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SMART CARD NEWS

December 2000

Volume 9
Number 12

*Subscribers will receive **Mondex "Citrus" Card** free with this issue of Smart Card News.*

Boots Launches Organ Donor Card Initiative

Boots Advantage cardholders can now register with the NHS Organ Donor scheme in the first partnership of its kind between Boots the Chemist and the UK Department of Health. It is hoped that an extra million people will register as donors in the coming year through the Advantage Card, a Smart Card retail loyalty scheme.

Special printers are being installed in 250 stores nationwide to print the NHS Organ Donor symbol on the cards. New applicants will be able to register by ticking the relevant box on the Advantage Card applications form. Details of those who register will be automatically forwarded onto the NHS Organ Donor Register.

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Boots Advantage Card in use

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GSM News Roundup

Smart Card Tutorial

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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**

Boots Organ Donor Card Initiative

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ORGA Card Systems is the sole supplier of the Boots Advantage Cards (for a minimum of three years) and will be working in partnership with Thames Card Technology who provide a bureau service for the personalisation and fulfilment of the cards on behalf of Boots.

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Joint Venture for Campus ID

Israeli-based high-tech company SuperCom's subsidiary SuperCom Asia Pacific, has established a joint venture with Campus Online, a Web-based educational Application Service Provider (ASP) in Asia Pacific.

The joint venture, called Campus Smart, will aim to provide a multi-function Smart Card solution (Campus ID) for schools and universities in the region, initially targeting the Hong Kong educational market.

The Campus ID card production will be supported by the recently established joint venture company New Concept Technology, formed by SuperCom Asia Pacific and Shenzhen Mingwah Aohan High Technology Co., the second largest Smart Card manufacturer in China.

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SafeNet Adopts Rijndael Algorithm

SafeNet has announced its support for the new Rijndael algorithm, selected by the National Institute of Standards and Technology (NIST), to replace the ageing DES encryption formula (Data Encryption Standard). Rijndael is expected to become the new Advanced Encryption Standard (AES) for US government organisations, as well as organisations, institutions, and individuals operating in the private sector - both in the US and abroad.

The widely deployed SafeNet CGX library is now available with the Rijndael AES algorithm. This means that all applications, which currently use the CGX library, can easily be upgraded to use the AES algorithm. Also, as the CGX library is used in the SafeNet 214x hardware accelerator chips, there is a path to upgrade existing designs to the new algorithm. In addition, all of the company's next-generation VPN hardware and software products, including the Soft-PK remote access client and PCI Board encryption accelerator, will incorporate the AES standard.

"While DES and Triple-DES are the de facto encryption standards today, we constantly need to be ahead of the curve in implementing new and sophisticated, hacker proof technologies that can handle the diverse security and performance requirements for secure e-business communications," said Mike Kaplan, SafeNet's Senior Vice President of Technology.

The Rijndael algorithm, which emerged the winner of a three-year, worldwide competition to develop a new encryption standard will be proposed formally for incorporation into the new Draft Federal Information Processing Standard (FIPS) and is expected to become an official government standard in the spring of 2001.

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Debitek and Digital Privacy Partner

Debitek and Digital-Privacy are partnering on Smart Card technology to offer multi-application platforms to organisations seeking a single card solution for stored value, user authentication, file encryption, and Internet-based e-commerce security.

Digital Privacy develops logical security applications, incorporating Smart Card technology, and offers user authentication, file encryption, and e-commerce access security for corporations, governments and individuals using desktop and notebook computers as well as servers. Vertical markets include government facilities, universities, hospitals, corporations, resorts, hotels and correctional facilities.

Website

- **Digital Privacy**
  💻 www.digital-privacy.com
- **Debitek**
  💻 www.debitek.com

USB Smart Card Reader

Alcor Micro Corp. has unveiled the first fully integrated single chip PC/SC-compliant USB Smart Card reader controller.

By combining USB, Smart Card technologies and a voltage regulator into a single chip, Alcor Micro has developed a self-contained USB Smart Card controller chip called the AU9510 that can be used in a standalone USB Smart Card reader or in a variety of embedded USB devices, including keyboards and notebook computers.

"Our ultimate goal is to put Smart Card technology into every PC by offering a high performance, easy to use USB interface based on a cost-effective design," said William Lee, Alcor Micro's Vice President of Sales. "We believe that USB is the technology that will dramatically increase the use of Smart Cards in personal computers."

Contact

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ACG Growth in Smart Cards

High-tech broker ACG AG earned revenue of 234.8 million Euro in the first nine months of 2000, an increase of 287 per cent over last year's period (60.6 million Euro).

Smart Card chip brokerage generated earnings of 48.81 million Euro compared with 20.79 million Euro for the same period last year.

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Gemplus Identrus Solution

Gemplus has announced that its security solution for members of the Identrus global network of trust is now available. GemSAFE IS (Identity Signature for the Identrus system) built on Gemplus GemSAFE PKI-based security technology, will enable Identrus financial institutions and the businesses that rely on them to obtain high level security for their online B2B transactions and benefit from the simplicity and portability of a secure Smart Cards.

Seven Identrus member financial institutions have already selected Gemplus GemSAFE IS technology to integrate Smart Cards into their infrastructure for the Identrus system.

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First Data and Baltimore Team

First Data Corp and Baltimore Technologies are to work together to generate digital certificates on Smart Cards for card issuers. First Data will use the Baltimore UniCERT Certificate Management System e-security infrastructure to build a certificate authority to issue, maintain and validate certificates used on chip cards.

Website

- **First Data Corp**
  💻 www.firstdata.com
- **Baltimore Technologies**
  💻 www.baltimore.com

CardBASE Opens Office in Lagos

CardBASE Technologies has opened its subsidiary office, CardBASE (Africa), in Lagos, following the successful implementation of a national Smart Card electronic payment system branded ValuCard, for a consortium of 26 banks in Nigeria.

The new office, under Managing Director Chuks Onyebuchi, will support the ValuCard scheme and develop the growing business opportunities in the African region.

Contact

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Egg Implementing 3 Domain SET

UK Internet bank, Egg, is to implement Visa's e-commerce security programme - 3 Domain SET - based on securing the three information flows (or domains) required in a card payment transaction; between cardholder and issuing bank; between retailer and acquiring bank; and between issuing and acquiring banks.

Website

- **SETCO**
  💻 www.setco.org
- **Egg**
  💻 www.egg.com

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Ingenico Buys Saunders Jefferies

Ingenico Fortronic has acquired Saunders Jefferies, a provider of electronic point of sale payment software, back office systems and business-to-business applications.

The deal will allow Ingenico to expand its international electronic funds transfer point of sale terminals business to include payment software and a range of related services.

Saunders Jefferies will become known as Ingenico Transaction Systems and its Hampshire, UK, base will remain open, adding a third office to Ingenico Fortronic's headquarters in Dunfermline, Scotland, and a call centre/help desk operation in Northwich, UK. Len Saunders will remain as Managing Director of ITS reporting to Scottish headquarters.

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Schlumberger Teams with Entrust

Schlumberger has teamed with Entrust Technologies as part of Entrust's Consultant/System Integrator (CSI) Platinum Partner Program.

As a CSI Platinum Partner, Schlumberger has access to Entrust's security tools and resources and is providing its expertise in Internet Protocol (IP) networking and security, including Smart Card-enabled PKI solutions.

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German Security Agency Project

cv cryptovision gmbh is providing components for digital signatures based on ECC technology to the German Information Security Agency (GISA) for its SINA (secure networking) project. The SINA project was drafted by GISA and is currently being conceptually improved and realised by secunet AG.

SINA is a security system for protected digital communications via VPN technology, which has first been drafted for the secret services. In the future, variants of the system are to be employed in the private sector.

In addition, cryptovision carries out the integration of components into the operating system used on the Smart Card. The component consists of routines for key generation as well as for the creation and verification of digital signatures. They will be implemented in a Smart Card based on the Infineon SLE66CX with the CardOS operating system by Siemens.

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Cholesterol Monitors Shipping

The first home cholesterol testing device with a built-in Smart Card reader that lets consumers store and share test results with their doctors and pharmacists online are now rolling off the production line, says Lifestream Technologies.

The Personal Cholesterol Monitor offers a fast, accurate and inexpensive way for individuals to test their cholesterol levels for risk of heart disease and then securely store the test results in private medical files created online.

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Bull to Offer Smart Card-based PKI

SmartTrust, a provider of comprehensive security and service management solutions for mobile and Internet e-services, has announced support for Bull's TBC80 RSA Smart Card.

Customers will be offered complete network security solutions from Bull covering hardware, applications, services, consultancy and SmartTrust's PKI-based software.

Website

- **SmartTrust**
  💻 www.smarttrust.com
- **Bull**
  💻 www.cp8.bull.net

AmaTech Buys NBS Card Services

AmaTech USA, a provider of contactless Smart Card manufacturing and development, has acquired NBS Card Services, a certified provider for Visa and MasterCard and supplier of over 50 million of these cards each year to some of the largest issuing institutions.

AmaTech says it has the capability to combine the power and convenience of contactless Smart Card technology with the universal acceptability of Visa and MasterCard on a broad commercial basis. This opens the door to the general acceptance and use of contactless Smart Cards in a wide range of industries including banking, retail, public transportation, automotive, entertainment, healthcare and network security.

Multiple applications, such as stored value and payment functionality, access control and user authentication, file encryption and Internet-based e-commerce security, and the storage of medical information, personal contacts, and other data, can also be included on a single Smart Card.

"A wallet stuffed with numerous credit, access, and loyalty cards could be a thing of the past," said Dennis Ryan, President of AmaTech USA, "all replaced by one easy-to-use, multiple-application contactless Smart Card."

AmaTech also offers combi cards featuring both contactless and contact functions to provide flexibility and to facilitate the transition to contactless technology.

Contact

- **AmaTech USA**
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  www.amatechusa.com

Emerald Solution for 1st eTech

Emerald Solutions, a provider of e-business professional services, has developed a secure Smart Card purchasing solution for 1st eTech, a provider of Smart Card and secure Internet services.

Jim Biorge, founder and President of 1st eTech, said: "Emerald Solutions provided us with the sophisticated delivery platform we needed to integrate electronic cash and our Internet payment services, allowing consumers to choose levels of security."

1st eTech's Smart Card Secure Payment Services protects both merchants and consumers from fraud over the Internet by offering multiple delivery options. Consumers can select whether the merchant is paid after the product is shipped, once it is received or - for the highest level of security - after the products have been inspected at the door.

Once a consumer makes an initial purchase, 1st eTech reserves the amount of the purchase from the Smart Card and holds it in escrow until the payment is released, depending on the level of secure payment selected. This guarantees the merchant will receive full payment.

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PubliCARD Invests in TecSec

PubliCARD has announced a stock purchase agreement under which it will invest $5 million in TecSec. PubliCARD has agreed to purchase TecSec convertible preferred stock representing a 3.5% ownership interest. The consummation of the investment is subject to customary closing conditions.

"PubliCARD's Smart Card readers coupled with TecSec's CKM-enabled Smart Card technology will result in a powerful combination of next-generation secure e-Commerce and e-Business products and devices," said TecSec's Chairman, John Petty.

Website

- **TecSec**
  www.tecsec.com

Bull and Cardsoft Alliance

Bull has signed a technological, marketing and shareholding agreement with Cardsoft, a provider of open platform software on small electronic devices, to develop and market portable, compact and secure software for small devices.

"This partnership gives birth to the first worldwide provider of such software," said David Levy, CEO, Bull Smart Cards.

Website

- **Cardsoft**
  www.cardsoft.com
- **Bull**
  www.cp8.bull.net

Biometrics for Doorphones

Keyware has announced that Fasttel, supplier of telephone physical access security products in Belgium, has selected its biometric software solutions to develop a biophone product line for home and business locations. Fasttel plans to implement biometric technology into their physical access doorphone products.

Keyware's LBV (Layered Biometric Verification) allows users to grant access to a location remotely through their cellular phone, a switchboard phone, a network or the Internet. For example, if a delivery arrives at a home office when the occupant is on the road, when the delivery person rings the buzzer, the occupant's phone rings and he or she can control the security system remotely by voice, allowing the delivery to be made.

Fasttel plans to start shipping and marketing the phone by the end of this year.

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Protocom Supports BAC

Protocom Development Systems has announced that its SecureLogin software now includes support for Biometric Access Corporation's SecureTouch 2000 advanced identity verification products.

SecureLogin is an authentication and single sign-on system to Web sites, UNIX, LAN Windows applications, accounting products, healthcare applications, e-mail, PKI and mainframe systems while enhancing the security of the IT environment. It works with a diverse range of biometric, Smart Card and token hardware to ensure a higher level of user authentication while simultaneously easing the password maintenance burden on users.

BAC's SecureTouch 2000 fingerprint reader as well as Key Source International keyboards with embedded SecureTouch technology ensure positive user authentication.

Contact

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SENSE Technologies Wins Award

SENSE Technologies, a provider of biometric identification systems, has been awarded "Best of Show" for new and emerging technology. The award was presented at LatinChannels VI in Dallas, Texas last month.

This is the second award SENSE Technologies has received at LatinChannels events. SENSE Technologies won Best New Product at LatinChannels V in New Orleans six months ago for the its biometric technology and applications.

SENSE also received initial orders at LatinChannels VI for the CheckPrint access control system, and for its new CheckPrint DTU, an integrated desktop fingerprint/Smart Card reader.

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Smart Logon from Cherry and ISL

Computer keyboard specialist, Cherry Electrical Products, and Informer Systems Limited (ISL), have jointly developed a Smart biometric keyboard for access verification and control. Applications include workstation logon, network logon and remote access.

The keyboard, manufactured by Cherry, features a built-in Smart Card reader and a fingerprint scanner using ISL's SentriNET fingerprint authentication software programme.

Enrolment involves the scanning of two fingers (to guard against 'lock out') and then a digital fingerprint template is created and the data encrypted and stored on the Smart Card.

An alternative to using a Smart Card is a Cherry fingerprint only keyboard used with SentriNET for workstation or network logon. The network solution stores fingerprint templates directly into Novell's NDS/e-Directory, Microsoft's SAM database or ADS (Active Directory Services).

Contact

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Datakey Cards for Dept. of Energy

Datakey has announced that its cryptographic Smart Card technology was selected by the Rocky Flats Environmental Technology Site, a US Department of Energy (DOE)-owned environmental site, for employees accessing the site network through a Virtual Private Network (VPN).

The site is dedicated to the safe clean up and shut down of Rocky Flats after nearly 40 years of nuclear weapons production. The production of nuclear weapons left behind a legacy of contaminated facilities that must be safely cleaned up before the site can be closed down. In 1995, Kaiser-Hill was awarded the contract to perform the cleanup and has accelerated the completion schedule from 2040 to 2010. It also recently committed to complete the cleanup in 2006.

With a large base of employees working on the project, Rocky Flats has continued to streamline operations by expanding business functions conducted electronically over the Internet. To provide the necessary security and trust for submitting sensitive information online and to provide strong user authentication for remote employees accessing the network, Rocky Flats is deploying a VPN and PKI technology from Entrust Technologies.

Datakey Smart Cards were selected as an important component of the Entrust/PKI because they offer a high level of cryptographic security for Entrust digital credentials and also because they give remote employees the flexibility to access the site network securely - wherever they carry their Smart Card.

Initially, Rocky Flats will distribute Datakey Smart Cards, card readers and interface software to 300 employees, with additional distribution as business needs require. It is anticipated that the use of the Datakey Smart Card will expand to thousands of DOE employees across the complex.

Website

- **Datakey**
  www.datakey.com

Humetrix.com Internet Product

Humetrix.com has released its Netissimo autolaunch Internet connectivity product that enables automated, easy and secure Internet access.

Netissimo employs Smart Cards and other portable smart devices (cell phones, PDAs) and client-based software, to give users direct access to selected Web sites, protected pages, and/or personal Web-based accounts.

Insertion of a Smart Card, powered by the Netissimo application, into a card reader or a Web-enabled phone automatically launches Internet dialup (regardless of ISP setup), and login to one or more selected Internet locations.

Users benefit from convenience and simplicity, with no URLs, usernames or passwords to remember or type. Card removal from the reader automatically triggers closing of the open Internet connections and log off from the selected sites.

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MIPS Development Center

MIPS Technologies, a provider of industry standard processor architectures and cores for digital consumer and network applications, has formally opened its new 4,000 square metre (43,000 square feet) facility for the MIPS Denmark Development Center (MDDC) in Copenhagen.

MDDC is instrumental to MIPS Technologies' ability to serve Europe's key high technology market leaders with the embedded microprocessor intellectual property (IP) for embedded processors on which some companies are basing technology roadmaps.

Jean-Luc Ledys, Vice President of Technology at Gemplus, said: "The next generation of Smart and SIM cards will act as miniature computers running a variety of sophisticated software programs. We are working with MDDC to enable this next generation with a special high performance, extremely low power 32-bit MIPS core that includes specific extensions to the MIPS architecture."

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Counterfeit Pay-TV Card Case

Irdeto Access has begun legal proceedings against a man in the UK who is accused of selling fake pay-TV Smart Cards over the Internet.

The accused appeared in court in Oxfordshire to face two allegations of breaching the amended Copyright, Designs and Patents Act 1988 by selling an unauthorised Irdeto Access Smart Card and by supplying a Smart Card which was purportedly manufactured or approved by Irdeto Access when in fact its origin was not known. The revised legislation makes it an offence to distribute, sell, offer to sell or advertise any unauthorised decoder including Smart Cards.

The prosecution comes after an undercover probe by an anti-piracy team at Irdeto Access, law firm DLA and private investigators. Irdeto Access has a long track record of success against Smart Card pirates and hackers and was among companies that successfully lobbied the EU to issue its anti-piracy directive this year.

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MDC Sells Optus to Symcor

MDC Corporation (MDC) of Toronto has sold Optus Corporation, a business and technology services company within MDC's Secure Transactions Division, to Symcor Services, a provider of technology solutions and processing services to major financial institutions in North America.

Symcor has also agreed to purchase 15% of MDC's Metaca Corporation (Metaca), Canada's leading Cardprogram Management Company, with an option to purchase an additional 35% over the next three years, for a combined potential holding of 50%. In addition, Metaca has signed a strategic co-marketing agreement with Symcor to enhance current customer relationships and develop new opportunities in North America.

The combined transaction, without the exercise of the Metaca option, is valued at approximately $50 million and is expected to close within a month, pending regulatory approval.

Metaca is the leading card provider in Canada with around 45% share of the overall card market, including 90% of all telecom cards, 60% of all cards issued by financial institutions and 50% of the loyalty card market. Metaca is also developing a number of pioneering e-business applications with input from clients in areas such as bank cards, identification, authentication and access control.

Greg McKenzie, President and COO of Metaca, said: "With our expanded client base and new partnership we are well positioned to capitalise on the growth opportunities that the Smart Card evolution represents."

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People on the Move

Richard A Johnson has been named Chief Operating Officer of Cubic Transportation Systems. Previously he was President and Chief Operating Officer of Honeywell's C&K Systems.

delSECUR Corporation has announced a consultancy agreement with **Anthony M Cieri** to represent delSECUR and assist the Company's marketing team for the implementation of the del-ID system in US government and commercial markets and on a worldwide basis. The del-ID technology is an authentication process based on biological data collected from finger abstract images. Cieri has had a distinguished career in the US Navy and developed the architecture and implementation strategies for the SMARTSHIP program aimed at reducing manning requirements and ship life cycle costs. Subsequently, he served as Director of the Department of Navy Smart Card Office.

GlobalPlatform has announced its new Board of Directors as **Steve Brown**, Business Development Manager for Smart Cards, BT elected to continue as Chair, with **Jim Lee**, Senior Vice President, Visa International as Vice Chair. Treasurer and Secretary is Graeme Ward of ACI. Other Board members are **Gerry Smith** of American Express, **Toni Merschen** of Citibank, **Jerry Johnson** of Datacard, **Masonori Maeda** of JCB, **Hirofumi Hotta** of NTT, **Yves Moulart** of Proton World, **Ian Jenkins** of Telstra and **Chung Wook Suh** of TTA.

Mobile Payments Project

ForeningsSparbanken, Swedbank and Telia are jointly developing secure solutions for payments, bank and e-commerce services via mobile phones.

Applications which make things easier for the customer will gradually be launched, including the ability to check purchases and balances on accounts, carry out credit/debit card purchases, make payments via an Internet bank and order a range of services - all via an ordinary mobile phone.

Swedbank is to take responsibility for the payment and authentication processes, while Telia handles the mobile telephony platform, the special SIM card, and PKI certification. Smart Trust has provided the security system.

In spring 2001, the pilot will be expanded to cover several thousand users and will have more applications. The national launch is expected after the summer of 2001.

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WAP-Based Wireless Office

Telstra MobileNet and Entellect have launched Mobile Office for Wireless Application Protocol (WAP) enabled mobile phones that allows corporate clients to be accessible anywhere, anytime.

Employees can send, receive, forward and reply to MS Outlook e-mails, and can view attachments and forward them to a fax machine.

Telstra OnAir General Manager, Business Solutions, Doug Reid said: "The fact that executives no longer need to carry a laptop, Personal Digital Assistant (PDA) and mobile phone but can use their WAP enabled handsets for voice and data communications is a huge breakthrough."

Contact

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3G Network for Turkey's Telsim

Telsim, Turkey's fastest-growing GSM operator, has signed a Memorandum of Understanding (MoU) agreement with Motorola for the supply and deployment of a third generation (3G) mobile network to provide advanced multimedia services. Motorola estimates that the potential value of the contract could be in excess of $2 billion.

Telsim initially plans to deploy Motorola's UMTS (Universal Mobile Telecommunications System) solution in Turkey's capital city and economic centre Ankara, and in its largest city Istanbul. The operator, which has over five million customers, anticipates seven and a half million customers by the end of the year.

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MoBiTai Expands Taiwan Network

Motorola has signed a contract with MoBiTai Communications for expansion of its network in central Taiwan and will install macro and micro GSM 900 communications network base stations in the central areas of Taichung, Chang-hwa and Yuen-lin. With this expansion, MoBiTai network capacity expects to reach 600,000 subscribers.

The network installation allows MoBiTai to upgrade the system in the future to General Packet Radio Service (GPRS) technology by adding a packet controller unit and a gateway support node core network, as well as a software upgrade.

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Infineon Ships 100 Million Chips

Infineon Technologies last month announced the shipment of its 100 millionth GSM baseband chipset confirming its position as a leading supplier of standard chip solutions for GSM cellular phones.

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Forecast of 3G data rates of 2Mbps

Third-generation (3G) data rates of 2Mbps are forecast by AXEON, an Aberdeen, Scotland-based start-up focused on the development of a breakthrough microprocessor component to enable 3G wireless communications. The company has announced that it has raised a total of £3.5 million in funding from leading UK business investors.

This second stage of financing will be used for product launch and to add additional technical resources to the company. The product will provide a reception component that will be the first to enable wireless device manufacturers to achieve the 2Mbps bandwidth potential promised by the 3G standard.

"The opportunity in the 3G space is extremely large, but there has been much recent comment both from analysts and now from telecoms operators that the promise of 3G data rates of 2Mbps cannot be achieved and that perhaps only 56Kbps will be delivered initially," said Hamish Grant, AXEON's founder and CEO. "Our component solves this problem, and indeed enables 2Mbps even in the outdoor moving environment."

The company says it will begin rolling out its product lines in early 2001.

Website

- **AXEON**
  - www.axeon.com

OTI and Funge Team

OTI and Funge Systems are to develop wireless devices enabled with OTI contactless Smart Card technology and Funge System interface technology. The agreement will result in mobile phones and personal digital assistants (PDAs) that are able to also function as contactless Smart devices.

The companies will develop an attachment that can be added to an existing mobile phone that will then act as a contactless smart device. A consumer would be able to download funds online to the Smart Card portion of the phone and make a purchase at a contactless point of sale (POS) device. These POS locations might include mass transit ticketing machines or vending machines that are equipped with contactless Smart Card readers.

Website

- **OTI**
  - www.oti.co.il
- **Funge Systems**
  - www.fungesystems.com

Ericsson Bolivian GPRS Contract

Ericsson is to install Latin America's first GPRS mobile network for Bolivian operator Entel Móvil. The three-year agreement for a turnkey GSM/GPRS 1900MHz system is valued at US $36 million.

Standard GSM services will be deployed in La Paz, Santa Cruz and Cochabamba. The new GSM-based system will go into commercial operation by the end of December 2000 while the GPRS wireless network is scheduled for launch in Q2 2001. Phase two will expand services to other major cities of Bolivia.

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Bluefish Multi-million US$ Deal

Bluefish Technologies has signed a multi-million US$ deal with Emosyn, the fabless semiconductor division of ATMI, for the use of their Theseus range of microcontroller chips for a new generation of SIM cards. The deal confirms Bluefish's intention to offer flash memory technology to its customers.

Bluefish has also announced that it will be working with Info2Cell.com, a Middle East mobile information provider, on the development of SIM based content solutions, targeted at the Middle East's GSM network operators.

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Radicchio Celebrates First Year

Radicchio, the global initiative developing and promoting a universal framework for secure wireless e-commerce, last month celebrated its first year in operation with more than 50 member companies.

Radicchio has identified Public Key Infrastructure (PKI) as the foundation for securing mobile commerce transactions and is promoting this technology platform.

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Satellite Phones for Buses

Globalstar, the global mobile satellite telephone service, has announced that Globalstar do Brasil has signed a contract with Itapemirim, the largest passenger transportation company in Brazil, to install Globalstar phone units in the company's inter-city buses.

These buses are a vital transport link between major cities and through remote areas where virtually no cellular service is available. Globalstar phones are now being installed on 43 buses operated by Itapemirim and Penha, two companies in the Itapemirim Group, with commercial service starting on 1 December. Phones will also be installed on all new buses added to both companys' fleets in the future.

Passengers will be able to make calls using pre-paid Smart Cards virtually anywhere the buses travel around the country.

Camilo Cola, Chairman of the Itapemirim Group, said: "We are very pleased to be the first bus company in the world to offer this original service."

"This announcement is another example of the ever-growing range of applications that customers are discovering for Globalstar service," said Tony Navarra, President of Globalstar. "Transportation enterprises operating across land, sea and air continue to discover the value of our service not only for personnel within their own operations but also for the convenience of their customers."

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MasterCard/Brodia E-platform

MasterCard International and Brodia have announced that they are to develop and market a next generation e-business platform.

MasterCard's relationship with Brodia began in July 2000, with the launch of the MasterCard eWallet - from Brodia providing cardholder convenience, with its ability to instantly fill out online forms, remember passwords, streamline shopping (through a product search capability and consumer reviews), and protect privacy (by receiving only relevant offers and blocking unwanted e-mail).

The two companies say they have now identified opportunities to broaden their e-business services to cardholders, offering expanded e-wallet capabilities, consumer-to-consumer payment support, mobile commerce capability, Smart Card and other personal commerce services.

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Phone Card Machines for Saudi

Interlott Technologies has received an initial order of 100 Phone Card Dispensing Machines (PCDMs) from Saudi Arabian telecommunications company Silki La Silki.

This represents Interlott's second major international order for PCDMs in the last three months. The Saudis selected Interlott's PCDMs from among several competing European, Asian and American manufacturers.

According to President and CEO David Nichols, Interlott is establishing itself as a leading provider of vending technology worldwide. "This is our fourth international contract this year," he said. "We have also won six domestic awards this year and we now hold contracts with 24 state lotteries."

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De La Rue Profits Rise

The De La Rue group has shown an 8 per cent rise in operating profits with the six months to 30 September figure at just over £27 million.

Pre-tax profits were lower this year, but this was due to the absence of £50 million profit acquired by the sale of the Smart Card operation and the loss of profits from that division.

Website

- **De La Rue**
  www.delarue.com

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Portland Trials Multispace Parking

Schlumberger announced that the city of Portland, Oregon, has recently chosen Schlumberger Stelio parking technology for participation in a field test designed to determine what characteristics and functions might best benefit the city. The project includes replacing single space meters with Schlumberger Stelio Pay & Display and Pay by Space multispace parking terminals at selected Portland sites in the downtown area, bench testing and examination of equipment and operational training for city staff.

Stelio technology offers city managers improved trouble reporting via wireless application linked to a central station with a Parkfolio software package that provides data management.

The Stelio multispace terminal accepts cash, credit cards, debit cards, magnetic stripe cards and Smart Cards. The acceptance of these varied payment methods will reduce cash handling during collections.

The trial is currently underway and is scheduled to be completed in February, 2001.

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Bureau of Labor Statistics Project

Datakey has announced that the US Bureau of Labor Statistics (BLS) will deploy Datakey PKI Smart Cards for 1,500 employees who will use them for authentication to the agency's corporate network and enhanced security when submitting and reviewing labor- related data online.

With field agents located across the United States, the agency increasingly performs many business activities over the Internet to expedite the collection and dissemination of labour data to headquarters.

To provide strong security and user authentication for remote employees submitting information - and also for employees at the agency's headquarters - the BLS selected PKI technology from Entrust Technologies and cryptographic Smart Cards from Datakey. In the future, the BLS also may use Datakey Smart Cards as a multi-functional identification card for building access.

Website

- **Datakey**
  - www.datakey.com

Secure Computing / EDS Alliance

Secure Computing and EDS have formed an alliance under which EDS will offer its customers authentication and public key infrastructure (PKI)-readiness through Secure Computing's SafeWord and SafeWord Plus products along with Sidewinder. The co-marketing agreement combines EDS' business consulting and systems integration expertise with the interoperability of Secure's security solutions so that companies can choose the level of security they need today with the ability to expand their solutions tomorrow.

"Interoperability enables us to offer the widest range of security solutions to our customers," said Shakil Kidwai, EDS' Vice President Information Assurance Services. "Most companies want to implement a solution today that allows them to build-on security when they need it in the future - like starting with a basic password system with plans of moving to PKI or digital certificates tomorrow."

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FutureTV and Mondex Scheme

FutureTV and MasterCard Smart Card subsidiary Mondex International, are launching a service solution for marketing financial transactions through interactive TV. The alliance enables set-top boxes to be turned into a home ATM, letting viewers purchase products, conduct home banking, and load electronic cash to and from their Smart Card. It will integrate with operators' systems specifically for the purchase of video-on-demand movies and products sold through interactive advertising.

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Room Security for the Waldorf

The Waldorf Astoria, one of the world's premier hotels, has chosen TESA Entry Systems' HT28 Smart Card electronic locking system to secure its more than 1750 rooms.

The Waldorf Astoria engaged in a meticulous selection process. The most important criteria considered were cutting edge technology with Smart Card applications, ease of management of the technology, maintaining the hotel's integrity and harmony of design, and superior customer service.

One of the most challenging aspects of this project was to protect the design integrity of this historic property. The hotel was looking to maintain the appearance of the original door hardware, while offering the latest in security and technology to the guests.

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Terminals Order for Hypercom

Bank Central Asia has ordered 10,000 Hypercom ePic ICE 5000 and ICE 5500 Internet-enabled card payment terminals for deployment to retailers, hotels and airlines throughout Indonesia. The initial deployment of 5,000 ICE terminals is expected to be completed by the end of this year.

Hypercom's ePic (ePOS-infocommerce) ICE devices are touch screen-based, Internet-enabled card payment terminals and Web appliances that incorporate a firewall multi-application operating system, EMV chip card capability, secure PIN pad, built-in HTML/HTTP Web browser and integrated receipt printer.

In addition to the embedded applications, Hypercom's ePic ICE terminals support a range of value-added applications and services including: electronic signature and receipt capture, e-mail, on-screen advertising, interactive electronic coupons, user e-commerce function and cash management reporting through a standard browser - as well as credit, debit and Smart Card functions.

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Boppers and e Smart Merge

Boppers Holdings has announced it has closed the acquisition of e Smart Systems (eSmart) through a merger transaction with a subsidiary of Boppers. Under the merger, eSmart has become a wholly owned subsidiary of Boppers. Boppers plans to recommend that its shareholders agree to a change in the company's name to e-Smart Technologies Inc., as soon as practicable.

In connection with the merger, all of the officers and directors of Boppers have resigned and John Phelan has become the sole officer and director of the company. eSmart holds an exclusive technology license covering the territory of China, to manufacture and to supply a new generation of proprietary, secure, multi-application Smart Cards.

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New Personalisation Facility

A new card personalisation facility has been opened by Schlumberger Test & Transactions at its secure manufacturing plant in Felixstowe, UK.

Part of a $3 million investment programme, the plant will enable Schlumberger to offer its UK banking customers an end-to-end solution for the design, production and deployment of payment cards, from magnetic stripe cards to Smart credit and debit cards.

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GiroVend Record Sales

GiroVend reports record September and October sales of its e-purse systems after winning 39 sites across the UK and Europe worth £870,000 in new equipment orders. They include cashless payments systems for staff food services at Heathrow Airport, Merrill Lynch, KPMG, Railtrack, Mobil Oil and Volkswagen Brussels.

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Teen Card for 'net Shopping

Splash Plastic, a UK company, has developed the first reloadable prepaid card for teenagers who want to buy on the Internet but do not qualify for a credit card until they are 18. The new card will be launched in January 2001 and Splash Plastic says it will be accepted by more than 60,000 retailers.

Thyron is supplying its YES secure payment system to underpin the new Internet shopping card. The deal, according to John Curnow, Thyron's Vice President of Secure Payments, is expected to be worth over £1 million.

YES.secure payment solution provides the integration of retailers, Web merchants, distribution networks, cardholders and call-centre operations.

The Splash Plastic system will enable teenagers to load cash into an online buying account from electronic high street terminals and purchase goods and services securely on the Internet.

Philip Jording, COO at Thyron, said: "Teenagers in the UK currently spend around £20 billion a year and more than 80% of them want to shop on-line - that is a huge potential market."

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Flint Unveils New Products

A new multi-media PC Keyboard is now available from Flint Smart for use in authentication, e-commerce, home banking, information security and restricted access applications. Designed for use with Windows 2000, the ACK keyboard from Flint franchise Advanced Card Systems (ACS) features a built-in PC/SC compatible Smart Card reader/writer.

Also new from Flint is a series of compact Smart Card checkers from Advanced Card Systems which can be configured to support cards for e-purse, payphone, photocopier and other Smart Card applications.

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Trans-Atlantic EMV Transaction

MasterCard and Europay have announced that a European-issued Smart Card was used in chip terminals outside of Europe for the first time for payment. Posto Safari, a gas station in Sao Paulo, accepted an EMV-compliant MasterCard chip card issued by UK bank Barclays. Numerous other merchants were tested and passed as well.

The news follows the recent announcement from MasterCard on the current deployment of a major chip migration program in Brazil involving the issue of 16 million MasterCard M/Chip Lite Smart Cards to cardholders and the roll-out of a complete chip acceptance infrastructure.

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Collectors Corner

This month's Collectors Corner Card is the Citrus e-Cash Card supplied by ORGA UK. The card has been produced by ORGA in conjunction with Mondex International and National Australia Group, parent company of National Irish Bank and it uses the MULTOS operating system.

This multi-application Smart Card combines electronic cash and loyalty rewards is being used by shoppers in Blanchardstown Centre, Dublin, Ireland.

Technology Award

Sonera SmartTrust, a provider of security and service management solutions for mobile and Internet e-services, won the Technology Foresight Award at this year's World Communication Awards.

The award was presented to SmartTrust in recognition of its work towards the development of wireless security services.

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Gemplus Plans Public Offering

Gemplus has unveiled plans to sell a small share of its equity to the public, the share sale will be approximately 15% of its equity. Thoughts are that this will give the company a valuation of 5 billion Euros. Founder and Chairman of Gemplus, Marc Lassus, hopes that the sale will give Gemplus the power to make acquisitions and to progress in various directions. The Quandt family who hold 24% of Gemplus shares are hoping to reduce their shareholding by approximately 5%.

Gemplus has seen an increase in revenue with 818 million Euros in the year to date compared with a total of 767 million Euros for the whole of 1999. The sale is being managed by Credit Suisse First Boston and trading is expected to start on Wednesday, 6 December.

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MasterCard Digital Wallet

MasterCard International has announced the development of a chip-activated digital wallet solution with Trintech. Using Trintech's chip-enabled eIssuer will enable customers of MasterCard's member financial institutions to conduct their online transactions using both a Smart Card digital ID and PIN number. The chip contains a digital ID number that authenticates the cardholder and then launches the digital form-filling wallet.

"Consumers have struggled to find a convenient and secure payment solution for Internet shopping and MasterCard is tackling this issue head on," said John McGuire, CEO of Trintech.

"Trintech worked closely with MasterCard to provide a secure payment infrastructure using Payware eIssuer that will expedite the transaction process, drastically reduce fraud levels, and lead to a more satisfactory payment experience for cardholders, merchants and issuing banks."

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Mover Card Launch

SPYRUS has announced the successful implementation of its SPYRUS PKI System solution at Mover S.p.A., providing a secure foundation for the Mover Card initiative, a Rosetta Smart Card-based e-commerce system that lets online shoppers safely buy products over the Web.

Powered by the SPYRUS PKI System solution, Mover will launch its Mover Card program to let consumers purchase products online in a completely secure environment, eliminating the threat of credit card fraud.

The Mover Card program lets consumers conduct online transactions with their credit cards without having to provide their card numbers to merchants over the Web.

Mover securely stores consumers' personal and credit card information in an offline database and issues each customer a SPYRUS Rosetta Smart Card, the Mover Card, which contains a digital certificate representing the cardholder's identity. The Mover Card is then used with the SPYRUS Personal Access Reader to purchase products from affiliated merchants, with Mover handling the associated credit-card settlement transactions.

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IFS/Visa E-cChip Program

IFS International has announced that Vseukrainsky Aktsionerny Bank (VABANK), in the Ukrain has licensed its TP-CMS product for card issuing and merchant acquiring.

The license is the first under the "e-chip" marketing program implemented in conjunction with Visa International to offer Visa members the ability to migrate to a chip-based solution with minimum risk.

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Briefing Notes on Multi-Application Smart Cards – Part 11

A Basic Javacard Applet

The following example is a simple program to show the structure of a JavaCard applet. This application stores a single variable 'count' which may be read and changed by a single external command obeying the ISO 7816 APDU format described previously. This applet has the following structure:

- Import the Javacard Interfaces
- Applet class definition
- Variable definitions
- Class constructor
- Install method
- Process APDU method
- Invoke update count method
- Return
- Update count method

```
import javacard.framework.*;


import javacardx.framework.*;


    // All Java Card programs must extend the Applet class


public class Counter extends javacard.framework.Applet {

    // Our simple program accepts one command, with an APDU of the
    // format
    // CLASS=0x03, INS=0x10, P1 & P2 don't care, LC=1 and LE=1
          // The one byte in the command data is the value we
       // increment the counter by,
    // and we return the new value as the result

    byte count;  // Where we store the count
    byte buffer[]; // APDU buffer

    // This is the constructor, called when the program is created
    // and which sets the value of count to zero
       private Counter() {
          count = 0;
          // This informs the card that we exist, making us visible to
          // the outside world
          register();
    }

    // The method is called by the card when our program is
    // installed.  We
    // create a new instance of our class.
    public static void install(APDU apdu){
       new Counter();
    }

    // This is called by the card when an APDU is sent to our program
    public void process(APDU apdu) {

          // APDU object carries a byte array (buffer) to
          // transfer incoming and outgoing APDU header
          // and data bytes between card and CAD
          buffer = apdu.getBuffer();

    // First we do some simple error checks
       // We get called when the card selects our app (INS=0xA4).
    // Ignore it when
       // the CLASS is 00 or 0cF0.
       if (buffer[ISO.OFFSET_INS ]== (byte) 0xA4)
          if ( (buffer[ISO.OFFSET_CLA] == (byte)0) ||
(buffer[ISO.OFFSET_CLA] == (byte)0xF0))
          ISOException.throwIt(ISO.SW_NO_ERROR);

       // At this point we know the command is valid.  Work out what
    // to do next
       switch (buffer[ISO.OFFSET_INS]) {
          case 0x10: update(apdu); return;
```


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```
            default: ISOException.throwIt (ISO.SW_INS_NOT_SUPPORTED);
        }

    }

    // This method updates our counter with the supplied byte and
    // then returns the new value in the response.
    private void update(APDU apdu) {
         // indicate that this APDU has incoming data and
         // receive data starting from the offset.
         byte byteRead = (byte)(apdu.setIncomingAndReceive());

         // increase the counter by the amount specified in the
         // data field of the command APDU. (The data is the 5th ement
         // element of the APDU)
         count = (byte)(count + buffer[5]);

         // inform system that the applet has finished processing
         // the command and the system should now prepare to
         // construct a response APDU which contains data field
         apdu.setOutgoing();

         // indicate the number of bytes in the data field
         apdu.setOutgoingLength((byte)1);

         // move the count value into the APDU buffer starting at
       // offset 0
         buffer[0] = (byte) count;

         // send 1 byte of data at offset 0 in the APDU buffer
         apdu.sendBytes((short)0, (short)1);
    }
}
```

The two import statements at the start of the program simply state that we wish to use other classes that are part of the core javacard library. What this means when we run the program on the card is that we will be using facilities the card provides for us. This could be a cryptographic operation, for example.

The next line declares that our class Counter 'extends' the Applet class. This means that our class will be a superset consisting of functions provided by the Applet class with extra ones we will write. This constraint is enforced so that the card operating system has entry points to our program, which it needs so it can it to the outside world. We will see such an example when we look at the install method in a moment.

The next 2 lines declare some local storage. Unless otherwise stated all storage in a java card program is persistent between APDUs being sent to the card, so the developer must be careful to eat lots of memory carelessly. We store the actual value we will use in count, while buffer is used to read & write APDUs.

Now we come to the constructor, which is the same name as the class. This is a very simple routine that sets count to 0, and then calls register(), which is a hook into the card OS. The register() method declares that our program exists and can be used.

The constructor is invoked when a new instance of our class is created. This happens within install(); in fact, this is all that happens. The install() method is invoked by the card OS itself (one of the entry points we mentioned above), when an actual instance of the program is created on the card. So the actual sequence would be

1 The file containing our program is loaded onto a javacard and an instance of the program is created by the card operating system.
2 The card operating system reserves enough storage on the card for the programs use and then invokes the install() method.
3 Our install() method creates a new instance of the Counter class, which zeroes the counter and informs the card OS that our program now exists.

You may be asking how can install() be invoked when the class doesn't exist yet? This can happen because the install() method is declared static, meaning it is common across all instances of Counter and as such doesn't need an instance to be invoked.

The process() method is another entry point used by the card OS. When our application is selected and APDUs are sent to it the card OS sends these APDUs to the process() method. We do some basic filtering to make sure the APDU is of interest to us (if it isn't we send back a result indicating an error). If it is, we then invoke our update() method. We could place the logic of the update() method directly in the process() method, but that is error prone and makes for unreadable code.

One point of interest is that process() is a public method. This means it is visible to the outside world (or at least, the card OS). Our update() routine is private, which means only we can see it ourselves.

Finally, our update() routine extracts the data value from the incoming APDU, updates our counter and returns the new value of counter via a new APDU.

To be continued
Jon Barber

O2Micro and Sci-worx Team

O2Micro International, a supplier of IC's to mobile computer and communications manufacturers has licensed Sci-worx's Smart Card reader IP core for use in new SmartCardBus products.

Using Sci-worx technology, O2Micro will develop a new generation of SmartCardBus products with built in Smart Card reader technology for notebook and desktop computers. O2Micro's SmartCardBus products are fully compliant with Microsoft PC/SC standard, EMV Level 1 certified, and comply with the IEEE 7816 specifications and standard transmission protocols including T=1, T=0.

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PKI-Smart Card Deal

Sonera SmartTrust, a provider of security and service management solutions for mobile and Internet e-services, has announced a deal that will allow customers of its Certification Management solutions to outsource the production of PKI-enabled Smart Cards to Nordic card system specialist Graphium.

Graphium will offer its services to CAs using SmartTrust Certificate Manager for the management of certificates and cryptographic key pairs. By supporting the printing of cards and the storage of keys within them, Graphium alleviates the cost and management of running an internal card production centre, in turn helping CAs to easily scale production according to demand.

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Fujitsu Cuts Jobs at ICL

Fujitsu, the Japanese software and semiconductor manufacturer, is planning significant job cuts at its UK subsidiary ICL which made operating losses of approximately £70 million on a turnover of £2.7 billion.

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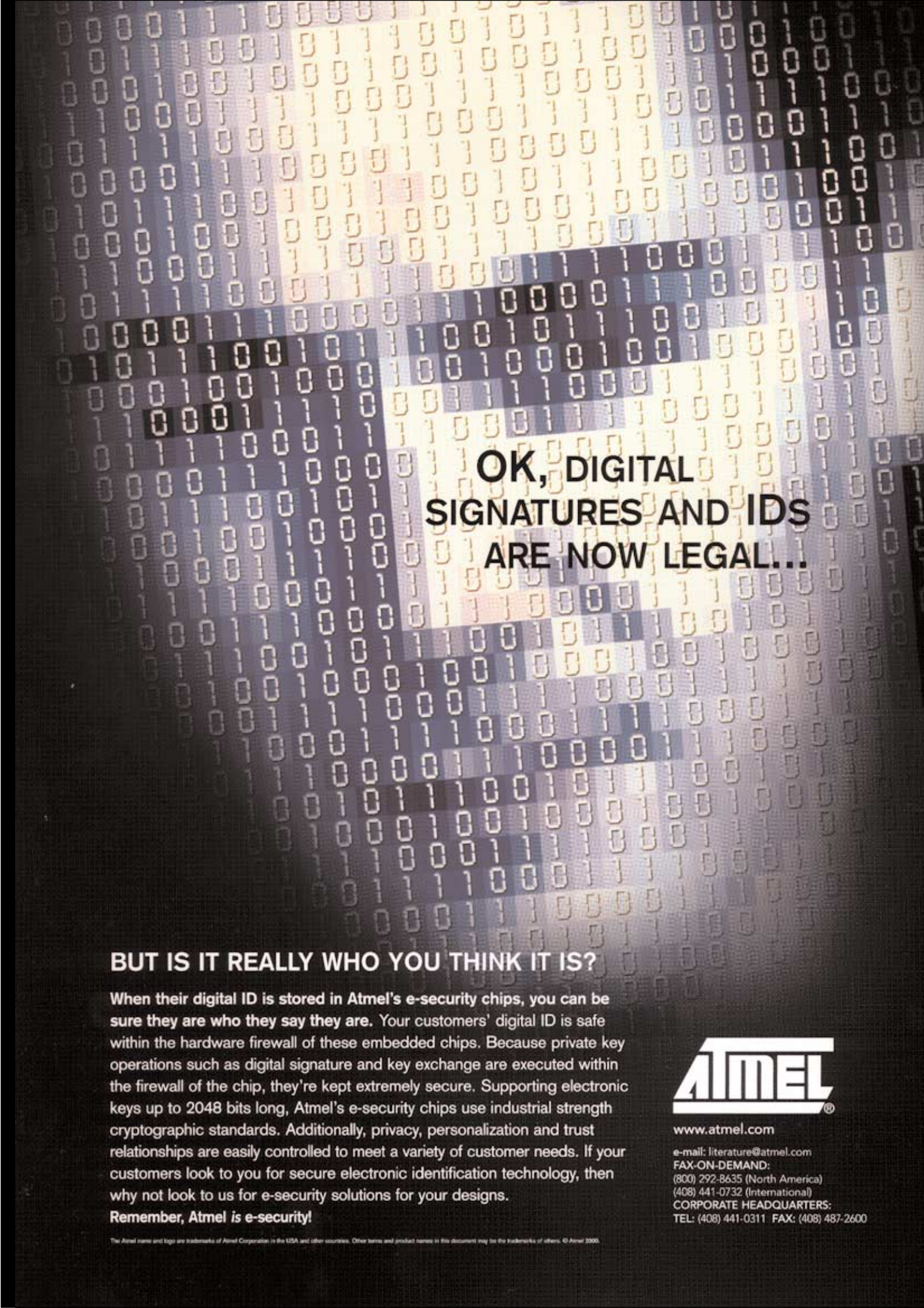

BUT IS IT REALLY WHO YOU THINK IT IS?

When their digital ID is stored in Atmel's e-security chips, you can be sure they are who they say they are. Your customers' digital ID is safe within the hardware firewall of these embedded chips. Because private key operations such as digital signature and key exchange are executed within the firewall of the chip, they're kept extremely secure. Supporting electronic keys up to 2048 bits long, Atmel's e-security chips use industrial strength cryptographic standards. Additionally, privacy, personalization and trust relationships are easily controlled to meet a variety of customer needs. If your customers look to you for secure electronic identification technology, then why not look to us for e-security solutions for your designs.

Remember, Atmel *is* e-security!

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