SMART CARD NEWS

October 2000

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*Subscribers will receive Gemplus' "**GemSAFE Enterprise"** free with this issue of Smart Card News.*

Worldcard Multi-function Loyalty Card Launch in UK

High Street retailer Woolworth's has signed up for the launch of Worldcard, a new loyalty Smart Card being piloted in the north east of England.

Worldcard is a multi-functional card and has already been adopted by Newcastle City Council and the DfEE through Tyneside Careers, providing a cardholder base of around 20,000.

Worldcard says that 100,000 cards will be in circulation by Christmas in the north east and the target cardholder base is 350,000 in three years. There are plans to launch Worldcard in Manchester and Birmingham during 2001.

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News

Cards on the Cover

Main Photograph
Worldcard Promotion

GSM News Roundup

Guest Article

*NB: Dr David Everett's "Briefing Notes on Multi-Application
Smart Cards" will return later in the year.*

Don't Forget!
Our Website containing daily News On-Line, and information about the full range
of SCN services, can be found at the following address: **www.smartcard.co.uk**

Worldcard Launch in UK

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Tom Downes, CEO of Music Marketing Services and creator of Worldcard, said: "Retailers will be able to use the information from the card to get what has never been available before i.e. a clear picture of who their customers are, their age and buying habits. Cardholders will appreciate that it is not just buying groceries but also attending school or college, the leisure centre or buying CDs or clothes or books and visiting the cinema which earns them points."

He added that Worldcard carries encrypted proof of age - a facility suited to convenience stores and stores which sell age sensitive merchandise.

Woolworth's local store manager, Paul Graham, said: "The set up costs are very low, removing barriers to entry for all retailers. With most young people in the region with a Worldcard in their pocket we cannot afford to miss this opportunity.

"The existing cardholders will be just the right target age for us now but I can see that it will have appeal to shoppers cross all age ranges as it gives everyone the chance to collect points in their preferred retail outlets."

Contact
- **Helen Hargrove** Northern Profile
  ☎ +44 (0)191 273 2773

Collectors Corner

Our card this month is the GemSAFE Enterprise, Gemplus' corporate security solution, incorporating Smart Cards to enhance the security and ease the management of technologies like digital signature and file encryption. Based on open standards, GemSAFE Enterprise secures applications ranging from e-mail, business to business applications to web or network access.

It also enables enterprises to seamlessly add Smart Card capabilities into any existing corporate security infrastructure and take advantage of the inherent benefits of Smart Cards: trust, portability, convenience and ease of use. GemSAFE Enterprise is a complete solution that provides enterprises with the client and administrative features necessary to enhance PKI security and manageability.

Electronic Cash for All

UK-based Mondex International has designed a system using electronic cash which could make bank services available to everyone.

The Smart Card firm says the system does not require a heavy investment in infrastructure from the banks and can bring services to people living in remote areas and to those currently considered not credit-worthy to open a banking account.

First to join the programme is South Africa's Venda region near the Zimbabwe border. According to Alison Greensmith of Mondex International: "Biometric technology will give people fast and ready access to electronic cash, and fingerprints will provide the identification required to access e-bank accounts."

Contact
- **Clare Looker** Fishburn Hedges
  ☎ +44 (0)20 7544 3095

First 64K RSA-enabled SIM

Oberthur Card Systems has launched the first 64K, RSA-enabled, Java-based SIM Toolkit card. Called SIMphonIC SWIM, it brings together both the WIM (WAP Identity Module) and SIM Toolkit functions on one card, creating a highly secure environment for WAP services.

Developed with Infineon Technologies, it supports high-level security systems including PKI (Public Key Infrastructure).

Contact
- **Stéphanie de Labriolle** Oberthur CS
  ☎ +33 (0)1 41 25 28 42
  ✉ s.delabriolle@oberthurcs.com

O2Micro Ships 100,000 Units

O2Micro International, supplier of ICs to notebook manufacturers, has announced the shipment of over 100,000 units of their SmartCardBus controllers which provides built-in Smart Card reader technology for portable computers.

Contact
- **Richard Brayden** O2Micro
  ☎ +1 408 987 5920, ext. 8004
  ✉ info@o2micro.com

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Card Manufacturers Support Visa

A program to offer Visa member banks a family of low cost multi-application Smart Cards has been launched by Visa International with IBM and Philips Semiconductors and supported by four Smart Card manufacturers - Giesecke & Devrient, Oberthur Card Systems, ORGA and Schlumberger.

The program, called Visa Price Breakthrough, will enable Visa member banks to obtain Open Platform multi-application Smart Cards starting at less than three dollars each compared with the average price of a microprocessor chip card of around six dollars.

The family of new Smart Cards is based on the Java Card 2.1 and the Open Platform 2.0 specifications. The price of the initial card includes two applications, such as Visa credit/debit and Visa Cash, loaded to the read-only memory (ROM) with room for multiple applications in the erasable memory (EEPROM). This means issuers can decide what additional applications they may want to offer, such as loyalty or secure Internet access.

Contact
- **Colin Baptie** Visa International
  - ☎ +1 650 432 4671
  - ✉ cbaptie@visa.com

Air Train to be Smart Card-ready

New York's JFK International "Air Train," the Light Rail System for easy airport access, will feature MetroCard compatibility, providing seamless common ticketing with New York's subways and buses. The ticketing technology and equipment will be provided by Cubic Transportation Systems.

The train system, which is scheduled to begin service in 2002, will also be Smart Card-ready in anticipation of the new ticketing technology's introduction later in the decade.

Under a five-year agreement with the project contractor, Ontario-based Bombardier, Cubic will design, manufacture and maintain faregates, automatic vending machines, computers, software and customer service equipment for two new light rail stations serving the JFK Airport.

Contact
- **Kelly Williams** Cubic Corp
  - ☎ +1 858 505 2378
  - ✉ Kelly.Williams@cubic.com

Visa Level 3 for Gemplus Card

Gemplus has obtained Level 3 approval from Visa International for its GemXpresso 211 - V2 card. This is the first Smart Card that supports Java Card 2.1 and Open Platform 2.0 to achieve the highest security rating possible.

GemXpresso 211 - V2, a Smart Card platform based on Philips Semiconductors P8WE5032, is capable of supporting Visa-approved applications, such as Visa Smart Debit/Credit (VSDC) and Visa Cash, as well as Member proprietary applications.

Contact
- **Ron Schwenger** Gemplus
  - ☎ +1 650 654 2978
  - ✉ ron.schwenger@gemplus.com

VeriFone Shipments Top 9 Million

VeriFone, a division of Hewlett-Packard Company, has announced that it has shipped more than nine million payment systems worldwide, approximately three times more than its closest competitor.

Contact
- **Shelley Blum** Eastwick PR for VeriFone
  - ☎ +1 650 480 4014
  - ✉ shelley@eastwick.com

Parking Plan in Scarborough

Scarborough Borough Council is using a Pay & Display parking solution from Schlumberger to increase control of on-street parking in the centre of the popular Yorkshire holiday resort in north east England.

Solar-powered Stelio parking terminals equipped with Smart Card readers will enable the Council to develop on and off-season parking schemes to suit the needs of residents, visitors, hoteliers, businesses, commuters and shoppers.

Logipark, Schlumberger's financial and statistical data management program will analyse parking usage to assist in better utilisation of parking facilities.

Contact
- **Dirk Hinze** Schlumberger
  - ☎ +33 (0)1 47 46 79 50
  - ✉ Hinze@montrouge.tt.slb.com

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Smart Card Initiative in N America

The Smart Card Industry Association (SCIA) and the Smart Card Forum (SCF) have announced a joint effort to stimulate the rapid adoption of Smart Card technology in North America.

Known as the Smart Card Security Initiative, it will promote the role of Smart Cards in securing e-business, enterprise systems and consumer Internet applications. "We want to make sure that everyone understands that Smart Cards are synonymous with security in the networked world," said Paul Beverly, SCIA Chairman. "They serve as a secure portable token providing digital identity, hardware-based authentication, cryptographic key storage and much, much more."

SCIA and SCF have committed initial funding of $500,000 to the initiative in its first two years. A full-time executive director will guide the day-to-day activities, augmented by internal staff, volunteers from member companies and outside experts where appropriate. The initiative will have three major areas of activity:

- the establishment of a panel of experts to address any technical issues standing in the way of user organisation's adopting Smart Cards for digital security.

- an educational program promoting the reliability and cost-effectiveness of Smart Card security solutions, and

- a lobbying effort to ensure that Smart Card reader/writers become standard on new PCs, workstations, and network devices.

"Suppliers of computer and network devices have a tremendous opportunity to provide products that are equipped to combat the growing security threat in the cybereconomy," said Allen Gilstrap, Chairman of the Smart Card Forum. "The few dollars that it costs to incorporate industry standard card reader/writers will save millions for their customers over time."

Contact
- **Charles Cagliostro** SCIA
  - ☎ +1 646 325 6604
  - 🖳 ccagliostro@scia.org
- **Donna Farmer** SCF
  - ☎ +1 212 837 7713
  - 🖳 dfarmer@smartcardforum.org

Xcert PKI for smart Visa Platform

Xcert has announced that its Sentry CA public key infrastructure (PKI) software is being offered as part of Visa USA's newly introduced smart Visa Technology Platform. Xcert's technology, a component of the smart Visa Access application provides the foundation for secure Internet access using a smart Visa card.

The smart Visa Technology Platform enables financial institutions to combine traditional payment cards with chip technology for added security and convenience. The platform consists of three pre-packaged applications that can co-reside on a chip card - smart Visa Payment, smart Visa Access and smart Visa Loyalty.

Contact
- **Angela Hall** Xcert
  - ☎ +1 925 274 9300
  - 🖳 ahall@xcert.com

Proton Personalisation Centre

CPI Card Group has been certified as the first US-based card personalisation centre for Proton-based cards. The announcement was made at the Proton World Forum in Ghent, Brussels, last month.

The company said the cards would be personalised at CPI's secure card production facility at Denver and it would soon be opening a card production and personalisation centre in Sao Paulo, Brazil.

Antonio Accornero, CPI's President, said: "We look forward to developing close links with Proton licensees in North and South America."

Contact
- **Benoît Guez** CPI Card Group
  - ☎ +1 514 488 0008
  - 🖳 bguez@cpicardgroup.com

Atmel Takes Over Siemens Plant

Atmel Corporation, based in California, USA, is to reopen the former Siemens microchip plant at Wallsend, North Tyneside, England, in a deal partly financed with a UK Government grant of £27.8 million. The plant closed two years ago with the loss of 1,200 jobs due to a slump in the semiconductor market.

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Contactless Card Plant for China

A contactless Smart Card facility is to be set up in Guangdong (China) by New Concept Technology Ltd., a joint venture between SuperCom Asia Pacific (51%), a subsidiary of Israeli-based high tech company SuperCom, and Shenzhen Mingwah Aohan High Technology Co. (49%), the second largest Smart Card manufacturer in China.

Initial investment in the new company will be US $4 million with plans for a production capacity of at least 20 million cards per year.

The plant will have two contactlees Smart Card production lines: one based on SuperCom technology, and the other based on Chinese polyvinyl chloride (PVC) technology.

Contact
- **Eldad Adar**
  - ☎ +972 9 7674166
  - ▭ www.supercomsmart.com

"Beyond Smart" 5 MB Card

UltraCard is to launch a 5MB card in the first quarter of 2001, says company President Dan Kehoe.

"The UltraCard card is an evolvement of magnetic stripe and Smart Card technology," said Kehoe. "We have added our patented technology to render the Smart Card 'beyond smart'."

UltraCard's Chief Technology Officer, Don Mann, said: "The proposed future use of Smart Cards will require several megabytes of data storage, yet the storage size of the existing Smart Card EEPROM memory is limited to 32 to 64 Kb, and we believe any increase in storage capacity greater than 64 Kb will be extremely expensive and difficult to obtain."

"The UltraCard technology addresses this issue," says Dan Kehoe. "UltraCard's 5 MB entry product combines hard disk technology, the standard mag stripe card, and the Smart Card chip with UltraCard's patented technology to produce a revolutionary system for high security, high capacity portable data storage in a credit card format."

Contact
- **Daniel Bland** Upgrade International
  - ☎ +1 206 903 3116

MAXIMUS for GSA Program

MAXIMUS has been qualified by the US General Services Administration (GSA) to compete for work under the ten-year, $1.5 billion Smart Identification Card Program.

Initially 3-G International (3GI) was among the five vendors who received an award. But, as substantially all of the assets of the Government Services Division of 3GI were purchased by MAXIMUS, the contract was modified to name MAXIMUS as the successor.

Contact
- **Rachael Rowland** MAXIMUS
  - ☎ +1 703 288 6809

Fusion Smart Visa Card

Fleet Credit Card Services, one of the top ten credit card issuers in the US, has launched the Fusion Smart Visa Card. It combines the benefits of a traditional Visa card, including acceptance at 19 million locations worldwide, with a 32K microprocessor providing access to a variety of pre-loaded applications including: advanced digital security, single PIN e-shopping, pre-loaded promotions and discounts.

Consumers can apply for the Fusion card online at www.fusioncard.com

Contact
- **Deborah Pulver** Fleet Credit Card Services
  - ☎ +1 215 444 7849
  - ▭ dpulver@fleetcc.com

ITSEC E4 Rating for Chip

Infineon Technologies' SLE66CX320P chip card controller has been certified to level E4 in the ITSEC (Information Technology Security Evaluation Criteria) testing scheme.

The SLE66CX320P is a member of Infineon's 66Plus series of 16-bit chip card controllers with a memory capacity of 32K bytes EEPROM, 64K bytes ROM and 3K bytes RAM). In quantities of 10,000, the controller is priced at US $6.50 (euro 6.90) each.

Contact
- **Monika Sonntag** Infineon
  - ☎ +49 89 234 24497
  - ▭ monika.sonntag@infineon.com

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Major Phone Contracts for L&G

Landis & Gyr Communications (L&G) has been awarded a contract to supply 2,200 Pulsar 50 GSM chip card payphones by Venezuelan Digitel SA. The payphones, which will be connected to the country's GSM network, will be installed in remote areas where there is no telephone service.

The Pulsar phones accept the latest in payment technology, such as third-generation prepaid chip cards. They are also equipped with a PhoeniX security module, which locally authenticates the user's chip card.

L&G has also been awarded contracts in El Salvador and Guatemala for its Trilogy payphones. Telemovil in El Salvador has ordered 3,000 Trilogy payphones and Comcel in Guatemala has ordered 1,500. They will be connected to the TDMA cellular network in each country for use primarily with prepaid cards.

The phone can accept a wide range of coins as well as all types of chip cards, electronic purse cards and prepaid calling cards. When a user places a call, the payphone automatically sends the card's PIN to the call centre for credit authorisation.

Contact
- **Adolf Deyhle** L&G Communications
  - ☎ +41 22 749 3355
  - ▤ +41 22 749 3208

Providian Launches Clear Card

A new Smart credit card, moulded of clear plastic with an embedded computer chip, will soon be making its way to American homes.

The Providian Visa stores customer identification and account information on an 8K chip (8K RAM, 24K ROM) as well as on a traditional magnetic stripe that ensures acceptance online and at all Visa merchant locations.

It can support numerous applications that involve storage of data. When fully enabled, it could also serve, for example, as a telephone calling card or electronic ticket. As the technology evolves to an expected 32K chip (32K RAM), all Providian Visa Smart Card holders will receive the newest generation of card.

Providian has teamed up with Colorado Plasticard Corporation which has a patent-pending process to colour the clear card plastic with Stealth technology-developed ink. This special ink permits the card to be clear, but readable by ATMs.

Contact
- **Alan Elias** Providian
  - ☎ +1 415 278 4189
  - ▤ alan_elias@providian.com

Card Inspection Equipment

Leading Spanish card manufacturer Microelectrónica Española, based in Madrid, has installed three NBS OptiCheck systems which utilise machine vision for the checking of 1.8 million cards per month.

Microelectrónica Española manufactures GSM and financial (EMV and electronic purse) Smart Cards for mobile telephone operators and various financial establishments.

Contact
- **Philip Barton** NBS Technologies
  - ☎ +44 (0)1932 351531
  - ▤ philip barton@nbstech.co.uk
- **Javier Pérez Aznar** Microelectrónica Española
  - ☎ +34 91 563 6847
  - ▤ microele@accessnet.es

Upgrade/Pathways Merger Plan

Upgrade International Corporation has announced plans to acquire The Pathways Group. The merger is subject to regulatory approval and approval by the Pathways shareholders.

Pathways' systems accommodate credit and debit payment methods, electronic benefit transfer, electronic funds transfer and Smart Card systems.

Upgrade acquired a stake in UltraCard in 1998. Carey Daly, President and CEO of The Pathways Group, said: "We decided to embrace Upgrade and the UltraCard technology, because we expect it to replace other microprocessor-based technologies that have been the carriers of our e-banking and e-commerce applications in the past."

Contact
- **Daniel Bland** Upgrade International
  - ☎ +1 206 903 3116
  - ▤ ir@upgd.com

Oberthur Doubling US Card Output

Oberthur Card Systems says it is doubling its production in the United States to 200,000 cards per day with an investment of approximately $5 million in new manufacturing equipment.

The company says this investment makes its Rancho Dominguez headquarters the largest Smart Card producing facility per day for GSM, memory and microprocessor applications in the US. The new equipment will enable Oberthur to respond to what it describes as strong demand especially for its SIM card.

"The new equipment infrastructure gives us the capacity to create 160,000 cards per day just in Los Angeles," said CEO Philippe Tartavull. "Combined with our existing manufacturing plant in Exton, Pa., Oberthur can now produce and deliver 200,000 specialised cards designed to market specifications."

Half of the 200,000 capacity will be dedicated to memory cards such as prepaid phone cards and half to microprocessor cards such as GSM cards. Oberthur produces cards for American Express, Visa and MasterCard.

Contact
- **Francine Dubois** Oberthur CS
  - ☎ +1 310 884 7981
  - 🖥 Francine.dubois@oberthurusa.com

Chips in Contactless Cards

Gemplus is to partner with HID, CASI-RUSCO and WSE-Honeywell to launch a new generation of TwinCards. Gemplus will embed its contact chips into existing contactless cards produced by HID, CASI-RUSCO and WSE-Honeywell, layering Smart Card solutions over current proximity cards based on 125 Khz technology.

"Major corporate clients are keen to adopt Smart Cards for logical access and other applications while leveraging their existing investment in conventional proximity-based access control equipment," said Glen Greer, Executive Vice President and COO of CASI-RUSCO.

Contact
- **Ron Schwenger** Gemplus
  - ☎ +1 650 654 2978
  - 🖥 ron.schwenger@gemplus.com

HyperSecur and AXS Agreement

AXS Technologies of Canada is to use HyperSecur Corporation's HyperProximity technology in its products, including contactless Smart Card readers. The primary application will be for AXS door access control readers.

Frank Bertucci, HyperSecur Chairman, said: "The AXS relationship will help accelerate the acceptance of contactless Smart Cards if readers are available that support our HyperProximity technology."

Contact
- **Jean Dore** HyperSecur Corporation
  - ☎ +1 514 288 8882
  - 🖥 Investors@HyperSecur.com

First WAP Browser

Banksys has announced a WAP (Wireless Application Protocol) browser application that runs on the Java-based C-ZAM/SMASH card terminal. The C-ZAM/SMASH WAP browser combines communications and payment, opening a communications gateway between banks, acquirers, terminal operators, retailers and end-users.

The first application (mobile banking) has been developed with Belgium's DEXIA bank for customer account management functions.

The WAP browser for the C-ZAM/SMASH is the world's first WAP browser available for a card terminal. The terminal supports multiple simultaneous applications and can run the WAP browser at the same time as Smart Card, debit card, credit card, loyalty, ticketing and other applications.

Contact
- **Caroline Duterme** Banksys
  - ☎ +32 2 727 6521
  - 🖥 caroline.duterme@banksys.be

EMV Approval for PayCell

Thyron has announced that its PayCell mobile point-of-sale (MPOS) terminal, has been granted EMV (Europay/MasterCard/Visa) level 1 approval.

Contact
- **Norrie Blackeby** Thyron
  - ☎ +44 (0)207 440 6981
  - 🖥 norrie.blackeby@thyron.com

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Fare Card Tops 100,000 Sales

Cubic Transportation Systems and The Washington Metropolitan Area Transit Authority (WMATA) have announced that sales of SmarTrip contactless Smart Card fare cards have reached 100,000.

The SmarTrip card, using Cubic technology, was introduced to Metro commuters a little over one year ago. The card allows commuters to enter Metro trains by simply walking near a card reader.

Contact
- **Kelly Williams** Cubic Corp.
  - ☎ +1 858 505 2378
  - 🖳 Kelly.Williams@cubic.com

Three Cardis Patents in the US

Cardis Enterprises International has been granted three US patents within the last four months, added to its original "Charge-and-Change" patent issued April 1998.

"Our patents cover the three fundamental aspects of a successful payment solution: how payment is made convenient to the cardholder, how value is audited rigorously at low cost, and the way merchants settle at the end of the day to provide a solid business case for all parties involved," said Robin Townend, President and CEO.

US patent 6,076,075 "Retail Unit and a Payment Unit for Serving a Customer on a Purchase, and Method for Executing the Same," is an expansion of US patent 5,744,787 founding the 'Charge-and-Change' mechanism - a way an electronic purse collaborates with a credit (or debit) function on the same Smart Card, so that the consumer enjoys credit card convenience on micropayments while the banks enjoy stored-value economy.

Patent 6,119,946 "Countable Electronic Monetary System and Method" deals with auditing the value stored and moved within a stored value system.

Patent 6,065,675 "Processing System and Method for a Heterogeneous Electronic Cash Environment" deals with the way transactions are settled between merchants and their acquirers.

Contact
- **Ms Batya Pilcer** Cardis
  - ☎ +972 9 764 4888
  - 🖳 batya.pilcer@sidrac.com

GemVentures/Realtime Alliance

GemVentures, Gemplus' venture capital fund, has become a new shareholder in Denmark based Real time, European provider of value added services for the mobile industry.

Realtime is focusing on delivering information and entertainment services to the mobile market linking the wireless, Internet and TV media.

Contact
- **Ron Schwenger** Gemplus
  - ☎ +1 650 654 2978
  - 🖳 Ron.Schwenger@gemplus.com
- **Jacob Beckmann** Realtime
  - ☎ +1 45 70 27 27 50
  - 🖳 jb@realtime.dk

Bluetooth Products from Motorola

Motorola has announced the addition of two Bluetooth products to its portfolio, offering consumers the opportunity to experience this new technology with a wireless phone.

Bluetooth wireless technology provides links between mobile computers, mobile phones, other portable handheld devices and connectivity to the Internet without wired connections.

Bluetooth uses short-range radio signals to connect a wide range of devices, eliminating the need for wires or cable attachments. Bluetooth connections are virtually instantaneous and do not require the device to be within line of sight.

Contact
- **Sue Frederick** Motorola
  - ☎ +1 847 523 6555
  - 🖳 Sue.Frederick@motorola.com

Apple Joins PC/SC Workgroup

Apple Computer has joined the PC/SC Workgroup formed in 1996 to drive Smart Card technology standardisation and adoption in the industry.

Version 2.0 PC/SC Specification will be released in the last quarter of this year and will include Smart Card readers with PIN pads and contactless cards.

- 🖳 www.pcscworkgroup.com

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$150m in US Wireless Market

NEC Corporation says it will spend $150 million to develop next generation wireless handset products for the US market. Additionally, NEC is shifting significant development resources to the high-growth wireless business, specifically targeting the 3G wireless and wireless Internet businesses, where annual growth rates are expected to increase dramatically.

NEC will develop dual-mode handsets based on EDGE (Enhanced Data rates for Global Evolution) and ANSI-136 TDMA (Time Division Multiple Access) technologies. EDGE is an air interface standard for high-speed wireless data providing the first step in the convergence of GSM and TDMA networks creating a global footprint for its users.

Contact
- **Jose Sosa** NEC America
  - ☎ +1 972 751 7410
  - 🖳 sosaj@ccgate.dl.nec.com
- **Akiko Shikimori** NEC Corporation
  - ☎ +81 3 3798 6511
  - 🖳 a-shikimori@ay.jp.nec.com

Gemplus to Acquire SLP InfoWare

Gemplus plans to acquire SLP InfoWare, the Paris-based provider of Predictive Customer Relationship Management (P-CRM) software solutions for the telecommunications and mobile e-commerce.

SLP InfoWare's P-CRM applications are currently used to predict the behaviour of more than 20 million mobile phone users around the world and can help reduce subscriber churn (customer non-renewal), a phenomenon that costs operators an average 25% of annual sales.

The company reports a 95% annual growth rate over the last three years with sales being driven from offices in Boston, Singapore, London and Frankfurt.

Contact
- **Severine Percetti** Gemplus
  - ☎ +33 (0)4 42 36 67 67
  - 🖳 severine.percetti@gemplus.com
- **Jerome Nadel** SLP InfoWare
  - ☎ +1 617 742 4102
  - 🖳 jnadel@slpinfoware.com

WAS Network Centres

Schlumberger has added a further seven centres to its Wireless Application Services (WAS) development network, providing local presence for service delivery in Rome, Madrid, Ferndown (UK), Prague, Sydney, Taipei and Kuala Lumpur.

Contact
- **Emily Hall** Schlumberger
  - ☎ +1 408 586 6553
  - 🖳 ehall@san-jose.tt.slb.com

GPRS Network in Russia

Mobile TeleSystems, a leading Russian provider of mobile cellular communication services, and Motorola have announced the launch of the first General Packet Radio Service (GPRS) high-speed mobile data network in Russia based on the MTS dual band GSM 900/1800 network.

Contact
- **Eva Prokofieva** MTS
  - ☎ +7095 104 4938
  - 🖳 evp@mts.ru
- **Beth Sharples** Motorola
  - ☎ +44 (0)802 367 639
  - 🖳 beth.sharples@motorola.com

WFI to Expand Kuwait Network

Wireless Facilities Inc. (WFI) has been selected by Siemens for the phase-two expansion of the Siemens dual-frequency GSM network in Kuwait, originally designed and optimised by WFI.

Contact
- **Glenn Selbo** Wireless Facilities Inc.
  - ☎ +1 858 824 2929
  - 🖳 glenn.selbo@wfinet.com
- **Florian Kreutz** Siemens
  - ☎ +49 89 722 37678
  - 🖳 florian.kreutz@icn.siemens.de

Vodafone Stake in GlobalSign

Vodafone Group is to acquire a 40 per cent stake in GlobalSign, Brussels, which will provide digital certificate security for electronic trading in the Business-to-Business and Business-to-Consumer segments.

Contact
- **Jüergen Dierickx** GlobalSign
  - ☎ +32 2 724 3610
  - 🖳 juergen.dierickx@globalsign.net

Motorola GSM Contracts in China

Motorola's Global Telecom Solutions Sector has signed a contract for the expansion of the GSM900/1800 dual band network in Beijing, China and another for the expansion of the GSM900 network in Shanxi Province. The value of the two contracts is over US $30 million.

The Beijing contract, which also involves China Eastern Communications Company (Eastcom), was awarded by Beijing Mobile Communication Corporation. The Shanxi GSM900 network expansion contract came from Shanxi Mobile Communications Corporation.

When completed in the first quarter of next year, the two networks will have the capacity to service 4.5 million subscribers.

Contact
- **Joe Arimond** Motorola
  ☎ +1 847 632 3889
  💻 jarimon1@email.mot.com

GSM Wireless Trial on Cruise Ship

A successful technical trial of a wireless communications system to provide full GSM coverage on P&O Cruises' flagship Aurora has been completed by interWAVE Communications International with BT A&M, an operator of aeronautical and maritime telecommunications solutions.

interWAVE's wireless network solution enables passengers with standard GSM mobile telephones to receive and place calls when the ship is outside normal coverage areas. To provide GSM coverage and capacity to the cruise liner, interWAVE and BT A&M installed an innovative wireless application that utilizes the latest in scalable GSM network elements, satellite back-haul compression and transmission techniques.

💻 www.iwv.com

First GPRS Contract in Lithuania

UAB Omnitel, Lithuania, has awarded a contract to Motorola for the supply and deployment of General Packet Radio Service (GPRS) high speed mobile data on the Omnitel GSM network.

Motorola will work with partner Cisco Systems to make the GPRS services available in Vilnius, Lithuania's capital, this month. Nationwide network coverage is scheduled for early 2001.

Contact
- **Beth Sharples** Motorola
  GSM +44 7802 367 639
  💻 beth.sharples@motorola.com

CDMA and GSM Roaming

Mobile phone operator Korea Telecom Freetel (KTF) has launched Schlumberger's new Smart Card Simera Airflex which enables international roaming between CDMA and GSM networks.

The new card is the first to implement the new R-UIM (Removable User Identity Module) standard for CDMA phones, which allows CDMA subscribers to place the card into the SIM slot of a GSM phone when travelling and obtain GSM network coverage.

This gives Korea Telecom Freetel customers international roaming in 86 countries, including 45 states in the USA, covered by GSM networks.

Contact
- **Vivien Goh** Schlumberger Asia
  ☎ + 65 746 9676
  💻 vivien@singapore.solutions.slb.com

Ericsson 3G Equipment Facility

Ericsson has launched its latest production facility for 3G network equipment at Gavle, in Sweden, where it will produce WCDMA base stations for the global market.

Bjorn Bostrom, Senior Vice President, Supply and Information Technology at Ericsson, said: "We expect that within three years, production levels for WCDMA will be at levels similar to that which it took 10 years to reach for GSM."

WCDMA will provide up to 50 times greater data rate than can present-day GSM, making a range of multi-media applications with mobile terminals a practical reality.

Contact
Kathy Egan / **Gary Pinkham** Ericsson
☎ +1 212 685 4030

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MiniKey PKI-based Token

Cylink Corporation has introduced MiniKey, a low-cost, compact token that combines both Smart Card and reader features so PC users can authenticate their identity for e-business transactions.

MiniKey connects to the Universal Serial Bus (USB) port on personal computers. The door key-sized device provides security for PC users, including strong user identification, authentication and encryption for all Internet, extranet and Web-based applications.

With 32K memory, MiniKey can store digital certificates and other electronic information while providing enough memory to meet future needs, such as for storing and processing biometric information.

Contact
- **Mike Hall** Cylink Corp.
  - ☎ +1 408 855 6390
  - 🖳 mhall@cylink.com

Biometrics for Patient Records

Keyware is to provide customised fingerprint Smart Card authentication for eMedicalFiles.com, LLC in a deal initially worth over $1 million. The eMedicalFiles.com system will store and retrieve comprehensive medical information via an exclusive combination of a Smart Card and Web-based Internet server.

Patients will carry their medical information on a Smart Card protected by Keyware's fingerprint technology and "points-of-care" - hospitals, doctors, dentists, pharmacies and rehabilitation facilities - will be able to access patient records and obtain accurate, timely information.

"There are clear benefits to hospitals, doctors and emergency rooms having instant access to medical information. eMedicalFiles.com provides that access," said Keyware President and CEO Francis Declercq. "By using Keyware's Smart Card fingerprint solution, eMedicalFiles.com, LLC assures their users' privacy and security."

Contact
- **Elizabeth Marshall** Keyware
  - ☎ +1 781 933 1311, ext. 235
  - 🖳 emarshall@keyware.com

Digital Certificates on Smart Cards

CardBASE Technologies has announced the availability of ChipCERT, the company's PKI Card Life Cycle Management System which facilitates the storage and bulk issuance of digital certificates onto Smart Cards. ChipCERT is capable of issuing and supporting millions of active Smart Cards and is fully integrated into Baltimore Technologies UniCERT product.

Contact
- **Aileen Carmody** CardBASE Technologies
  - ☎ + 353 1 284 3233

SC Forum Adds 14 Members

The Smart Card Forum (SCF) has announced that 14 Principal, Auditing and Government members have joined the organisation. The new members are:

Access360, Capital One Financial, Catuity, Cubic Transportation Systems, easiSolutions, EncypTix, Fargo Electronics, Financial Institutions Consulting, New England Bankcard Association, I-95 Corridor Coalition, IC Interconnect, T K Keith Company, US Postal Service and Washington Metropolitan Area Transportation Authority.

Contact
- **Smart Card Forum**
  - 🖳 www.smartcardforum.org

e-TopUp from Ingenico Fortronic

Ingenico Fortronic, the UK electronic funds transfer (EFT) terminals provider, is moving into the mobile phone pre-payment terminals market with the development of e-TopUp terminals. Mobile phone users will be able to top up their phones electronically at the point of sale.

Managing Director Malcolm Bushell says there is no need to forecast the demand for vouchers in various denominations for the different network operators and ship them around the country. "There is in fact, no need for vouchers at all," he said.

The company says it has already received orders for more than 10,000 e-TopUp terminals.

Contact
- **Graham Wright** Ingenico Fortronic
  - ☎ +44 (0)131 459 8800
  - 🖳 info@ingenicofortronic.com

OTI Campus Card Contract

OTI (On Track Innovations) has been awarded a contract from Hadassah College, Jerusalem, to implement its contactless Smart Card technology with a campus card solution provided by its recently acquired German subsidiary, InterCard GmbH Kartensysteme.

Hadassah College will implement OTI's contactless, microprocessor-based Smart Card system to automate the student registration process, control access to computer laboratories and track classroom attendance. Other functions will be added later such as automatic vending and copying machines.

Contact
- **Ohad Bashan** OTI America
  - ☎ +1 408 919 5525
  - ⌨ ohad.bashan@otiamerica.com

Dione Order for 6,000 Terminals

Dione has won a contract to supply 6,000 online payment terminals to e-pay, the new mobile phone electronic top-up system recently launched in the UK. The system enables pre-pay mobile phone users to top up their phones via the terminal, eliminating the need for vouchers.

Each terminal incorporates magnetic stripe and Smart Card readers and a thermal printer.

Contact
- **Pascale Smith** Dione
  - ☎ +44 (0)1494 429600
  - ⌨ info@dionecorp.com

Consult Hyperion Opens HK Office

Consult Hyperion, the UK-based IT management consultancy specialising in e- and m-commerce, is opening a new office in Hong Kong which will be managed by Craig Richman, Business Development Manager for Asia Pacific.

"The opportunities for e-commerce and in particular Smart Card consultancy in these areas are immense," said Richman.

Contact
- **Gloria Benson** Consult Hyperion
  - ☎ +44 (0)1483 301793
  - ⌨ glor@consult.hyperion.co.uk

People on the Move

ComSense, maker of Comdot, the first reader-free Internet card technology, has appointed **Glenn Weiner** as Senior Vice President of Corporate Strategy. He joins the company from American Express where he served as Vice President, Smart Card Technologies and was a member of the technology team that brought Blue from American Express to market.

UK Smart Card supplier ID Data has announced the appointment of **Mike Blackburn** as non-executive Chairman. He held senior positions at Lloyds Bank, was Chief Executive of The Joint Credit Card Company (Access), and served on the boards of MasterCard and Eurocard. In 1987, he joined Leeds Permanent Building Society as Chief Executive and after six years was recruited by the world's largest building society, the Halifax, to be Chief Executive. At the Halifax, he oversaw both the merger with the Leeds in 1995 and the Halifax's flotation on the London Stock Exchange in 1997. He retired in December 1998.

CardBASE Technologies has announced the appointments of **Cormac Shaw** as Chief Financial Officer and **James McEntee** as Chief Operating Officer. They have also been appointed to the board as directors of the company. Shaw joined the company in February 2000 from Kieran Ryan & Co., Chartered Accountants. McEntee joined CardBASE in June 2000 from SHS Sales & Marketing where he was Managing Director.

Khaja E Ahmed, formerly of ValiCert, has joined Identrus as Chief Technology Officer, and **Peter J Cerra**, previously with MasterCard, becomes Vice President of Product Management.

Bank of Valletta Selects Hypercom

Malta's Bank of Valletta has selected Hypercom's ePic ICE 5000 card payment web appliances to support growing resident and tourist demands to pay by plastic at retail establishments throughout Malta and Gozo. Initially, 500 card payment devices will be deployed and they will enable the retailers to support the new credit/debit Smart Cards conforming to EMV specifications.

Contact
- **Mark McMurtrir** Hypercom Europe
  - ☎ +44 (0)1483 718600
  - ⌨ mmcmurtrie@hypercom.com

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ID Data AIM Flotation

UK-based Smart Card supplier ID Data plc has published its full prospectus relating to its placing and admission to the Alternative Investment Market (AIM) of the London Stock Exchange and has announced a placing price of 63 pence per share, giving a market capitalisation at the placing price of approximately £43 million.

The placing of £17.5m includes £12.5m of new money, an increase of £2m on previous expectations, which reflects significant demand for the shares.

The company says it will use the proceeds to improve gearing and provide working capital for future growth. Dealings are due to commence on Tuesday 10th October 2000.

Exporting to more than 30 countries, ID Data is ranked eighth in the recent Dataquest worldwide Smart Card vendor rankings.

The company was formed in 1988 by the founder Peter Cox with the purchase of a division of BPCC, which operated a card production plant in Corby. In 1999, it signed a joint venture agreement with Toshiba Corporation and Toppan Printing Co of Japan, to form TTI Card Technology Europe.

In the same year, ID Data acquired the Smart Card operations of GPT Card Technology and McCorquodale Card Technology.

Peter Cox, Chief Executive, said: "We are particularly pleased that the placing has gone well and that the company will have a high quality institutional shareholder base. We look forward to further enhancing our customer base and revenue streams both organically and by acquisition."

ID Data has also announced the appointment of Mike Blackburn, former Chief Executive of the Halifax Building Society, as non-executive Chairman. (See People on the Move, p193)

Contact
- **Peter Cox** ID Data
  - ☎ +44 (0)1536 207000
  - ⌨ pcox@id-data.co.uk
- **Paul Davies** Collins Stewart Limited
  (Nominated Adviser and Broker to the Company)
  - ☎ +44 (0)20 7522 9977
  - ⌨ pdavies@collins-stewart.com

Gemplus Acquires Celo

Gemplus has acquired full ownership of Celo Communications, a global provider of PKI (public key infrastructure) solutions for digital signatures, access control and network communications. The two companies will combine their expertise to speed up the development of integrated PKI and Smart Card solutions for the IT security market.

Contact
- **Carl Norell** Celo Communications
  - ☎ +1 650 938 7600
  - ⌨ carl@celocom.com
- **Tarvinder Karsandh** Gemplus Americas
  - ☎ +1 650 654 2917
  - ⌨ tarvinder.karsandh@gemplus.com

LBV Smart Card Toolkit

Keyware has announced the LBV (Layered Biometric Verification) Smart Card Toolkit, the first toolkit to enable Smart Card application developers and large Smart Card issuers to utilise Smart Cards in a layered biometric authentication solution.

Using the LBV - Layered Biometric Verification Server, the LBV Smart Card Toolkit enables the quick integration of biometric authentication in Smart Card security models which can also be managed from a central authentication server. Biometric information that is stored on the card allows the end-user to carry his/her own bio data.

Contact
- **Elizabeth Marshall** Keyware
  - ☎ +1 781 933 1311 ext. 235
  - ⌨ emarshall@keyware.com

Microcontroller with 256Kb Flash

Atmel Corporation has released the T89SC256C secure microcontroller with 256K byte reprogrammable non-volatile memory. To date the largest embedded flash in secure microcontrollers has been 64K bytes. For high-speed cryptography computation capacity, a separate arithmetic crypto co-processor is provided on the chip. It supports up to 2048-bit RSA computation.

Contact
- **Olivier Debelleix** Atmel
  - ☎ +33 (0)2 40 18 16 99

Transit Benefit Program

The Washington Metropolitan Area Transit Authority (WMATA) has introduced a new program called SmartBenefits enabling Metro riders who are eligible for monthly employee transit benefits to receive them electronically with the WMATA SmarTrip contact-less Smart Card.

SmartBenefits utilises technology developed by Cubic as part of its Nextfare Solution suite, a package of tools that can be integrated into AFC (automatic fare collection) systems. Nextfare Express - called SmartBenefits by WMATA - enables employers to securely and conveniently deliver transit fare products.

With SmartBenefits, passengers will no longer have to wait in line every month to obtain their Metrochek paper vouchers. Metro customers who currently receive vouchers from their employers can now have their transportation benefit downloaded directly to their SmarTrip card at any WMATA Pass/Farecard vendor in the 78 rail stations in the WMATA system.

Contact
- **Kelly Williams** Cubic Corp.
  - ☎ +1 858 505 2378
  - 🖥 Kelly.Williams@cubic.com

GemSAFE Thin Client Launch

Gemplus has launched GemSAFE Thin Client for Citrix MetaFrame software (GemSAFE Thin Client) described as a first-to-market application that makes Smart Card-based authentication available on low cost thin client devices.

GemSAFE Thin Client uses public key infrastructure (PKI) to provide secure and non-repudiated authentication for a variety of business operations including secure network, Web and e-mail access, digital identity, physical security and stored value applications.

"Gemplus technology offers Citrix MetaFrame users the added security of Smart Card authentication on thin devices, which are growing in popularity," said Bruce Cabral, Director, Alliances for Citrix.

Contact
- **Ron Schwenger** Gemplus
  - ☎ +1 650 654 2978
  - 🖥 Ron.Schwenger@gemplus.com

Setec Digital Signature Card

Setec has delivered the first EMV multi-application banking card enabling PKI based digital signature to Finnish OKO Bank.

The solution made for OKO Bank includes EMV/PKI application as well as the Avant e-purse possibility. Consumers will have access to the cards and new services in the beginning of next year.

Jarmo Rouhiainen, Senior Vice President, Setec Banking & Retail, said: "The possibility to use one and the same Smart Card for secure electronic identification, legally binding digital signatures and electronic payments in different terminals is a reality. You can also use the same chip card when paying in shops, the Internet or mobile networks. Digital TV will also have a Smart Card reader as standard equipment."

Setec Smart Cards with PKI based digital signature are already in use in Finland as ID cards by the Population Register Centre (VRK).

Contact
- **Jarmo Rouhiainen** Setec
  - ☎ +358 9 8941 4216

Oberthur Partners with Entrust

Oberthur Card Systems has announced a partnership with Entrust Technologies, bringing together Oberthur's expertise in card-based e-business and wireless technology and Entrust's expertise in providing PKI and Certificate Authority solutions to trusted, secure e-business and m-commerce.

The initial joint projects will be to develop solutions for putting WAP (Wireless Application Protocol) digital certificates onto all Oberthur Smart Card products, including SIM/WIM cards for telecommunications, banking and authentication.

Entrust.net's WAP root key certificates will also be embedded within Oberthur's SIM/WIM cards for delivery of trusted services.

Contact
- **Francine Dubois** Oberthur CS
  - ☎ +1 310 884 7981
  - 🖥 Francine.dubois@oberthurusa.com
- **Hazel Thompson** Firefly (for Entrust)
  - ☎ +44 (0)207 386 1476
  - 🖥 hazel.thompson@firefly.co.uk

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First smart Visa Transactions

Providian Financial Corporation, the fifth largest bank card issuer in the US, and Visa USA have successfully completed smart Visa credit card transactions using the chip on a Providian smart Visa card.

Five purchases were made at five different locations in London, including the purchase of London Underground tickets and the return of one item for a refund to test the system for returns.

The credit transactions were conducted without using the magnetic stripe technology on the card, instead relying only on the chip on the card. All the transactions were conducted through EMV- compliant merchants, then routed back to the US for authorisation and clearance.

Contact
- **Alan Elias** Providian
    - ☎ +1 415 278 4189
    - 🖳 alan_elias@providian.com

MSA to Buy Bridge Technology

MSA Capital Corp. has entered into agreements to acquire Bridge Technology Inc (BTI), a wireless application service provider for the mass transit and shuttle service industries. The proposed transaction will constitute a reverse takeover of MSA and will be subject to a number of regulatory requirements, including shareholder approval.

BTI, located in Phoenix, Arizona, developed the Tranz:System product, a transaction processing system that enables remote and mobile wireless transaction processing for public and private transit providers.

The company has patents pending on its wireless data acquisition and delivery system and also on its "Remote Smart Card," a universal money card module that combines the features and capabilities of credit/debit and Smart Cards with real time wireless processing, authorisation and settlement.

Contact
- **Peter W Holmes** MSA Capital Corp.
    - ☎ +1 520 751 8620
    - 🖳 p.w.holmes@juno.com
- **Ian E McDonald** Bridge Technology, Inc.
    - ☎ +1 602 952 2526
    - 🖳 ian@bridgetech.net

Smart Campus Access

Schlumberger is implementing its new Smart Campus Access solution at the University of Texas at El Paso (UTEP) using its Java-based Cyberflex Access card to secure both digital and physical campus access.

The solution provides an integrated ID card program for building access, time and attendance, network security, secure sign-on, identification, vending, meal plans, registration, digital certificates, sporting events and network printing. It also enables students, faculty and administrators access online, confidential and legal documents.

Contact
- **Lee Ross** Schlumberger
    - ☎ +1 408 586 6681
    - 🖳 lross@san-jose.tt.slb.com

Leapfrog Biometric Reader

Leapfrog Smart Products has annnounced the Biothentic SCR100 which combines AuthenTec's TruePrint fingerprint technology with a Smart Card reader providing a device capable of eliminating user names and passwords in network security.

In addition, it meets the network security need for Smart Card technology that implements access control, deploys PKI encryption and offers a safe way to store digital certificates, all in a single device. It also eliminates the need for a biometric database by storing the fingerprint template on the Smart Card.

Contact
- **Ken Clinton** Leapfrog
    - ☎ +1 407 838 0400

nCipher for smart Visa Platform

nCipher Corporation reports that Visa USA will utilise its Hardware Security Modules (HSMs) as a component of the smart Visa technology platform. nCipher's HSM product, nShield, provides advanced security capabilities that enhance key management and is validated to FIPS 140-1 Level 3.

Contact
- **Linda Johnson** nCipher Inc
    - ☎ +1 781 994 4000
    - 🖳 ljohnson@us.ncipher.com

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"The SIM Card today and its role in the future world of 3rd Generation technologies" - Part 2

Part 3 of this article will appear next issue

By Declan Taylor of Bluefish Technologies

The full potential of SIM-based applications in the wireless world is still a long way from being realised; SIM Toolkit is only the tip of the iceberg. There are a series of SIM and handset developments taking place, creating momentum to push service delivery into the 3G world.

- Multi-application SIMs to host credit, debit and micro payment applications.
- Dual-Slot handsets that can read a second SIM card.
- A second SIM card in the handset, perhaps owned by a bank.
- Payment software built into the phone interacting with the SIM.
- Development of the WIM for WAP services.
- Development of the USIM offering open access to 3G services.

The potential is compelling for applications and technologies, which can be supported by an adapted security model of the SIM. The SIM was the original key to securely entering into a mobile world controlled by GSM operators. However, in the 3G world the traditional relationships around the SIM will change. The introduction of multi-application platforms will create new commercial dynamics for distributing and managing applications in the field. The SIM model used today will evolve into a more advanced model and will continue to play a fundamental role in securing access and personalising service delivery for 3G wireless services.

A decade ago we started talking about creating a "killer application" that would be the "must have" product for consumers. Perhaps we missed the point back then, and it was getting access to "killer services" that was more important to drive consumer demand and wireless revenues. We can also look back to the time of 1969, when millions of people bought their first TV set just to watch Neil Armstrong walk on the moon. How many more TV sets have been sold just so that we could watch and share our sporting heroes triumphs at that crucial moment in time. Therefore, is "killer content" more important than killer services?

Today we recognise that the search for a killer application is perhaps a fruitless one and that no single application is enough to do the trick. Applications themselves in isolation are not enough to get consumers excited. Bundled services that can be easily customised to reflect the culture, tastes, means and education of consumers may provide a starting point for generating true consumer appeal and perhaps massive revenue generation. The evolution of the SIM model and its introduction into multi-application platforms will create enormous potential for developing services with massive consumer appeal. In the run up towards full UMTS services, we will see many examples of new SIM enabled services being introduced in the market. These will be designed, not only to attract new customers and increase their loyalty, but also to encourage increased usage of the network and related services.

However given that we had technology to put men on the moon 30 years ago, why has it taken so long within GSM to get innovative SIM enabled products and services to the market? Surely it cannot be rocket science we are talking about here? Well in its defence Houston, we do have a problem. Previous efforts to deploy SIM based value added services was restricted because of the distinct lack of interoperability of solutions and the difficulty of post issuance management of the SIM by the operator. The proprietary nature of the applications and the smoke and mirrors required to develop them did not lend itself to creating products for widespread introduction. Despite these challenges operators have continued to develop SIM based applications, as the card itself is their property and represents a key part of their brand identity. This ownership situation may change as multi-application cards enter the market and there will be a shake-up of the traditional SIM ownership and application supply chain.

The introduction of open platforms and greater standardisation in GSM is the starting point for solving many of these traditional proprietary problems. But these measures are also fragmenting the traditional SIM supply chain and creating more complexity for operators. The battle between the different camps of open platform technology will have an impact on service development strategies from now until the introduction of UMTS. So while open platforms are key to the future it is not yet clear which will become dominant in the same way that Windows has in the PC environment.

First into the GSM ring was Java Card technology. At first sight it was too overweight for this contest and not originally built for this type of battle. Intensive training has trimmed it down to a respectable fighting weight, which could be adopted as the unchallenged GSM champion. Shortly to enter the ring however, all the way from cutting its teeth in the financial sector is the MULTOS platform. MULTOS is already gaining considerable momentum within GSM, as its platform architecture is seen as a more comprehensive end-to-end solution than Java. Satisfying issuers from the telecoms, banking and Internet sectors might just be the knockout punch that MULTOS lands on the Java platform. Finally, a late entrant and not one to be underestimated, is the Windows platform from Microsoft. This platform is also being tipped as a future challenger that will soon be able to pack a heavyweight punch, particularly given the strength of the Windows development community and the pace with which its mobile internet applications are converging.

The Java SIM is already the choice of many network operators, particularly in Asia where 32KB Java SIMs are prevalent. In 2001 the UK will see more Java based

products on the market. Java is currently the "heavily disputed" but unchallenged champion of GSM platforms. Until new challengers enter the ring the real contest cannot begin. Only then will we know if the Java platform has the conditioning to go 15 rounds with a serious challenger like MULTOS? The market will ultimately decide.

Interoperability provided by multi-application platforms is a key ingredient in the growth of mobile commerce services but true interoperability implies a type of plug and play environment were applications can be dynamically swapped in and out of services by being easily installed and uninstalled. How close this is to being a commercial reality is still unclear, however improving interoperability is a driver to bring increased competition, greater product differentiation, competitive pricing and higher quality of service to consumers. The SIM within these interoperable solutions will have to provide the security, flexibility and capability for operators and their partners to create and deliver personalised services to their customers. It will also have to ensure that these solutions can interact securely with other less mature technologies such as WAP and support alternative bearers such GPRS. The SIM will also need to be able to optimise the user experience and help unlock the value of location-based services.

The next generation of SIM-like modules will play a crucial part as the wireless arena moves towards 3G. A smarter, faster and more functional SIM is needed to support a host of new services that are emerging. The migration from standard GSM voice services to full UMTS data services is unlikely to be a smooth one. The voice-centric use of mobile phones today, will evolve to become data-centric models in the future. These advanced mobile services require higher data rates, increased capacity and improved spectral efficiency. Securing and enabling 3G services will be a new breed of functionally packed SIMs, using advanced smart card platforms to support multi-tasking capability, multi-subscriber management, multi-access control, multi-cryptographic and multi-application mechanisms. In the short to medium term, the range of new services will be focused on mobile commerce, Internet/ Intranet access and micro-payment functions. Smart card technology is already available to manage both identity and value in a secured and portable manner. But it is support for Public Key Infrastructure (PKI) applications that is likely to be key to the development of the next SIM modules. The Sonera SmartTrust application was the first wireless PKI implementation on a SIM card and is just the start of SIM enabled products to secure mobile commerce transactions and messaging. Enabling mobile commerce is not just about being able to do stand alone transactions through your phone or other mobile devices. It is about synchronization, interoperability and using whatever technology is appropriate. For example, pointing your phone at a set top box and purchasing what is on screen securely, or changing your digital ticket to an earlier flight and getting a wireless refund while you are in a taxi on the way to the airport.

In the longer term the issuance of secure multi-application platforms within the financial sector will make these institutions' platforms commercially attractive vehicles for hosting voice and data applications to support a 2G/ 3G subscriber base. The dynamics of the mobile Internet will enable third party service providers, such as banks, to create complete suites of services, making them available to millions of customers.

Security is a major issue, which the smart card technology will help to address. WAP, the first enabler of mobile Internet services still has a long way to go to deliver what was promised. Poor service and slow speeds may have reduced the wireless information age to a mere trickle, however this does not worry network operators, as this is part of the learning curve. In 2001 the faster data rates of GPRS will connect WAP users to the Internet 24 hours a day. Greater use of voice enabled WAP portals and the introduction of voice navigation-enabled WAP browser handset technology will start to address some of the main criticisms expressed over WAP services. Addressing the security aspects lacking in WAP is the WAP Identity Module (WIM), a tamper resistant smart card device.

The WIM seeks to address two fundamental security issues. Firstly, to secure the wireless transport layer (WTLS) between the WAP Gateway and the mobile client. The WTLS provides mutual authentication and confidentiality, the same kind of function the SSL (Secure Socket Layer) performs in the Internet world today. The Gateway server authenticates the "thin client" through the WIM via a challenge and response mechanism, based on secrets that are stored and applied on the card. Secondly, to secure the application layer the WIM uses digital signatures and non-repudiation techniques. Much like the original SIM concept the WIM will start by offering fundamental security, and will gradually evolve to support more complex and sophisticated applications. For the 2.5G world the main question today is not simply "WAP versus SIM Application Toolkit ", but rather "How to find the right level of interaction between WAP and Toolkit. It does not matter if you speak it, listen to it, or type it, the main point is make it a superior user experience so the technology becomes seamless to the customer.

Moving on from WAP and the WIM the USIM is just one 3G application that resides on a multi application smart card, called a UICC. The USIM application will interoperate with a 3G terminal to provide access to 3G services. It will meet defined security requirements and provide storage for subscription and subscriber related information. It will also support comprehensive phone book features (full name, address and email entries), synchronize with external databases and handle incoming and out going call records.

In conclusion, trying to predict the future is a very difficult exercise. As the pioneers of the computer industry found out to their cost, speed of technical innovation and unexpected consumer demand can create new market dynamics overnight. The success of the SIM concept in GSM has ensured a steady and

standardised evolution path to becoming an "intelligent" SIM. The move to open platform technology will lead to hardware and software elements of smart cards becoming unbundled. Memory sizes are constantly growing with 32k EEPROM SIM cards now being adopted and attention is already turning to the 64k EEPROM chips that are being developed. Trends seen in the PC industry over the last twenty years are now being reflected in the smart card industry and its new supply chain:

- Applications are being developed using standard toolkits with higher level programming languages.
- Application development processes can now be separated from the card, allowing third parties to create applications.
- Multiple applications can now be loaded onto a single card, which can be supplied by multiple vendors.
- Applications can also be managed in a standardised way by loading or deleting them dynamically, after the cards have been issued to the subscriber.

In the 3G world more complex and sophisticated "intelligent" SIMs will depend on the demand for new applications. The 2G world focused on technology based solutions rather than customer driven services. For 3G the focus will be on how consumers interact with technology, how they will personalise their service bundles and how payment for services will be made. The impact of voice, roaming and high-speed interactive data will completely change the way we work and communicate. In fact the details behind the underlying technology may even become a technical sideshow. Whichever way you look at it, it will be very interesting to see how the consumer will embrace the 3G services enabled by the next generation SIM card.

About the Author

Declan Taylor joined Bluefish Technologies in June 2000 as Sales Manager. Previously Declan worked for De La Rue Card Technology, Tech-rep UK and then moved to ORGA in 1997. He worked as a Business Development Manager for Telecommunications at ORGA and was a regular speaker at various Telecommunication conferences.

For further information about Bluefish Technologies please visit: www.bluefish-tech.com

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