gemplus state that the price depends on the quantity bought and that there is no standard price range currently available.

**www.gemplus.com/products/gemconnect_home_mysimeditor**