



Subscribers will receive "SmartCities for Southampton" free with this issue of Smart Card News.



French Know How Wins Sesames Awards in Paris

Cyber-COMM won the best application and best security SESAMES 2000 awards which are a key part of Cartes, the annual Smart Card show in Paris. Gemplus also won two awards in the healthcare and e-commerce categories.

Only a company from Turkey successfully challenged the French know how leadership in Smart Card technology to win an award in the transportation section.

These prestigious awards decided by an international jury recognise advances in technology in the Smart Card industry and this year attracted 90 applications from Australia, Austria, Belgium, France, Germany, Hungary, The Netherlands, Sweden, Switzerland, Turkey, USA and the UK, compared with 58 last year.

Continued on page 203





November 2000



Cards on the Cover

**"SmartCities for Southampton" -
this issue's Collector's Corner Card**

Page 203

**WfSC supplied by SAGEM for the
Smart Card News Multi-Application Toolkit**

Page 208

ASK's "e.ticket" Card

Page 204

Mondex "Citrus" Card

Page 219

Main Photograph

**Cartes, the annual Smart Card
show in Paris, France**

*If you wish to subscribe to Smart Card News
please complete the form on page 219*

News

203 ~ 209

**Sesames 2000 Award Winners
Collectors Corner
e-Galleon from Schlumberger
Visa Announces Electronic Wallet
Contactless Disposable e-Ticket
Transparent Smart Payment Cards
Italy Orders ID Smart Cards**

212 ~ 217

**ActivCard Wins DoD Contract
SmartXA 64K Card from Philips
mysmart Mouse Pad Deals
Datakey Cards for the FDIC
Bluetooth First for Infineon
Citrus e-Cash and Loyalty Scheme**

GSM News Roundup

210 ~ 211

**New Ideas Competition
Bull SIM ROCK 64K Card for GSM**

Smart Card Tutorial

218 ~ 219

**Briefing Notes on Multi-Application
Smart Cards - Part 10**

Smart Card News is published monthly by Smart Card News Ltd PO BOX 1383 Rottingdean Brighton East Sussex BN2 8WX England
Telephone : + 44 (0) 1273 515651 • Facsimile : + 44 (0) 1273 516518 • 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 Kenneth Ayer • Peter Hawkes • Simon Reed • Robin Townend

Printed by DAP (Sussex) Ltd. Telephone : +44 (0) 1273 430430



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

202

202

202

202

Sesames 2000 Award Winners

Continued from page 201

The Sesames Awards announced at the Cartes 2000 show in Paris went to:

Technological Innovation: Bull CP8 (Oversoft Technology-iSimplify!)

The Oversoft technology transforms a Smart Card into an Internet node.

Transport: Kent Kart - Automatic Fare Collection System

A contactless Smart Card AFC system on buses, metro and ferry services in Izmir, Turkey.

GSM: Horanet-Mobiex - GSM Mobiex

The product is the first Combi Smart Card loading service through dual-slot GSM phones. It allows remote loading of VIGIK contactless Smart Cards for access controls, allowing buildings service providers or operators (for maintenance operations, meter reading, mail and other distribution services) to receive a daily right of access via their mobile phones.

Identification - Security: Cyber-COMM.com (the Cyber-COMM solution)

The solution is based on a secure payment architecture for the Internet using a Smart Card reader connected to the user's PC. Based on SET standards and using the security functions of the Smart Card, the Cyber-COMM label guarantees the security and authentication of any transaction.

Healthcare: Gemplus - Slovénie, Carte Nationale d'Assure Social

This application for the Slovenian National Health Insurance Card System involves two types of card - the Health Insurance Card for the insured population and the Health Professional Card for use by healthcare providers.

E-Commerce: Gemplus - Gemplus Utilities

An application designed to simplify personal access to favourite Internet sites and provide "one click" convenience in e-commerce through intelligent form-filling.

Banking - Finance: Schlumberger - EMPS - Electronic Mobile Payment Services.

Unlike conventional mobile banking applications, the EMPS service allows subscribers to use their mobile phones to pay for goods and services on the Internet, wherever and whenever they wish. Key to

the security of the service is the Schlumberger Cyberflex Palmera Smart Card conforming to Java Card 2.1 and Visa Open Platform 2.0 standards, with an integrated WIM (WAP identity module), which plugs into the dual slot phone to make authenticated Visa credit or debit payments with high security.

Loyalty: Xiring & AGYS (Groupe Cofinoga) - Citizen Reader.

The reader is based on a citizen Smart Card associated to a reader equipped with a radio message reception system. It receives all the citizen information sent by the municipality within a broadcast messaging system. The Smart Card gives access to the different services of the city and also supports loyalty programs of affiliated owners.

Best Application (Selected from the above seven applications):

Cyber-COMM.com - The Cyber-COMM solution

Cards for @ Secure net: Oberthur Card Systems - AuthentIC Mobile

AuthentIC Mobile is the first Wireless Application Protocol (WAP) enabled Smart Card. It acts as a secure, portable storage and identity medium for access to wireless-based Internet services and can store issuer defined connectivity information such as IP addresses, dial-up access numbers as well as the cardholder's personal information.

Contacts

- **Bull CP8** Pascal Urien
☎ +33 (0)1 39 66 42 30
✉ Pascal.Urien@bull.net
- **Cyber-COMM** Hervé Sitruk
☎ +33 (0)1 53 89 39 40
✉ hs@cyber-comm.com
- **Gemplus** Bertrand Cambou
☎ +33 (0)4 42 36 50 00
✉ info@gemplus.com
- **Horanet-Mobiex** Jean-Paul Huon
☎ +33 (0)1 40 92 78 10
✉ jp.huon@mobiex.com
- **Kent Kart** Dr Mazhar Umur Basmaci
☎ +90 212 249 6720
✉ kentkart@superonline.com
- **Oberthur Card System** Stephanie de Labriolle
☎ +33 (0)1 41 25 28 42
✉ s.delabriolle@oberthurcs.com
- **Schlumberger** Emmanuelle Saby
☎ +33 (0)1 47 46 71 04
✉ saby@montrouge.tt.slb.com
- **Xiring & AGYS** Georges Liberman
☎ +33 (0)1 46 23 67 40
✉ g.liberman@xiring.com

Collector's Corner

The SmartCities initiative makes use of the latest 'Smart Card' technology to introduce a multi-application card that will give local residents access to city services and facilities, as well as providing an 'e-purse' to pay for a broad range of goods and services.

The Project - funded by the European Commission's Fifth Framework IST Programme - includes partners all over Europe and from both the Commercial and Private Sector.

Card-holders will be able to select from a number of different applications which provide access to the City's leisure and library facilities, or pay for services such as transport, school meals and life-long learning opportunities. Applications can be selected and changed through a range of outlets, or through a mobile phone with a Smart Card slot. Personal, portable and secure, the SmartCities scheme will be a test-bed for integrated Smart Card applications across European cities. It will protect personal privacy, and by decreasing the visibility of discounts and concessionary payments, will help to destigmatise transactions made by low-income residents.

The 30-month pilot project supports national targets for e-government as set out in the Government's 'Modernising Government' agenda and will help address the digital divide to ensure that all UK citizens are able to benefit from Information Age technologies.

The SmartCities project is an excellent example of national and local government working in partnership with the private sector to find new ways of addressing the challenge of new technology.

For further information regarding the SmartCities Project please visit www.smartcities.co.uk

EMV Approval for Terminals

Ingenico Fortronic, UK developer of secure payment solutions and Smart Card reading terminals, has announced EMVCo Type Approval Terminal Level 1 for its Elite 500 and 700 terminals.

Contact

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

Eurosmart Figures and Forecast

Eurosmart, the Brussels-based association of European Smart Card players, which includes major Smart Card and IC chip manufacturers, is recognised as the source for providing as reliable figures on shipments as we are likely to obtain.

At Cartes 2000 in Paris last month, Eurosmart figures for shipments last year and its forecast for 2000 were as follows:

Shipment per sector 1999

	Memory (Mu)	Microprocessor (Mu)
Banking	-	108
Healthcare	27.5	30
Telecom	913	200
Transport	40.5	3
PayTV / IT	1	29
Others	49	28
Total 1999	1031	398
1429 Million Units		

Total Eurosmart 1319.5 - 92%
Total external 109.5 - 8%

Forecast 2000

	Memory (Mu)	Microprocessor (Mu)
Banking	-	120
Healthcare	30	35
Telecom	1030	300
Transport	50	8
Pay TV	-	35
IT Internet	-	15
Loyalty / retail	30	-
Others	35	50
Total	1175 (+14%)	564 (+42%)

Total 1739 - +22%

Source: Eurosmart

Contact

- ✉ info@eurosmart.com
- 🌐 www.eurosmart.com

e-Galleon from Schlumberger

Schlumberger has announced a new range of Smart Card payment cards, which add the benefit of fast and simple customisation for local markets to the global interoperability of EMV. The new e-Galleon range enables issuers to strike a precise balance between security, retailer and customer convenience, and operating overheads, to reflect local requirements within their global EMV migration strategy. With the e-Galleon offering, issuers can now move to global EMV deployment, confident that their cards meet future needs.

“Smart payment is no longer a novelty - the finance community and its partners are now looking for an extra advantage within the smart payment infrastructure,” said Brigitte D’Heygere, product marketing manager financial applications. “The combination of security, speed and support for complementary services such as loyalty, on an easy to customise platform, makes the e-Galleon EMV card the most versatile on the market today.”

The secret of the card’s versatility is its exceptionally powerful processor - supporting high transaction speeds and high levels of security - and the capacity to host multiple applications, opening the door to new loyalty applications, for example, to support new partnerships between banks and the retail community. It also provides additional post-issuance flexibility, through the ability to activate the PIN to reflect local market changes.

Contact

- **José de Vries** Schlumberger
- ☎ +33 (0)1 47.46. 44.67
- ✉ jdevries@montrouge.tt.slb.com

US \$150m to Fight Card Fraud

Visa EU Member banks are investing US \$150 million to fight payment card fraud in Europe by migrating from magnetic stripe cards to chip cards.

In announcing this boost to its chip migration plan, Visa EU said that as of January 2005 there will be a shift in liability whereby banks will be responsible for fraudulent transactions if they have not implemented chip cards and it can be shown that Smart Cards could have prevented the fraud.

Contact

- **Stacy Torbit** Visa
- ☎ +44 (0)20 7795 5390
- ✉ torbits@visa.com

Biometric and Smart Card PKI

Fingerprint Cards AB and Litronic Inc are to co-operate on the development of a new, strong authentication solution combining fingerprint biometrics and Smart Card based digital signatures on the Microsoft Windows Powered Smart Card platform.

The companies say they anticipate that the resulting system will satisfy the security standard FIPS 140-1, level 3 (Federal Information Protection Standard) requirements set out by the US government’s National Institute of Standards and Technology (NIST).

To comply with requirements on this level of security, all management of security credentials must take place independently of any host PC or other computer system. This is achieved by using Fingerprint Cards’ patented, two-chip, fingerprint authentication technology, where the sensor and processor chips are integrated into the Litronic Smart Card reader.

Comparison between the stored and the presented finger patterns takes place inside the Smart Card, thereby opening up the digital signature and associated personal credentials.

Contact

- **Lennart Carlson** Fingerprint Cards
- ☎ +46 31 60 78 20
- ✉ info@fingerprint.se

Health Club Loyalty Scheme

Fit stop health and fitness clubs in London and Southampton have introduced a loyalty scheme using Smart Cards supplied by ORGA. Club members earn loyalty points every time they attend the gym or book to use the facilities.

ORGA is part of a joint venture with customer loyalty specialists The Continuity Company which implemented the scheme, and Dione who supplied Smart Card electronic point of sale terminals.

Points can be exchanged for goods from the loyalty scheme catalogue. Members can earn additional points in a variety of ways, from booking a course of sun-bed treatments to introducing a new member.

Contact

- **Darren Brown** ORGA Card Systems (UK)
- ☎ +44 (0)118 377 6029

Visa Announces Electronic Wallet

Visa EU announced availability of the Visa run electronic wallet. The service will allow Visa card issuers to provide authentication quickly and with minimal up-front investment, therefore helping to build customer confidence in electronic commerce and reduce fraud.

Bankgesellschaft Berlin will be the first to utilise the new service.

The Visa supplied electronic wallet solution will provide an alternative for card issuers to implement their own wallet solution.

Visa said that up-front investment for the banks will be minimal, with banks being charged \$50,000 to enroll, with an ongoing annual fee of \$20,000, and then will pay on a per usage basis.

Contact

■ Stacy Torbit Visa

☎ +44 (0)20 7795 5390

✉ torbits@visa.com

Banxafe E-Commerce Initiative

Bansys launched its new e-commerce initiative, Banxafe, which is a new secure system for e-commerce payments encompassing all types of existing paymentcard systems (credit, debit, purse) and makes their use possible in the virtual world. Security is achieved by the use of a chip card (currently a Proton R3 card) and PIN that gives access to a virtual wallet in which the customer will find duplicates of his physical cards.

"Banxafe is a major step forward in electronic payment," said Bernard Vanderlande, e-Commerce Director for Banksys.

"We have created a system that allows the user to take his real world cards onto the Internet in total security. We believe that this system will overcome many of the barriers that security issues have placed in the way of e-commerce adoption and really release the massive potential of on-line payment for banks, merchants and customers across the world."

Contact

■ Marina De Moerlouze Banksys

☎ +32 2 727 6822

✉ marina.demoerlouze@banksys.be

Microsoft Rolls Out Cards

Microsoft Corp. announced substantial roll-outs of multi-application Smart Cards based on the Microsoft Windows for Smart Cards operating system. New Windows Powered Smart Card-based applications and services include a network security and logon service developed for British Telecommunications (BT) by Authentic8 International, and a 500,000 Smart Card deployment for home cholesterol monitors developed by Lifestream Technologies in the United States.

Microsoft also highlighted growing support for Windows Powered Smart Cards from mobile network operators, with Swedish railway operator Banverket becoming Microsoft's first customer and Telefonica Moviles Espana committing to a joint trial of Windows for Smart Cards SIM Toolkit.

Lifestream, Banverket and BT will all utilise Smart Cards manufactured by SAGEM of France.

Contact

■ Judy Garziglia Miller/Shandwick

☎ +44 (0)20 7240 8666

✉ emeamsmobility@miller.shandwick.com

e-Ticketing for Frequent Flyers

Electronic ticketing terminals from Schlumberger are helping to speed Air France passengers through the check in process. The new system, demonstrated at Cartes, allows frequent flyer members travelling without baggage to simply identify themselves to the terminal at the airport to acknowledge receipt of their virtual ticket, and automatically check in.

Customers book their seat and pay for the ticket through the normal channels. On requesting an electronic ticket, they are asked for their Frequent Flyer or bank card identification details. At the airport, they identify themselves by inserting the card in the terminal, are checked in automatically, and the terminal dispenses their boarding card.

The new terminals are currently installed at major French airports and the airline estimates that within three years between 25 and 30% of its passengers will choose this option.

Contact

■ José de Vries Schlumberger

☎ +33 (0)1 47 46 44 67

✉ jdevries@montrouge.tt.slb.com

Contactless Disposable e-Ticket

A low cost paper ticket for use in contactless Smart Card ticketing in mass transit was demonstrated at Cartes by ASK, a pioneer in contactless technology.

Called the e-ticket, it contains a 256 bits EEPROM chip developed by ASK and manufactured by STMicroelectronics.

It is aimed at public transport companies using contactless Smart Cards for regular travellers (season tickets or concessionary fares) so that they can handle the remaining 5 to 10% of occasional travellers without having to invest and maintain dual technology equipment such as magnetic stripe or barcode readers.

The e-Ticket complies with ISO 14443 standard and operates on the same terminal as contactless Smart Cards. Designed for single trips it can be used for multi-modal connections or for instant entrance tickets to stadiums or museums.

Over 10,000 e-Tickets have been tested in the Metro in Paris.

Contact

- **Emeric d'Argoeuves** ASK
☎ +33 (0)4 97 21 40 00

Visa Cash CEPS Product

Cardbase Technologies launched its latest product that is VCEPS (Visa Cash Electronic Purse Specifications) compliant. The stored value product will enable card issuers to offer a secure, global, multi-currency, electronic purse system. It incorporates three Smart Card management software modules, CardBASE Issuer, CardBASE Acquirer and CardBASE Clearing and Settlement. The CardBASE system allows banks running Visa Cash programs to migrate from the current Visa Cash system to the globally interoperable VCEPS based Visa Cash system with no disruption to their cardholders or merchants.

CardBASE Technologies will participate in trials to demonstrate the interoperability of the VCEPS technology with other Common Electronic Purse Specifications (CEPS) compliant systems in both Europe and the USA in 2001.

Contact

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

Top ups Over the Internet

A new service launched in the UK by SmartPrepay allows holders of Smart Cards with a Mondex electronic purse to purchase airtime top ups for their mobile phone over the Internet. Students at Exeter, Nottingham, Aston, and York Universities are using the new top up service with the Smart Cards they already use on campus for a variety of purposes including photo identity and for gaining access to buildings, library and computing facilities.

SmartPrepay enables the students to use e-cash to top up their mobiles without having to find a retail outlet and, significantly, enables them to use the service whether or not they hold a credit card.

The users simply access the eTopup.com web site, and enter their phone details and required top up. To confirm their transaction, they insert their Smart Card into a reader attached to their PC, and the payment is securely transferred.

SmartPrepay supplies the Smart Card reader and Internet payment software to all new users, and is monitoring the take-up and usage of the service on behalf of the mobile operators, who are likely to run the service from their own Web sites.

Contact

- **SmartPrepay**
☎ +44 (0)8700 101312
✉ press@smartprepay.net

Hitachi Smart Card Controllers

Hitachi announced two new Smart Card controllers, the AE45C and the AE450, incorporating high memory and functional integration with a new 16-bit CPU core.

The AE45C features a 1024-bit co-processor and is targeted at high end banking applications and GSM SIM cards with PKI based functions. The AE450 is suitable for GSM SIM cards, particularly JavaCard and multi-application cards.

Both devices are made more secure with an Integrated Security Concept (ISC) including a Firewall Management Unit and a DES Engine.

Contact

- **Johnathon Colbourne** Hitachi Europe
☎ +44 (0)1628 585163
☎ +44 (0)1628 585160

Transparent Smart Payment Cards

A transparent Smart Card was shown by Schlumberger Test and Transactions who said it was designed to meet growing demand from banks and retailers worldwide for a new branding tool to help them differentiate their services in an increasingly competitive market.

Called Luxea, it offers the capabilities of the leading smart payment cards in a transparent body. Luxea can be tinted in a subtle range of colours to meet branding needs.

The option of a transparent card body is available for all Schlumberger smart financial cards, including the Palmera Visa Open Platform card, e-Galleon EMV card and Cyberflex cryptographic cards. All the cards can be used as normal in insertion readers such as POS, ATM and PC terminals.

Contact

- **Jose de Vries** Schlumberger
 ☎ +33 (0)1 47 46 44 67
 ✉ jdevries@montrouge.tt.slb.com

WfSC Toolkit Addition

The Smart Card News Multi-Application Toolkit now contains a WfSC, card supplied by SAGEM SA. This essential toolkit works in conjunction with the tutorials, found at the back of this newsletter, and takes the user through the process of loading, installing and using applications. The tutorials and toolkit are designed to give participants a clear understanding of working with multi-application Smart Cards such as JavaCard, MULTOS and WfSC.

For further details or to purchase a toolkit please contact Smart Card News Ltd.

Contact

- **Albert Andoh** Smart Card News Ltd
 ✉ www.smartcard.co.uk
 ✉ albert@smartcard.co.uk

MULTOS Version 5 Released

MAOSCO announced the release of MULTOS Version 5 providing the highest level of security. It is compatible with GSM SIM/3GPP USIM technology, provides a contactless interface and supports

the latest asymmetric cryptography standard to provide greater flexibility for PKI applications.

The addition of an ISO 14443 contactless interface is seen as offering opportunities for public transport and mass ticketing.

Contact

- **Catherine Spaul** Fishburn Hedges
 ☎ +44 (0)20 7544 3065
 ✉ catherine.spaul@fishburn-hedges.co.uk

MasterCard Smart Solutions

ACI Worldwide and MasterCard International announced the launch of MasterCard Smart Solutions, a scheme designed to help MasterCard's members around the world define the combination of technology and business applications they need to adopt Smart Card technology.

As the solution supplier for the program, ACI will provide the necessary software, integration services, project management, consultation and training to meet the unique business requirements found in different markets around the world.

"No two regions have the same market conditions or business cases for the adoption of Smart Card technology," said Mark Vipond, ACI's President.

"We will work with MasterCard to understand what its members need in the way of application support, platforms, and supporting infrastructure to launch Smart Card technology. We know customers want the flexibility to create something that makes them unique in their markets."

Art Kranzley, MasterCard's senior vice president, Electronic Commerce & Emerging Technologies, said: "Through the Smart Solutions program, MasterCard's members will have the ability to offer chip-enabled solutions that differentiate them in the marketplace."

Contact

- **Christina Costa** MasterCard
 ☎ +1 914 249 4606
 ✉ christina_costa@mastercard.com
- **Gene Hinkle** ACI Worldwide
 ☎ +1 402 390 8906
 ✉ hinkleg@tsainc.com

Italy Orders ID Smart Cards

Setec Oy is to supply 240,000 electronic ID cards to the Italian IPM Group. The deal is the biggest ever concerning ID Smart Cards enabling digital signature. The Smart Cards, which fulfill the requirements of the Italian law on digital signature, will be delivered by the beginning of 2001 and local distribution will take place immediately afterwards.

According to IPM Group, the acquirers are the Italian Post, the Italian Chamber of Commerce and region of Lombardia. The IPM Group develops and personalises GSM SIM cards, telecommunication solutions and security applications for certification authorities among others.

Senior Vice President Tom Ahlers of Setec's Government & Corporate division said: "Italian companies will now start the distribution of law conformant digital signature Smart Cards to support and enhance their business."

In addition to Italy, Setec provides electronic ID Smart Cards to Finland (Population Register Centre), Germany, Sweden, Norway, Denmark, Singapore, Thailand and other countries.

Contact

- **Tom Ahlers** Setec Oy
- ☎ +358 9 8941 4350
- 🌐 www.setec.fi

Italian ID Card Order for Drexler

Drexler Technology Corporation has won an order for 100,000 LaserCard optical memory cards which will be used as Smart/Optical cards in the Italian Electronic Identity Card (IEIC) national ID card program.

The Italian government indicates that the national services offered may include healthcare, voting, and social security, while municipal local services may include transportation and education.

The optical memory cards will contain a 1 megabyte, 16mm-wide optical memory stripe, and the cards will provide a designated space for a computer microchip to be inserted.

Shipments of these "microchip ready" optical memory cards are scheduled to begin this quarter for the initial phase of the IEIC program.

The Italian government will arrange to have microchips inserted into the optical memory cards, thereby creating a combination Smart Card and optical memory card. The optical stripe will be used to provide the high security electronic identity data, to record transaction process history and provide a data backup, to store large amounts of data, and to provide a visual embedded "ID hologram."

The microchip will be used to provide electronic identification, authentication, and communication security for network transactions. The combination card also can be used to provide digital signatures and a variety of e-services.

Contact

- **J P Protsik** Drexler Technology Corp.
- ☎ +1 650 969 7277

Oberthur Launches 4Most

Oberthur Card Systems has launched 4Most, a new service that uses the Internet as the primary means of delivering multiple applications on a Smart Card and giving card issuers and cardholders control over their cards via an easy-to-use interface.

4Most is a new Internet-centric model providing fully hosted card services capable of supporting every aspect of a Smart Card's life cycle. Supporting primarily Internet service delivery, 4Most can also deliver via GSM networks, mobile phones, PCs and interactive TV.

"Using a simple icon-driven user interface, card issuers and cardholders can select which applications are held on their Smart Card, choose to temporarily 'park' applications making space for others and check application details," said Oberthur Card Systems 4Most Director, Tim Reeve.

Credit management will be the first 4Most service. 4Most is designed to allow card issuers to manage all aspects of the card's cycle, including manufacturing, personalisation, activation, application downloads, customisation of applications, card status changes and expiration and re-issue. The service will be rolled out in early 2001 with a full service, including dynamic post issuance support, by Q3 2001.

Contact

- **Francine Dubois** Oberthur CS
- ☎ +1 310 884 7900
- 🌐 Francine.dubois@oberthurusa.com

New Ideas Competition

One year after the success of the SIMagine 2000 contest, which attracted 170 entrants, Bull Smart Cards & Terminals, Sun Microsystems, STMicroelectronics and Europay International have announced SIMagine 2001 sponsored by Motorola, Cegetel, Optimus, TIM (Telecom Italia Mobile) and Swisscom Mobile.

The aim is to uncover new ideas for innovative, powerful services for the mobile telephones of tomorrow. Specialists, application developers, students and non-specialists are invited to submit projects for innovative applications for GSM, GPRS, UMTS, 3G and other forms of mobile telephones.

The competition offers research grants worth up to £70,000 and the technical development resources needed to take the initial idea through to completion and real-world commercial outlets.

There will be prizes for all ten finalists, who will also retain the property rights to their project, while being offered the opportunity to work with Bull to finalise their application and, together, turn it into a commercial success.

The results will be announced on 22 February, 2001 at the GSM World Congress in Cannes, France.

Contact

- **Catherine Vincent** Bull
 - ☎ +33 (0)1 39 66 42 63
 - ✉ catherine.vincent@bull.net

Phone Top-up at Dixons

Dixons Stores Group with some 1,000 locations, including The Link, Dixons, Currys and PC World, is to provide an integrated point-of-sale top-up solution for pre-pay mobile phones at its retail outlets. The Group will use Omega Logic's E-Top-Up solution which captures the request for airtime via magnetic stripe cards which are being issued by network operators, starting with Vodafone, to their pre-pay customers this autumn.

Contact

- **Simon Murray** Omega Logic
 - ☎ +44 (0)118 956 5744
 - ✉ info@omegalogic.co.uk

Wireless Printing to Cell Phones

Texas Instruments and TROY XCD, a subsidiary of TROY Group, are collaborating to offer wireless printing capabilities in cellular phones equipped with TROY's Bluetooth printing software and TI's Bluetooth chipset solution.

Consumers will be able to print e-mails, stock trade confirmations, address book information and Web site research by wirelessly linking to any Bluetooth-enabled printer. TROY's Bluetooth printing software will be first offered to wireless OEMs as part of TI's GSM wireless solution.

Contact

- **Jeff Wender** Texas Instruments
 - ☎ +1 214 480 3355
 - ✉ jwender@ti.com
- **Patrick J Dirk** TROY Group
 - ☎ +1 949 250 3280

Bluefish Deal with Compta

SIM card and solutions provider Bluefish Technologies is to be represented in Portugal by Lisbon-based systems house Compta. The companies plan to target the Portuguese wireless market. With Bluefish's backing, Compta can now provide a complete localised SIM solution for network operations from SIM cards to value added service and content provision.

Contact

- **Scott Allen** Bluefish Technologies
 - ☎ +44 (0)118 965 3875
 - ✉ scott.allen@bluefish-tech.com
- **Pedro Patrã** Compta
 - ☎ +351 213 135551
 - ✉ pedro.patras@compta.pt

Orange/FT Select Nokia

Nokia has agreed with mobile operator Orange, recently acquired by France Telecom, to supply full 3G network solutions, including Nokia's mobility core and radio access technology, terminals and services. The three-year agreement will enable Orange to deliver high speed mobile Internet services based on open platforms.

Contact

- **Communications Dept** Nokia Networks
 - ☎ + 358 9 5113 8193
 - ✉ nokia.networks@nokia.com

Bull SIM ROCK 64K Card for GSM

Bull announced the SIM ROCK card with 64 K of memory at the Cartes show in Paris last month. The card is based on the Java platform and complies with the WIM standard, increasing secure Internet access from mobile phones.

In a highly competitive market, Bull says the large memory capacity of the new card will enable mobile telephone operators to offer new services to their subscribers, such as a sophisticated e-mail facility, access to image and secure payment applications.

Contact

- **Catherine Vincent** Bull
- ☎ +33 (0)1 39 66 42 63
- ✉ catherine.vincent@bull.net

Bull Introduces ZePlatform

Bull Smart Cards & Terminals introduced a software architecture called ZePlatform for a new generation of Smart Cards which it claims will offer six times more power and performance than today's offering, plus even more security.

The first ZePlatform-based cards, implemented on 32-bit chips, will be released in 2001 and offered to mobile phone operators. Bull says contracts have already been signed for cards developed with this technology.

Contact

- **Catherine Vincent** Bull
- ☎ +33 (0)1 39 66 42 63
- ✉ catherine.vincent@bull.net

BTG Buys SIM Card Patents

BTG, a leader in commercialising technologies, has acquired a portfolio of Smart Card patents that enable SIM toolkit applications such as SMS (short message services) in GSM networks from Celltrace Communications.

According to BTG, the patents form a vital link to the delivery of mobile commerce. In particular, they can transform a whole array of devices, such as mobile telephones, personal digital assistants,

personal computers, automatic teller machines and point of sale machines into retail outlets, enabling the subscriber to use these devices to purchase goods, services and enhanced offerings.

Contact

- **Daphne Luchtenberg** BTG
- ☎ +44 (0)20 7575 1682
- ✉ Daphne.Luchtenberg@btgplc.com

UK £300m Network Expansion

Nokia and BT Cellnet, the UK's second largest digital mobile operator, have signed a deal valued at more than £300 million for the supply of a range of Nokia GSM base stations, related equipment and services. The agreement is effective immediately and will run until March 2003.

Contact

- **Communications Dept** Nokia Networks
- ☎ +358 9 5113 8193
- ✉ nokia.networks@nokia.com
- **BT Cellnet Press Office**
- ☎ +44 (0)1753 565656

Boots and Egg Co-brand on Card

Schlumberger announced that it is delivering an end-to-end multi-application Smart Card solution for UK internet banking pioneer Egg and its partner, Boots the Chemist.

Schlumberger is the sole supplier of the Smart Cards for the new "Advantage Card Powered by Egg," a co-branded, combined credit and loyalty card, and is also handling the whole supply chain - including data integration, personalisation and delivery services - required to turn an Internet request into a card in the customer's hand.

The new combined payment and loyalty cards are based on the Schlumberger e-Galleon EMV Smart Card, certified by Europay, MasterCard and Visa.

Contact

- **Emmanuelle Saby** Schlumberger
- ☎ +33 (0)1 47 46 55 42
- ✉ saby@montrouge.tt.slb.com

ActivCard Wins DoD Contract

The US Defense Manpower Data Center (DMDC) is to roll-out 4.3 million Common Access Smart Card-based ID badges throughout the US Department of Defense (DoD) using ActivCard's digital identity management software.

DMDC has embedded ActivCard digital identity infrastructure software into 1,300 existing Real-Time Automated Personnel Identification System (RAPIDS) workstations which are installed in about 900 locations around the world, including the Pentagon, military bases, aircraft carriers and other sites.

The software provides simultaneous and secure connections to two independently managed systems from which user applications and data are acquired. One system is the Defense Enrollment Eligibility Reporting Systems (DEERS), containing information on over 23 million people. The other is the Defense Information Systems Agency's (DISA) PKI Certificate Management System.

The result is a system that is deployed worldwide to issue CAC ID badges to all DoD employees and contractors. The new badges will support a wide range of functionality from building access to financial services, digital identity for access to government services and information containing personnel information and processing credentials that enable digital signature, encryption and strong user authentication.

Contact

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

ShopSafe Service

Orbiscom has announced that MBNA, the world's largest independent credit card issuer with over 45 million cardholders, will offer its O-power software technology to its US customer base by autumn this year for secure shopping on-line.

The MBNA ShopSafeSM service generates a substitute Controlled Payment Number (CPN's) when customers purchase online. The customer's actual credit card number is never revealed and never travels on the Internet, eliminating any threat that the credit card account could be compromised either during a transaction or while residing in an e-merchant database.

MBNA cardholders will be able to access the O-power application from the bank's Web site. Each time they make a credit card purchase, a unique 16-digit number, valid for one transaction, will be generated by the O-power technology. The number will be valid at all Internet retailers who currently accept credit cards.

This technology was developed to address the concern that credit card number theft is a primary barrier to online shopping. The MBNA ShopSafe service will be available to MBNA customers through their MasterCard and Visa programs.

Graham O'Donnell, Orbiscom's Group CEO, said: "When we created this technology we believed that opening up global online business needed customer control of payments. Endorsement of our products by a market leader of the scale and quality of MBNA confirms our vision."

Contact

- **Patrick Keane** Orbiscom
- ☎ +353 1 294 5111
- ✉ Press@orbiscom.com

VASCO Launches Digipass 800

VASCO, a provider of enterprise-wide security solutions, has introduced the Digipass 800, a secure, intelligent, universal platform that extends strong authentication and digital signature capabilities to all market-leading Smart Cards. As a hand-held and platform-independent device, the Digipass 800 functions as a fully portable "security portal" that eliminates the need for a Smart Card reader and software for any Smart Card holder.

Eddy De Legher, Product Manager for VASCO, said: "Users simply insert their existing Smart Card into their Digipass 800 and enter their PIN into the Digipass 800, and it is ready for use from any platform, without the need for any other Smart Card reader or client software. Users thus obtain all the advantages of a Smart Card, with the added benefits of full portability and the proven security of VASCO's Digipass technology."

Contact

- **Amber Meikle** EML
- ☎ +44 (0)20 8408 8000
- ✉ amberm@eml.com

SmartXA 64K Card from Philips

Philips Semiconductors has developed a second generation of its high-end Smart Card micro-controller SmartXA to power future developments in mobile communications and secure network access.

The new 16-bit architecture has been optimised to support multiple applications, and with its high levels of security and support for public key cryptography, it also provides a secure platform for banking and government applications. Smart XA has enhanced memory up to 64K EEPROM, 128K ROM and 5K RAM.

Contact

- **Elisabeth Doerner** Philips
 - ☎ +43 3124 299760
 - ✉ Elisabeth.Doerner@philips.com

Managing Multi-application Cards

GlobalPlatform and MAOSCO have announced a single technical approach for issuers who need to manage multi-application Smart Cards, regardless of the card operating platform.

This solution will help to streamline critical processes in Smart Card lifecycle management including personalisation and post-issuance maintenance.

GlobalPlatform, the cross industry organisation promoting a standardised technical framework, and MAOSCO, the industry consortium managing the MULTOS Smart Card operating platform, have worked together to produce a common identification process that will enable Smart Card systems to identify the on-card technology, whether it is MULTOS or Open Platform, before completing the platform-specific command.

It consists of two standard system commands using the International Standards Organisation (ISO) construction to send and receive data from a card.

The solution is scheduled to be part of the next release of both MAOSCO and GlobalPlatform card specifications.

Contact

- **Laura White** Sinclair Mason
 - ☎ +44 (0)207 7470 8737
 - ✉ lauraw@sinclairmason.com

EI2 and Sierra Team

Electronic Identification (EI2), developer of Smart ID Card technology, is partnering with Sierra Atlantic, a pioneer of application networks, to build a next-generation, secure Smart Card application.

The EI2 Smart ID Card, through its patented compression technology, is said to eliminate fraud and forgery while facilitating rapid and easy movement across borders and through security check points.

“Sierra Atlantic’s i3-Frameworks is central to our strategy to connect industry-leading applications through pre-built solutions across multiple customer touch points,” said Terry Kirby, Chairman and CEO, Electronic Identification.

“The Smart ID Card holds the digital certificate of authenticity. We are partnering with Electronic Identification to offer an innovative solution to e-identification without re-engineering in-place infrastructure,” said Sanjay Bulchandani, Vice President, e-Business innovation, Sierra Atlantic.

Contact

- **David Crawford** Ardent Communications
 - ☎ +1 604 684 6906
 - ✉ +1 604 689 2669

Defender SmartCard Gold

AXENT Technologies, which recently entered into a definitive agreement with Symantec Corporation to be acquired, and ActivCard, plan to expand their long-term relationship to provide customers with flexible and versatile authentication through the use of Smart Card technology.

By combining the strengths of AXENT’s Defender 4.0 two-factor authentication software, ActivCard Gold software, and Smart Card technology into Defender SmartCard Gold, the companies say that customers will have an integrated and convenient solution to a wide range of security issues facing many e-business customers.

Contact

- **Cynthia Smith** AXENT Technologies
 - ☎ +1 301 258 5043
 - ✉ info@axent.com
- **Rod Stuhlmuller** ActivCard
 - ☎ +1 510 574 -0100
 - ✉ rstuhlmuller@activcard.com

mysmart Mouse Pad Deals

mysmart.com has announced that its mysmart Mouse Pad System is now available at Best Buy, the largest consumer electronics retailer in the US. The addition of Best Buy's 401 stores enhances mysmart.com's current nationwide marketing and sales efforts by doubling the number of venues across the country where the product can be purchased.

The mysmart Mouse Pad System combines one-button Internet navigation with Smart Card technology, which enables consumers to interact and transact over the Internet with greater ease and security. The pad features 20 buttons that take users directly to pre-set and user-selected Internet sites and services.

The device is operational by inserting a key card containing Smart Card technology (a power computer chip) into any mysmart.com pad-equipped computer. The Smart Card technology allows users to store and transport their Web site preferences, passwords and personal information in a more secure environment, expediting Web surfing and e-commerce transactions.

The mysmart Mouse Pad System offered through Best Buy has a pre-programmed button to Best Buy's Web site, www.bestbuy.com, which provides a direct connection to Best Buy's online store. The product retails for \$19.99.

The announcement followed the signing of a joint marketing and distribution agreement with eFinance provider, Digital Insight which provides a variety of Internet services, including Internet banking and online cash management to more than 1,000 financial institutions.

Under the terms of the deal, mysmart.com will produce private-labeled mysmart Mouse Pads, which include a Smart Card and Smart Card reader, for Digital Insight's financial institution clients. The financial institutions will then have the option of distributing pads to their customers as part of their sales and marketing programs.

mysmart.com also announced that Welcom Real-time, provider of marketing software for smart payment devices, will provide e-Coupon and loyalty technology for the mysmart Mouse Pad System. The two companies will co-market the mysmart pad and the Smart Card-based eXtended Loyalty System in the United States. Welcome will also distribute the mysmart pad in France and other selected European markets.

Contact

- **Sly Helleis** Digital Insight
☎ +1 888 344 4674, ext. 281
✉ sly.helleis@digitalinsight.com
- **Marjorie Banès** Welcome Real-time
☎ +33 (0)4 42 97 58 62
✉ m.banes@welcome-rt.com
- **Tom Evans** MS&L for mysmart
☎ +1 805 230 8208
✉ tevans@msltech.com

Hitachi and 1st eTech Team

Hitachi America and 1st eTech are to collaborate on Smart Card technology and systems solutions. 1st eTech will employ Hitachi's Smart Card technology in a marketing demonstration at the upcoming COMDEX 2000 international technology show in Las Vegas, Nevada, 13-17 November using the Mondex electronic cash Smart Card application.

1st eTech plans to implement a field trial in the Las Vegas, Nevada area in 2001. The Smart Card applications will be on the MULTOS platform and may include electronic cash and Hitachi's loyalty program "Multi-Pockets." The project will include supplying many trade merchants, including department, gas and grocery stores, with readers. If the field test is successful, 1st eTech will expand the Hitachi Smart Card solution to selected markets.

Contact

- **Gerard F Corbett** Hitachi America
☎ +1 650 244 7900
✉ Gerard.Corbett@hal.hitachi.com
- **Tami Daniels** 1st eTech
☎ +1 435 258 1098
✉ tdaniels@1stetech.com

Datacard Ships 600th Module

Datacard Group celebrated the shipment of the its 600th Smart Card personalisation module at Cartes. The module, which can be integrated with the Datacard 9000 or 7000 Series card issuance systems, is used for a variety of applications, including personalisation of financial, healthcare, transit, loyalty, telecommunications, identity and Internet transaction Smart Cards.

Contact

- **Kevin Gillick** Datacard
☎ +1 612 988 2846
✉ kevin_gillick@datacard.com

Datakey Cards for the FDIC

Datakey has announced that the Federal Deposit Insurance Corporation (FDIC) is issuing Datakey Smart Cards to around 3,000 employees who will use them as ID cards loaded with digital credentials for online communications and user authentication as well as for building access.

The FDIC insures deposits in virtually all US banks. To provide a secure, trusted infrastructure for private online communications and user authentication, it selected PKI technology from Entrust Technologies and Datakey Smart Cards to provide portable, two-factor protection for digital credentials, allowing remote employees to use their digital credentials wherever they carry their cards.

Some users will receive Smart Cards with photo IDs while others will have additional proximity technology for building access.

Contact

 www.datakey.com

Ericsson Wireless Wallet

Another wallet on display was the Ericsson Wireless Wallet which combines Bluetooth, WAP and Smart Card technology. The wallet can hold several cards and connect them to the Internet through a mobile phone.


The Ericsson concept uses Bluetooth to connect to other close-range devices such as mobile phones, PDAs and laptops. The wallet also contains a WAP server and a Java Virtual Machine.

Users, for example, can download cash on to their card without having to physically find a cash point, book theatre tickets on the move, make purchases on the Internet by entering the Smart Card they want to use.

A Software Developers Kit (SDK) that runs on Windows NT is available. It comes with a Wireless Wallet which can be attached to the communications port of a PC.

Contact

■ **Philip Nyströmer** Ericsson Radio Systems

 +46 8 757 3009

 philip.nystromer@era.ericsson.se

People on the Move

AVT Corporation, provider of business-to-business communications solutions, has appointed **David P Anastasi** as President, CEO and Director. He joins AVT from Conversa, a leader in speech technologies for both mobile and traditional Internet devices, where he was President and CEO. He was one of the original founders, as well as President and CEO, of the Global Chipcard Alliance (GCA), the global Smart Card Consortium.

Dione, manufacturers of standalone terminals, has appointed **George White** as Head of Overseas Business Development. Previously he gained sales and management experience with Maconomy, Scala International and Checkline.

Dione has also appointed **Amanda Craft** as Business Development Manager for its new XTill which combines an electronic cash register with a payment terminal. She joins from InterAct.

Lifestream Technologies, developer of the first "at-home" cholesterol testing monitor with embedded Smart Card reader, has appointed **Brian K Packard** as Vice President of Business Development. Previously he was business development manager of a new consumer healthcare initiative for Agilent Technologies.

Lifestream also appointed **Paul Beatty** as Vice President of Consumer Sales. Previously he was an executive with Optiva Corporation.

New Keyboards from Cherry

Cherry was showing its latest keyboards, including the G83-6716 with the Gemplus Gem PC 410 Smart card reader.

Also on show was the 12000 keyboard with an integrated fingerprint sensor as well as an optional Smart Card reader. The user's fingerprints are stored securely on the user's personal Smart Card.

Contact

■ **Patrick Ceytere** Cherry

 patrick.ceytere@cherry.fr

Bluetooth First for Infineon

Infineon Technologies has announced that its Blue Moon 1 chipset has received Bluetooth qualification and will be included on the Bluetooth Qualified Product List (BQPL).

The company says it is the first semiconductor manufacturer to receive Bluetooth qualification for a complete system solution including the baseband integrated circuit (IC), the radio frequency transceiver as well as the link manager (LM) and host controller interface (HCI) firmware. The solution supports both voice and data.

Contact

- **Günter Gaugler** Infineon
☎ +49 89 234 28481
✉ guenter.gaugler@infineon.com

e-Ticketing Orders for Intellect

Intellect has secured two major orders in Austria and The Netherlands for electronic ticketing in public transport.

The Dutch railways, NS Reizigers (NSR), will install 800 - 1000 electronic ticketing systems in railway stations. Working with Ascom and CCV (The Netherlands), Intellect has adapted its BIM20XO terminals to enable passengers to buy tickets using debit, credit and electronic purse transactions.

Austrian railways, ÖBB Österreichischer BundesBahn, is to install about 800 terminals in railway stations and also on board trains to allow passengers to pay for their tickets electronically. About 20 per cent of the new ticketing systems will be installed on trains and the remainder will be located at about 700 railway stations.

The terminals are linked to host systems to perform electronic transactions over the EFT network. On trains, the terminals use GSM wireless links.

This project involves card issuer Europay Austria and Ascom which is integrating Intellect's secure online payments technology into its ticket vending systems.

Contact

- **Francis De Vrieze** Intellect
☎ +32 2 722 8803
✉ Francis.devrieze@intellect.be

Europay Wallet for WAP

Europay International has announced the launch of Element Wallet, the first SET (Secure Electronic Transaction), server-based wallet for WAP mobile phones.

According to Europay, Member banks that offer the Element Wallets for WAP will benefit from an increase in the number of transactions with the new revenue channel.

Cardholders simply enter their personal profiles once onto the wallet for the convenience of "one-click" shopping on the Internet.

Europay designed the specifications and features of the wallet and e-commerce solutions developer Element developed the software.

Contact

- **Charlotte O'Connor** Europay
☎ +32 2 352 5647
✉ coc@europay.com
- **Ronny Leplae** Element
☎ +32 51 248742
✉ ronny@element.be

New Card Reader for ABN AMRO

A cordless Smart Card reader a little larger than a bank card has been developed by CPS Europe for Dutch bank ABN AMRO and is used in a challenge and response security system.

The reader is easy to use. The customer places his or her chip card in the Smart Card reader and enters the PIN code. The bank transmits a combination of numbers to the customer via the phone or Internet which the customer enters into the Smart Card reader. A new number is calculated and shown in the display. When this code is entered, via the phone or computer, the financial transaction is protected.

The new reader can be used in combination with a PC, laptop, standard phone or mobile phone.

Gerard Geurtjens, Project Manager at ABN AMRO, said the reader would make home banking simpler and more secure and give Internet banking a boost.

Contact

- **Mrs Sandra van en Hof**
☎ +31 73 684 8499
✉ s.v.d.hof@pijnenburg.nl

216

216

216

216

Citrus e-Cash and Loyalty Scheme

A new multi-application Smart Card combining electronic cash and loyalty rewards is being used by shoppers at Ireland's largest out-of-town shopping centre, the Blanchardstown Centre in Dublin.

Behind the Citrus card, produced by ORGA Card Systems in collaboration with Mondex International and using the MULTOS operating system, is National Australia Group, parent company of National Irish Bank, in association with the fund-raising organisation Rehab.

Shoppers can use the card instead of cash to purchase items and at the same time earn a point for every Pound spent using Mondex. Each point is equivalent to an entry into a monthly draw for cash prizes. Proceeds from the draw entry fees go to Rehab's work in training, employing and caring for people with disabilities.

Cardholders can load electronic cash directly from their bank account onto their Smart Card either over the telephone or by using a homeload device. There are also a number of cashless ATM's located around the shopping centre.

So far 60 per cent of the centre's retailers have signed up to the scheme, including Boots, Bewleys, Easons and Dunnes, Ireland's leading department store. It is expected that 80 per cent of the retailers will join the scheme which represents an IR£6 million investment by the National Australia Group.

Contact

- **Peter Moran** ORGA Card Systems UK
- ☎ +44 (0)118 377 6000
- ✉ +44 (0)118 377 6002

More Members for SCF

The Smart Card Forum in the US has added 12 new members to the organisation. They are: CyberSafe, Entrust Technologies, Federal Reserve Bank of Chicago, Hitachi America, Jsource, mysmart.com, Proton World, Providian Financial, Supercom, Symbol Technologies, Thinkpulse Inc and TOWITOKO AG/Zone Development.

Contact

- **Donna Farmer** SCF
- ☎ +1 212 837 7713
- ✉ dfarmer@smartcardforum.org

Leapfrog and Advantor Partner

Leapfrog Smart Products and Advantor Corporation are collaborating to integrate Leapfrog's Smart Card technology into Advantor's existing product line. Leapfrog's core software will be embedded into Advantor's security systems and will provide biometric Smart Card readers and compatible Smart Card readers.

Advantor says it will utilise a combination of Leapfrog's technologies to provide protection over physical and information systems.

Contact

- **Dale Grogan** Leapfrog Smart Products
- ☎ +1 407 838 0400
- ✉ daleg@leapfrog-smart.com

ST Unveiled Two New Chips

STMicroelectronics unveiled two chips that extend its ST19 family of high-end 8-bit microcontrollers (MCUs).

The first is the ST19XG34. With 70K bytes of user ROM, 2K bytes of RAM and 34K bytes of EEPROM, the ST19XG34 is designed primarily for the high-end mobile market.

The second, complementary MCU, the ST19XL34, has 94K bytes of user ROM, 4K bytes of RAM, 34K bytes of EEPROM and a dedicated 1,088-bit cryptocontroller. With its large memory capacity and advanced cryptographic performance, this product addresses the access control, identity and secure transaction requirements of high-end markets.

Contact

- **Richard Stockdill** STMicroelectronics
- ☎ +33 (0)4 50 40 25 58
- ✉ richard.stockdill@st.com

Keyware Opens Singapore Office

Keyware, a provider of biometric authentication solutions, has opened a Singapore office to meet increased demand for authentication solutions on Smart Cards in the Asian market. The company's existing customers include Sony in Japan, Micro-circuit in Singapore, Bank Negara and Public Bank in Malaysia and Petroleum Authorities of Thailand.

Contact

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

Briefing Notes on Multi-Application Smart Cards – Part 10

The Applet Development Lifecycle

This month we will look at the applet development lifecycle. The term cardlet is used to describe the program that is eventually loaded and executed on a Java enabled Smart Card. The process of developing a cardlet is as follows:

- Write the Java source code applet using any standard Java tool using the Java Card API.
- Compile the Java source using any standard Java compiler into a class file.
- Process the class file to produce the cardlet package (CAP file) which will be loaded onto the card
- Load the CAP file onto a card
- Instantiate & initialise the application

Writing the Java application

The first two phases mentioned above are the same as developing a normal Java application, which would be targeted at desktop computers. Sun Microsystems, the creators of Java, have many different flavours of Java to account for different platform capabilities. As you would imagine, the facilities provided by Java Card are quite modest when compared with other flavours of Java, so the developer must observe certain guidelines.

Amongst these are:

- Reuse variables where possible
- Use as few arguments as possible
- Use primitive data types, and use the ones that consume the least amount of memory.

The Java Card included in the kit has the following parameters, as way of illustration. Total cardlet size is limited to 13.5k, with cardlets being stored in EEPROM. If you allocate too many local variables or call deeply nested methods the stack will be exhausted, generating a StackOutOfRangeException (0x623D) at runtime. There is little you can do to control the stack, so you must observe the standard guidelines.

The heap is allocated at load time, and is a reserved area for class instances, arrays and global variables. If you use more heap than is available you will

generate a OutOfMemoryException(0x6239). If you encounter this kind of error you can reload the cardlet specifying more memory to reserve for it, but this will reduce memory available for other applications.

When developing Java Card applets the developer uses the Java Card API (application provider interface). This is a set of classes & methods that the Java Card provides. These provide facilities such as cryptography and file manipulation. At the time of writing the latest version is 2.1.1, but many current Java Cards implement either 2.0 or 2.1

The applet must extend the base class `javacard.framework.Applet`. This gives the Smart Card a known starting point when executing the application.

Compile the Java source

This step is identical to compiling a normal Java source file. Any compiler that generates standard class files can be used, and the `javac` program that comes with the freely available Sun Java SDK (software development kit) is ideal for this. The end result of this step is the class file.

Process the class file

This is the point at which the development process deviates from standard Java development, which would have finished with the previous step. At present Java Cards cannot execute class files as they are generated by the compiler; they need to be converted to a form that can be.

The Java Card 2.1 API specifies a uniform file format that can be used by the card, which they name CAP (cardlet package). Previous APIs didn't specify this, and so the manufacturers provided their own proprietary tools. This meant that you would have to create as many processed files as you had differing cards. The card included in the kit, for example, uses Schlumbergers bin file format, which is generated by their `mksolo` utility.

Now a file that can be loaded onto the card is available.

Load the cardlet onto the card

Up to this point the developer doesn't need a card at all, and one could take the view that development has now finished. The steps from now on are the

deployment of the cardlet, and now either a card or a simulator is needed.

The Java Card API itself does not specify how a card will handle the loading and subsequent management of cardlets, which means the manufacturers had to create their own schemes. However, it is a recent trend for Java Card compliant cards to also conform to the Visa Open Platform (VOP) standard, which does cover this process, and allows applications to be loaded in a very secure manner.

The Cyberflex card included in the kit is not VOP compliant, and uses Schlumbergers own mechanism for loading. The first step is to prove to the card that you have permission to load a program. This is done by a shared secret mechanism, and once this has been completed the card can be manipulated until it is reset.

Now the image itself can be loaded. You must specify a file ID to store the image under, and the image must be digitally signed using a key that the card knows about. By default this is a triple DES key, and ensures the integrity of the data. The image is then split into blocks and each block is sent to the card in turn. Once the last block is loaded the card checks the signature, and if all is well it is stored on the card using the file ID you requested.

Instantiating the cardlet

The image of the application has now been loaded, but to actually use the application you must create an instance of it. This means you could have several instances of the same program, which could be useful for generic applications such as loyalty.

When creating an instance you must supply the AID (application id) and other parameters such as memory to reserve for the heap. This command is also proprietary to the particular Javacard manufacturer. The AID is used to select the application, and so must be known by all the software that will use it in the future.

When an instance is created the Javacard run time environment will call the program to set up the initial data and values, and it is then in a state to be used for real. It is possible to instantiate an instance for as long as the image has been loaded.

To be continued - a simple Javacard applet program will follow next month.

Jon Barber



Purchase our Subscriptions and Products

- SCN's Newsletter - UK : £375
- SCN's Newsletter - International : £395 / €6646 / \$572 [includes free News On Line access and Directory CD]
 - Printed Papers PDF (via e-mail)
 - Both Formats £450 / €756 / \$652
 - Shipping : Inclusive

- SCN's News On Line service via e-mail
 - Subscriber : free subscription for one year
 - Non-subscriber : £100 per person / €168 / \$145
 - One week trial : free of charge
- [If you wish to purchase a multiple user licence please contact Smart Card News Ltd for current rates.]

Here is my e-mail address:

- SCN's Information Datasphere [www.smartcard.co.uk]
- One year membership : £495 / €832 / \$717

User Name: _____

Password: _____

- SCN's Multi Application Toolkit
 - Subscriber: £250 per course / €420 / \$362
 - Non-Subscriber: £550 per course / €924 / \$797
 - Shipping : Inclusive
 - [+ VAT where applicable]

These products may be purchased directly by visiting our on line store: <http://store.smartcard.co.uk>

Name _____

Position _____

Company _____

Address _____

Telephone _____

Facsimile _____

e-mail _____

- Please invoice my company
- Cheque enclosed
- Visa/Mastercard/Eurocard/Access/Amex

Card No.
Expiry Date
Signature

Please return to:

Smart Card News Ltd. PO BOX 1383, Rottingdean,
Brighton, East Sussex BN2 8WX United Kingdom

or facsimile : + 44 (0) 1273 516518

or e-mail : scn@pavilion.co.uk

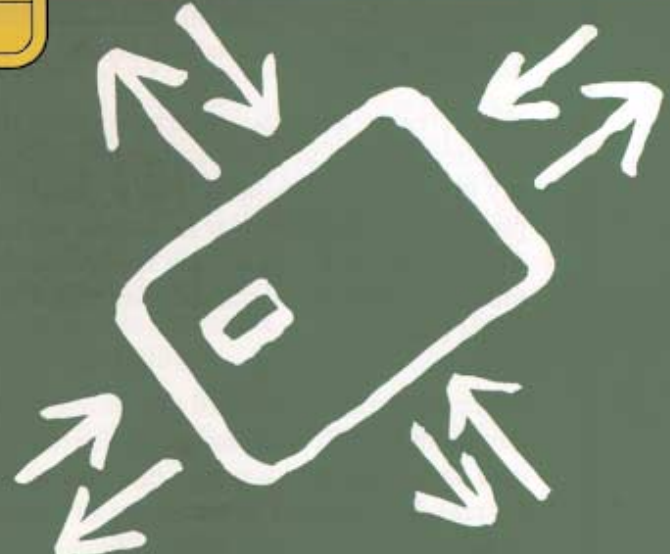
Smart Card News carries an unconditional refund guarantee. Should you wish to cancel your subscription at any time then we will refund all unmailed issues.

ORGA – Smart Solutions for the Smart Card Market.

The smart card industry is continuing its rapid growth. To be a leading supplier within the smart card market you have to be a truly international organisation. ORGA Card Systems, a founder of the smart card industry, offers the complete product range to a number of markets including; GSM, Communications, Banking, Retail, Loyalty, Health, Leisure, ID and Access Control.

To be at the forefront of these smart card markets talk to ORGA.

For more information visit us at: www.orga.co.uk



ORGA Card Systems (UK) Ltd.

255 Wharfedale Road,
Winnersh Triangle
Wokingham
Berkshire RG41 5TP
Phone: +44 (0) 118 377 6000
Fax: +44 (0) 118 377 6001
Email: info@orga.com

ORGA Kartensysteme GmbH

International Headquarters
Am Hoppenhof 33
33104 Paderborn
Germany
Phone: +49 5251 889 0
Fax: +49 5251 889 1889
Email: info@orga.com