

# Customer Loyalty Card Launched by La Poste

La Poste, the French Post Office, has launched a unique customer loyalty bank card, called Adésio, to attract new customers, and encourage those who have a La Poste account but also have a card with another bank to use more Post Office products and services.

Adésio cardholders will be rewarded with points each time they use a La Poste ATM to withdraw money or use the various Post Office services.

Since it was launched on 6 May, some 50,000 cards have been issued and La Poste plans to have 300,000 cardholder customers within a year and targets one million cardholders in year three, making it a serious challenger to the French banks.

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## Smart Card News

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## La Poste Loyalty Card

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France has the largest Smart Card-based banking

system operating anywhere in the world with over 22 million cards issued. Known as "CB" cards - Cartes Bancaires - they can be used anywhere in France, and in Monaco and French overseas territories for ATM usage and payment at all "CB" affiliated merchants.

The Adésio card carries the "CB" logo and is backed by Eurocard and MasterCard enabling it to be used throughout Europe and the MasterCard outlets worldwide.

Customers pay a fee for a bank card in France and a similar charge is made for the Adésio card - 200 francs when purchases are deducted at bank debit, and 240 francs to obtain 30 days credit.

Frequent users should be able to collect enough points to recover the fee for the card and take advantage of various services which can be paid for with points making them free or available at reduced prices. One point is added to the card for every 100 francs of business transacted at La Poste, for example, paying money into an account or withdrawing it.

The card is available at all of the 17,000 post offices in France and by mail order as part of a promotional campaign.

The cards are being supplied by three French Smart Card manufacturers - CP8 Transac, Gemplus and Solaic.

France, despite its pioneering commitment to Smart Cards is one of the few major European countries without a national electronic purse scheme. Talks between the banks and La Poste failed to reach agreement and La Poste decided to go ahead on its own. A consortium of CP8/Philips developed the operating systems for the electronic purse and the system security modules.

However, La Poste has shelved its plans to launch a pilot scheme this year although it could easily add a purse function to the Adésio card in the future.

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## **Europay Demos CLIP Purse**

Europay International formally introduced its multi-currency electronic purse system, CLIP, to members at its biennial congress in Seville, Spain, in early June and announced that banks in the According to Europay, the system incorporates the latest security technology and advanced performance capabilities such as terminal interpreter technology, allowing several software applications to share the terminal independently

Czech Republic are to launch CLIP as the country's national electronic purse and that Italy will integrate CLIP into the MiniPay electronic purse.

Louis-Noël Joly, Europay's new Director and CEO, said they were certain that the CLIP system would evolve quickly, first as a domestic payment option and then internationally. He added:

"CLIP can also serve as the basis for the international migration of the many domestic purses in Europe."

Europay says it will cost Member banks one billion ECU to convert the more than 131 million Europay-brand card base from existing magnetic stripe to chip cards over a five-year period.

CLIP is an electronic purse product which can store monetary value in multiple currencies (up to 10) and can be loaded as a stand alone purse card or in combination with an existing debit or credit card. It is designed to function as a domestic and/or international purse scheme.

In addition to being loadable at compatible on-line devices such as ATMs, telephones and PCs, CLIP has the unique ability to advise the cardholder that the purse balance has fallen to a certain level during a transaction and then gives the cardholder the option of reloading the card on the spot at on-line point of sale terminals.

It is designed for low value purchases up to about 25 ECU at vending machines, payphones, and for public transport and fast food, etc.

Those taking part in the three-day conference were issued with a reloadable Smart Card protected by a PIN number and could use it to make purchases at the congress centre's boutiques and service areas.

The demonstration used Gemplus Smart Cards, Dassault A.T. Freesia electronic payment terminals and Dublin, Ireland-based Card Services International (CSI) back-office servers. Freesia terminals, using a specific software, are also used at the Europay charging stations for reloading cards.

and keep pace with hardware upgrades; and the public key algorithm RSA is used to authenticate the transaction.

## Czech Republic's first national purse

Three leading Czech banks, Komerční banka, Investiční a Poštovní banka and Agrobanka, are to launch CLIP as the Czech Republic's first national, domestic electronic purse scheme.

A CLIP pilot programme will start in the first quarter of 1997 and will include 10,000 cards and 600 terminals. National roll-out is scheduled by the end of 1997 and will be followed by the addition of international functionality and integration onto existing debit cards.

The co-operation also includes an initiative between Investiční a Poštovní banka and Europay which will guarantee compatibility for the conversion of the bank's two million-plus planned chip cards for use at over 3,000 Post Office branches.

František Hlavac, Europay Board Member for the Czech Republic said the initiative will enable the Czech banks to introduce a new technology on the national level while ensuring compatibility with international standards, and guaranteeing a cost-effective future migration to international usage that benefits bankers, retailers and consumers alike.

## CLIP MINI PAY for Italy

SSB (Società per I Servizi Bancari), which represents 80% of the Italian banking community payment processing business, will integrate CLIP into MINI PAY, the national electronic purse scheme, in summer 1997.

MINI PAY is being launched in Turin this month with 150,000 8K Bytes Smart Cards from CP8 Transac and 5,000 terminals from Olivetti. The project includes a retailer loyalty programme which can be marketed across Europe, and a hand-held card reader for consumers known as TSP.

Renzo Vanetti, SSB's Director, said: "The integration of CLIP into MINI PAY paves the way for an efficient migration to international usage."

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## Spain Wins Smart Card Award

The Spanish Social Security Card project (Tarjeta de la Seguridad Social Española - TASS) won the Outstanding Smart Card Application Award for

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## London Transport Invites Tenders

Four consortia have been invited to tender for London Transport's PRESTIGE (Procurement of Revenue services) ticketing project for buses and the Underground. The scheme is likely to use Smart Card technology and a preferred supplier is expected to be nominated by the end of 1996.

The consortia, which have pre-qualified, are:

- \* Transys - a consortium of EDS, WCL, ICL, WS Atkins and Wayfarer Transit Systems.
- \* A consortium of Olivetti UK, Andersen Consulting, SBC Warburg, Citibank International, National Express, Ascom Hasler, Ove Arup and KPMG Corporate Finance.
- \* A consortium of British Telecom Syntegra, AES ProData, Hoskyns, Gemplus, Cegelec CGA and Mitsubishi Corporation.
- \* A consortium of IBM, Logica, Thorn Transit Systems International and BR Business Systems.

London Transport is seeking a ticketing system that is quick, convenient, accessible and increases the confidence of potential customers. The technology is also required to improve information about customers and their travel patterns while reducing ticket fraud and having the flexibility to adapt fares and ticketing policies as circumstances change.

London Transport has confirmed that the project is likely to use Smart Card technology, which is more secure than magnetic stripe cards and can store and process a much greater volume of information and can be read without being removed from a wallet.

1996 at the CardTech/SecurTech Conference in the United States last month.

Jesús Merino Salmerón, Director of the General Treasury of Social Security, accepted the award on

behalf of the agency.

The award recognises user organisations that embrace excellence in project planning, management and implementation and is sponsored by the US Smart Card Industry Association.

Conference Chairman, Ben Miller, said: "The TASS program is significant because it is the largest multi-application Smart Card initiative in the world today, combining several government programmes on the same card including pensions, unemployment insurance and health insurance." He added that the project also employs fingerprint technology to ensure that individuals are not issued with more than one card.

To date, 800,000 microprocessor cards have been issued to citizens in two provinces of Spain. Plans call for an additional 37 million cards to be issued at a rate of 5 to 7 million per year.

To expedite the launch the government programme managers decided to employ an existing Smart Card operating system and selected the SEMP OS mask developed by the major banking association in Spain and used by the banks for an electronic purse, but with the necessary security features and functionality for multiple applications.

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## VISA Cash Card for Hong Kong

VISA Cash, Visa's stored value card system, is to be jointly launched in Hong Kong by Bank of China Group, Standard Chartered Bank and Visa International.

Visa said that a number of retail service industries in Hong Kong have expressed "considerable" interest in accepting VISA Cash. These include fast food chains, supermarkets, public telephones, department stores, convenience stores, fashion chains, petrol stations and car parks

## MasterCard to Test Biometrics

MasterCard International is to start testing biometric technology at its Purchase, New York headquarters this month. The aim is to determine

The agreement announced in Hong Kong last month marks the first co-operative partnership between Bank of China Group and Standard Chartered Bank and the possibility of future co-operation, particularly in technology related areas, is being discussed.

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## DataCard Instant Issuance System

DataCard Corporation was showing its low-cost card personalisation system at Futurebank '96. Called the 150i, the system allows financial institutions to instantly issue ATM, debit or credit cards on demand. The system offers embossing, magnetic stripe encoding, Smart Card personalisation, indent printing and colour topping capabilities at a cost which DataCard claims is about one-third as much as competitive systems.

Dave Gilbert, Director of Marketing for DataCard's instant issuance business unit, says financial institutions like the idea of instant issuance, but it has traditionally been cost-prohibitive for them to put equipment in dozens or even hundreds of branches.

"Issuing cards through the mail poses three problems," he said. "First, there is postage and handling costs. Second, cards often do not make it to their destinations because they are lost or stolen. And third, customers have to wait for days or weeks to get their cards. The 150i solves all those problems. Financial institutions can issue cards in a matter of seconds and put them in their customers hands immediately. There is no postage, less opportunity for theft and no card delivery delays."

DataCard is planning to introduce a software developers' kit for systems integrators and value-added resellers to integrate the 150i with their products.

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the reliability and efficiency of different types of biometrics that may ultimately be used in the payments industry to provide positive personal identification of cardholders.

Biometric technology is based on some physical characteristic unique to the individual such as their fingerprint, voice print and hand geometry.

“Our objective is simple: to make MasterCard the safest way to pay,” explained Joel S Lisker, MasterCard’s Senior Vice President, Security and Risk Management. “We must, therefore, investigate new technologies that will help ensure safe, secure transactions for our Members and their cardholders worldwide.”

### **Finger minutiae**

The card issuer has been testing biometrics internally for the last two years and has looked at hand geometry, voice recognition, dynamic signature and retinal scanning. But Lisker revealed at the CardTech/SecurTech conference in Atlanta, USA, last month that finger minutiae will come under scrutiny first.

“We decided to test finger minutiae because, at this point, it provides the highest degree of reliability, ease of enrollment and acceptance than other technologies on the market,” he said, adding: “We will, however, continue to research other emerging systems.”

Finger minutiae is an advanced biometric technology based on the unique characteristics of the finger. A mathematical algorithm is used to assign a numeric value from the finger pattern so that number can be loaded onto a chip card. When a cardholder goes to make a transaction, they touch a small screen with their finger so that the finger minutiae can be read and matched against the numeric value previously loaded on the chip.

“One of the most important factors to be aware of with finger minutiae is that we are not talking about fingerprinting,” emphasised Lisker. “It is the digitally encoded value that is verified. There is no comparison of fingerprints per se.”

MasterCard is also conducting extensive consumer research on biometrics to help the association understand issues of acceptance and potential cultural and privacy biases amongst other things.

Three different types of tests will be conducted on-site

### **Conditional Access PC Card**

French Smart Card manufacturer Gemplus and LSI Logic, an industry leader in digital video

at MasterCard involving employee access, electronic time sheets and visitors.

Finger Minutiae will be used with a sample of some 100 employees and the test will be set up at the employee entrance area where the employee will insert his/her chip ID card into a chip reader, place their finger on a special digital finger reader and the finger minutiae number will be checked against that which is stored in the chip. (MasterCard says it was the first company in the United States to use chip technology for employee access and additionally, it is using its MasterCard Cash Smart Card stored value application in the company cafeteria and store.)

Several of the Association’s departments use paper-based logging systems to track employee attendance and these systems will be upgraded with a new standalone system which will allow employees to “check in” electronically using a finger minutiae reader that matches their data with that stored in the device.

Visitors to MasterCard’s corporate headquarters will also be involved in the tests. MasterCard receives more than 25,000 visitors a year at its headquarters and as new guests arrive their signature and finger minutiae will be captured and stored so that the next time they visit both will be verified with the information previously stored in the system. The tests will be optional for both visitors and employees.

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### **Record Order for GPT**

Singapore Telecom has ordered 40 million payphone cards in a record order for GPT Card Technology in the UK. Twenty million cards are to be supplied by December 1996, and the remainder during 1997.

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semiconductor technology, will jointly develop a conditional access PC card to be used in digital TV set-top boxes based on the DVB (digital video broadcast) standard.

The companies announced last month that a team of 10 engineers from each company has been established in Paris and Gemenos (near Marseille) for the joint development. Shipment is expected to begin in early 1997.

The new card will allow end users to simply plug the card into a slot in their DVB set-top boxes to gain access to the programmes they are authorised to view through the decryption of digital signals.

It will contain a jointly developed, custom system-on-a-chip product based on LSI Logic's INTEGRA set-top box architecture and a Smart Card developed by Gemplus. The PC card will also automatically debit a customer's account each time it is used for authorised viewing.

LSI Logic will provide Gemplus with a custom system-on-a-chip product that is derived from its INTEGRA set-top box architecture. The Gemplus system on a chip will consist of the following blocks; a 32-bit MiniRISC microprocessor core, an MPEG-2 transport demultiplexor, a DVB descrambler, an interface to the INTEGRA chipset in the set-top box and an interface to the Smart Card circuitry. The chip is based on LSI Logic's CoreWare design programme in which cores, or high level, pre-tested building blocks, are connected to form a complex integrated circuit that can be tailored to a customer's own specifications.

Jean-Luc Droitcourt, Marketing Director for Consumer Products at LSI Logic Europe, said: "One of the advantages of LSI Logic's CoreWare solution is that the combination of all the elements of conditional access on a custom single-chip product will provide a high level of security. In other words, it will be difficult to gain unauthorised access through reverse engineering."

He added that the use of a more powerful 32-bit microprocessor core, as opposed to the current 8-bit processors used for current conditional access cards, will offer much higher performance. "This will become important as set-top boxes take on additional functions such as video game playing, Internet browsing or digital video disk capabilities," he said. "Without this performance, multiple systems would be needed."

### **Inter-op Demo Success in Atlanta**

Mondex, the UK-developed electronic cash card,

LSI Logic Corporation is headquartered in Milpitas, California. LSI Logic Europe has its headquarters at Bracknell in the UK and offices in France, Germany, Israel, Italy, Spain, Sweden and Switzerland.

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### **NBS-Bull CP8 Smart Card Alliance**

NBS Technologies Inc. and Bull CP8 have formed a strategic alliance to provide Smart Card technology to financial institutions and other markets and to distribute each other's products in the North American market and on a global scale.

NBS has a strong market position in North America providing card, personalisation and POS products, services and solutions, while Bull CP8 specialises in microprocessor Smart Cards.

Ken Kivenko, President and CEO of NBS, says: "By leveraging the strengths of both companies we are able to offer Smart Card solutions to satisfy the explosive demand we see coming in the next decade."

Geraldine Capdeboscq, President and CEO of Bull CP8, says current uses for Smart Cards have barely scratched the surface. "This strategic alliance gives us added technological strength and marketing expertise to respond to this rapidly growing demand on a global scale," she said.

The alliance between NBS and Bull CP8 will encompass sourcing and manufacturing of Smart Cards, technical assistance and support, software development and cross-distribution rights for each other's products.

**Contact:** *Ken Kivenko, President and CEO, NBS Technologies Inc., Canada - Tel: +1 905 671 3334. Fax: +1 905 671 0690.*

joined with MasterCard and American Express last month in a test of interoperability to demonstrate that different Smart Cards could be read in the same terminal.

It happened at CardTech/SecurTech in Atlanta, Georgia, USA, and is the most important technical demonstration yet that major chip card brands can be interoperable. This is necessary for the rapid spread of applications like the electronic purse as retail merchants require a single terminal able to accept and process any card. All the major competitors, the EMV group of Europay, MasterCard and Visa, American Express and Mondex are committed to the "one footprint" philosophy of a single transaction device at the point of sale.

MasterCard and American Express have been collaborating on interoperability for over a year and first tested it together at CardTech/SecurTech West last November demonstrating a MasterCard credit and an American Express charge application on one terminal.

### Vendor participation

In this latest demonstration involving Mondex, five chip applications were demonstrated. In addition to the credit and charge applications implemented previously, there were three stored value applications in operation.

Vendors participating in the demonstration were ORGA Card Systems, Solaic Smart Cards, Hitachi, Dassault AT and VeriFone Inc. The lessons learned are being shared with all global card issuers, terminal manufacturers and card manufacturers.

The move also brings Mondex closer to joining the card issuer establishment. It uses leading edge technology and does not conform to the standards later drawn up by the EMV group. The biggest difference is that Mondex is an unaccounted system in which value on the card behaves like cash in your pocket, whereas the major credit card issuers use fully accounted systems in which transactions are recorded.

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### VeriFone Unveils SC Family

VeriFone, Inc., the U S, Redwood, California-based supplier of transaction automation systems, has

### Gemplus Card Plant in Mexico

Gemplus last month announced the forthcoming

announced its expanded Smart Card product family which comprises a series of Smart Card-accepting PIN pads that combine high security PIN pad and Smart Card functionality into a single hand-held package.

The SC 455 - an upgrade to the SC 450 - accepts a single Smart Card. An optional graphics display supports a variety of character sets such as Arabic, Cyrillic, Chinese and Japanese.

SC 550 has similar features to the SC 455 and includes an integrated dual track card reader enabling it to support multiple types of card media.

SC 552 supports all of the features of the SC 550 and permits the acceptance of a second Smart Card. Typically used to store a removable security application module (SAM) or a data storage card for merchant records, the SC 552 is suited for many of the stored value card schemes, including Mondex and VISA Cash.

SC 542 is similar to the SC 552 but without the magnetic stripe card reader. It supports both a primary and secondary Smart Card .

VeriFone says all their future solutions will be "Smart Card ready," but some will be designed for Smart Card-only payment environments.

### VeriFone/Mondex Agreement

VeriFone has also announced an agreement with Mondex which will enable VeriFone to offer hardware and software that is compatible with the Mondex electronic cash payment system.

The agreement means that Mondex can potentially be accepted by a large percentage of retailers using much of the same equipment installed in their current credit and debit card authorisation systems around the world, said Tim Jones, Mondex Chief Executive Officer. VeriFone's new SC 552 and SC 542 terminals will enable merchants to add Mondex chip card capability to their existing applications.

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opening of a card manufacturing plant in Mexico which over the next two years is scheduled to reach an annual production of 100 million cards. The

factory, which will be the largest of its type in Latin America, is a \$20 million investment and will create 200 new jobs in Mexico.

Initially, the new facility will manufacture phonecards, mainly for the Mexican operator Telmex, and then diversify in Smart Card production for applications such as banking and social assistance. Gemplus says the new plant will develop the entire card production process ranging from injection moulding and printing the card bodies to mounting and coding the French-produced microchips and carrying out quality control procedures.

Gemplus claims to be currently the number one card supplier in Mexico, Venezuela and Argentina and estimates it has 85 per cent of the Latin American market. By manufacturing in Mexico, it puts Gemplus closer to its major South American clients and reduce the time to market for competitive products.

The new plant brings the total number of plants producing Smart Cards in the group to six: two in France, one in Germany, United States, China and Mexico.

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## Financer Terminal for Austrian EP

Thyron has announced an agreement with Siemens (Austria) and Wihup (Austria) to integrate the Austrian Electronic purse QUICK application into the Financer Terminal which will also continue to process international standard credit/debit cards and Cabcharge Smart Cards, making it a multi-application terminal.

The Thyron host data collection system (the FTP) will be enhanced to capture the QUICK electronic purse transactions. These will be formatted by the FTP system for subsequent delivery to Europay who will perform a number of application-specific security checks and clear the transactions. During each communication session between the FTP system and Europay, the FTP system will also receive hot-lists of cards that are blocked from use.

## VISA Cash on the Move in Atlanta

QUICK Smart Cards are based on the Siemens SLE 44C42 chip and are manufactured by Austria Card in Vienna.

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## Integrator Upgrades POS Systems

NBS Technologies, Inc. of Montreal, Canada has announced the Integrator, a secure PIN entry device that upgrades point of sale systems to accept magnetic stripe cards and Smart Cards. In addition to connecting easily to NBS terminals it can be plugged into a full range of devices from electronic cash registers to PCs.

Integrator supports all major encryption key management schemes and introduces keyboard scrambling and false keystroke simulation for an extra measure of security. A secure microprocessor protects encryption keys from access and the detection system automatically erases the keys in case of tampering.

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## CTST is World Showcase

CardTech/SecurTech, the world's largest and most prestigious card and security technology conference and exhibition, has announced a record 5,543 attendees for the four-day event held last month in Atlanta, Georgia, establishing itself as the world showcase event for Smart Card technology.

Compared with last year, attendance increased 32%, seminar delegates increased 28% and the exhibition included 336 booths, an increase of nearly 64%. There were more than 50 new product and project announcements by vendors during the show.

VISA Cash, launched in Atlanta, Georgia, with First Union Corporation, NationsBank and Wachovia, is

the USA's first full scale introduction of microchip-based stored value cards which are available in values up to \$100 for visitors and people who do not have an established bank account.

Rechargeable cards are available for higher value transactions, and the total card issue target for this year is 4 million cards.

The cards will be accepted at more than 1,500 locations with an expected 4,000-5,000 electronic terminals. These include MARTA rail stations throughout Atlanta where travellers can pay with their card without the hassle of tokens or cash (see photograph below). VISA Cash cards can also be purchased at card dispensing machines located in 21 of the rail stations.

Schlumberger, which designed the Smart Cards, says First Union expects to distribute at least 1.5 million cards initially for use by visitors to the Summer Olympics and as a permanent scheme for Atlanta residents. The bank is already planning a national roll-out.

VISA Cash is specifically designed for low value every day purchases that are typically under US \$10, such as a cup of coffee, bus fare or newspaper.

Visa illustrates the concept that the Smart Card works like cash with the photograph above showing a card and a wallet.

## AMC Smart Card Reader/Writer

American Magnetics Corporation has launched a new low cost computer peripheral Smart Card reader/writer, called the AMC 151, together with a software development kit for Windows. It is housed in a moulded case with an LED indicating the unit's status. An optional non-slip base allows ease of use during counter top operation or the basic unit can be mounted on the side of a terminal.

The development kit, called SmartStart, provides the tools required to develop Smart Card solutions. Each kit includes sample ISO 7816 cards and trains the user in the operation of Smart Cards. The software operates with Windows 3.1 and displays the host and reader interchanges with on-line help.

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## Turkish Partner for VeriFone

VeriFone has appointed Iletisim Teknoloji Danismanlik Ticaret A.S. (ITD) as its sole authorised global partner for Turkey. As one of Turkey's leading suppliers of electronic payment systems, ITD will use its position to market, support and distribute VeriFone point of sale and Smart Card PINpads throughout the country.

Coskun Ural, ITD's President, said: "The Turkish market is now looking to introduce the latest Smart Cards, customer loyalty, networking and Internet commerce solutions."

Headquartered in Istanbul, ITD was established in 1991 and specialises in voice systems and electronic payments technology.

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## AviSIM for Serbia and Macedonia

Cellular mobile phone operators Mobtel of Serbia  
**Salzburg Smart Tourist Card**

and PTT Macedonia have placed orders for the installation of AviSIM, the GSM/PCN SIM card personalisation solution from systems integrator AU-System of Sweden. The AviSIM installations will be made in co-operation with Ericsson, the main contractor for the GSM networks currently being implemented.

AviSIM enables cellular operators to manage their production of SIM (Subscriber Identity Module) Smart Cards in-house. It supports Smart Cards and personalisation stations from all major vendors. Current users include GSM operators Telia Mobitel, Sweden; Telenor Mobil, Norway; Radiolinja, Finland; and Post and Telecom, Iceland.

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## Cookies Promote DANMØNT

Half-a-million Chinese fortune cookies are being distributed in downtown Copenhagen this month to promote the DANMØNT card in the Danish capital. The cookies will be distributed by 20 "street walkers" and through 250 bank branches, post offices, card sales outlets and on more than 80 stations in the Mass Transit System. In addition, fortune cookies will be seen in DANMØNT displays in cinemas and cafés throughout the city.

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The Austrian National Tourist Office has

announced a new pre-paid card for tourists to the City of Salzburg which can be used to pay for nearly all of their holiday requirements without the need to carry cash.

Called the Salzburg Card - Plus, the microprocessor Smart Card is the key to:

- \* Accommodation with breakfast at a range of 3-5 star hotels
- \* Two three-course meals a day at a choice of restaurants
- \* Refreshments and drinks at a number of cafes, bars, pubs and the hotel
- \* Free entry to various sights and attractions
- \* Admission to a classical concert at the Fortress
- \* Free transport on city buses
- \* A welcome "chip" for the Casino
- \* A copy of the Salzburg Guide
- \* A daily coffee break or a night-cap at the hotel bar
- \* Two glasses of sparkling wine at the Casino bar

Prices (effective until 31 October 1997) depend on the season and the class of accommodation chosen. Children up to six years free, 7-15 years 50% adult price. Prices are per person/per night.

	3-star hotel	4-star hotel	5-star hotel
Pre-season	from £92	from £98	from £125
Main season	from £130	from £173	from £187
Post-season	from £110	from £117	from £155

The scheme has been developed by Salzburg Information and its partners, SkiData Computer GmbH of Austria and Swatch AG, of Biel, Switzerland.

The Swatch Access watch, which features an integrated electronic data carrier, was developed in

## VISA Cash Pilot for Italy

a co-operation agreement between SkiData and Swatch. Since its introduction at the beginning of the 1995 winter season, the watch is accepted as a "ticket" in over 300 ski resorts throughout Europe and North America.

Hotel guests with Swatch Access watches can have the data transferred from the Salzburg Card - Plus onto the watch when they check in at the hotel. If they do not have this type of watch they may buy a special Salzburg design at the check-in.

**Contacts: Manuela Wilhelm, Marketing Manager, Austrian National Tourist Office, UK - Tel: +44 171 409 2892. Fax: +44 171 499 6038. Mr Wallerstorfer, President, SkiData, Austria - Tel: +43 62 46 888. Fax: +43 62 46 8887.**

## Hewlett-Packard/VeriFone Alliance

Hewlett-Packard and VeriFone have announced an alliance to jointly market and sell VeriFone's Omnihost 2.0 client/server software application running on the HP9000 family of enterprise servers which will enable financial services institutions to accomplish a wide range of electronic payment functions, including transaction switching and credit/debit authorisation and settlement. The agreement also calls for collaborative activities in other areas, including Internet commerce and Smart Card applications.

**Contact: Mark McMurtrie, VeriFone, UK - Tel: +44 1895 824031. Email: mark\_ml@verifone.com**

## Danish Cards in Design Exhibition

Unibank, one of the largest Danish banks, has issued a series of six DANMØNT cards with a stylistic side 1 in black and six different sides 2 showing some of the bank products. A total of 60,000 cards have been produced. The cards, designed by Johan Adam Linneballe, are currently being shown at an exhibition of Danish graphical design at The Museum of Industrial Design as an example of the new electronic money.

**Contact: Henning N. Jensen, Managing Director, DANMØNT - Tel: +45 43 44 99 99. Fax: +45 43 44 90 30.**

Bormio, a major tourist resort in the Italian Alps has been chosen for the first VISA Cash pilot in Italy. The stored value card system is to be launched by Italian financial institution Cariplo in time for the winter ski season.

Local retail outlets, including news stands, coffee shops, taxis, car parks, tobacconists, discotheques, games arcades, ski lifts and ice skating arenas have expressed interest in accepting VISA Cash and it is expected that there will be some 150 acceptance points throughout the resort.

Cariplo and the Associazione Albergatori di Bormio (the Bormio Hotel Association) will include a VISA Cash card in each welcome pack offered to all tourists who spend a week's winter holiday in the resort which attracts over 200,000 visitors during the winter.

**Contact: Colin Bapti, Visa International, UK - Tel: +44 171 937 8111. Fax: +44 171 937 0877.**

## BA Ticketless Travel Pilot

British Airways is planning a ticketless travel pilot scheme on the London Gatwick to Aberdeen route but is still a long way off introducing Smart Cards.

Travellers taking part in the pilot scheme will be able to make a booking using their credit card and those with hand luggage only will be able to obtain their boarding card at a self-service vending machine at the airport. Passengers with luggage to check in will go to the normal desk where they will receive their boarding card.

## Enhanced Toolkit from Aladdin

Aladdin Knowledge Systems has announced a new software version for the Aladdin Smartcard Environment (ASE), its integrated toolkit for developing PC-based Smart Card applications. This enhanced version supports additional Smart Cards and compilers, including support for Japanese NEC computers.

**Contact: Lisa Appelson, Marketing, Aladdin, Israel - Tel: +972 3 537 5795. Fax: +972 3 537 5796.**

## Italian Bank to Issue Smart Cards

Banca Commerciale Italiana (Comit) is to issue all its clients with Smart Cards in place of magnetic stripe cards starting this year.

The bank is restructuring its information system and has appointed the Olivetti Telemedia Group to supply one million Smart Cards through its Italian subsidiary Veron, based in Milan, and supply and install 1,500 Veron-Olivetti read/write terminals in the new Lyra range (*SCN March 1996*).

The project calls for the distribution of 300,000 Smart Cards this year and for all the bank's clients to be issued with Smart Cards by 1997.

The cards will enable the bank to positively identify the cardholder through a digital signature recorded electronically on the card and allow clients to carry out any type of bank transaction at any of its branches throughout Italy.

Veron's VC480 8K bytes EEPROM card is being supplied for the project. The card can be updated and new services added during normal card activity without the client being required to return the card to the bank.

**Contact: Luciano Cavazzana, Veron - Tel: +39 2 4821 5261. Fax: +39 2 4524 701.**

## CIS Banks License US Products

UNICOMBANK and AVTOBANK in the CIS (the former Soviet Union), have licensed TRANS24 from US Software, Inc. (USSI) and GENcard software operating on a UNIX platform from Applied Communications, Inc. (ACI).

According to Andrei A. Sobolev, Head of Plastic Cards Division at UNICOMBANK: "We wanted a total UNIX solution that was able to meet our short and long-term needs." He added that these products would mean easier cash operations and provide the ability to accept international payment methods.

USSI and ACI are subsidiaries of Transaction Systems Architects Inc. Its products are used to process transactions including credit, debit and Smart Cards.

**Contact: Sandy Bold, ACI - Tel: +44 1923 816393.**

## PayCard Launch in Germany

PayCard, a new electronic purse application, is being launched in Germany as a payphone and bus and rail travel card. The project is backed by Deutsche Telekom, Deutsche Bahn (the federal railways) and Verband Deutscher Verkehrsunternehmen (VDV), the association of transport authorities.

The new card, supplied by ORGA Kartensysteme GmbH, of Paderborn, is being tested in the Rhein-Main-Gebiet area and in Hamburg, Dresden, Stuttgart and Munich with 5,000 consumers. The card can be reloaded at Deutsche Telekom payphones and at special terminals installed at rail stations.

The German Transport Ministry is to study the pilot scheme to ascertain the benefits for public transport operators.

### Third purse card this year

This will be the third electronic purse card to be launched in Germany this year. First was the Geld Karte backed by ZKA (Zentraler Kredit Ausschuss) representing the savings, public, co-operative and commercial banks (*SCN January 1996*). It started a six month pilot in the town of Ravensburg in February with national roll-out planned for the end of this year.

Then came the P-CARD, described as bank independent. It is operated by a partnership headed by EBS Elektronik Banking Systems GmbH with Krone Kommunikationssysteme, Bad Hersfeld, ORGA Kartensysteme and Goppinger Datenservice. The system is being licensed in Germany and worldwide with a planned issue of 500,000 cards in 1996. (*SCN April and May 1996*)

**Contact:** Reinhard Hanses, Deutsche Telekom -  
**Tel:** +49 228 181 5319. **Fax:** +49 228 181 5519.

## Mondex Sites in Hong Kong

HongkongBank is to launch its Mondex electronic cash card trial before the end of this year at two sites - one in Tai Koo Shing on Hong Kong Island and the other in Sha Tin in the New Territories.

## Belgian Post Smart Card Pilot

Postcheque, the financial branch of the Belgian Post Office, La Poste, launched a Smart Card pilot scheme in the cities of Liege and Ghent last month.

Belgian Post is in a unique position as one of the few European post authorities providing, apart from the national banks association, only payment services related to current accounts. This gives Postcheque, the financial branch of the Post, the freedom to apply its own tariffs.

The Post Office already has a magnetic stripe card and the new Postcheque Smart Card is seen as a future replacement and an alternative to the Banksys payment system. Banksys is the operator of the Bancontact/Mister Cash network for electronic payment and the national electronic purse PROTON. The new Postcheque card is not an electronic purse card.

Postcheque plans to issue 20,000 Smart Cards to account holders. The new cards will be accepted in stores and Post Offices in the two cities chosen for the trial. Retailers taking part include the major retail chains in Belgium: GB, Delhaize, Makro, Superconfex, CORA and soon Colruyt. Other services will depend on the strategy of each card issuer - Post or retailer and associated service providers.

**Contact:** Laurent Van Den Eynde, Project Manager, Postcheque - **Tel:** +32 2 204 6714. **Fax:** +32 2 204 6032.

## CCTA Technology Guide Package

An illustrated software guide to Smart Card technology, called Get Smart, is being marketed by CCTA, the UK Government Centre for Information Systems to raise the level of awareness and understanding of the technology. It has already been purchased by companies, universities and government departments in the UK and the USA.

Prices for the non-audio diskettes range from £95 for a single user to £4,900 for an unlimited licence.

The Audio CDROM version costs from £125 for a single user to £6,300 for an unlimited licence.

**Contact:** Christine Goss, CCTA - **Tel:** +44 1603 704915. **Fax:** +44 1603 704817.

## Visual Card from Star Micronics

Star Micronics UK launched its new Visual Card at the 1996 Retail Solutions exhibition in Birmingham, England, last month.

The Visual Card features a unique panel on the front which displays information. There is a traditional magnetic stripe on the reverse of the card. The panel, which can contain up-to-date details personal to the user, can be rewritten up to 10,000 times using magnetic particles.

The display is made up of magnetic particles which are aligned by a 50 pin recording head in the reader/writer to produce up to three lines of 29 characters.

Annette Tarlton, Marketing Manager, explained that the information displayed within the panel could include the value or number of points accumulated in loyalty schemes, and special offers pertinent to customers holding in-store charge cards.

It could also be used on membership cards at sports clubs for instance where the number of paid up squash courts could be displayed or the number of days left before membership renewal is due. Other uses include appointment cards, identification cards and access cards.

The MCP-200 Visual Card and reader/writer system is available in both a packaged version for purchase by corporate end user customers, and as a mechanism for incorporating into solutions developed by systems integrators and VARs.

### Smart Card launch planned

Star Micronics is one of the world's largest printer manufacturers and is headquartered in Japan. Its special products division works in partnership with card manufacturer Dai-Nippon printing to produce the Visual Card systems.

The company is planning to launch a microprocessor Smart Card in September to enable it to access new but complementary markets.

**Contact: Annette Tarlton, Star Micronics UK - Tel: +44 1494 471111. Fax: +44 1494 473333.**

## Lease Plan Goes Live with OASIS

Lease Plan, Europe's largest car fleet operator, has gone live with OASIS, a Smart Card-based invoicing system which could save the motor industry millions of pounds a year.

OASIS (Open Automotive Services through Integrated Systems) has completed trials on BT's EDI Net (*see SCN December 1994, page 233*) involving fleet operators Godfrey Davis, Fleetlease and Lease Plan: and service providers Lookers, Henlys, Carringtons, Wadham Kennings and Altwoods. Leaseplan was apparently so impressed with the results that it decided to go on-line with OASIS on a permanent basis.

In the system, the fleet operator issues each driver with a Smart Card onto which is encrypted all the information and authorisation levels normally required by a service provider. By inserting the card into a reader, the correct information is entered into the computer system. Details of work carried out are entered into the system and the invoices are sent by EDI to the OASIS computer.

There the Bureau Translation Software recognises the service provider's codes and adds those of the fleet operator. The amended invoices are forwarded to the fleet operator, again by EDI, and can be automatically integrated into the payment system.

During trials, the improvement in the rejection rate of invoices was dramatic. OASIS estimated that a potential £190 million per year could be saved in postage, stationery, unnecessary authorisations and the removal of incorrect invoices.

Running costs are also significantly less than a traditional paper-based system. Calculations, based on a dealer serving 10 fleet vehicles per day, with 252 working days in the year - and an assumption that the average cost of correcting a rejected invoice is £20 per invoice at a five per cent rejection rate - show that the annual cost of the current paper-based system for such a dealer is £11,365 compared with the OASIS annual bill of £1,870.

OASIS is marketed and distributed by OASIS Global Systems.

**Contact: Alan Croft, OASIS Global Systems, UK - Tel: +44 1442 239239.**

## Global Market for CombiCard

The CombiCard - a combined contact and contactless Smart Card - will become an important product for the international card market, according to a joint statement issued by Marc Lassus, CEO of Gemplus, and Hans Dietrick Kreft, Managing Director of ADE Angewandte Digital Elektronik GmbH, who last month founded Gemplus ADE CombiCard GmbH (GAC) company which holds the rights for the CombiCard.

They said that they would help the international standardisation process for the ISO 14443 (remote contactless cards standardisation). Until this standard is completed it is a major obstacle for the broad introduction of contactless cards.

All chip and card manufacturers who want to bring their own CombiCard products to the market can obtain licences from the GAC, said the statement.

Service providers and card issuers should not postpone decisions to introduce card systems because they are not sure whether they should favour a contact card or a contactless card, they said, and advised them to start with a contact card now and make sure that their card producer will later provide them with a CombiCard which conforms to all the contact requirements.

## Mikron Management Strengthened

Dr Frank Zimmermann has been appointed Managing Director and Operations Manager of Mikron of Graz, Austria, a subsidiary of Philips Semiconductors, and will take up his new duties on 1 July with the contactless card and token developer and manufacturer.

A graduate of the Technical University of Braunschweig with a master's degree in electronics, Dr Zimmermann worked as a scientist at the University of Dortmund and then joined Philips Hamburg in 1983 where he held several management positions in R&D, engineering and production of semiconductors.

In parallel, Günter Schlatter, Managing Director at Mikron since last April, is responsible for marketing, R&D and finance.

## ICMA Sets Up Technical Helpline

A technical helpline has been set up by the International Card Manufacturers Association (ICMA) to answer members' questions on all aspects of card manufacturing and the plastic card industry.

Jeffrey E Barnhart, Executive Director for ICMA, explained: "When the ICMA was formed six years ago, one of the primary complaints was that industry participants rarely talked to one another. The creation of the helpline represents another step in establishing a greater exchange of information within the industry."

The helpline will act as an expert referral system. Members who call the helpline will be given the names and contact information for one or more experts who can answer their questions.

**Contact: Mike Pincus, ICMA, USA - Tel: +1 609 799 4900. Fax: +1 609 799 7032.**

## Composer Cards in Austria

Cards featuring famous composers are proving popular in Austria in the roll-out of the national electronic purse scheme QUICK.

The cards are 4K bytes EEPROM cards with a Siemens SL 44C42 chip and are supplied by Austria Card, a company of the Austrian central bank, to system operator Europay Austria.

Starting with a pilot scheme in December 1994, the scheme is being rolled-out nationally and is more than half-way towards its target distribution of five million cards by the end of this year.

The card, which can hold up to 1,999 Austrian Schillings (US \$200), can be used in parking meters, vending machines, public transport, taxis, restaurants and retail shops. It can also be used as a cheque guarantee card.

The electronic purse card has been issued in various designs because of the interest shown by card collectors.

**Contact: Ernst Piller, Austria Card - Tel: +43 1 61065 118. Fax: +43 1 61065 701**

## Smart Card Diary

**Driving Strategic Change in Purchasing Through Procurement Cards**, The Cavendish Square Conference Centre, London, 8 July.

A separately bookable one day workshop, A Practical Guide to Implementing your Procurement Card Scheme, takes place on 9 July. ICM - Tel: +44 171 436 5735. Fax: +44 171 436 5741.

**Cards Australia '96** Conference & Exhibition, Sydney Convention & Exhibition Centre, Sydney, Australia, 20-22 August.

Three-day trade exhibition and a multi-streamed conference organised by the Asia Pacific Smart Card Forum and AIC Exhibitions to cover Smart Cards, Stored Value Cards and electronic purse, co-branded/loyalty cards and procurement cards. Erika Morton, AIC Exhibitions, Australia - Tel: +61 2 210 5704. Fax: +61 2 223 9216.

**ICMA 6th Annual Card Manufacturing Expo**, Bermuda, 21-25 October.

The annual gathering of the International Card Manufacturers Association which has taken "The Globalisation of the Plastic Card Industry" as this year's conference theme. Lynn McCullough, ICMA - Tel: +1 609 799 4900. Fax: +1 609 799 7032.

**CarteS '96**, CNIT, La Defense, Paris, France, 29-31 October.

International forum for plastic card technologies and applications with a major conference and exhibition. CEP Exposium / Cartes - Tel: +33 1 49 68 52 87. Fax: +33 1 47 37 75 09.

## Veron Wins Phonocard Order

Veron, part of the Olivetti Telemedia Group, is to supply Romanian Telecommunications operator ROM TELECOM with telephone chip cards. The Milan, Italy-based company, says this is its first significant reference for the supply of payphone cards, and the contract, for an undisposed number of cards, was awarded against strong competition from other European chip card manufacturers.

## Tesco Leads in Loyalty War

Supermarket leader Tesco surprised the financial institutions and increased the stakes in the customer loyalty card war in the UK by offering a new card to enable customers to budget for their shopping and petrol purchases - and earn an attractive 5 per cent (gross) interest rate.

The Clubcard Plus payment card is linked to a Tesco deposit account which pays interest on credit balances. Shoppers pay a fixed amount of money each month by standing order and the amount can be greater than their anticipated shopping bills to enable them to use the cash-back facility at check-outs. Clubcard Plus is being administered by NatWest bank, so cash can also be withdrawn from any of its ATMs using the new card.

Like the original Clubcard, it will save points towards money-off vouchers and will also have a modest overdraft facility on which interest will be charged at 9 per cent.

## Sainsbury's announces Reward Card

Sainsbury's has launched its new Reward Card and announced an exclusive partnership with British Airways and Air Miles.

The card not only rewards customers in all Sainsbury's supermarkets but gives them the choice of exchanging Reward points for Air Miles awards or spending them at any of 852 Sainsbury-owned stores including Homebase, Texas and Savacentres.

The minimum spend to accrue points is £5 at Sainsbury's supermarkets or petrol stations earning five points. One additional point is awarded for every additional pound spent. A total of 250 points will earn customers either £2.50 or 40 Air Miles. Customers can request a second card on the same account number for their partners.

A launch competition offers 50 pairs of tickets in conjunction with Air Miles for a flight on Concorde and 350 pairs of British Airways tickets to Paris for runners-up - with no purchase necessary.

Asda supermarket chain is also said to be planning its own card and seeking a banking partner.

**Contact: Diane Lamb/Jane Reynolds, Sainsbury's - Tel: +44 171 921 6127.**

## Electronic Commerce and Payment Mechanisms Part 4

### The CCV Process continued.

There are a number of algorithms for creating hash functions,

- DES ( Same as CCV previously described)
- SHA ( NIST secure hash algorithm used by the DSS Digital Signature Standard)
- MD5 ( Message Digest 5, used by PGP and other systems )

Hash algorithms are based on the use of one way functions and should exhibit four properties:

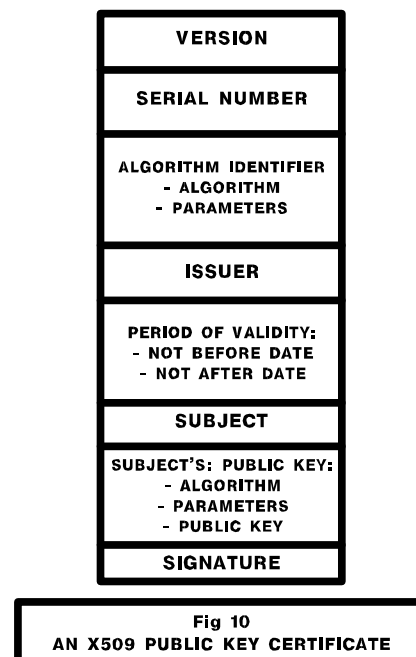
- 1) It should be easy to compute the hash digest
- 2) It should be difficult to invert the process
- 3) It should be difficult to find another message that produces the given hash
- 4) It should be difficult to find two arbitrary messages that produce the same hash.

Hash functions amongst the security fraternity is quite an emotive topic and often draws much attention than basic encipherment or basic signature algorithms. This is because over the last few years a number of hash algorithms have been shown to have flaws. Property ( 3 ) is sometimes referred to as a weak hash function where as property ( 4 ) is a strong hash function. If you are dealing with the transmission of random or unstructured data then property ( 4 ) might be desirable but in most practical designs, messages include a structured syntax which negates the impact of the fourth condition. In any event the inclusion of time stamps or sequence numbers will achieve the necessary property . Clearly it is the third property that is fundamental to stopping fraud. It is generally agreed that a 64 bit hash function is too small ( note the use of DES ) and most algorithms provide 128 bits or more.

Having produced the message digest or hash it is this data that is actually input to the signature process. In the case of RSA the algorithm is applied to this data using the secret key of the sender and the resulting cipher forms a digital signature which

is appended to the message. The signature algorithm can also operate in a different mode called signature with impress where the data itself is input to the signature process instead of the hash. In this case the data is not transmitted but is recovered by the receiver inverting the process using the associated sender's public key. It should be noted that signature verification is based on the checking of redundancy and such a signature process must include adequate ( 128 Bits ) redundancy.

The digital signature has the major advantage referred to earlier in that the property of non-repudiation is achieved in addition to data integrity. The sender being the only party with the secret key used to generate the signature cannot subsequently deny having sent it. Also any party with the public key is capable of checking the signature and being assured of the source.



This is the simplest of the security services and can be achieved by using either the symmetric or asymmetric cryptographic algorithms referred to earlier. In practice bulk encipherment is nearly always achieved by using symmetric algorithms such as DES. However the transmission of such symmetric keys to a correspondent is usually implemented using an asymmetric algorithm. This avoids the need to establish a common secret key before the communication session is invoked. It is clear that the authenticity of public keys is critical and this can be achieved in a number of ways. One common approach is to use a trusted key certification centre that effectively produces a signature for the public keys that may be checked to prove their authenticity. An alternative approach is to obtain such key certificates from another party that you trust. This is a distributed key certification service which lacks the rigour of the global system but can none the less provide a practical service within the constraints of trusting the participants. This later approach is used by PGP.



Key certificates are often defined against the ISO X509 authentication framework. This standard defines the structure for public key certificates. The format of the certificate is shown in *figure 10*. The version field identifies the certificate format whilst the subject field is the name of the user.

## Confidentiality

*David Everett*

Next Month - Payment on the Internet

## The Electronic Purse Review 1996 - Coming Soon

Free with next issue's edition of *Smart Card News* is this indispensable review of current Smart Card schemes. This report will go on sale for £25 to non-subscribers of *Smart Card News*.

## Don't Miss Out!

Don't miss out on our special preferential offer. As a subscriber to *Smart Card News* you can purchase the latest International Smart Card Industry Guide at the low price of only £70 which includes postage and packing.

If you have not ordered your copy of the Guide yet do it now by letter, phone, fax or e-mail (details on inside front page).

This is the Guide that even the experts keep handy because it provides you with all the information you need to know.

- \* It contains detailed information on some 200 companies involved in Smart Card

technology.

- \* Descriptions of their products and services
- \* Contact names, addresses and numbers
- \* Information on some 100 of the main Smart Card applications around the world, including electronic purse schemes.
- \* Articles by leading experts on the technology, patents and intellectual property rights.
- \* A glossary of terms used in the industry and comprehensive indexes.

The Guide is also available to non-subscribers at £125 plus postage and packing.

## Technical Smart Card Workshop

The first technical workshop on Smart Cards, organised by Information Technology Training in

association with *Smart Card News*, took place last month at the modern conference centre within the medieval Herstmonceux Castle in Sussex, England.

This venue was chosen because it is within easy reach of London, and particularly London Gatwick Airport, and also for its tranquil setting - ideal for two days of intensive training - and far from the distractions of the office.

Subjects covered ranged from an introduction to the technology through Smart Card applications and security to electronic commerce, including electronic purses and the Internet. As attendees are limited to about 12, it is an ideal, and rare, opportunity for those attending to interface with the presenters - all leading experts and specialists - over a two-day period.

Other workshops are being planned, but not necessarily in Sussex. If there is enough interest in a particular area, Information Technology Training will take the workshop to other venues in England, Wales or Scotland.

For further information call Estelle on +44 1273 626677.