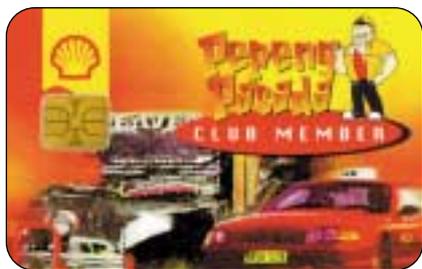
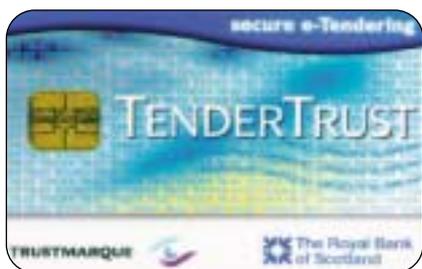




Subscribers will receive "Oberthur's SIMphonic" card free with this issue of Smart Card News.



Europay Plans E-Purse Payments on the Internet

Millions of people throughout Europe will soon be able to use Europay International's Clip electronic purse card for small payments on the Internet. In addition, Europay says it is targeting all domestic purse schemes in Europe currently representing 100 million e-purse cards. The scheme will give member banks the opportunity to expand their cardholder base to those without credit cards and to the under 18 market.

Europay says commercial agreements are already in place to enable 3,000 e-merchants (including providers of on-line music, on-line news and pre-paid telephony) to participate, and many more are expected to follow.

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Special Feature

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ICCET Lab, platform 7

Smart Card Tutorial

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Briefing Notes on Multi-Application Smart Cards

NB: This set of tutorials will be available to purchase online in spring 2000

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 Telephone : + 44 (0) 1273 236677 / 626677 • Facsimile : + 44 (0) 1273 624433 / 300991 • General Enquiries : scn@pavilion.co.uk ISSN 0967 196X

Managing Director Patsy Everett patsy@smartcard.co.uk • Editor Jack Smith • Technical Advisor Dr David B Everett

General Manager Tara Lavelle tara@smartcard.co.uk • Marketing Manager Albert Andoh albert@smartcard.co.uk
 Graphic Designer David Lavelle david@smartcard.co.uk • Customer Support Amanda Pearce amanda@smartcard.co.uk

Russian Agent : Alex Grizov Recon Company "Sport Hotel" 5th Floor Leninsky Prosp., 90/2 Moscow 117415 Russia
 Telephone : +007 095 131 92 92 • Facsimile : +007 095 131 92 65 • e-mail : recon@ropnet.ru

Asian Agent : J Clark Telephone : +852 2987 8737 • Facsimile : +852 2987 8732 • e-mail : jvclark@asiaonline.net

India Correspondent : Shailaja V.R. e-mail : uipai@md2.vsnl.net.in

Editorial Consultants Dr Donald W Davies CBE FRS • Peter Hawkes • Simon Reed • Robin Townend

Printed by Design and Print (Sussex) Ltd. Telephone : +44 (0) 1273 430430



Don't Forget!

Our Website, containing On-Line News, a Library of Smart Cards and information about the full range of SCN services, can be found at the following address: www.smartcard.co.uk

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Europay E-purse Payments

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Europay has joined forces with SmartAxis for the Clip/SmartAxis programme which will enable the acceptance of domestic e-purse cards over the Internet and mobile networks. They will target web sites offering low-value digital goods, such as software, music and games.

The card issuer claims the scheme is a significant step in the development of e-commerce, as Clip is a more practical alternative to a credit card when paying for frequent and small-value purchases.

“By combining expertise in debit and e-purse, this agreement represents an opportunity to provide a practical solution for rapidly evolving low-value payments over the Internet,” said Hervé Kergoat, Head of Prepaid Products at Europay International. “Thanks to Clip, issuing banks can now offer added value to their cardholders by extending domestic e-purse cards internationally.”

Julian Wilson, CEO of SmartAxis added: “Our collaboration with Europay International is a major development not just for European e-purses but for the Internet. Together we will create the Internet’s most efficient payment service for low value transactions.”

SmartAxis is providing the software and on-line services, e.g. transaction processing and maintenance, to Europay member banks, facilitating a consistent and interoperable platform for e-purse Smart Cards over digital networks.

Contact

■ **Charlotte O’ Connor** Europay

☎ +32 2 352 5647

✉ coc@europay.com

■ **Beatrice Larregle** SmartAxis

☎ +44 207 681 6511

✉ Beatrice.Larregle@smartaxis.com

MagIC 6000 for Vitale Project

Schlumberger’s MagIC 6000 point of sale terminals have been certified by GIE Sesam-Vitale for use in health applications in the next phase of the French national electronic Smart Card health card programme Vitale.

The smart health scheme is designed to minimize paperwork and administration in order to speed up reimbursement. Using a MagIC 6000 terminal connected to a PC, doctors will be able to easily transfer patient data from the card into the computer to generate and send claim forms electronically to the processing centre of the national health insurance scheme.

The terminal, which holds the doctor’s CPS card, is connected to the doctor’s PC. The patient’s Vitale card is then inserted in the terminal to read out patient information stored on the Smart Card. The information will be used to prepare the claim forms which will be sent centrally from the doctor’s computer to France’s Caisse d’Assurance Maladie organisation for processing.

The patient can use the terminal to pay by credit or debit card, instead of cheque or cash, depending on the payment options given by the doctor.

Contact

■ **Dirk Hinze** Schlumberger

☎ +33 (0)1 47 46 79 50

✉ hinze@montrouge.tt.slb.com

New Encryption Algorithm

Nippon Telegraph and Telephone Corporation (NTT) and Mitsubishi Electric Corporation have announced the joint development of “Camellia,” a next-generation encryption algorithm.

Camellia is described as a symmetric-key encryption algorithm with a block size of 128 bits. It was developed by the two companies using NTT’s cipher design technologies geared to high speed software implementation, Mitsubishi’s cipher design technologies for compact and high-speed hardware implementation, and security evaluation technologies of both companies.

NTT and Mitsubishi will propose Camellia in response to calls for contributions from ISO/IEC JTC 1/SC 27 and are aiming at adoption as a international standard.

Contact

■ **Kenya Nakatsuka**. NTT

☎ +81 3 5205 5550

✉ info@ml.hco.ntt.co.jp

■ **Matthew Nicholson** Mitsubishi Electric Corp

☎ +81 3 3218 2346

✉ Matthew.Nicholson@hq.melco.co.jp

Chip Cards Taking Off in Canada

Chip cards are starting to take off in Canada and the number in circulation is expected to exceed 35 million by 2004, according to a report by the Oakville, Ontario-based IT consultancy, Technology Surveys International Inc (TSI). This represents a compound average annual growth rate of 47% per annum off the current base of 5.1 million chip cards.

The number of chip cards issued in Canada in 1999 was in excess of 4.5 million units. Almost 85% of that was accounted for by chip cards issued by the telecommunications sector, encompassing cards for both payphone and GSM applications.

Christie Christelis, President of TSI, said: "The chip card market in Canada is finally about to take off, largely as a result of a strong initiative by Canadian debit and credit card organisations to migrate to chip."

The total investment into chip card systems in Canada is expected to exceed \$500 million over the next five years. This includes investment into chip cards, terminals, software and professional services.

The report, *Prospects for the Chip-card Market in Canada*, includes detailed forecasts for each major issuing sector in Canada.

Contact

- **TSI**
- ☎ +1 905 339 0109
- ✉ tsi@netcom.ca

US \$2.7 Million Order for Magal

Magal Security Systems has won a US \$2.7 million order to protect a large (unnamed) industrial facility in south east Asia.

The project will use advanced technologies from Lucent Technologies for transferring data through a communications network at Gigabyte speeds, including audio, video (including digital recording) and other data.

In addition, the company will use access control systems based on biometric systems and Smart Card technology.

Contact

- **Raya Asher** Magal Security Systems
- ☎ +972 3539 1444

ORGA Announces Record Results

ORGA Card Systems has announced record results for 1999 with turnover at £135 million - up 29 per cent on the previous year.

The company says that continued expansion during the year was fuelled by the growth of the GSM markets, a wider global presence, expanded production facilities, increased sales in the systems business and a larger product range.

Contact

- **Scott Allen** ORGA
- ☎ +44 (0)118 377 6000
- ✉ sallen@orga.co.uk

Fingerprint ID for Card Readers

Biometric Identification has announced that BridgePoint has selected its embedded OEM fingerprint verification module for integration into their People Access Smart Card Reader line.

Designed for new and retrofit applications, the integrated access control reader provides strong user authentication by employing fingerprint verification in conjunction with the convenience and efficiency of a Smart Card.

"BridgePoint's goal is to offer customers the most comprehensive and secure Smart Card-based solutions available on the market today," said Tom Corder of BridgePoint.

"We selected Biometric ID's fingerprint verification module because it is based on field-proven biometric technology and it provides us with the flexibility to use virtually any sensor component that we want to employ."

PeopleAccess Access Control Readers will interface with industry standard Wiegand based access control systems, enabling users to upgrade existing card platforms to Smart Cards. In addition, it is planned to integrate the biometric module into the firm's new PeopleAccess Single Door Access Control System due out in the Second Quarter.

Contact

- **Julia Webb** Biometric ID
- ☎ +1 818 501 3908
- ✉ jwebb@biometricid.com
- **Thomas E Corder** BridgePoint
- ✉ tecorder@intellock.com

New Chips Ready for Manufacture

New ferroelectric random access memory chips that can be used for storing data on devices without power have been developed by Ramtron International Corp. and Japan's Fujitsu.

The chips will be manufactured by Fujitsu who will pay Ramtron US\$2 million under a development and licensing agreement the companies reached in 1996.

Ramtron's chips are designed for use in a broad range of applications, including portable, hand-held electronic devices, Smart Cards, electronic power meters, test instrumentation, factory automation, security systems and other applications.

The technology uses an advanced one-transistor and one capacitor memory cell design to lower the cost of megabit-class FRAM memories. The one-megabit prototype FRAM memory device combines existing technologies to create a fast read/write speed and the ability to store information without power, Ramtron said. Ramtron plans to use the new architecture to develop megabit-class FRAM memory products that are currently being defined.

Campus Card for College

Schlumberger Smart Cards & Terminals' new Card Value Centre Lite (CVC/Lite) - a simplified, low-cost system for loading funds from credit and debit cards onto Smart Cards - has been purchased by Robert Morris College in Pittsburgh, Pennsylvania, where it is connected to PNC Bank for transferring value from the cardholders' bank accounts to their ID cards.

To transfer funds, the user simply selects "add to card," then "with credit card" or "with debit card" to indicate which type of bank card will be used in the funds transfer to the stored value chip. Instructions prompt the user to swipe the credit or debit card, insert the Smart Card into the reader, then key in a PIN number (when needed) and the amount to be transferred. The transferred funds can then be used for multiple off-line applications, such as purchases from vending machines, photocopying, laundry machines and point-of-sale retail purchases.

Contact

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

G&D/CIT Team on e-Commerce

G&D Security Card Systems and CIT Inc have formed an alliance to promote the use of Smart Cards in North America and internationally by jointly developing and marketing end-to-end solutions for the financial and healthcare sectors.

"Our market leading Smart Card capabilities and CIT's proven expertise in transactional Internet solutions will enable consumers to benefit from the security and portability of Smart Cards that are already well accepted in other parts of the world," explained Jim Frye, President of G&D.

Contact

- **Dave Roeder** G&D Security Card Systems
☎ +1 905 946 2844
✉ roeder@security-card.com
- **David Cartier** CIT Canada Inc
☎ +1 416 391 5045, ext 262
✉ dcartier@citglobal.com

Smart Card Loyalty System

The Reynolds and Reynolds Company is to expand its customer relationship management (CRM) solutions for automotive retailers by becoming the exclusive distributor of RiNG's Smart Card Loyalty Card system within the automotive industry.

The LoyaltyCard system is an electronic coupon package for customer acquisition and retention featuring a personalised card with an embedded microprocessor. The card is fully customized and electronically loaded with retailer-defined coupons and benefits.

Contact

- **Paul Guthrie** The Reynolds and Reynolds Company
☎ +1 937 485 4216
✉ paul_guthrie@reyrey.com

Hitachi to sell Mondex Solution

Hitachi is to sell Mondex-compatible IC card settlement solutions in Japan starting this month for central and local governments, and the retail, entertainment and transportation industries. It will be the first launch of Mondex-compatible settlement solutions in Japan.

Contactless Banking E-purse

HyperSecur Corporation and Group Bull have agreed to develop a contactless version of the Proton electronic purse using HyperProximity technology.

The agreement provides for the joint development of a dual (contact and contactless) card. This Smart Card will contain both ISO interfaces, (contact/contactless), and an antenna. Both companies will develop jointly a demonstration card that will debit (i.e. a user's bank account) using the Proton e-purse protocol in contact mode, and credit a mass transit wallet for electronic fare collection in a contactless HyperProximity mode.

The first customer is a Proton license holder, Grupo Financiero Inbursa SA of Mexico, which already has relations with both companies.

John Haggard, HyperSecur's President, said: "With Bull's support to develop a contactless version of a Proton e-purse, we have dramatically accelerated our development schedule. We will have a new product that will demonstrate that our secure contactless HyperProximity technology is capable of meeting the high security requirements of the banking sector. With our dual technology solution, we will market a product capable of working with existing contact based Proton e-purse deployments and, through its contactless interface, use it for mass transit and other related applications."

Contact

- **Bruno DiBattista** HyperSecur Corp.
☎ +1 514 288 8882
✉ Investors@HyperSecur.com

Welcome and Bull Team on EMV

Welcome Real-time and Bull Smart Cards & Terminals have teamed to accelerate EMV (Europay/MasterCard/Visa) migration by integrating Welcome Real-time's XLS' E4 software with Bull's Smart EMV payment card family.

Contact

- **Catherine Vincent** Bull Smart Cards & Terminals
☎ +33 (0)1 39 66 42 63
✉ catherine.vincent@bull.net
- **Marjorie Banès** Welcome Real-time
☎ +33 (0)4 42 97 58 62
✉ m.banes@welcome-rt.com

MULTOS for Mobile Phones

MAOSCO, the consortium promoting MULTOS, the Smart Card operating system, and mobEcom, mobile e-commerce solutions developer, have announced SecureSIM on MULTOS, allowing secure payment transactions to be made over GSM.

mobEcom in conjunction with MAOSCO have produced SecureSIM, the world's first secure multi-application SIM card. The new technology provides opportunities for financial institutions, network operators, service providers and content providers to allow secure payment transactions to take place using mobile phones.

Nick Habgood, CEO, MAOSCO said: "There is a huge demand for secure payment applications and the inherent security and personalisation features of the SIM make it the technology of choice for secure financial transactions."

Contact

- **Vicky Steel/Marjan Khanji** Brodeur
☎ +44 (0)1753 790700
✉ multospr@uk.brodeur.com

Precis to Acquire Foresight

Precis Smart Card Systems says it has agreed to acquire Foresight Inc., a national marketing company, in exchange for the issuance of common and preferred stock. The closing is contingent on Precis shareholder approval.

Foresight, located in Norman, Oklahoma, provides value-added benefits and services, packaged as membership programs, which allow clients to enhance profitability, customer loyalty, and product differentiation. In 1999, Foresight's revenues were approximately \$6 million, and the company maintains a base of more than 580,000 customers nationwide.

Precis Chief Executive Officer Larry Howell, said: "We have successfully developed a number of Smart Card applications and Foresight gives us the ability to expose our technology solutions to their clients, as well as add their marketing arm to expand into new markets."

Contact

- **Larry Howell** Precis Smart Card Systems
☎ +1 405 292 4900
✉ www.precis-scs.com

Visa and Nokia Wireless Partnership

Visa International and Nokia are partnering to introduce payment solutions for mobile electronic commerce. They will develop applications in which financial institutions and mobile phone operators can offer secure payment services to their customers via a mobile phone.

Under the agreement, Nokia and Visa will introduce a standardised means of making secure payments using a mobile phone, meeting different market requirements for security, risk management and dispute resolution. Both organisations are actively working on establishing open specifications, based on the WAP standard.

Rodolphe Chabanel, Director of Open Platform, Visa International Asia Pacific said: "This is an exciting and tangible partnership which will have long term benefits for Visa member banks and cardholders, mobile phone operators and users worldwide. The last decade saw a phenomenal growth in payment cards, mobile phones, and the Internet. This agreement will combine all three to provide one of the first great innovations of the 21st century."

Nokia will provide server applications based on WAP which will transmit payment data securely over wireless networks to financial institutions. A pilot of the technology will take place later this year with MeritaNordbanken in Sweden and Finland.

Web sites

- www.visa.com
- www.nokia.com
- www.mobilecommerceworld.com

Personalisation First for First Data

First Data Resources, a subsidiary of First Data Corp, has become the first company to be registered to personalise all Visa financial chip card products.

First Data says it has the capability to encode the chip with information such as credit limit, maximum dollar amount, and expiration date, depending on the card issuer's needs and the type of card.

Eula L Adams, Executive Vice President for First Data's card issuing business, said: "First Data leads the industry in preparing for the expansion of the use of chip cards. We are the only domestic processor

registered for chip card personalisation for Visa products."

Contact

- **Melissa Baron** First Data Resources
- [+1 402 222 6215](tel:+14022226215)
- melissa.baron@firstdatacorp.com

UK Banks to Protect E-commerce

UK banks have announced a scheme to create a trusted and secure Internet trading environment based on digital certificates. The scheme is being developed by APACs (Association for Payment Clearing Services).

Certificates will be issued by the participating banks on behalf of their business customers, providing them with unique proof of identification. In an on-line transaction, trading partners will exchange certificates which can be verified instantaneously by participating banks.

The new system, which is expected to go live towards the end of the year, will also allow businesses to use the banks' mainstream payment systems like CHAPS and BACS.

APACs says businesses should not need any new equipment other than a Smart Card reader which will be supplied by their bank along with the software.

Contact

- **Richard Tyson-Davies** APACS
- [+44 \(0\)20 7711 6234](tel:+442077116234)
- [+44 \(0\)20 7256 5527](tel:+442072565527)

Bell Group Acquisitions in Holland

Bell Group, provider of electronic security systems, has acquired AND Identification (AND ID), the Dutch electronic data security systems subsidiary of AND International Publishers, for £15.28 million.

AND ID designs, develops and markets an integrated, modular open software platform (ANDiS) which covers the implementation and management of secure Smart Card schemes, embracing public key infrastructure (PKI) and biometric components.

Contact

- **Pat Curran** Bell Group
- [+44 \(0\)181 553 5932](tel:+441815535932)

Shell Loyalty Programme

Shell is to roll-out its new fuel loyalty programme in the Philippines using Schlumberger's PrimeFlex Member 1K stored value Smart Card.

Initially targeted at Metro Manila's 700,000 vehicles of which around 20 per cent are taxis, jeepneys and tricycles, the fuel loyalty programme will eventually be rolled out nationwide.

Tricycles are the main mode of public transportation within the city, with buses, taxis and jeepneys being used for longer trips.

Contact

- **Patricia Ng** Schlumberger Singapore
 ☎ +65 746 9676
 ✉ patricia@singapore.solutions.slb.com

iD2 Ships Certificate Manager v3.0

ID2 Technologies is now shipping v3.0 of its Certificate Manager which includes unique batch card production functionality, enabling organisations such as Certificate Authorities to centralise and streamline the large-scale production of Smart Card-based digital certificates.

"Establishing a user's identity is central to the success of the Internet as a commercial medium," said Alwin Bakkenes, Product Marketing Manager for iD2. "A combination of PKI and Smart Card technologies has been accepted as the best way of achieving such secure identification by many of the world's leading hardware and software vendors."

Contact

- **Tim Smith** iD2 Technologies
 ☎ +44 (0)7957 311189
 ✉ tim.smith@iD2tech.com

Datacard Joins GlobalPlatform

Datacard Group has joined GlobalPlatform, a world-wide organisation dedicated to the development of standards and the advancement of multi-application Smart Cards.

Contact

- **Frederik ten Sythoff** Datacard
 ☎ +1 612 988 2907
 ✉ frederik_ten_sythoff@datacard.com

People on the Move

HyperSecur Corporation has named **John C Haggard** as President in addition to his other duties as Chief Technical Officer and Chief Operating Officer. Previously, he was President and Chief Operating Officer of VASCO Data Security.

HyperSecur Corporation has also announced the appointment of **Gregory T Apple** as Vice President and Chief Financial Officer. He was formerly Vice President of Finance and Administration for VASCO Data Security International.

Claude Arpin has been appointed Vice President of R&D at HyperSecur Corporation and will head a new business unit called the HyperSecur Solutions Lab, located in Longueuil, Quebec, a suburb of Montreal. Before joining the company he founded On/Off Electronic, Inc.

Datakey has appointed **John A Moroz** as Director of Business Development for its Information Security Solutions business unit. Previously, he was Vice President of Sales and Marketing for CrossWorks, Inc., a developer of software compilers for the mid-range market.

Brett Nelson has been appointed Director of Product Marketing at Datacard. Prior to joining the company, he worked for Ernst & Young as manager of information systems assurance and advisory services for e-commerce.

Joseph Schuler is to join Fargo Electronics in late April as Product Manager for Electronic Cards and direct FARGO's strategy for Smart Cards, proximity cards and advanced magnetic stripe cards. Previously, he held high level positions at Schlumberger, Gemplus and Visa International.

Bull Smart Cards & Terminals has appointed **Luc Barbier** as Executive Vice President and Director of Strategy & Alliances. Previously he was Associate Director of Devotech Conseil which he helped to found in 1992 and which was acquired in 1996 by Sema Group.

Ms Awa Garlinska is to head the sales department at Infineon Technologies. Before moving to Infineon she headed the Market Development and Operations Department at Siemens Information and Communication Products Group.

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Datacard Acquires Platform Seven

Datacard Group has acquired London-based platform seven from NatWest Bank, part of the Royal Bank of Scotland Group, for an undisclosed amount.

Jerry E Johnson, Datacard Group's CEO, said: "While Datacard Group has a reputation as a world leader in innovative plastic card personalisation and identity management solutions, platform seven has more than 10 year's experience of innovation in delivering SmartCard products and services. In short, platform seven is simply the best in the business.

"Together I believe we are in a unique position to leverage our technologies to facilitate the use of multi-application Smart Cards across the globe."

Graham Higgins, Head of platform seven, commented: "Datacard Group is known throughout our industry for its card personalisation systems and solutions.

"At platform seven, we have created one of the few teams in the world to have developed the specialised software components needed for the security and card life cycle management challenges of multi-application Smart Cards. Combining our expertise with that of Datacard will create an unbeatable resource for our customers' Smart Card needs."

Platform Seven is currently focusing its activity on three main Smart Card areas: common software interfaces/operating systems, scheme development tools and multi-application card management systems.

Platform seven developed the Mondex electronic purse, several Smart Card operating systems, including one that, in conjunction with Mondex International, was brought to market as MULTOS, and is the only team in the world to have developed non-military applications that have been certified to the ITSEC level E6 security rating.

Contacts

- **Frederik ten Sythoff** Datacard Group
 - ☎ +1 612 988 2907
 - ✉ frederik_ten_sythoff@datacard.com
- **Raj Gandecha** platform seven
 - ☎ +44 (0)20 7714 8007
 - ✉ raj.gandecha@platform7.com@platform7.com

Electronic Purse for Indian Bank

The IDBI Bank in India is to introduce its new electronic purse application in the small town of Renukoot (Uttar Pradesh) in the first stage of its international roll-out programme for Smart Cards.

Gemplus will deliver 5,000 Smart Cards using its MPCOS (Multi Application Payment Chip Operating System) for the project. Local people will use the cards for small everyday purchases including payment for groceries.

Contact

- **Louise Berry** Brodeur (for Gemplus)
 - ☎ +44(0) 1753 790700
 - ✉ louise_berry@brodeur.com

Mobile Commerce Alliance

MasterCard International and 724 Solutions have formed an alliance to develop and deliver global infrastructure software solutions for conducting payment transactions using mobile phones, personal digital assistants (PDAs) and other Internet-enabled devices.

MasterCard's member financial institutions will be able to use 724 Solutions' technology to extend secure payment capabilities to customers who can make purchases or pay bills using wireless devices.

Contact

- **Christina Costa** MasterCard
 - ☎ +1 914 249 4606
 - ✉ christina_costa@mastercard.com

First Mobile Banking Project

GMCC, the leading GSM network operator in China (a subsidiary of China Telecom (HK) Limited), and China Merchants Bank are to introduce mobile banking in China.

Mr Lin Zhen Hui, Deputy General Manager of GMCC, said they would be introducing a series of new businesses based on STK (SIM Tool Kit) technology and short messages.

This first mobile banking project in China, uses Gemplus' GemXplore 32K SIM card with four times the capacity of a normal SIM card. It allows the display of a Chinese menu on the phone.

Keeping Track of Students

Smart Cards could revolutionise the way young people progress to higher education, and the way universities and colleges keep track of who is applying for places, according to Tony Higgins, Chief Executive of UCAS (Universities & Colleges Admissions Service).

UCAS plans to issue Smart Cards, supplied by ORGA, to the 50,000 students attending selected higher education conventions during 2000. The cards will enable universities and colleges to collect data from students visiting their stands. Each card will hold a student's personal details including name, date of birth, qualifications, name of school and home address, which can then be downloaded in seconds, negating the need for endless form filling and subsequent data entry.

The scheme, which is being piloted during 2000, will provide several benefits to UCAS member institutions including, streamlined data collection, targeted communications and aid in the process of tracking students. It is hoped that this will be a first step to increasing the effectiveness of the conventions attended by over 200,000 students annually.

The cards will help to reduce the time spent queuing allowing more time to find out about the different colleges and universities and the courses on offer.

The scheme allows data to be collected off-line via an ORGA Handy Reader, which can store over 1,000 records. Once a student's card has been inserted additional information can be added using assigned option codes. The information can then be downloaded onto a separate download card.

Once back at the college or university the card is inserted into an ORGA desktop reader attached to a PC and student data retrieved into a database for uploading to the UCAS web site.

The final stage in the process takes place at UCAS when the uploaded data is changed into a form that the institutions can read. It is then sent back to the institutions in this form for ongoing use.

Contact

- **Scott Allen** ORGA Card Systems (UK)
- ☎ +44 (0)118 377 6000
- ✉ sallen@orga.co.uk

32-Bit RISC Java Card 2.1

Motorola has begun shipping its new M-Smart Jupiter MJ1000C Smart Card - the first to provide a 32-bit Reduced Instruction Set Computing (RISC) micro-processor and the first to provide a hardware-based Secure Memory Management Unit (SMU) for securely separating multi-applications. It supports dynamic application loading, and it is also the first 32-bit card in the industry based upon Java Card's 2.1 technology and Visa Open Platform 2.0 standards.

"Motorola is setting the pace in the Smart Card industry with the M-Smart Jupiter Smart Card, following closely on our M-Smart Mercury's contactless Smart Card announcement in January," said Francois Dutray, Motorola's Vice President and General Manager, Worldwide Smartcard Solutions Division.

Contact

- **Mike Doheny** Motorola
- ☎ +1 847 576 6931
- ✉ mike.doheny@motorola.com

eircom Secures Payphone Network

Ireland's leading telecommunications company, eircom, has selected the Schlumberger SAMflex Alliance security modules for installation in payphones to authenticate a user's Smart Card and validate payment. Schlumberger is also delivering KeyOps Pro Smart Card management system to secure all elements in its payphone network. In combination, these management products provide eircom with total control of the Smart Card life-cycle security chain for its rapidly changing multi-manufacturer payphone network.

"To provide our customers with better service, eircom is rapidly expanding its Smart Card payphone network and phone card distribution channels, encouraging new-generation payment techniques such as e-purses, and deploying new value-added services, which put security management top of our agenda," said Peter McIntyre, eircom's Director of Product Development.

Contact

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

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Europay e-Purse for Euro 2000

Europay International is to demonstrate its Clip electronic purse to European bankers during the Euro 2000 football championships in Belgium and The Netherlands this summer.

The application used for the cards is the first version of a CEPS (Common Electronic Purse Specifications) based product developed by Proton World and Gemplus which is supplying and personalising the cards.

The aim of the project is to give European banks a first-hand demonstration how Clip enables them to offer their customers a cross-border electronic purse in time for the launch of euro bank notes and coins in 2002.

Two thousand exclusive EURO 2000 Clip cards will be distributed to Europay member bankers and industry vendors attending matches during the tournament. The cards will be loaded with 40 euros and can be used to buy merchandise at gift stands throughout the eight stadiums. Cardholders will also be supplied with a "euro converter" designed by Xiring, allowing them to check how much they have spent in their domestic currencies.

In a further demonstration of the Clip electronic purse capabilities, Europay member bankers attending the final in Rotterdam on 2nd July will receive a dual slot mobile phone. Users can load the 40 euros onto their Clip card with the GSM phone and make purchases at the gift stands.

Hervè Kergoat, Europay's Head of Prepaid Products, said: "Euro 2000 is an ideal opportunity to demonstrate to our member banks that Clip is on schedule for implementation in 2002."

The souvenir shops will be equipped with the new Banksys C-ZAM/SMASH point of sale terminals which will accept payment during Euro 2000 using the Clip cards and also the Proton electronic purse in Belgium and the Chipknip electronic purse in The Netherlands.

Contacts

- **Charlotte O'Connor** Europay
☎ +32 2 352 5647
✉ coc@europay.com
- **Caroline Duterme** Banksys
☎ +32 2 727 6521
✉ duterme.c@banksys.be

Mondex Technological Advances

Mondex Canada, which is implementing Mondex electronic cash in the Sherbrooke region of Quebec is claiming several technological advances.

While Mondex e-cash can be used at more than 600 local merchants, there are also more than 700 unattended point-of-sale devices which have been or are currently being converted to accept Mondex e-cash such as coffee, beverage, snack, and sandwich vending machines, parking meters, pay photocopiers and computer printers.

Mondex says that adding an e-cash option to these machines has resulted in some world 'firsts': the first successful conversion of laser printers to accept Mondex e-cash on a university campus, and the first installation of Mondex card readers that support a broad range of vending protocols, such as Micro Mech, in a MULTOS environment.

Mondex Canada is working in conjunction with Canadian suppliers, QI Technologies, ITC Systems and JJ MacKay Canada, among others, to develop solutions that can be applied to numerous machines.

Contact

- **Richard Thomas** Mondex Canada
☎ +1 416 945 1805
✉ thomasr@mondex.ca

CardBASE R&D Centre for Dublin

CardBASE Technologies is to set up an R&D centre for secure e-commerce based on Smart Cards and will employ an additional 50 staff at its Irish headquarters in Dublin. The company is seeking software developers with experience in C++, Java, Oracle, PKI, Corba and TCP/IP.

Aonghus Geraghty, CEO, said: "The centre will utilise the latest development technologies and processes and will be involved in developing next generation PKI and e-commerce solutions."

CardBASE recently formed a strategic alliance with Baltimore Technologies, incorporating Baltimore's encryption technology into its Smart Card management system.

Contact

- **Aileen Carmody** CardBASE Technologies
☎ +353 1 284 3233
✉ info@cardbase.com

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RBS Invests £4m in TrustMarque

Royal Bank of Scotland (RBS) has invested £4 million to acquire a 39 per cent stake in TrustMarque, an e-commerce company, and together they have launched a secure on-line tendering system based on Smart Card technology.

TrustMarque says the system will help suppliers increase the number of invitations to tender they receive and purchasers to expand their supplier base.

Known as TenderTrust, the system will use PKI encryption and digital certificates provided by RBS to authenticate the identity of both the purchaser and supplier. All tender responses are stored on a secure server and suppliers receive a receipt to confirm arrival of the tender.

Admiral PLC has independently reviewed the available source code to ensure the security methods employed are in line with current best practices for the protection of privacy and confidentiality of commercially sensitive tender details.

John Williams, CEO at TrustMarque, said: "We anticipate similar investments from other large organisations like RBS to provide the springboard into other new and exciting areas. After all, trust is the only thing that stands in the way of the e-commerce juggernaut."

Contacts

- **Jayne Goodwins-Miller** RBS
☎ +44 (0)20 7427 8127
- **TrustMarque**
☎ +44 (0)1753 880800
🌐 www.trustmarque.com

Jordan Extends Phone Network

Schlumberger is installing a major extension to the Smart Card payphone network operated by Jordan Public Phones (JPP) and supplying an additional two million cards.

JPP, one of two payphone operators in Jordan, built its success on a card-only payphone network utilising Schlumberger pre-paid Smart phone cards, later expanding its facilities to offer on-line credit card payment.

The Schlumberger Access 200 Smart Card pay-

phones provide a multi-lingual user interface - the payphones for JPP have Arabic, English, Spanish, German and Italian language displays, reflecting the diversity of the operators target market - and provide on-line operational information to the central management system, P@ynet.

Contact

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

MAXIMUS Acquires 3GI

MAXIMUS has acquired the government services division of Virginia-based 3G International, Inc. (3GI), a leading Smart Card integrator for the public and commercial sectors.

3GI's government services division will be joining MAXIMUS with approximately 90 IT professionals and two office locations in Williamsburg, Virginia and Honolulu, Hawaii.

"The acquisition of 3GI reflects the emphasis MAXIMUS has placed on emerging technologies for the government marketplace," said David Mastran, CEO of MAXIMUS.

"3GI has been on the cutting edge in the Smart Card industry and has provided the types of services at the federal level, that are now in great demand at the state and local levels of government."

"This technology has tremendous applications in our traditional health and human services markets, including food stamps, WIC, and Medicaid program areas," he added.

3GI clients include the General Services Administration, the US Navy, the US Air Force and the US Department of State.

"Joining MAXIMUS gives us access to entirely new government markets for 3GI services. MAXIMUS is a known quantity to state and local governments, and we are excited about the growth possibilities," commented Kit Letchworth, Executive Vice President and COO of 3GI.

Contact

- **Rachael Rowland** MAXIMUS
☎ 800 368 2152, ext 809

Ubuy Smart Card for the Internet

E-Pawn.Com Inc has signed an agreement with Loyalty Card Holdings Limited (LCL) to launch a new global Internet credit card called the Ubuy Smart Card in late June 2000. The company says the Ubuy Card will be underwritten by a major multi-national financial institution.

It will be the first global credit card issued in Euro's the official currency of the (EU) European Union.

The Ubuy Smart Card will be used as a credit card, phone card, and bank money access card (ATM), while at the same time featuring anti-fraud protection technology using fingerprint recognition technology to eliminate credit card fraud. The card will be marketed under the brand name www.ubuy.network.com.

E-Pawn.com will exploit the Smart Card technology and strategic alliances that have been developed by LCL's subsidiary, Loyalty Card Services Limited, based in the UK.

Raymond E Winter, Chairman of LCL, will join the Board of Directors of E-Pawn.Com Inc. and will head up the European operations of E-Pawn.Co.UK and UbuyNetwork.Co.UK as Chief Executive Officer. He brings to the company many years of experience in telecommunications and marketing of credit cards for multi-national corporations.

Contact

- **Ray Winter** UbuyNetwork.Com UK
- ☎ +44 (0)279 655599
- ✉ rwinter@loyaltycard.freemove.co.uk

Leapfrog Addresses Congress

Leapfrog Smart Products Inc, a leading provider of Smart Card applications and related database management systems and services, has announced that the company's President, Dale Grogan, recently testified before the Congressional House Ways and Means Committee on the importance of normalised trade relations with China.

In his statement, Grogan emphasised the benefits for US technology-based businesses of Permanent Normal Trade Relations (PNTR) status and WTO membership for China. According to Grogan: "China's greatest resource today is its collective buying power. China recognises this and rightfully

protects that resource. To effectively do business in China, having a strong in-country partner is absolutely elemental."

Grogan said: "The ability to sell (Leapfrog's) software into China is critical to our success. The fact of the matter is that the US market lags Asia dramatically. For example, over the next three years, the US market for Smart Card software will be about \$300 - \$400 million. China alone will be over \$2 billion. Companies in our industry simply cannot ignore the Chinese market."

Leapfrog recently signed a joint venture agreement with TopGroup of the Peoples Republic of China to provide Smart Card driven products to a booming Asian market, which is estimated to exceed \$1 billion over the next two years.

TopGroup selected Leapfrog as its exclusive developer of Smart Card applications and biometrics identification products for the Golden Card Projects mandated by the Chinese government to supply Smart Card solutions throughout the country.

Contact

- **Dale Grogan** Leapfrog Smart Products Inc
- ☎ +1 407 838 0400

Sun Adds \$200m to Venture Fund

Sun Microsystems has announced an additional \$200 million to be added to its venture fund and plans to expand its focus to include the Middle East, Europe and Asia. The fund will continue to collaborate with leading venture firms and investment banks to identify companies around the world innovating in the development of Internet infrastructure and network services.

"Having committed our initial \$200m pool, we are seeing opportunities around the world that warrant a broadening of our funding base and geographic focus," said Jonathan Schwartz, Vice President of Venture and Strategic Investments at Sun. "Looking forward, we are committed to driving innovation wherever it is happening and leveraging Sun's technology and market presence to amplify the success of next generation firms around the globe."

Contact

- **Anne Little** Sun Microsystems, Inc
- ☎ +1 650 786 6702
- ✉ anne.little@sun.com

Mobile Commerce Pilot in France

The first mobile commerce pilot in France to provide cardholders with payment services based on international standards, has been announced by Crédit Mutuel, France Telecom Mobiles, Oberthur Card Systems, Motorola, MasterCard International and Europay International.

Crédit Mutuel and France Telecom Mobiles have formed a partnership to provide subscribers with secure payment options based on international standards via their mobile phones.

Using MasterCard's credit/debit application M/Chip Select on the MULTOS (multi-application operating system) platform, Crédit Mutuel will issue the first Smart Cards based on the EMV standard and France Telecom will upgrade its network to carry the payment transactions to both French and international e-commerce merchants.

Contact

- **Stephanie de Labriolle** Oberthur CS
 ☎ +33 (0)1 41 25 28 42.
 ✉ s.delabriolle@oberthurcs.com
- **Christina Costa** MasterCard
 ☎ +1 914 249 4606
 ✉ christina_costa@mastercard.com

Certifications for HK Card Centre

Schlumberger Smart Cards & Terminals has announced that its Hong Kong Card Industrial Centre has been awarded both the ISO 9002 and Visa certification for the embedding of IC modules in Smart Cards.

Contact

- **Patricia Ng** Schlumberger
 ☎ +65 746 9676
 ✉ patricia@singapore.solutions.slb.com

SCN at CardTech/SecurTech 2000

The CardTech/SecurTech advanced card and security technology conference and exhibition in Miami, Florida, May 1-4, attracts 10,000 industry decision-makers from around the world for expert presentations and access to over 300 exhibitors.

SCN will be there on Stand No. 2260 positioned close to the Technical Talks area and the Lunch area to welcome current and potential readers.

ActivCard Gold Version 1.2

ActivCard has released ActivCard Gold version 1.2. The multi-application Smart Card-based software adds several new features, including full support for Baltimore Unicert, Microsoft Windows 2000, Novell eDirectory/NMAS and Sun Java Card.

Rodman Stuhlmuller, Vice President of Corporate Communications, said: "ActivCard Gold is helping us meet customer demand for user identity solutions in almost every market segment. The value of information, privacy and business integrity cannot be measured in dollars, unless they are compromised. In today's networked world a password is just not good enough."

Contact

- **Frédéric Engel** ActivCard
 ☎ +33 (0)1 42 04 84 00.
 ✉ Frederic.Engel@activcard.fr

EI2 Teams with CPI Card Group

Electronic Identification (EI2) has teamed with CPI Card Group and Smart Card Integrators to provide Smart Card identification and security solutions.

The companies will use the EI2 - Electronic Passport Access Control Systems (e*PACS) and the EI2 - Electronic Personnel Identification and Control Systems (e*PICS) as their platform.

Contact

- **Ardent Communications (for EI2)**
 ☎ +1 604 684 6906
 ✉ +1 604 689 2669

Litronic Demonstrates PKI

Litronic demonstrated public key infrastructure (PKI) technology with Microsoft Windows Powered Smart Cards during Spring Internet World, in Los Angeles, in early April. The demonstration was to show the many applications of Smart Cards in corporate IT settings.

As a Microsoft technology partner, Litronic is developing solutions to advance Smart Card-based Internet security.

Contact

- **Gina Ray** T&O Public Relations
 ☎ +1 949 224 4023
 ✉ gray@topr.com

TVG Invests in Smart Cards

TVG Technologies has purchased 49.9 per cent of Embers Distributing Company in Atlanta, Georgia, for \$2,000,000. Embers is building a Smart Card factory which is expected to begin production in the third quarter of 2000 for supply primarily to the banking industry.

TVG are an Israeli-based high technology company largely engaged in the design, development, manufacture, marketing and support of software and hardware products involving Smart Cards. This investment completes the foundation of its strategy to provide solutions across the spectrum of demand for Smart Cards.

The company also announced that Hitachi will begin production of read/write Smart Cards in the third quarter of 2000, and is expected to begin shipment to customers of Hitachi and TVG in the fourth quarter of 2000.

Contact

- **Evelyn Miller** TVG Technologies
☎ +972 8 936 3171

Multi-Application System

Fujitsu and its wholly owned subsidiary ICL, a global IT services company, have announced a management system for the next generation of multi-application Smart Cards that will revolutionise the way Smart Card schemes are operated.

The new platform system will enable organisations such as banks, retailers and the telecommunications industry, to introduce Smart Cards more cost effectively and generate revenue by “renting” space on the card to other companies.

Fujitsu and ICL will provide the software and infrastructure required by such organisations to issue and manage multi-application cards.

“This partnership between Fujitsu and ICL will give card issuers the global support that they will need, and allow them to ‘partner’ with other organisations who wish to deploy their applications on the same card,” said Hidetoshi Shibagaki, Group President of Fujitsu’s Consumer Transaction Systems Group.

He added: “By sharing the cost of building the

infrastructure and through the deployment of cards, the mass adoption of multi-application Smart Cards can become a reality.”

An advantage for card users is that applications can be added, deleted or modified on the same card, as and when required, to reflect their changing lifestyles. For instance, users can tailor their Smart Card by downloading applications over the Internet or mobile phone, as well as via more traditional means.

It is planned that the system will support MULTOS, Open Platform and Microsoft’s Windows for Smart Card.

Contact

- **Caroline Marino** ICL Smart Card Group
☎ +1 847 982 0565
✉ cmarino@iclscg.com
- **Noriko Kikuchi/Bob Pomeroy** Fujitsu Limited
☎ +81 3 3215 5236
✉ Pr_mailbox@hq.fujitsu.co.jp

Identifying Faulty Chips

Electroglas, a leading supplier of process management tools for the semiconductor industry, has introduced the 4090f Film-Frame Wafer Prober designed to ease the identification of faulty semiconductor devices fabricated for advanced packages, including Smart Card, telecommunications and computing devices, prior to their final assembly.

The new tool, claims the company, will reduce manufacturing expense and improve production quality.

“Many new semiconductor devices are being fabricated on extremely thin wafers that are very difficult to handle,” explained Curt Wozniak, Electroglas Chairman and CEO.

“The industry needs a reliable way to weed out defective integrated circuits fabricated on thin wafers before they reach the final device assembly stage and that is the great value - and unique benefit - of the 4090f, which is based upon our production-proven 4090 platform.”

Contact

- **Maria Apodaca** Electroglas
☎ +1 408 528 3300
✉ mapodaca@electroglas.com

ActivCard European Distributors

ActivCard has announced four new distributors in Europe. Systems Groups Ltd (UK), Entrada Kommunikations GmbH (Germany), Internet2000 Deutschland GmbH (Germany) and Minor Systemhouse Co. Ltd (Hungary) will distribute ActivCard digital identity technology in their respective territories.

The four distributors will enable ActivCard to fulfil market demand for strong user authentication and certification capabilities, said the company.

ActivCard sales strategy is 100 per cent indirect and relies on distributors and system integrators who have a very strong expertise in network security solutions as well as e-business applications, said Marc Hudavert, ActivCard Vice President for European Operations.

ActivCard currently has over 50 distribution partners in over 30 countries worldwide, including 35 distribution partners in Europe who market ActivCard products and technology to industry and vertical market segments, including electronic commerce, financial, telecommunications, healthcare and information service companies.

Contact

- **Frederic Engel** ActivCard
- ☎ +33 (0)1 42 04 84 00
- ✉ Frederic.Engel@activcard.fr

Litronic Introduces NetSign 3.1

Litronic Inc, a provider of Internet security solutions has announced NetSign 3.1, a client-side security software that Smart Card-enables leading Web browsers.

“Internet security is a prominent issue facing business-to-consumer and business-to-business organisations communicating electronically,” said Bill Holmes, Vice President of Marketing at Litronic.

“Knowing who is on the other side of an electronic communication simply cannot be taken for granted,” he said.

“NetSign,” he explained, “confirms each party by facilitating validation and authentication of a

person’s digital signature using Smart Cards with any version of Windows.”

Enhancements to v3.1 include Windows Powered Smart Card support for the Netscape Web browser in addition to Internet Explorer, and Microsoft’s new operating system, Windows 2000.

NetSign additionally has CardStart for all versions of Windows, which automatically launches applications with the Smart Card; and ScreenLock option for Windows NT, causing any screen to lock when the Smart Card is removed from the reader.

NetSign also emulates many of the Smart Card capabilities that are available in Windows 2000 for easy deployment in Windows 9x and NT systems allowing smooth transition to Windows 2000. It supports a variety of Internet browsers that can be used interchangeably with multiple PKI certificates on a single Smart Card.

NetSign 3.1 is bundled with a Smart Card reader and a Windows Powered Smart Card or a traditional 8K Smart Card. It also supports other PKI security devices. The product is currently being shipped.

Contact

- **Gina Ray/Jackie Zerbst** T&O Public Relations
- ☎ +1 949 833 8006
- ✉ gray@topr.com / jzerbst@topr.com

Collector’s Corner

Oberthur Card Systems developed the award-winning SIMphonIC(TM) card - the world’s first Java-powered SIM Toolkit Card.

The SIMphonIC solution enables value-added services to be delivered to mobile phones through tailor-made packages - from distinct modules to turn-key solutions - in an open, secure and adaptable environment. Oberthur Card Systems is working with the world’s largest operators to deliver services that are transforming the nature of mobile communications.

SIMphonIC offers a total solution for fast and easy value-added services development and interoperability between SIM suppliers.

ICCET Lab, platform 7

Clothes designed to be comfortable achieve this partly through the flexibility of the materials used. So carrying a smart card on our person, in a pocket for example, can subject the small silicon chip in the card to stresses which chips in more conventional packages can avoid. The flexibility associated with comfort could easily cleave in two the small silicon chip that is the heart and brain of the card and given the repeated stresses on a card as it is flexed in all sorts of directions, it is remarkable that it survives. However it does survive in all but a few cases and failure is a rare occurrence. As the card flexes the fine wire connections to the chip might break loose. If a card fails like this, and such failures are rare, then the card fails completely and must be replaced but an intermittent fault could allow the card to fail during a transaction. So paying for some item of shopping or a hotel bill allows the card to malfunction in a way not imagined by the designers of the transaction protocols and the logic on the card could load a balance from an international telephone number.

The above account may be somewhat speculative, but serves to illustrate the need to understand how cards fail. We need to understand the stresses and strains on the chip in the card. We might need to be as intrusive as possible

and get into the workings of the chip itself, down to the level of rewiring the tiny tracks of the integrated circuit itself. It is easy to imagine testing the wires that connect the chip to the little gold pads on the front of your card. Once the plastic has been removed, using a highly corrosive solution of hot fuming nitric acid, these wires are visible and can be gently tugged to test their integrity. The wires inside the integrated circuit (IC) on the other hand are sub-micron and might even be beyond the reach of the best optical microscope. This is where a new technology comes in; the technology of focused ion beams (FIB). A beam of gallium ions can be focused down to a small spot of only a tiny fraction of a micron and the beam scanned to produce an image of a circuit with all the resolution needed for today's chips and for chip technologies of the next several years. But we can go beyond just using the tool for high resolution imaging and use the same beam to cut the tiny wires in the IC. Additionally, under the right conditions we can also add new tracks. These capabilities allow the rewiring of the IC to give a level of analysis previously considered impossible. This work can determine the effectiveness of the many on-chip security features, small circuit elements to prevent hostile attacks on the integrity of the chip and the cryptographic data stored on it.



▲ **Figure 1**
A focused ion beam machine that can be used in the analysis of Smart Card chip security

Figure 2 ➤
An IC modified by the addition of a new circuit track

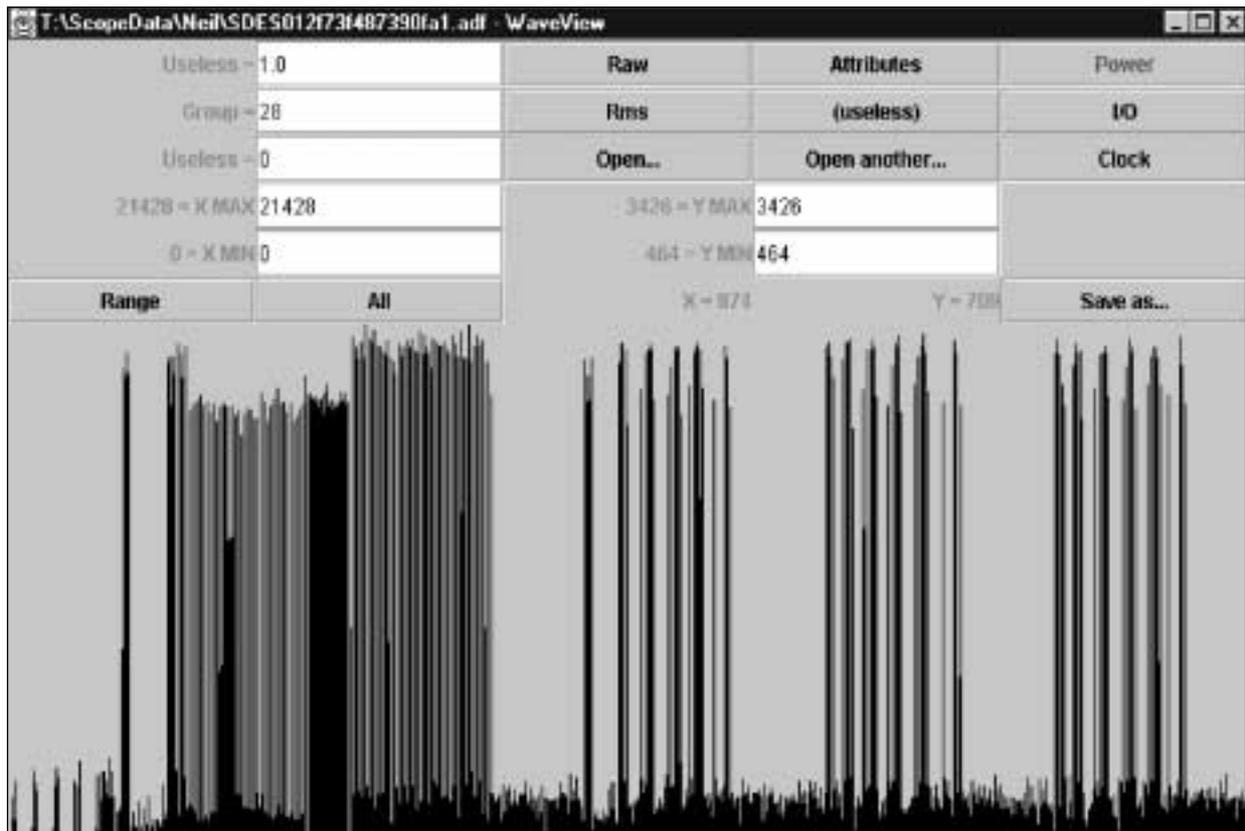


Figure 3

Data collected from a chip to see whether secure information can be extracted by clever hackers

The laboratory at platform seven, recently acquired by Datacard group, has been developing and refining techniques for smart card analysis for several years and is now making the techniques available to those in the smart card industry who may need the analysis but who cannot justify the cost of setting up from scratch. This analysis is typically used to understand the failure modes of cards which have been returned by customers with problems. To understand how a card fails is to understand how to minimise future failings. There is even a test to simulate the bending experienced by a card in your pocket. There is, however, another aspect of the platform seven lab which, up until now has been kept somewhat under wraps. The smart card world was hit by the technique of differential power analysis (DPA) a couple of years ago by academic researcher Paul Kocher. This is a technique which analyses the power consumption of the chip. This can leak information about the cryptographic algorithms and keys used to securely transmit data. Of course, if the power signal leaks data the card is no longer considered secure and any criminal armed with the cryptographic keys used by the card can, for example, load value (cash, in some cases), watch unlimited satellite television or phone all their Australian relatives, depending on the cards function. The compromising of a card's security, either accidentally or by determined criminal hackers, not only represents a significant revenue loss, but could lead to a crisis of confidence in the entire scheme. Cards now have a variety of features built into the hardware and software to eliminate the possibility of extracting sufficient information to compromise the chip's security; but are they enough? The team at platform seven have

built up considerable expertise in this field in order to develop their smart card security libraries which are recognised as being as high a standard as it is possible to achieve. The requirements for successfully carrying out this kind of attack are specialised electronics development, highly skilled data analysis and an in-depth knowledge of cryptanalysis. This expertise can now be brought to bear on determining the security of customers' chips. Analysis of a smart card's resistance to DPA assumes more than just the accidental failure as in the intermittent fault example. Determined criminals must be guarded against, and it is to disable the attempts of these tenacious individuals that a thorough understanding of their methods is required to build into the system all the necessary safeguards against attack. The stakes are high. Do you believe your cards are secure enough to pass the test?

Overall the platform seven laboratory represents a new level of opportunity in the depth of analysis now possible and in the breadth of techniques that can be brought to bear. There may be other labs which cover some aspects of the above, but never in one place. And never with the industry's leading analysts on tap.

Contact

■ **John Walker** ICCET Manager
Datacard platform seven Ltd
☎ 0171 714 8210
✉ card.analysis@platform7.com

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Briefing Notes on Multi-Application Smart Cards

We have now reached the point in our briefing notes where we invite readers to participate with some hands on experience. Smart Card News has put together an evaluation pack to help readers obtain practical experience in the underlying techniques used to interact with Multi-Application Smart Cards. The initial kit will be available next month and consists of the following components:

- Schlumberger Cyberflex card
- Towitoko Micro Smart Card reader / writer
- CD-Rom containing the evaluation software for Microsoft Windows 95 / 98 / NT

The Towitoko reader uses the serial I/O port on the computer, for those participants who wish to use their laptop we have the Gemplus GPR400 PCMCIA reader which is available as an alternative.

The purpose of this evaluation kit is to help readers understand the various interactions with a Multi-Application Smart Card that are necessary to follow the complete life cycle of the card. The course is designed for non specialists and no previous software experience is necessary. Over the following months we will look at a number of different Multi-Application cards from both the JavaCard and Multos families covering the major providers of such cards. This will allow participants to understand the differences between these two platforms and the different approaches required to manage their life cycles. In the case of JavaCard an understanding of Global Platform (derived from Visa's initial work on Visa Open Platform) will be introduced. The evaluation course will allow users to develop simple applications of their own using the various products that will be explained.

Readers are invited to subscribe to this mini course by filling in the form below, or by applying through our web site.

Subscribe to Smart Card News' Multi-Application Smart Card Mini Course

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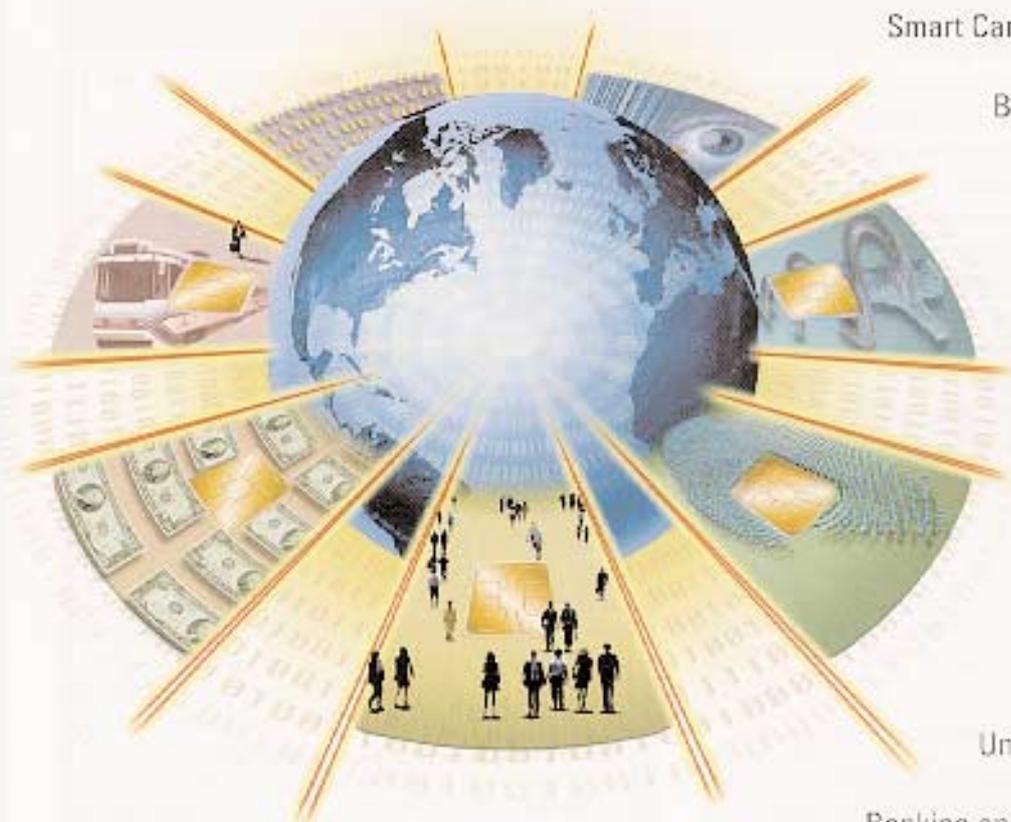
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